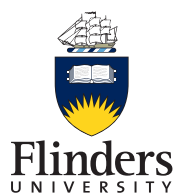




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Hospitalised injury in children and young people

2017–18

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Number 135

Hospitalised injury in children and young people

2017–18

Australian Institute of Health and Welfare
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Summary

This report provides information on hospitalised injury in children and young people in Australia aged 0 to 24 in 2017–18. Around 130,000 children and young people were hospitalised because of an injury in 2017–18, males outnumbering females by almost 2 to 1. Generally, rates of injury were higher for the older age groups. The overall rate was 1,747 per 100,000, and the highest overall rate was among males aged 18–24, at 2,946 cases per 100,000 population. Rates of injury were also higher in rural and remote areas and for Aboriginal and Torres Strait Islander children and young people.

Infants

In infants (<12 months), rates of drowning (7.9 per 100,000) and injury due to thermal causes (50 per 100,000) were among the highest of all age groups examined. About 75% of infant drowning cases were in bathtubs.

Children aged 1–4

Compared with other age groups, children aged 1–4 had the highest rate of injury for drowning, accidental poisoning, injury due to thermal causes, and falls. *Falls* was the most common cause of injury for this age group, with falls from playground equipment being most likely (17% of the *Falls* in this age group); 37% of playground equipment falls were from trampolines. About 50% of the drownings were in swimming pools.

Children aged 5–9

Rates of injury due to *Falls* were high for children aged 5–9 (665 per 100,000). The falls were commonly from playground equipment (37% of the *Falls* in this age group) with 46% of the falls from such equipment being from climbing apparatus.

Children aged 10–14

For children aged 10–14, *Transport crash* injury, *Falls* and injuries due to *Exposure to inanimate mechanical forces* were common. *Falls* was one of the leading causes of hospitalisation (8,417 hospitalisations) and 321 involved skateboards. Just over half of all cases (55%) of *Exposure to inanimate mechanical forces* were due to 3 causes: *Striking against or struck by sports equipment* (739 cases), *Striking against or struck by other objects* (671) and *Contact with other sharp object(s) including a knife* (492).

Adolescents aged 15–17

Adolescents aged 15–17 had the highest rate of *Intentional self-harm* (396 cases per 100,000 population) among children and young people. The rate of *Intentional self-harm* among female adolescents (658 per 100,000) was over 4 times that of male adolescents (147). The most common means of *Intentional self-harm* for both female (86%) and male (82%) adolescents was intentional self-poisoning.

Young adults aged 18–24

Young adults (aged 18–24) had the highest rates of *Transport crash* injury (420 cases per 100,000 population) and *Assault* (176). Most transport injuries in young women involved cars (62%) and 8% involved a motorcycle. In contrast, transport injuries in young men more often involved a motorcycle (40%) than a car (34%). The rate of assault for young men (235 per 100,000) was twice that for young women (114). Young women were more likely to have been assaulted by their spouse or domestic partner (48%) than young men (2%).

1 Introduction

This report provides information about hospitalised injury in children and young people in Australia aged 0 to 24. It takes a developmental stage approach to examining injury, acknowledging that age and injury are closely linked at some periods of life—for example, early childhood and young adulthood (AIHW 2012).

Age groups and developmental stage

Progression from birth to adulthood is a complex process of growth and development. Physical aspects of this are most obvious, but developments in mental capabilities, emotions, relationships with other people, and social roles and expectations are also important.

Age is an easily measured proxy for growth and development. While individual children vary in the age at which they achieve certain capabilities, there is enough commonality for growth charts and tables of developmental ‘milestones’, organised by age, to be widely used as guides to monitor development and screen for developmental delay (Centers for Disease Control and Prevention 2014). Age is also used to frame requirements for school entry and driver licensing.

Patterns and rates of injury in childhood vary greatly with age in ways that have often been considered to reflect development (see, for example, Flavin et al. 2006 and MacInnes & Stone 2008).

Growth and development are continuous processes. It is useful to divide ages into ranges for purposes such as screening and statistical description; it should be recognised, however, that the choice of age groups is rather arbitrary and no single set of age groups predominates in the literature on child development. Certain terms are common—such as infant, toddler, child and adolescent—and some subdivisions are also common—such as early, middle and late childhood. However, opinion on which ages are attached to such terms varies. An exception is ‘infant’, which commonly refers to the first year of life, or from 1 month to 1 year after birth.

The age groups used in this report are:

- less than 12 months (Infancy)
- 1–4 years (Early childhood)
- 5–9 years (Middle childhood)
- 10–14 years (Late childhood)
- 15–17 years (Adolescence)
- 18–24 years (Young adulthood).

Methods and data sources

This report uses data from the National Hospital Morbidity Database (NHMD) covering the period 1 July 2017 to 30 June 2018 to provide information on hospitalised injury in children and young people in Australia.

Diagnosis and external cause information for the hospital separations in this report were coded according to the 10th edition of the International Statistical Classification of Diseases and Related Health Problems, 10th revision, Australian modification (ICD-10-AM) (ACCD

2016), incorporating the Australian Classification of Health Interventions. The ICD-10-AM comprises classifications of diseases and external causes of injuries and poisoning, based on the World Health Organization's version of ICD-10. The ICD-10-AM classification is hierarchical, with 20 summary disease chapters divided into a large number of more specific disease groupings.

Only a small proportion of all injury cases result in admission to a hospital. For each hospital admission, many more cases present to hospital emergency departments but are not admitted or are seen by a general practitioner. A larger number of generally minor cases do not receive any medical treatment. As well, a smaller number of severe injuries that quickly result in death go unrecorded in terms of hospital separations but are captured in mortality data. This report does not include emergency department presentations for injury.

Intentional self-harm

Determining whether an injury was due to *Intentional self-harm* is not always straightforward. Cases may appear to be *Intentional self-harm*, but often there is no information available to know this conclusively. Some patients may choose not to disclose that their injuries resulted from intentional self-harm; others may be unable to do so due to the nature of their injuries, or because their motives were ambiguous.

In very young children, ascertaining whether an injury was due to *Intentional self-harm* can be difficult and may involve a parent or caregiver's perception of the intent. Ability to form an intention to inflict self-harm and to understand the implications of doing so requires a degree of maturation that is absent in infancy and early childhood.

It is also not possible to differentiate between acts of non-suicidal self-injury and acts of self-harm with suicidal intent using records from the NHMD. We do know that it is likely that an unknown proportion of cases of *Intentional self-harm* in late childhood and at older ages are self-injurious in nature rather than suicidal in intent (Martin et al. 2010). The age at which self-inflicted acts can be interpreted as *Intentional self-harm* is not well defined and is the subject of debate (see Box 1.3).

What data are reported?

The data are presented by:

- age
- sex
- external cause of injury
- remoteness of the patient's area of usual residence
- Indigenous status.

Selection criteria for records, and data terms and definitions

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

- hospital separations occurring in Australia from 1 July 2017 to 30 June 2018
- age at date of admission between 0 and 24
- principal diagnosis in the ICD-10-AM range S00–T75 or T79 using Chapter XIX 'Injury, poisoning and certain other consequences of external causes' codes—but excluding any with 'Z50 Care involving use of rehabilitation procedures' appearing in any additional diagnosis field (see Appendix A: Data issues for information on Z50)

- mode of admission was not a transfer from another acute hospital (see Appendix A: Data issues for details).

Important terms relating to the data used in this report are summarised in boxes 1.1 to 1.5 and further information on data and methods is provided in Appendix A: Data issues.

In tables and charts, unless stated otherwise:

- the patient's age is calculated at the date of admission
- rates were age standardised as detailed in Appendix A: Data issues.

Note that, in tables presenting data by age group and by sex, separations for which age and/or sex were not reported are included in totals.

Box 1.1: Summary of terms relating to hospitalised injury

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

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

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

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

The **injury separation records** included in this report are those with a principal diagnosis code in the ICD-10-AM range S00–T75 or T79. This includes records where the main reason for the episode in hospital was a recent injury, such as a fracture, laceration or burn to any part of the body, or poisoning. It also includes a small number of episodes mainly due to complications of surgical and medical care, to sequelae present a year or more after injury, or to other late effects.

Records are included whether the injury was caused unintentionally ('accidents') or intentionally (*Intentional self-harm* or *Assault*). Records where intent was not determined are also included. Throughout this report, records with a principal diagnosis of S00–T75 or T79 are included in the totals of tables unless otherwise indicated—even if they lack an external cause or have a first-reported external-cause code of complications of surgical and medical care, or codes describing the sequelae of external causes. These records meet the principal diagnosis definition of 'community injury' but lack a meaningful external cause.

(continued)

Box 1.1 (continued): Summary of terms relating to hospitalised injury

Injury cases are estimated as the number of injury separations, less those records where the mode of admission was 'Admitted patient transferred from another hospital'. These transfers are omitted to reduce over-counting. The criteria for injury cases retain a small number of records with a first external-cause code that is invalid or refers to a sequelae (late effect) or complication of care. These cases are reported as 'other or missing' in tables of external causes.

Box 1.2: Indigenous reporting

In this report, the term 'Indigenous Australians' is used to refer to persons identified as such in Australian hospital separations data and population data collections. The 'Other Australian' category includes separations for non-Indigenous Australians and those for which Indigenous status was 'not stated'

From 2010–11 onwards, Indigenous status information within hospital separations data from all jurisdictions were of sufficient quality for statistical reporting purposes (AIHW 2013). An Australian Institute of Health and Welfare (AIHW) study found that an estimated 88% of Indigenous patients were correctly identified in Australian public hospital admission records in 2011–12.

The report recommends that the data from 2010–11 onwards for all jurisdictions be used in analysis of hospitalisation rates by Indigenous status.

Injury rates were age-standardised to 85 and over by the direct method. Further information is available in Appendix A: Data issues.

Box 1.3: Ascertainment of *Intentional self-harm*

According to inclusion notes in the 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 was due to *Intentional self-harm* is not always straightforward. Cases may appear to be *Intentional self-harm*, but inconclusiveness of available information may preclude their being coded as such. In this situation, the case can be coded to an *Event of 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.

In very young children, ascertaining whether an injury was due to *Intentional self-harm* can be difficult and may involve a parent or caregiver's perception of the intent. Ability to form an intention to inflict self-harm and to understand the implications of doing so requires a degree
(continued)

Box 1.3 (continued): Ascertainment of *Intentional self-harm*

of maturation that is absent in infancy and early childhood. It is not possible to differentiate between acts of self-injury and acts of self-harm with suicidal intent within the NHMD, but it is likely that an unknown proportion of cases of *Intentional self-harm* in late childhood and at older ages are self-injurious in nature rather than suicidal in intent. The age at which self-inflicted acts can be interpreted as *Intentional self-harm* is not well defined and is the subject of debate. Such sources of uncertainty about the assignment of intent limit the certainty of any estimates of *Intentional self-harm* based on routine hospital data. For these reasons, in this report, cases of *Intentional self-harm* are suppressed in age groups under 10 years.

Box 1.4: Understanding ‘drowning and submersion’

Increasingly, the term ‘drowning’ is used to refer to ‘the process of experiencing respiratory impairment from submersion/immersion in liquid’ (van Beeck 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 (for example, a person who becomes exhausted while swimming, but manages to reach a shore, perhaps with assistance).

Submersion: Brief submersion (or immersion) in water or other non-toxic liquid is usually harmless. However, injuries can occur while a person is submerged, particularly following a fall or dive into water, and these account for about 30% of the 2016–17 cases included in this chapter. A submerged person may experience respiratory impairment (see the following explanation for ‘drowning’). Harm can also result from submersion to a great depth (nitrogen narcosis) or from rising rapidly from a deep dive (‘the bends’). Such cases are out of scope for this report.

Drowning: Prolonged submersion (or brief submersion in some circumstances—for example, if a person is unconscious when entering the water) puts a person at immediate risk of death by drowning. The drowning process typically involves firstly breath-holding; then attempted inhalation, triggering a spasm of the larynx; depletion of oxygen and build-up of carbon dioxide; loss of consciousness; and, eventually, inhalation of water into the lungs.

Box 1.5: Ascertainment of assault and perpetrator coding

As with injury due to *Intentional self-harm*, cases of injury due to intentional assault may be difficult to identify. Feelings of shame or embarrassment may underlie a reticence to admit to either of these forms of intentional injury. As well, most injuries due to interpersonal violence have potential legal implications. Pressures or incentives not to reveal assault may be particularly likely in circumstances such as injury of a child or other dependent person by a caregiver, or injury of one spouse by the other. Cases recognised as possibly being due to assault—but where doubt remains—may therefore be coded as *Undetermined intent*.

(continued)

Box 1.5 (continued): Ascertainment of assault and perpetrator coding

Perpetrator codes are used in the ICD-10-AM when a code from the ICD-10-AM category *Assault* (X85–Y09) is present (see Appendix A: Data issues). A coding standard (NCCH 2002) guides clinical coders in assigning codes identifying the perpetrator of assault, abuse or neglect. The coding rules operate on a hierarchical basis, with coders required to code the closest relationship between the perpetrator and the victim. The 10 subcategories of perpetrator are:

- spouse or domestic partner
- parent
- other family member
- carer
- acquaintance or friend
- official authorities
- person unknown to the victim
- multiple persons unknown to the victim
- other specified person
- unspecified person.

Structure of this report

Chapter 2 provides an overview of hospitalised injury among children and young people in Australia. The information provided, by sex and age group, includes number of hospitalised injury cases, nature of injury, external cause of injury, remoteness of the patient's area of usual residence, and Indigenous status.

Chapters 3 to 8 provide similar information to that in Chapter 2, but for specific age groups:

- Chapter 3: less than 12 months (Infancy)
- Chapter 4: 1–4 years (Early childhood)
- Chapter 5: 5–9 years (Middle childhood)
- Chapter 6: 10–14 years (Late childhood)
- Chapter 7: 15–17 years (Adolescence)
- Chapter 8: 18–24 years (Young adulthood).

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

2 All children and young people

Overview

There were 532,562 hospital cases due to injury and poisoning for public and private hospitals in Australia during 2017–18 of which 26% were children and young people aged 0–24 (Table 2.1). A higher proportion of boys and young men (63%) than girls and young women (37%) were hospitalised as a result of an injury. The rate of injury in children and young people was less than the rate of injury in all Australians; however, the rate of injury in boys and young men was more similar to the all-ages rate for males.

Table 2.1: Key indicators for hospitalised injury cases in children and young people aged 0–24, 2017–18

Indicators	Children and young people			All ages		
	Males	Females	Persons	Males	Females	Persons
Estimated hospitalised injury cases	87,163	51,027	138,199	291,253	241,285	532,562
Age-standardised rate/100,000 population	2,146.4	1,326.3	1,746.9	2,353.3	1,727.3	2,047.9

Note: Persons total includes cases for which age and/or sex were not reported.

Source: AIHW NHMD.

More males than females were hospitalised as a result of an injury in every age group from 0–24 (Table 2.2). But there were differences in the relative contributions of each age group to the total number of hospitalised injury cases for each sex. For example, for males, the 18–24 age group contributed 41% of all 0–24 male injury hospitalisation cases, whereas for females the 18–24 group contributed 35% of female cases. In contrast, the female infancy (less than 12 months), 1–4 and 5–9 groups contributed greater proportions to the total 0–24 female injury hospitalisations than did the corresponding male groups to total male injury hospitalisations.

Table 2.2: Hospitalised injury cases in children and young people, by age, 2017–18

Age group	Males		Females		Persons	
	Number	%	Number	%	Number	%
<12 months	1,580	1.8	1,311	2.6	2,891	2.1
1–4	11,468	13.2	8,161	16.0	19,629	14.2
5–9	11,894	13.6	8,178	16.0	20,072	14.5
10–14	14,493	16.6	7,895	15.5	22,388	16.2
15–17	12,304	14.1	7,527	14.8	19,835	14.4
18–24	35,424	40.6	17,955	35.2	53,384	38.6
Total	87,163	100.0	51,027	100.0	138,199	100.0

Notes

1. Persons total includes cases for which age and/or sex were not reported.

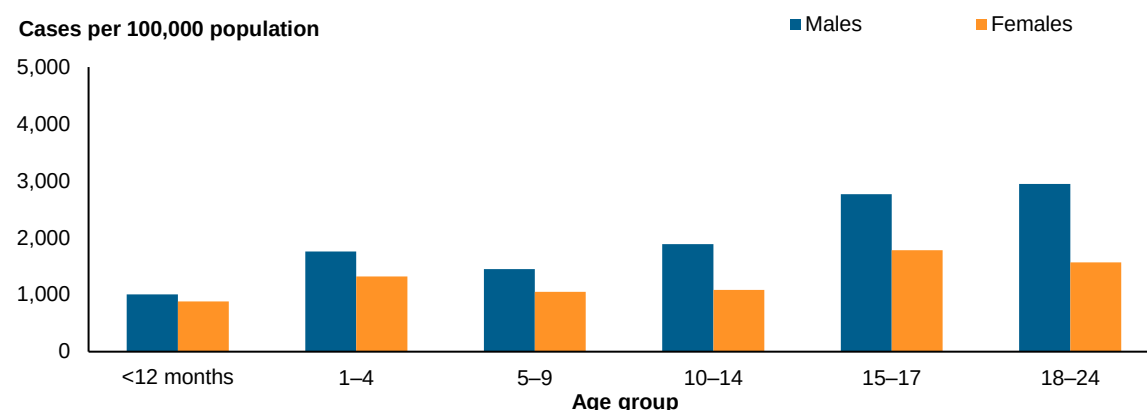
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Figure 2.1 presents the age-specific rates of injury for males and females by age group. The rate of injury for males was higher than the rate for females in all age groups. The difference was widest in the older groups, with male rates increasing with age more strongly than was the case for females. The highest rate of injury occurred among males in young adulthood

(18–24) at 2,946 cases per 100,000 population. In the same age group, the rate of injury for females was 1,567.

Figure 2.1: Age-specific rates of hospitalised injury in children and young people, by sex, 2017–18



Source: AIHW NHMD.

Nature of injury

Table 2.3 presents information on the more common injuries sustained by children and young people. Fractures were common, with 35% of all children and young people sustaining a fracture as a result of their injury. In males, fractures accounted for 39% of all cases, followed by open wounds (17%) and intracranial injuries (including concussion) (5%). In females, fractures accounted for 29% of all cases, followed by poisonings (18%) and open wounds (16%).

Table 2.3: Cases of hospitalised injury in children and young people, by selected nature of injury, 2017–18

Nature of injury	Males		Females		Persons	
	Number	%	Number	%	Number	%
Fracture	33,725	38.7	14,573	28.6	48,298	34.9
Dislocation	2,004	2.3	833	1.6	2,837	2.1
Soft-tissue injury	8,260	9.5	4,054	7.9	12,314	8.9
Open wound	15,062	17.3	7,950	15.6	23,013	16.7
Intracranial injury	4,642	5.3	2,093	4.1	6,735	4.9
Internal organ or vessel of trunk	1,018	1.2	328	0.6	1,346	1
Burn	1,842	2.1	1,043	2.0	2,885	2.1
Superficial injury	3,964	4.5	2,848	5.6	6,813	4.9
Poisoning or toxic effect	4,605	5.3	8,947	17.5	13,556	9.8
Other and unspecified injuries	12,041	13.8	8,358	16.3	20,402	14.8
Total	87,163	100.0	51,027	100.0	138,199	100.0

Notes

1. Persons total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Body region injured

An analysis of body region injured revealed some differences between males and females (Table 2.4). Males (19%) had a higher proportion of injuries to their wrist and hands than females (11%). The higher proportion of injuries not specified by body region for females was largely due to higher numbers of females with a poisoning diagnosis.

Table 2.4: Cases of hospitalised injury in children and young people, by body region injured, by sex, 2017–18

Type of injury	Males		Females		Persons	
	Number	%	Number	%	Number	%
Head and neck	22,689	26.0	12,711	24.9	35,402	25.6
Trunk (thorax, abdomen, lower back, lumbar spine and pelvis)	4,532	5.2	3,068	6.0	7,602	5.5
Shoulder and upper limb (excluding wrist and hand)	17,743	20.4	9,288	18.2	27,032	19.6
Wrist and hand	16,941	19.4	5,755	11.3	22,696	16.4
Hip and lower limb (excluding ankle and foot)	11,978	13.7	5,874	11.5	17,852	12.9
Ankle and foot	4,072	4.7	2,202	4.3	6,274	4.5
Other, multiple and incompletely specified body regions	3,845	4.4	2,687	5.3	6,532	4.7
Injuries not described in terms of body region	5,363	6.2	9,442	18.5	14,809	10.7
Total	87,163	100.0	51,027	100.0	138,199	100.0

Notes

1. Persons total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Remoteness of usual residence

Past research has shown that patterns and rates of injury change with increasing remoteness (AIHW: Pointer 2019a). Differences in rates of injury hospitalisations by remoteness could be due to factors such as distance or access to services, or the lower socioeconomic status of people who live in remote areas (AIHW: Pointer 2016).

The age-standardised rate of injury in children and young people increased with increasing remoteness. The rate of injury for residents of *Very remote* regions (3,731 per 100,000 population) was more than double the rate for residents of *Major cities* (1,552 per 100,000) (Table 2.5).

Table 2.5: Hospitalised child injury cases, by remoteness of usual residence for children and young people, 2017–18

Indicators	Remoteness of usual residence					Total ^(a)
	Major cities	Inner regional	Outer regional	Remote	Very remote	
Estimated injury cases	89,643	27,016	13,984	2,967	2,523	138,199
Proportion of estimated injury cases (%)	64.9	19.5	10.1	2.1	1.8	100.0
Age-standardised rate/100,000 population	1,551.7	2,005.1	2,273.3	3,420.3	3,731.1	1,746.9

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

Source: AIHW NHMD.

Aboriginal and Torres Strait Islander children and young people

Many factors contribute to the relatively high rates of hospitalised injuries in Aboriginal and Torres Strait Islander children and young people. These include the ongoing effects of colonisation including social disadvantage, drug and alcohol misuse and family violence. In addition, poor safety standards in the living environments and unsafe roads all contribute to higher rates of injuries. (AIHW: Pointer 2016). As well, a higher proportion of Indigenous children and young people live in remote regions, and remoteness is significantly associated with higher rates of injury (AIHW: Pointer 2019b).

There were 11,441 cases of hospitalised injury among Indigenous children and young people during 2017–18 (Table 2.6). More Indigenous males than females were hospitalised (ratio of 1.4:1). For Indigenous children and young people, rates of injury were higher than those of other Australians; this was true for male and female Indigenous Australians.

Table 2.6: Hospitalised injury cases for children and young people, by Indigenous status and sex, 2017–18

Indicators	Indigenous Australians			Other Australians		
	Males	Females	Persons	Males	Females	Persons
Estimated injury cases	6,683	4,758	11,441	80,480	46,269	126,758
Age-standardised rate/100,000 population	3,071.4	2,299.4	2,695.0	2,095.4	1,272.9	1,694.7

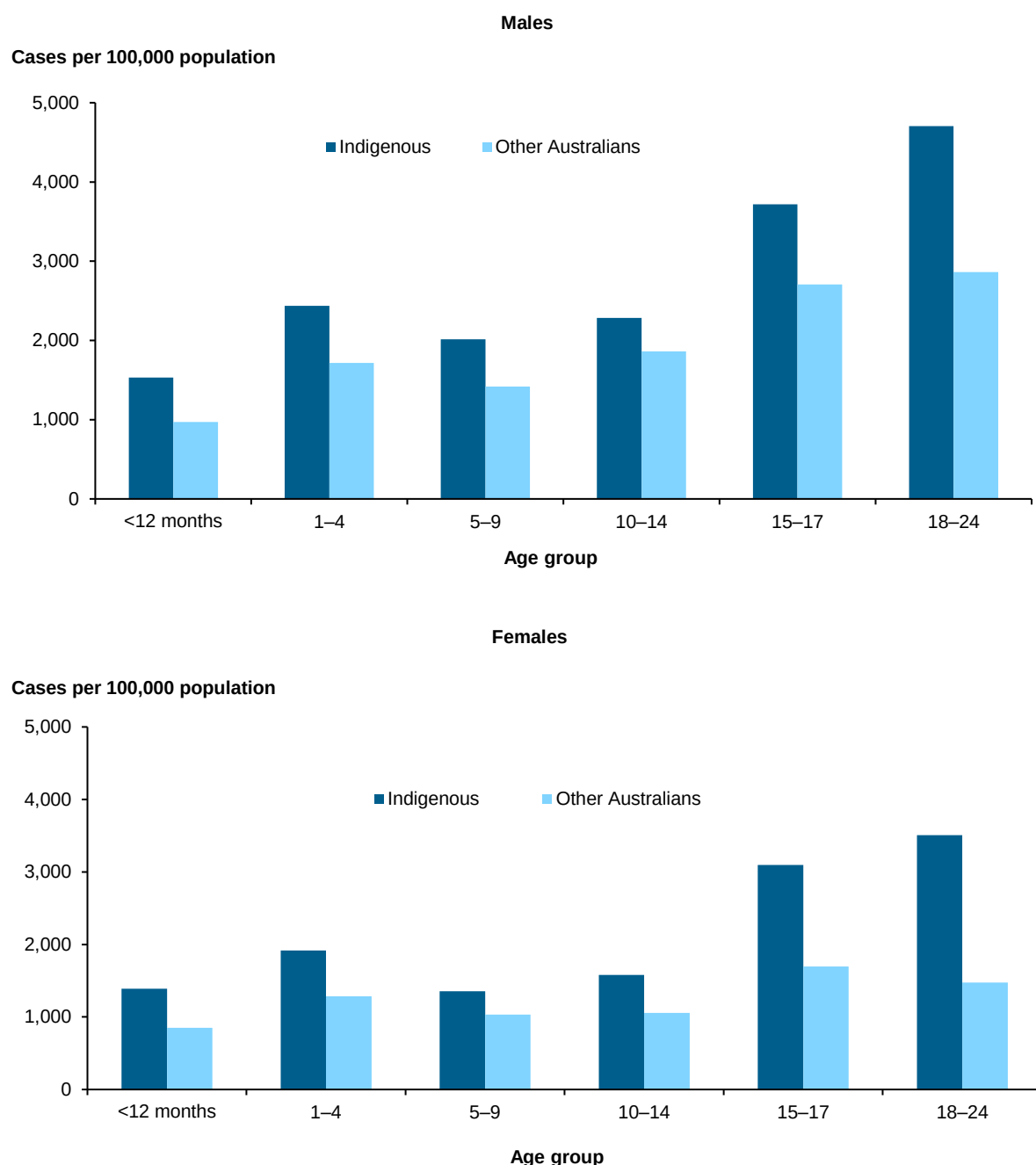
Notes

1. Persons total includes cases for which age and/or sex were not reported.
2. Other Australians include non-Indigenous Australians and cases where Indigenous status is not reported.

Source: AIHW NHMD.

Rates of injury in Indigenous children and young people were higher than rates in other children and young people at each age group for both males and females (Figure 2.2). Rates of injury were highest among those aged 18–24 for both Indigenous and other Australian males. For females, rates were highest for Indigenous females at 18–24 and 15–17 for other Australians females.

Figure 2.2: Age-specific rates for hospitalised injury cases for children and young people, by age and sex, by Indigenous status, 2017–18



Source: AIHW NHMD.

External cause of injury

During 2017–18, the most common cause of hospitalised injury among children and young people was *Falls* (29%) (Table 2.7). This was true of both males (29%) and females (29%). The next most common cause was *Exposure to inanimate mechanical forces* (19%), followed by *Transport crashes* (14%) and *Other external causes of unintentional injury* (14%).

'Other unintentional causes' covers a broad range of external cause categories from Chapter XX *External causes of morbidity and mortality* and *Other external causes of accidental injury* (W75 to X59) and includes:

- *Other accidental threats to breathing* (W75–W84)
- *Exposure to electric current, radiation and extreme ambient air temperature and pressure* (W85–W99)
- *Contact with venomous animals and plants* (X20–X29)
- *Exposure to forces of nature* (X30–X39)
- *Overexertion, travel and privation* (X50–X57)
- *Accidental exposure to other and unspecified factors* (X58–X59).

An increase in the proportion of cases coded to *Accidental exposure to other and unspecified factors* (X58–X59) occurred in each subsequent age group.

Differences were apparent between males and females. Boys and young men had a higher proportion of injuries (21%) due to *Exposure to inanimate mechanical forces* than girls and young women (15%). In contrast, girls and young women had a higher proportion of injuries (16%) due to *Intentional self-harm* than boys and young men (3%).

Table 2.7: Major external cause groups for hospitalised injury cases in children and young people, by sex, 2017–18

External cause	Males		Females		Persons		M:F ratio
	Number	%	Number	%	Number	%	
Unintentional injuries							
Transport crashes	12,928	14.8	6,332	12.4	19,261	13.9	2.0
Accidental drowning and submersion	253	0.3	184	0.4	437	0.3	1.4
Accidental poisoning	1,750	2.0	1,507	3.0	3,257	2.4	1.2
Falls	25,059	28.7	14,916	29.2	39,976	28.9	1.7
Thermal injury	1,499	1.7	851	1.7	2,350	1.7	1.8
Exposure to inanimate mechanical forces	18,059	20.7	7,589	14.9	25,648	18.6	2.4
Exposure to animate mechanical forces	6,614	7.6	2,866	5.6	9,480	6.9	2.3
Other external causes of unintentional injury	13,004	14.9	6,030	11.8	19,035	13.8	2.2
Intentional injuries							
Intentional self-harm	2,866	3.3	8,087	15.8	10,958	7.9	0.4
Assault	3,811	4.4	1,840	3.6	5,652	4.1	2.1
Undetermined intent	688	0.8	552	1.1	1,240	0.9	1.2
Total	87,163	100.0	51,027	100.0	138,199	100.0	1.7

Notes

1. Persons total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.
3. Total external cause count includes other external causes of injury and cases missing external cause information.

Source: AIHW NHMD.

The most common type of *Exposure to inanimate mechanical forces* that led to hospitalisation was *Striking against or being struck by other objects* (19%) (Table 2.8). Boys and young men (19%) were much more likely to be hospitalised as a result of *Striking against or being struck by other objects* than girls and young women (17%). *Contact with a sharp object(s)* resulted in just under 4,000 hospitalisations, again a much more common

occurrence among boys and young men than among girls and young women. In contrast, a larger proportion of girls and young women (16%) were *Caught, crushed, jammed or pinched in or between objects* than boys and young men (11%).

Table 2.8: Types of *Exposure to inanimate mechanical forces* hospitalised injury cases in children and young people, by sex, 2017–18

Type of exposure	Males		Females		Persons		M:F ratio
	Number	%	Number	%	Number	%	
Striking against or struck by other objects	3,456	19.1	1,321	17.4	4,777	18.6	2.6
Contact with other sharp object(s) (includes knife)	2,750	15.2	998	13.2	3,748	14.6	2.8
Caught, crushed, jammed or pinched in or between objects	1,966	10.9	1,205	15.9	3,171	12.4	1.6
Foreign body entering into or through eye or natural orifice	1,750	9.7	1,364	18.0	3,114	12.1	1.3
Contact with sharp glass	1,862	10.3	860	11.3	2,722	10.6	2.2
All other types of exposure	6,275	34.4	1,841	24.2	8,116	31.4	3.4
Total	18,059	100.0	7,589	100.0	25,648	100.0	2.4

Notes

1. Persons total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

For boys and young men being *Hit, struck, kicked, twisted, bitten or scratched by another person* (47%) was the most common reason for hospitalisation as a result of *Exposure to animate mechanical forces*; among girls and young women, it was being *Bitten or struck by a dog* (31%) (Table 2.9).

Table 2.9: Types of *Exposure to animate mechanical forces* hospitalised injury cases in children and young people, by sex, 2017–18

Type of exposure	Males		Females		Persons		M:F ratio
	Number	%	Number	%	Number	%	
Hit, struck, kicked, twisted, bitten or scratched by another person	3,131	47.3	763	26.6	3,894	41.1	4.1
Bitten or struck by dog	1,096	16.6	873	30.5	1,969	20.8	1.3
Striking against or bumped into by another person	1,354	20.5	386	13.5	1,740	18.4	3.5
Bitten or struck by other mammals	291	4.4	397	13.9	688	7.3	0.7
Bitten or crushed by other reptiles	396	6	237	8.3	633	6.7	1.7
All other types of exposure	346	5.2	210	7.4	556	5.8	1.6
Total	6,614	100.0	2,866	100.0	9,480	100.0	2.3

Notes

1. Persons total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

The causes of injury varied by developmental age. Sections 3 to 8 examine these variances by each age group in more detail.

Age group and external cause of injury

Table 2.10 ranks the 5 most common external causes of injury by age group for injury hospitalisations. The most common external cause of injury for all children up to the 10–14 age group was *Falls*. For the 2 oldest age groups, *Intentional self-harm* and *Transport crash* related injuries were the most common causes of hospitalised injury.

Table 2.10: Ranking of case numbers of external cause of injury, by age group for injury hospitalisations, 2017–18

Rank	Age group (years)					
	<12 months	1–4	5–9	10–14	15–17	18–24
1st	Falls	Falls	Falls	Falls	Intentional self-harm	Transport
2nd	Inanimate mechanical forces	Inanimate mechanical forces	Inanimate mechanical forces	Transport	Falls	Inanimate mechanical forces
3rd	Burns	Accidental poisoning	Transport	Inanimate mechanical forces	Transport	Falls
4th	Accidental poisoning	Animate mechanical forces	Animate mechanical forces	Animate mechanical forces	Inanimate mechanical forces	Intentional self-harm
5th	Assault	Burns	Burns	Intentional self-harm	Animate mechanical forces	Assault

3 Less than 12 months (Infancy)

The age range covered by infancy—less than 12 months old—is characterised by rapid developmental changes to behaviour, and changes in the environmental hazards to which infants are exposed as they become more mobile (Agran et al. 2003; Siskind & Scott 2013).

Together, these factors result in changing risks of injury as the infant gets older. For example:

- from 0–4 months, infants start to bring their hands to their mouths, and will soon start to reach and grasp for objects and put them into their mouths
- at 3–5 months infants begin to roll
- at 8–12 months infants start to crawl, pull up to furniture, ‘cruise’ around furniture and stand briefly by themselves—some will even start to walk.

Overview

There were 2,891 cases of infants hospitalised as a result of an injury in 2017–18, representing 2% of all hospitalised injury cases in children and young people (Table 3.1). The age-specific rate of injury for infants was 948 per 100,000 population, and infant boys had a higher rate of injury than infant girls.

Table 3.1: Key indicators for hospitalised injury cases in infants (<12 months), 2017–18

Indicators	<12 months		
	Boys	Girls	Children
Estimated injury cases	1,580	1,311	2,891
Age-specific rate/100,000 population	1,006.4	885.2	947.6

Note: Children total includes cases for which age and/or sex were not reported.

Source: AIHW NHMD.

External cause of injury

During 2017–18, the most common cause of hospitalised injury among infants was *Falls* (49% of all cases) (Table 3.2). The age-specific rate of hospitalised fall injuries among boys was 540 cases per 100,000 population and 522 for girls. The second most common cause of hospitalised injury among infants was *Exposure to inanimate mechanical forces* (14%); boys (147 cases per 100,000) had slightly higher rates of injury than girls (121).

Table 3.2: Major external cause groups for hospitalised injury cases in infants (<12 months), 2017–18

External cause	Boys		Girls		Children		M:F ratio
	Number	Rate	Number	Rate	Number	Rate	
Unintentional injuries							
Transport crashes	20	12.7	18	12.2	38	12.5	1.0
Accidental drowning and submersion	14	8.9	10	6.8	24	7.9	1.3
Accidental poisoning	65	41.4	46	31.1	111	36.4	1.3
Falls	848	540.1	773	521.9	1,621	531.3	1.0
Thermal injury	102	65.0	51	34.4	153	50.1	1.9
Exposure to inanimate mechanical forces	231	147.1	179	120.9	410	134.4	1.2
Exposure to animate mechanical forces	44	28.0	37	25.0	81	26.5	1.1
Other external causes of unintentional injury	179	114.0	138	93.2	317	103.9	1.2
Intentional injuries							
Intentional self-harm	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Assault	58	36.9	46	31.1	104	34.1	1.3
Undetermined intent	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Total	1,580	2,146.4	1,311	1,326.3	2,891	1,746.9	1.2

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Cases coded as *Intentional self-harm* have been suppressed, see Box 1.3.
3. Total external cause count includes other external causes of injury and cases missing external cause information.

Source: AIHW NHMD.

Key causes of injury hospitalisations among infants

Falls

Infants were hospitalised as a result of a *Fall involving bed* in 21% of cases (Table 3.3). A similar proportion of infants had a *Fall while being carried or supported by other persons* (20%), while falls involving chairs and other furniture accounted for 14% and 10% of hospitalised *Falls*, respectively. Falls in these latter 3 categories may occur as infants learn to roll over and are no longer safe when left unattended (Ibrahim et al. 2012; Schnitzer et al. 2013). A fall involving a pedestrian conveyance includes ice-skates, skis, roller-skates, skateboards, scooters and other pedestrian conveyances.

Table 3.3: Types of fall for hospitalised injury cases in infants (<12 months), 2017–18

Type of fall	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Fall involving bed	187	22.1	157	20.3	344	21.2
Fall while being carried or supported by other persons	165	19.5	161	20.8	326	20.1
Fall involving chair	119	14.0	113	14.6	232	14.3
Other fall from one level to another	103	12.1	92	11.9	195	12.0
Fall involving other furniture	86	10.1	81	10.5	167	10.3
Fall involving pedestrian conveyances	57	6.7	57	7.4	114	7.0
Other fall on same level	48	5.7	35	4.5	83	5.1
Fall on and from stairs and steps	36	4.2	31	4.0	67	4.1
All other types of fall combined	27	3.2	32	4.1	59	3.6
Unspecified fall	20	2.4	14	1.8	34	2.1
Total	848	100.0	773	100.0	1,621	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Thermal injury

The age-specific rate of thermal causes of injury in infants (50 per 100,000 population) was second only to that for the 1–4 age group (72 per 100,000). Infants were more often injured as a result of *Contact with hot drinks, food, fats and cooking oils* (32%) than other types of thermal injuries (Table 3.4). Hot water burns from taps, and burns from other hot fluids, each accounted for 15% of all thermal injuries.

Table 3.4: Types of thermal causes of injury for hospitalised injury cases in infants (<12 months), 2017–18

Type of thermal causes	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Contact with hot drinks, food, fats and cooking oils	33	32.4	16	31.4	49	32.0
Contact with hot tap-water	14	13.7	9	17.6	23	15.0
Contact with other hot fluids	12	11.8	11	21.6	23	15.0
Contact with hot household appliances	n.p.	n.p.	n.p.	n.p.	30	19.6
Contact with hot heating appliances, radiators and pipes	n.p.	n.p.	n.p.	n.p.	9	5.9
All other causes	12	11.8	7	13.7	19	12.4
Total	102	100.0	51	100.0	153	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Exposure to inanimate mechanical forces

Over half (237) of all cases of *Exposure to inanimate mechanical forces* were due to 2 causes: *Foreign body entering into or through eye or natural orifice* (140 cases) or *Striking against or struck by other objects* (97). Compared with other age groups, infants had the highest proportion of injuries occurring as a result of the effects of *Foreign body entering into or through eye or natural orifice*. Injuries caused by foreign bodies were dominated by a principal diagnosis of *Foreign body in respiratory tract* (T17) (129 cases), which includes asphyxia or choking, most likely on food, phlegm or as a result of inhalation of liquid or vomit (NCCH 2010). There were also 75 cases of *Other accidental threats to breathing* within the *Other external causes of unintentional injury* category.

Accidental drowning and submersion

Of the 24 cases of infants hospitalised as a result of *Accidental drowning and submersion*, 18 occurred in a bathtub.

Remoteness of usual residence

The age-specific rate of injury in infants generally rose with increasing remoteness. The rate of injury for residents of *Remote* regions was more than one and a half times the rate for residents of *Major cities* (1,472 and 889 cases per 100,000 population, respectively) (Table 3.5).

Table 3.5: Hospitalised injury cases, by remoteness of usual residence for infants (<12 months), 2017–18

Indicators	Remoteness of usual residence					Total ^(a)
	Major cities	Inner regional	Outer regional	Remote	Very remote	
Estimated injury cases	2,034	469	270	64	32	2,891
Proportion of estimated injury cases (%)	70.4	16.2	9.3	2.2	1.1	100.0
Age-specific rate/100,000 population	888.6	946.8	1,103.3	1,472.3	1,096.5	947.6

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

Source: AIHW NHMD.

Aboriginal and Torres Strait Islander infants

There were 279 Aboriginal and Torres Strait Islander infants hospitalised due to injury and poisoning during 2017–18 (Table 3.6). Indigenous infant boys had a higher rate of injury than Indigenous infant girls. Indigenous infant rates of injury were 1.6 times those of other Australian infants.

Table 3.6: Hospitalised injury cases for infants (<12 months), by Indigenous status and sex, 2017–18

Indicators	Indigenous Australians			Other Australians		
	Boys	Girls	Children	Boys	Girls	Children
Estimated injury cases	150	129	279	1,430	1,182	2,612
Age-specific rate/100,000 population	1,532.1	1,390.1	1,463.0	971.4	851.5	913.2

Notes

1. Children totals includes cases for which age and/or sex were not reported.

2. Other Australians include non-Indigenous Australians and cases where Indigenous status is not reported.

Source: AIHW NHMD.

4 Early childhood (1–4 years)

The early childhood age range of 1–4 is characterised by increasing mobility, coupled with lots of energy, curiosity and a need to explore. Children in this age group are still too young to be aware of danger and may not be able to keep themselves safe (Bugeja & Franklin 2005; Scott 2003). They have improving ability to climb and access a range of areas where hazardous objects and substances are kept (Agran et al. 2003; Ibrahim et al. 2012; Schmertmann et al. 2013). As well, their increased mobility outside the home raises their exposure to a range of environmental hazards (MacInnes & Stone 2008).

Overview

There were 19,629 cases of children 1–4 years hospitalised as a result of an injury in 2017–18 (Table 4.1), representing 14% of all hospitalised injury cases in children and young people. The age-specific rate of injury was 1,545 per 100,000 population, and boys had a higher rate of injury than girls. In comparison, the overall rate of injury in children and young people aged 0 to 24 was 1,747 cases per 100,000.

Table 4.1: Key indicators for hospitalised injury cases in children aged 1–4, 2017–18

Indicators	1–4 years		
	Boys	Girls	Children
Estimated injury cases	11,468	8,161	19,629
Age-specific rate/100,000 population	1,757.5	1,320.6	1,545.0

Note: Children total includes cases for which age and/or sex were not reported.

Source: AIHW NHMD.

External cause of injury

The most common cause of hospitalised injury in early childhood was *Falls* (44%) (Table 4.2). The rate of *Falls* injury among boys (765 cases per 100,000 population) was higher than that for girls (586). The second highest cause of hospitalised injury in this age group was *Exposure to inanimate mechanical forces*; the third highest was *Other external causes of unintentional injury*, with 94 cases of *Contact with venomous animals and plants* and 85 cases of *Other accidental threats to breathing*.

Table 4.2: Major external cause groups for hospitalised injury cases in early childhood (1–4 years), 2017–18

External cause	Boys		Girls		Children		M:F ratio
	Number	Rate	Number	Rate	Number	Rate	
Unintentional injuries							
Transport crashes	441	67.6	266	43.0	707	55.6	1.7
Accidental drowning and submersion	138	21.1	101	16.3	239	18.8	1.4
Accidental poisoning	748	114.6	609	98.5	1,357	106.8	1.2
Falls	4,992	765.0	3,623	586.3	8,615	678.1	1.5
Thermal injury	541	82.9	370	59.9	911	71.7	1.5
Exposure to inanimate mechanical forces	3,007	460.8	2,076	335.9	5,083	400.1	1.4
Exposure to animate mechanical forces	570	87.4	403	65.2	973	76.6	1.4
Other external causes of unintentional injury	858	131.5	588	95.1	1,446	113.8	1.5
Intentional injuries							
Intentional self-harm	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Assault	64	9.8	41	6.6	105	8.3	1.6
Undetermined intent	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Total	11,468	1,758	8,161	1,321	19,629	1,545	1.4

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Cases coded as *Intentional self-harm* have been suppressed, see Box 1.3.
3. Total external cause count includes other external causes of injury and cases missing external cause information.

Source: AIHW NHMD.

Two-thirds (68%) of all cases of *Exposure to inanimate mechanical forces* were due to 3 causes: *Caught, crushed, jammed or pinched in or between objects* (1,164 cases), *Foreign body entering into or through eye or natural orifice* (1,163) and *Striking against or struck by other objects* (1,136). Further information available from the principal diagnoses showed that foreign bodies in the ear canal (331 cases, T16), nostril (265, T17.1) and alimentary tract (211, T18) accounted for 69% of all foreign body cases in early childhood.

The largest number of cases within the *Exposure to animate mechanical forces* in early childhood was 488 cases due to being *Bitten or struck by dog*.

Compared with all children and young people, children in early childhood had higher age-specific rates of *Accidental drowning and submersion*, *Falls*, thermal injury and *Accidental poisoning*. Age-specific rates were the highest of any age group covered in this report for cases due to *Accidental drowning and submersion* (19 cases per 100,000 population), thermal injury (72) and *Accidental poisoning* (107). The age-specific rate for *Falls* in early childhood was the highest of all the age groups at 678 cases per 100,000.

Key causes of injury hospitalisations in early childhood

Accidental drowning and submersion

Of the 239 cases of children aged 1–4 hospitalised as a result of drowning and immersion, 120 occurred in a swimming pool and 11 in a bathtub (Table 4.3). More boys than girls were hospitalised as a result of drowning in a swimming pool.

Table 4.3: Location of drowning for hospitalised injury cases in early childhood (1–4 years), 2017–18

	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Swimming pool	73	52.9	47	46.5	120	50.2
Natural water	13	9.4	12	11.9	25	10.5
Bathtub	n.p.	n.p.	n.p.	n.p.	11	4.6
Other or unspecified	n.p.	n.p.	n.p.	n.p.	83	34.7
Total	138	100.0	101	100.0	239	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Falls

The increasing mobility of children in this age group is reflected in changes in the types of *Falls* resulting in hospitalisation compared with falls for infants (Table 4.4). A *Fall involving playground equipment* was the reason most often specified for hospitalisation as a proportion of all types of falls (17%).

Table 4.4: Types of fall for hospitalised injury cases in early childhood (1–4 years), 2017–18

Type of fall	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Fall involving playground equipment	805	16.1	683	18.9	1,488	17.3
Fall on same level from slipping, tripping and stumbling	742	14.9	464	12.8	1,206	14.0
Fall involving chair	542	10.9	525	14.5	1,067	12.4
Other fall on same level	647	13.0	390	10.8	1,037	12.0
Unspecified fall	493	9.9	292	8.1	785	9.1
Other fall from one level to another	432	8.7	311	8.6	743	8.6
Fall involving bed	371	7.4	290	8.0	661	7.7
Fall on and from stairs and steps	297	5.9	230	6.3	527	6.1
Fall involving pedestrian conveyances	196	3.9	120	3.3	316	3.7
Fall involving other furniture	129	2.6	102	2.8	231	2.7
Fall from, out of or through building or structure	144	2.9	76	2.1	220	2.6
All other types of fall combined	194	3.9	140	3.9	334	3.9
Total	4,992	100.0	3,623	100.0	8,615	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

A closer look at the types of falls involving playground equipment is shown in Table 4.5. The most common cause (37%) was a fall involving a trampoline: 555 cases (296 boys and 259 girls).

Table 4.5: Types of fall involving playground equipment for hospitalised injury cases in early childhood (1–4 years), 2017–18

Type of fall	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Fall involving trampoline	296	36.8	259	37.9	555	37.3
Fall involving playground climbing apparatus	100	12.4	124	18.2	224	15.1
Fall involving unspecified playground equipment	107	13.3	95	13.9	202	13.6
Fall involving slide	122	15.2	79	11.6	201	13.5
Fall involving swing	62	7.7	65	9.5	127	8.5
Fall involving other specified playground equipment	81	10.1	43	6.3	124	8.3
Fall involving flying fox	14	1.7	8	1.2	22	1.5
Fall involving tree house	14	1.7	5	0.7	19	1.3
Fall involving seesaw	9	1.1	5	0.7	14	0.9
Total	805	100.0	683	100.0	1,488	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Thermal injury

The age-specific rate of thermal causes of injury was highest in early childhood (72 cases per 100,000 population) and more than twice that of all children and young people (29). Children were more often injured as a result of *Contact with hot drinks, food, fats and cooking oils* (29%) than by other types of thermal injury (Table 4.6). *Contact with other hot fluids*, which includes contact with boiling water other than hot tap water and water heated on a stove, accounted for 21% of all thermal causes of injuries, with similar proportions recorded for boys (19%) and girls (22%). *Contact with hot tap water* accounted for 70 cases.

Table 4.6: Types of thermal causes of injury for hospitalised injury cases in early childhood (1–4 years), 2017–18

Type of thermal injury	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Contact with hot drinks, food, fats and cooking oils	158	29.2	106	28.6	264	29.0
Contact with other hot fluids	105	19.4	83	22.4	188	20.6
Contact with hot household appliances	66	12.2	37	10.0	103	11.3
Contact with hot tap-water	37	6.8	33	8.9	70	7.7
Exposure to controlled fire, not in building or structure	39	7.2	28	7.6	67	7.4
All other thermal causes	136	25.1	83	22.4	219	24.0
Total	541	100.0	370	100.0	911	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Accidental poisoning

Of the 1,357 cases of *Accidental poisoning*, there were 1,054 cases of poisoning by pharmaceuticals in early childhood in 2017–18. Table 4.7 lists the types of drugs involved, by sex. The most frequent category was *Other and unspecified drugs, medicaments and biological substances* (44%). The next most frequent category was poisoning by *Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs not elsewhere classified* (25%). More details on the specific substances involved are given in Table 4.7.

Table 4.7: Types of pharmaceutical poisoning for hospitalised injury cases in early childhood (1–4 years), 2017–18

Type of pharmaceutical poisoning	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Nonopioid analgesics, antipyretics and antirheumatics	99	17.3	82	17.0	181	17.2
Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified	141	24.6	123	25.6	264	25.0
Narcotics and psychodysleptics [hallucinogens], not elsewhere classified	43	7.5	35	7.3	78	7.4
Other drugs acting on the autonomic nervous system	38	6.6	27	5.6	65	6.2
Other and unspecified drugs, medicaments and biological substances	252	44.0	214	44.5	466	44.2
Total	573	100.0	481	100.0	1,054	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

More detail on the type of drug involved is available using the principal diagnosis codes in the hospital record. As shown in Table 4.8, the majority (17%) of hospitalised injury cases in early childhood (1–4 years) caused by poisoning by pharmaceuticals were poisoning by non-opioid analgesics (for example, nonsteroidal anti-inflammatory drugs such as ibuprofen and paracetamol), antipyretics (for example, aspirin and acetaminophen) and antirheumatics (some of which are used to treat arthritis). Of the 182 cases, 139 were identified as being due to paracetamol.

Psychotropic drugs (for example, tricyclic and tetracyclic antidepressants, antipsychotics and neuroleptics) were the second most common substances (14%) causing hospitalised injury cases in early childhood (1–4 years), with *Agents primarily affecting the cardiovascular system* (13%) being the third.

Table 4.8: Poisoning by pharmaceuticals hospitalised injury cases in early childhood (1–4 years), 2017–18, by sex and type of substance, 2017–18

Type of substance	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Nonopioid analgesics, antipyretics and antirheumatics	100	17.5	82	17.0	182	17.3
Psychotropic drugs (not elsewhere classified)	80	14.0	70	14.6	150	14.2
Agents primarily affecting the cardiovascular system	74	12.9	61	12.7	135	12.8
Antiepileptic, sedative-hypnotic and antiparkinsonism drugs	62	10.8	51	10.6	113	10.7
Diuretics and other and unspecified drugs, medicaments and biological substances	60	10.5	51	10.6	111	10.5
Narcotics and psychodysleptics [hallucinogens]	43	7.5	35	7.3	78	7.4
Topical agents primarily affecting skin and mucous membrane and by ophthalmological, otorhinolaryngological and dental drugs	43	7.5	35	7.3	78	7.4
Drugs primarily affecting the autonomic nervous system	41	7.2	27	5.6	68	6.5
Systemic and haematological agents (not elsewhere classified)	30	5.2	33	6.9	63	6.0
All other categories combined	40	7.0	36	7.5	76	7.2
Total	573	100.0	481	100.0	1,054	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

There were also 303 hospitalised injury cases in early childhood (1–4 years) caused by poisoning by other substances. Most of these cases (209) were due to poisoning by other and unspecified chemicals and noxious substances, followed by *Organic solvents and halogenated hydrocarbons and their vapours* (50) and pesticides (30).

Remoteness of usual residence

The age-specific rate of injury in children aged 1–4 increased with increasing remoteness. The rate of injury for children living in *Very remote* regions (2,685 per 100,000 population) was more than one and a half times the rate for residents of *Major cities* (1,457 per 100,000) (Table 4.9). As children living in more remote areas start exploring environments outside the home, they are exposed to a wider range of hazards, many of which are unique to rural and remote areas (for example, unfenced dams and farm machinery) (Morrongiello et al. 2012).

Table 4.9: Hospitalised injury cases, by remoteness of usual residence for children (1–4 years), 2017–18

Indicators	Remoteness of usual residence					Total ^(a)
	Major cities	Inner regional	Outer regional	Remote	Very remote	
Estimated injury cases	13,479	3,453	1,806	422	341	19,629
Proportion of estimated injury cases (%)	68.7	17.6	9.2	2.1	1.7	100.0
Age-specific rate/100,000 population	1,457.0	1,618.4	1,775.7	2,402.9	2,685.3	1,545.0

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

Source: AIHW NHMD.

Aboriginal and Torres Strait Islander children

There were an estimated 1,640 hospitalised injury cases for Aboriginal and Torres Strait Islander children aged 1–4 in 2017–18 (Table 4.10).

Rates of injury for Indigenous boys aged 1–4 were higher than for Indigenous girls aged 1–4. Rates of injury were 1.5 times those of other Australian children.

Table 4.10: Hospitalised injury cases for early childhood (1–4 years), by Indigenous status and sex, 2017–18

Indicators	Indigenous Australians			Other Australians		
	Boys	Girls	Children	Boys	Girls	Children
Estimated injury cases	942	698	1,640	10,526	7,463	17,989
Age-specific rate/100,000 population	2,436.8	1,918.0	2,185.2	1,714.7	1,283.2	1,504.8

Notes

1. Children's total includes cases for which age and/or sex were not reported.

2. Other Australians include non-Indigenous Australians and cases where Indigenous status is not reported.

Source: AIHW NHMD.

5 Middle childhood (5–9 years)

The age range covered by middle childhood (5–9 years) is characterised by increasing independence from parents as children transition to school. Children in this age group in general learn to ride bicycles, spend more time in playgrounds, and start participating in organised sports—and the causes of injury reflect these activities (Flavin et al. 2006). Some of the environmental hazards to which younger children are exposed remain hazardous at this developmental stage, particularly in the area of drowning—for example, a child may have had swimming lessons but is still not considered a confident swimmer (Brenner 2003).

Overview

There were 20,072 cases of children aged 5–9 hospitalised as a result of an injury in 2017–18 (Table 5.1), representing 15% of all hospitalised injury cases in children and young people. The age-specific rate of injury was 1,258 per 100,000 population, and boys had a higher rate of injury than girls. In comparison, the overall rate of injury in children and young people aged 0 to 24 was 2,048 cases per 100,000.

Table 5.1: Key indicators for hospitalised injury cases in middle childhood (5–9 years), 2017–18

Indicators	5–9 years		
	Boys	Girls	Children
Estimated injury cases	11,894	8,178	20,072
Age-specific rate/100,000 population	1,452.8	1,052.6	1,257.9

Note: Children total includes cases for which age and/or sex were not reported.

Source: AIHW NHMD.

External cause of injury

During 2017–18, the most common cause of hospitalised injury in this age group was *Falls* (665 cases per 100,000 population) (Table 5.2). Rates of fall injury were higher for boys (746 cases per 100,000) than girls (581). The next most common cause of hospitalised injury in middle childhood was *Exposure to inanimate mechanical forces*, with rates of 317 and 204 cases per 100,000 for boys and girls, respectively. The rate of *Transport crash* injury was 121 cases per 100,000, with higher rates for boys (149) than girls (91).

Table 5.2: Major external cause groups for hospitalised injury cases in middle childhood (5–9 years), 2017–18

	Boys		Girls		Children		M:F ratio
External cause	Number	Rate	Number	Rate	Number	Rate	
Unintentional injuries							
Transport crashes	1,220	149.0	704	90.6	1,924	120.6	1.7
Accidental drowning and submersion	27	3.3	34	4.4	61	3.8	0.8
Accidental poisoning	111	13.6	83	10.7	194	12.2	1.3
Falls	6,104	745.6	4,512	580.7	10,616	665.3	1.4
Thermal injury	181	22.1	113	14.5	294	18.4	1.6
Exposure to inanimate mechanical forces	2,594	316.8	1,586	204.1	4,180	262.0	1.6
Exposure to animate mechanical forces	746	91.1	469	60.4	1,215	76.1	1.6
Other external causes of unintentional injury	777	94.9	597	76.8	1,374	86.1	1.3
Intentional injuries							
Intentional self-harm	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Assault	52	6.4	30	3.9	82	5.1	1.7
Undetermined intent	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Total	11,894	1,452.8	8,178	1,052.6	20,072	1,257.9	1.5

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Cases coded as *Intentional self-harm* have been suppressed, see Box 1.3.
3. Total external cause count includes other external causes of injury and cases missing external cause information.

Source: AIHW NHMD.

Key causes of injury hospitalisations in middle childhood

Falls

Fall involving playground equipment was the reason most often specified for hospitalisation for *Falls* for children aged 5–9 (37%) (Table 5.3).

Table 5.3: Types of fall for hospitalised injury cases in middle childhood (5–9 years), 2017–18

Type of fall	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Fall involving playground equipment	2,026	33.2	1,881	41.7	3,907	36.8
Fall on same level from slipping, tripping and stumbling	775	12.7	491	10.9	1,266	11.9
Other fall on same level	634	10.4	464	10.3	1,098	10.3
Other fall from one level to another	493	8.1	343	7.6	836	7.9
Fall involving pedestrian conveyances	472	7.7	262	5.8	734	6.9
Fall from tree	257	4.2	143	3.2	400	3.8
Fall from, out of or through building or structure	219	3.6	106	2.3	325	3.1
Fall involving chair	179	2.9	137	3.0	316	3.0
Other fall on same level due to collision with, or pushing by, another person	237	3.9	70	1.6	307	2.9
Fall involving bed	152	2.5	119	2.6	271	2.6
Fall on and from stairs and steps	112	1.8	97	2.1	209	2.0
All other fall types	548	9.0	399	8.8	947	8.9
Total	6,104	100.0	4,512	100.0	10,616	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

A closer examination of the types of falls involving playground equipment is set out in Table 5.4. The most common cause of a fall involving playground equipment was climbing apparatus (1,791 cases, 46%)—for example, falls from monkey bars. Falls involving trampolines was the next most common cause of injury (799 cases, 21%).

Table 5.4: Types of fall involving playground equipment for hospitalised injury cases in middle childhood (5–9 years), 2017–18

Type of fall	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Fall involving playground climbing apparatus	868	42.8	923	49.1	1,791	45.8
Fall involving trampoline	405	20.0	394	20.9	799	20.5
Fall involving swing	129	6.4	148	7.9	277	7.1
Fall involving slide	171	8.4	98	5.2	269	6.9
Fall involving flying fox	98	4.8	116	6.2	214	5.5
Fall involving tree house	20	1.0	7	0.4	27	0.7
Fall involving seesaw	12	0.6	10	0.5	22	0.6
Fall involving other specified playground equipment	115	5.7	78	4.1	193	4.9
Fall involving unspecified playground equipment	208	10.3	107	5.7	315	8.1
Total	2,026	100.0	1,881	100.0	3,907	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Exposure to inanimate mechanical forces

Just over half of all cases (58%) of *Exposure to inanimate mechanical forces* were due to 3 causes: *Striking against or struck by other objects* (830 cases), *Foreign body entering into or through eye or natural orifice* (828) and *Caught, crushed, jammed or pinched in or between objects* (762). An additional 11% (447) of cases were due to *Contact with other sharp objects*, including a knife. Foreign bodies in various body regions was a less common occurrence, although a sizeable number of children in this age group (485 cases) had foreign bodies in their ear canal.

Exposure to animate mechanical forces

Thirty-five per cent of cases of *Exposure to animate mechanical forces* were due to being *Bitten or struck by a dog* (428 cases). For cases of hospitalised injury in middle childhood due to *Other external causes of unintentional injury*, 13% (179 cases) were due to *Contact with venomous animals and plants*.

Transport crashes

Children aged 5–9 were most often hospitalised as a result of unintentional transport injury as pedestrians (Table 5.5)—boys (48%) more often than girls (35%). Events involving pedal cycles were the second most common cause of hospitalised *Transport crash* injury (17%), accounting for a higher proportion of transport injury in boys (22%) than girls (9%). In contrast, girls were far more likely than boys to be injured as a result of riding animals (for example, horse riding), or being the occupant of an animal-drawn vehicle (16% and 3%, respectively). There were also 63 cases of children hospitalised as a result of an incident involving a special all-terrain or other motor vehicle designed primarily for off-road use.

Table 5.5: Types of vehicle for *Transport crash* hospitalised injury cases in children (5–9 years), by sex, 2017–18

Type of vehicle	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Pedestrian	590	48.4	248	35.2	838	43.6
Pedal cycle	265	21.7	66	9.4	331	17.2
Motorcycle	144	11.8	148	21.0	292	15.2
Car	103	8.4	79	11.2	182	9.5
Animal or animal-drawn vehicle	38	3.1	114	16.2	152	7.9
All other vehicle types	80	6.6	49	7.0	129	6.7
Total	1,220	100.0	704	100.0	1,924	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

The main types of collision events for pedal cyclists and pedestrians aged 5–9 were non-collision events for pedal cyclists, and collisions with cars, pick-up trucks or vans for pedestrians (tables 5.6 and 5.7). Similar proportions of girls (66% of pedal cyclist collisions) and boys (68%) were injured in non-collision incidents on their bikes. Girl and boy pedestrians were also more likely to have been injured in a collision with a car, pick-up truck or van, 79% and 72%, respectively.

Table 5.6: Types of collision for pedal cyclists in *Transport crash* hospitalised injury cases in children (5–9 years), by sex, 2017–18

Pedal cyclist injured in collision with:	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Non-collision transport accident	402	68.1	163	65.7	565	67.4
Fixed or stationary object	35	5.9	16	6.5	51	6.1
Heavy transport vehicle or bus	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Car, pick-up truck or van	34	5.8	9	3.6	43	5.1
Other pedal cycle	21	3.6	9	3.6	30	3.6
Pedestrian or animal	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Other and unspecified transport crash	97	16.4	47	19.0	144	17.2
Total	590	100.0	248	100.0	838	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Table 5.7: Types of collision for pedestrians in *Transport crash* hospitalised injury cases in children (5–9 years), by sex, 2017–18

Pedestrian injured in collision with:	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Car, pick-up truck or van	74	71.8	62	78.5	136	74.7
Pedal cycle	7	6.8	6	7.6	13	7.1
Pedestrian conveyance	n.p.	n.p.	n.p.	n.p.	10	5.5
Two- or three-wheeled motor vehicle	n.p.	n.p.	n.p.	n.p.	9	4.9
Other non-motor vehicle	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Heavy transport vehicle or bus	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Other and unspecified transport accidents	9	8.7	0	0.0	9	4.9
Total	103	100.0	79	100.0	182	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Remoteness of usual residence

The rate of injury in middle childhood increased with increasing remoteness. The rate of injury for residents of *Very remote* regions (2,348 per 100,000 population) was twice the rate for residents of *Major cities* (1,164 per 100,000) (Table 5.8).

Table 5.8: Hospitalised injury cases, by remoteness of usual residence for middle childhood (5–9 years), 2017–18

Indicators	Remoteness of usual residence					Total ^(a)
	Major cities	Inner regional	Outer regional	Remote	Very remote	
Estimated injury cases	13,219	4,050	1,863	455	376	20,072
Proportion of estimated injury cases (%)	65.9	20.2	9.3	2.3	1.9	100.0
Age-specific rate/100,000 population	1,164.0	1,404.2	1,390.4	2,107.3	2,347.7	1,257.9

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

Source: AIHW NHMD.

Aboriginal and Torres Strait Islander children

There were an estimated 1,588 cases of Aboriginal and Torres Strait Islander children aged 5 to 9 being hospitalised due to injury and poisoning in 2017–18 (Table 5.9). Rates of injury for Indigenous children were higher than those for other Australian children. Rates among Indigenous boys were higher than those for Indigenous girls, and rates for both sexes were higher than those for other Australian boys and girls of the same age.

Table 5.9: Hospitalised injury cases for middle childhood (5–9 years), by Indigenous status and sex, 2017–18

Indicators	Indigenous Australians			Other Australians		
	Boys	Girls	Children	Boys	Girls	Children
Estimated injury cases	966	622	1,588	10,928	7,556	18,484
Age-specific rate/100,000 population	2,014.0	1,354.4	1,691.4	1,417.9	1,033.6	1,230.8

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Other Australians include non-Indigenous Australians and cases where Indigenous status is not reported.

Source: AIHW NHMD.

6 Late childhood (10–14 years)

The period of late childhood/early adolescence (10–14 years) is characterised by an increase in risk-taking behaviours, particularly among boys (Spear 2000). In the late childhood years, children typically have increasing, and often unsupervised, access to a broader range of settings, such as sporting environments, streets and neighbourhoods. Exposure to roads, traffic and transport increases as can access to drugs and alcohol (White & Bariola 2012).

Overview

There were 22,388 cases of children aged 10–14 hospitalised as a result of an injury in 2017–18 (Table 6.1), representing 16% of all hospitalised injury cases in children and young people. The age-specific rate of injury was 1,498 per 100,000 population, and boys had a rate of injury almost twice that of girls. In comparison, the overall age-specific rate of injury in children and young people aged 0 to 24 was 2,047 cases per 100,000.

Table 6.1: Key indicators for hospitalised injury cases in late childhood (10–14 years), 2017–18

Indicators	10–14 years		
	Boys	Girls	Children
Estimated injury cases	14,493	7,895	22,388
Age-specific rate/100,000 population	1,886.5	1,087.0	1,498.0

Note: Children total includes cases for which age and/or sex were not reported.

Source: AIHW NHMD.

External cause of injury

During 2017–18, the most common cause of hospitalised injury in late childhood was *Falls* (38%) (Table 6.2). Rates of fall injury were higher among boys (734 cases per 100,000 population) than among girls (382). *Transport crashes* (241 cases per 100,000) and *Exposure to inanimate mechanical forces* (232 cases) were the next most common causes of hospitalised injury among those aged 10–14, each accounting for 16% of hospitalisations.

Intentional self-harm accounted for 3% of injury hospitalisations overall—a rate of 136 cases per 100,000 population for hospitalised girls compared with 19 for hospitalised boys.

Table 6.2: Major external cause groups for hospitalised injury cases in late childhood (10–14 years), 2017–18

External cause	Boys		Girls		Children		M:F ratio
	Number	Rate	Number	Rate	Number	Rate	
Unintentional injuries							
Transport crashes	2,600	338.4	1,001	137.8	3,601	240.9	2.6
Accidental drowning and submersion	14	1.8	9	n.p.	23	1.5	1.6
Accidental poisoning	79	10.3	75	10.3	154	10.3	1.1
Falls	5,642	734.4	2,775	382.1	8,417	563.2	2.0
Thermal injury	106	13.8	68	9.4	174	11.6	1.6
Exposure to inanimate mechanical forces	2,354	306.4	1,117	153.8	3,471	232.2	2.1
Exposure to animate mechanical forces	1,408	183.3	513	70.6	1,921	128.5	2.7
Other external causes of unintentional injury	1,826	237.7	1,122	154.5	2,948	197.2	1.6
Intentional injuries							
Intentional self-harm	148	19.3	990	136.3	1,138	76.1	0.1
Assault	207	26.9	130	17.9	337	22.5	1.6
Undetermined intent	48	6.2	54	7.4	102	6.8	0.9
Total	14,493	1,886.5	7,895	1,087.0	22,388	1,498.0	1.8

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Total external cause count includes other external causes of injury and cases missing external cause information.

Source: AIHW NHMD.

Key causes of injury hospitalisations in late childhood

Falls

Other fall on same level was the reason most often specified for hospitalisation for *Falls* for children aged 10–14 (18%) (Table 6.3). For boys, of the 922 cases of *Fall involving pedestrian conveyances*, 526 (57%) involved a non-powered scooter and 321 (35%) a skateboard. *Fall involving playground equipment* was less frequent in this age group than in younger age groups (1–4 years and 5–9 years) but, when falls did occur, 47% of them (580) involved a trampoline and 20% (250) playground climbing apparatus.

Table 6.3: Types of fall for hospitalised injury cases in late childhood (10–14 years), 2017–18

Type of fall	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Other fall on same level	976	17.3	537	19.4	1,513	18.0
Fall involving playground equipment	637	11.3	594	21.4	1,231	14.6
Fall involving pedestrian conveyances	922	16.3	290	10.5	1,212	14.4
Other fall on same level due to collision with, or pushing by, another person	987	17.5	205	7.4	1,192	14.2
Fall on same level from slipping, tripping and stumbling	730	12.9	451	16.3	1,181	14.0
Other fall from one level to another	362	6.4	179	6.5	541	6.4
Fall from, out of or through building or structure	188	3.3	37	1.3	225	2.7
Fall from tree	145	2.6	57	2.1	202	2.4
Fall on and from stairs and steps	110	1.9	79	2.8	189	2.2
All other fall types combined	182	3.2	125	4.5	307	3.6
Unspecified fall	403	7.1	221	8.0	624	7.4
Total	5,642	100.0	2,775	100.0	8,417	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Transport crashes

Events involving pedal cycles were the most common reason for children aged 10–14 being hospitalised due to unintentional transport injury (41%) (Table 6.4). A higher proportion of boys (48%) were hospitalised as a result of a pedal cycle event than girls (22%). Incidents involving motorcycles were the second most common cause of hospitalised transport injury (26%), with a much higher proportion of boys injured (32%) than girls (12%). In contrast, girls (33%) were far more likely than boys (2%) to be injured as a result of being an animal rider or occupant of an animal-drawn vehicle—for girls, 321 cases out of 329 were associated with riding a horse. There were 108 cases of children being hospitalised as a result of an incident involving a special all-terrain or other motor vehicle designed primarily for off-road use (69 for boys and 39 for girls).

Table 6.4: Types of vehicle for *Transport crash* hospitalised injury cases in late childhood (10–14 years), by sex, 2017–18

Type of vehicle	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Pedal cycle	1,241	47.7	220	22.0	1,461	40.6
Motorcycle	834	32.1	117	11.7	951	26.4
Animal or animal-drawn vehicle	55	2.1	329	32.9	384	10.7
Car	190	7.3	186	18.6	376	10.4
Pedestrian	128	4.9	74	7.4	202	5.6
Special all-terrain or off-road vehicle	69	2.7	39	3.9	108	3.0
All other vehicle types	83	3.2	36	3.6	119	3.3
Total	2,600	100.0	1,001	100.0	3,601	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

The main collision type resulting in injuries to pedal cyclists and motorcyclists were non-collision events in both instances (tables 6.5 and 6.6). For pedal cyclist cases, a higher proportion of girls (71%) were injured in non-collision events than boys (66%). Similar results were seen with motorcycle riders (Table 6.6).

Table 6.5: Types of collision for pedal cyclists in *Transport crash* hospitalised injury cases in late childhood (10–14 years), by sex, 2017–18

Pedal cyclist injured in collision with:	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Non-collision transport event	821	66.0	156	70.9	977	66.8
Other and unspecified transport event	217	17.5	32	14.5	249	17.0
Car, pick-up truck or van	92	7.4	15	6.8	107	7.3
Fixed or stationary object	68	5.5	9	4.1	77	5.3
Other pedal cycle	39	3.1	8	3.6	47	3.2
All other collision types	6	0.5	0	0	6	0.4
Total	1,243	100.0	220	100.0	1,463	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Table 6.6: Types of collision for motorcycle riders in *Transport crash* hospitalised injury cases in late childhood (10–14 years), by sex, 2017–18

Motorcycle rider injured in collision with:	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Non-collision transport event	605	72.9	81	69.2	686	72.4
Other and unspecified transport event	89	10.7	12	10.3	101	10.7
Collision with fixed or stationary object	83	10.0	14	12.0	97	10.2
Collision with two- or three-wheeled motor vehicle	35	4.2	6	5.1	41	4.3
Collision with car, pick-up truck or van	n.p.	n.p.	n.p.	n.p.	15	1.6
Collision with pedestrian or animal	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Collision with heavy transport vehicle or bus	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Total	830	100.0	117	100.0	947	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Exposure to inanimate and animate mechanical forces

Just over half of all cases (55%) of *Exposure to inanimate mechanical forces* were due to 3 causes: *Striking against or struck by sports equipment* (739 cases), *Striking against or struck by other objects* (671) and *Contact with other sharp object(s)* including a knife (492). Half of all cases of *Exposure to animate mechanical forces* were due to being *Hit, struck, kicked, twisted, bitten or scratched by another person* (955 cases). *Overexertion, travel and privation* accounted for 654 cases (22%) of hospitalisations due to *Other external causes of unintentional injury*.

Tables 6.7 and 6.8 provide a closer examination of the types of *Exposure to inanimate and animate mechanical forces* experienced by boys and girls. *Striking against or struck by sports equipment* was the most common cause of hospitalisation as a result of *Exposure to inanimate mechanical forces* for both boys (22%) and girls (19%). The second most common

cause among boys and girls was *Striking against or struck by other objects* (20% and 18%, respectively).

Table 6.7: Types of *Exposure to inanimate mechanical forces*, ‘Other unintentional causes’, for hospitalised injury cases in late childhood (10–14 years), 2017–18

Type of exposure to inanimate mechanical forces	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Striking against or struck by sports equipment	523	22.2	216	19.3	739	21.3
Striking against or struck by other objects	471	20.0	200	17.9	671	19.3
Contact with other sharp object(s) (includes knife)	350	14.9	142	12.7	492	14.2
Caught, crushed, jammed or pinched in or between objects	212	9.0	112	10.0	324	9.3
Foreign body entering into or through eye or natural orifice	186	7.9	138	12.4	324	9.3
All other exposure to inanimate mechanical forces types	612	26.0	309	27.7	921	26.5
Total	2,354	100.0	1,117	100.0	3,471	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

For injury due to *Exposure to animate mechanical forces*, the most common cause in late childhood was being *Hit, struck, kicked, twisted, bitten or scratched by another person*, followed by *Striking against or bumped into by another person* (Table 6.8). For boys 55% of hospitalisations due to animate mechanical forces were caused by being *Hit, struck, kicked, twisted, bitten or scratched by another person*, and 22% as a result of *Striking against or bumped into by another person*. Eighteen per cent of girls who were hospitalised as a result of *Exposure to animate mechanical forces* had been bitten or struck by a dog.

Table 6.8: Types of exposure to animate mechanical forces, ‘Other unintentional causes’, for hospitalised injury cases in late childhood (10–14 years), 2017–18

Type of exposure to animate mechanical forces	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Hit, struck, kicked, twisted, bitten or scratched by another person	768	54.5	187	36.5	955	49.7
Striking against or bumped into by another person	305	21.7	105	20.5	410	21.3
Bitten or struck by dog	176	12.5	91	17.7	267	13.9
Bitten or crushed by other reptiles	84	6	46	9	130	6.8
Bitten or struck by other mammals	27	1.9	58	11.3	85	4.4
All other exposure to animate mechanical forces types	48	3.4	26	5.1	74	3.9
Total	1,408	100.0	513	100.0	1,921	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Intentional self-harm

This section covers cases of suicide, suicide attempts, and cases where people have intentionally hurt themselves, but not with the intention of dying (see Box 1.3).

There were 1,138 cases of *Intentional self-harm* among children aged 10–14 in 2017–18. More girls (990) than boys (148) were hospitalised as a result of an *Intentional self-harm* injury. As evident in Table 6.9, *Intentional self-poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics* was the most common form of self-harm by girls (45%). In contrast, *Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs* was the most common cause of self-harm by boys (34%). Girls (11%, 111 cases) also had a much higher number of *Intentional self-harm by sharp object* cases than boys (12%, 17 cases).

Table 6.9: Type of *Intentional self-harm* for hospitalised injury cases in late childhood (10–14 years), 2017–18

External cause	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Intentional self-poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics	25	16.9	444	44.8	469	41.2
Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs	50	33.8	249	25.2	299	26.3
Intentional self-harm by sharp object	17	11.5	111	11.2	128	11.2
Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substances	19	12.8	101	10.2	120	10.5
Intentional self-harm by hanging, strangulation and suffocation	12	8.1	12	1.2	24	2.1
Intentional self-poisoning by and exposure to other and unspecified chemicals and noxious substances	7	4.7	16	1.6	23	2.0
Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified	n.p.	n.p.	n.p.	n.p.	21	1.8
Intentional self-poisoning by and exposure to other drugs acting on the autonomic nervous system	n.p.	n.p.	n.p.	n.p.	16	1.4
All other types of intentional self-harm	12	8.1	26	2.6	38	3.3
Total	148	100.0	990	100.0	1,138	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Remoteness of usual residence

The age-specific rate of injury in late childhood increased with children's increasing remoteness of usual residence. The rate of injury in children living in *Very remote* regions (2,731 per 100,000 population) was twice the rate for residents of *Major cities* (1,339 per 100,000) (Table 6.10).

Table 6.10: Hospitalised injury cases, by remoteness of usual residence for children (10–14 years), 2017–18

Indicators	Remoteness of usual residence					Total ^(a)
	Major cities	Inner regional	Outer regional	Remote	Very remote	
Estimated injury cases	13,970	4,959	2,506	462	382	22,388
Proportion of estimated injury cases (%)	62.4	22.2	11.2	2.1	1.7	100.0
Age-specific rate/100,000 population	1,338.8	1,734.7	1,893.5	2,460.0	2,731.3	1,498.0

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

Source: AIHW NHMD.

Aboriginal and Torres Strait Islander children

There were an estimated 1,727 cases of Aboriginal and Torres Strait Islander children aged 10 to 14 being hospitalised due to injury and poisoning in 2017–18 (Table 6.11). Rates of injury among Indigenous boys were almost one and a half times those of Indigenous girls, and both were higher than for other Australian children of the same age.

Table 6.11: Hospitalised injury cases for late childhood (10–14 years), by Indigenous status and sex, 2017–18

Indicators	Indigenous Australians			Other Australians		
	Boys	Girls	Children	Boys	Girls	Children
Estimated injury cases	1,037	690	1,727	13,456	7,205	20,661
Age-specific rate/100,000 population	2,283.1	1,580.8	1,938.9	1,861.6	1,055.4	1,470.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Other Australians include non-Indigenous Australians and cases where Indigenous status is not reported.

Source: AIHW NHMD.

7 Adolescence (15–17 years)

Risk-taking behaviour continues to occur in adolescents aged 15–17. As well, older children experience increased and often unsupervised exposure to adult activities such as driving, employment, and alcohol and drug use. Much of the injury among adolescents is associated with risk-taking behaviour associated with physical contact (either through violence or sport) and transport, both of which can be influenced by alcohol and drug use (Chapman et al. 2011; Swahn et al. 2004).

Overview

There were 19,835 cases of adolescents aged 15 to 17 years hospitalised as a result of an injury in 2017–18 (Table 7.1), representing 14% of all hospitalised injury cases in children and young people (0–24). The age-specific rate of injury was 2,287 cases per 100,000 population, with adolescent boys having a rate of injury much higher than that of girls. The highest rate of age-specific injury for adolescent girls occurred in this age group.

Table 7.1: Key indicators for hospitalised injury cases in adolescents (15–17 years), 2017–18

Indicators	15–17 years		
	Boys	Girls	Children
Estimated injury cases	12,304	7,527	19,835
Age-specific rate/100,000 population	2,767.3	1,780.3	2,286.6

Note: Children total includes cases for which age and/or sex were not reported.

Source: AIHW NHMD.

External cause of injury

During 2017–18, the highest rate of hospitalised injury in this age group were those grouped as *Other external causes of unintentional injury* (426 cases per 100,000); 78% of these cases were coded as *Accidental exposure to other and unspecified factors* with no further detail available (Table 7.2). The second most common causes of hospitalised injury were *Falls* and *Intentional self-harm*, each accounting for 17% of cases. The rate of *Intentional self-harm* injury (396 cases per 100,000 population) was slightly higher than the rate of *Falls* injury (385). For adolescent girls, the rate of *Intentional self-harm* injury was more than 4 times the rate for adolescent boys.

Transport crash injuries accounted for 16% of hospitalisations, with the rate of injury twice as high in adolescent boys (488 cases per 100,000 population) as in adolescent girls (227). For hospitalised *Assault*, the rate of injury in adolescent boys (137) was almost 3 times that of adolescent girls (68).

Table 7.2: Major external cause groups for hospitalised injury cases in adolescents (15–17 years), 2017–18

External cause	Boys		Girls		Children		M:F ratio
	Number	Rate	Number	Rate	Number	Rate	
Unintentional injuries							
Transport crashes	2,168	487.6	958	226.6	3,126	360.4	2.3
Accidental drowning and submersion	18	4.0	16	3.8	34	3.9	1.1
Accidental poisoning	129	29.0	150	35.5	279	32.2	0.9
Falls	2,512	565.0	825	195.1	3,337	384.7	3.0
Thermal injury	132	29.7	55	13.0	187	21.6	2.4
Exposure to inanimate mechanical forces	2,020	454.3	678	160.4	2,698	311.0	3.0
Exposure to animate mechanical forces	1,299	292.2	467	110.5	1,766	203.6	2.8
Other external causes of unintentional injury	2,540	571.3	1,156	273.4	3,696	426.1	2.2
Intentional injuries							
Intentional self-harm	652	146.6	2,782	658.0	3,437	396.2	0.2
Assault	607	136.5	288	68.1	896	103.3	2.1
Undetermined intent	99	22.3	98	23.2	197	22.7	1.0
Total	12,304	2,767.3	7,527	1,780.3	19,835	2,286.6	1.6

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Total external cause count includes other external causes of injury and cases missing external cause information.

Source: AIHW NHMD.

Key causes of injury hospitalisations in adolescents

Falls

Other fall on same level due to collision with, or pushing by, another person was the reason most often specified (32%) for hospitalisation as a proportion of all types of hospitalised fall injury cases in adolescents (Table 7.3). A larger proportion of adolescent boys were hospitalised as a result of a *Fall involving pedestrian conveyances* (13%, 324 cases) than adolescent girls (7%, 55 cases). For the adolescent boys, 190 cases were due to a fall from a skateboard and 75 from a non-powered scooter.

Table 7.3: Types of fall, hospitalised injury cases in adolescents (15–17 years), 2017–18

Type of fall	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Other fall on same level due to collision with, or pushing by, another person	860	34.2	204	24.7	1,064	31.9
Other fall on same level	431	17.2	145	17.6	576	17.3
Fall involving pedestrian conveyances	324	12.9	55	6.7	379	11.4
Fall on same level from slipping, tripping and stumbling	219	8.7	138	16.7	357	10.7
Other fall from one level to another	146	5.8	54	6.5	200	6.0
Fall from, out of or through building or structure	93	3.7	28	3.4	121	3.6
Fall involving playground equipment	68	2.7	33	4.0	101	3.0
All other fall types	173	6.9	84	10.2	257	7.7
Unspecified fall	198	7.9	84	10.2	282	8.5
Total	2,512	100.0	825	100.0	3,337	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Intentional self-harm

This section covers cases of suicide, suicide attempts, and cases where people have intentionally hurt themselves, but not with the intention of dying (see Box 1.3).

There were 3,437 cases of *Intentional self-harm* among adolescents hospitalised in 2017–18, with many more cases of adolescent girls hospitalised (2,782) than adolescent boys (652). The age-specific rates were 658 and 147 cases per 100,000 population, respectively.

As evident in Table 7.4, intentional self-poisoning (all types) was the most common form of self-harm for adolescent girls (86%) and boys (82%). *Intentional self-harm by sharp object* was the next most common type of *Intentional self-harm* for both sexes in this age group.

Table 7.4: Types of *Intentional self-harm* for hospitalised injury cases in adolescents (15–17 years), 2017–18

External cause	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Intentional self-poisoning (all types)	537	82.4	2,385	85.7	2,924	85.1
Intentional self-harm by sharp object	67	10.3	288	10.4	356	10.4
Intentional self-harm by hanging, strangulation and suffocation	31	4.8	46	1.7	77	2.2
All other types of intentional self-harm	17	2.6	63	2.3	80	2.3
Total	652	100.0	2,782	100.0	3,437	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

A closer look at the type of substances involved in hospitalised cases of intentional self-harm by poisoning is presented in Table 7.5. As a proportion of all types of substances, nonopioid analgesics (for example, paracetamol), antipyretics and antirheumatics were the most common substances involved for girls (48%) and boys (40%). Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs was the next most common type for boys and girls (37% and 36% respectively).

Table 7.5: Types of intentional self-poisoning for hospitalised injury cases in adolescents (15–17 years), 2017–18

Intentional self-poisoning by and exposure to:	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Nonopioid analgesics, antipyretics and antirheumatics	212	39.5	1,149	48.2	1,361	46.5
Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs	201	37.4	857	35.9	1,060	36.3
Other and unspecified drugs, medicaments and biological substances	62	11.5	215	9.0	277	9.5
Narcotics and psychodysleptics [hallucinogens], not elsewhere classified	n.p.	n.p.	n.p.	n.p.	103	3.5
Other and unspecified chemicals and noxious substances	20	3.7	48	2.0	68	2.3
Other drugs acting on the autonomic nervous system	n.p.	n.p.	n.p.	n.p.	27	0.9
Alcohol	6	1.1	7	0.3	13	0.4
Pesticides	n.p.	n.p.	n.p.	n.p.	6	0.2
Other gases and vapours	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Organic solvents and halogenated hydrocarbons and their vapours	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Total	537	100.0	2,385	100.0	2,924	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Transport crashes

Cases involving motorcycles were the most common type of hospitalised transport injury in the 15–17 age group (31%) (Table 7.4). The next 2 most common types of transport injury involved a car (25%) or a pedal cycle (23%).

The pattern of vehicle types involved in hospitalised injuries was very different for adolescent boys and girls. For boys, injuries sustained from motorcycling were the most common (40%) followed by injuries sustained from pedal cycling (30%) and injuries from being the occupant of a car (17%). In contrast, the most common cause of transport injury among girls was being the occupant of a car (42%) followed by being injured as an animal rider or the occupant of an animal-drawn vehicle (26%). For pedal cyclists, the most common cause was an injury that occurred in a non-collision transport accident (64%).

Table 7.4: Types of vehicle for *Transport crash* hospitalised injury cases in adolescents (15–17 years), by sex, 2017–18

Type of vehicle	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Motorcycle	870	40.1	106	11.1	976	31.2
Car	373	17.2	405	42.3	778	24.9
Pedal cycle	647	29.8	63	6.6	710	22.7
Animal or animal-drawn vehicle	40	1.8	246	25.7	286	9.1
Pedestrian	91	4.2	72	7.5	163	5.2
Special all-terrain or off-road vehicle	59	2.7	27	2.8	86	2.8
All other vehicle types	88	4.1	39	4.1	127	4.1
Total	2,168	100.0	958	100.0	3,126	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

The main causes of motorcycle related injuries for adolescents were non-collision events (65%) (Table 7.5). Collisions with fixed or stationary objects accounted for 11% of cases while collisions with other vehicle types accounted for 10% of cases.

Table 7.5: Types of collision for motorcycle riders in *Transport crash* hospitalised injury cases in adolescents (15–17 years), by sex, 2017–18

Motorcycle rider injured in:	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Non-collision transport accident	563	64.7	72	67.9	635	65.1
Other and unspecified transport accidents	109	12.5	9	8.5	118	12.1
Collision with fixed or stationary object	97	11.1	14	13.2	111	11.4
Collision with car, pick-up truck or van	49	5.6	5	4.7	54	5.5
Collision with two- or three-wheeled motor vehicle	35	4.0	6	5.7	41	4.2
Collision with pedestrian or animal	13	1.5	0.0	0.0	13	1.3
Collision with heavy transport vehicle or bus	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Collision with pedal cycle	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Total	870	100.0	106	100.0	976	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

For car occupants, the majority of injuries occurred as the result of a collision with a fixed or stationary object (33%) (Table 7.6). Differences were apparent by sex with adolescent boys more likely to be injured in a collision with a fixed or stationary object (39%), followed by a non-collision transport accident (33%); adolescent girls had higher proportions of injuries due to collisions with cars, pick-up trucks or vans (38%), followed by collisions with fixed or stationary objects (28%).

Table 7.6: Types of collision for car occupants in *Transport crash* hospitalised injury cases in adolescents (15–17 years), by sex, 2017–18

Car occupant injured in collision with:	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Fixed or stationary object	144	38.6	115	28.4	259	33.3
Car, pick-up truck or van	89	23.9	155	38.3	244	31.4
Car occupant injured in non-collision transport accident	122	32.7	111	27.4	233	29.9
All other vehicle types or objects	18	4.8	24	5.9	42	5.4
Total	373	100.0	405	100.0	778	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Exposure to inanimate mechanical forces

Table 7.7 provides a closer examination of the types of *Exposure to inanimate mechanical forces* experienced by adolescent boys and girls. *Striking against or struck by other objects* was the most common individual cause of hospitalised injury by *Exposure to inanimate mechanical forces* for both boys (20%) and girls (13%) (Table 7.9).

The second most common cause among adolescent boys (17%) was *Striking against or struck by sports equipment*, followed closely by *Contact with other sharp object(s)* including a knife (16%). Among adolescent girls, the second and third most common causes were *Contact with other sharp object(s)* including a knife (17%) and *Contact with sharp glass* (16%).

Table 7.7: Types of *Exposure to inanimate mechanical forces* for hospitalised injury cases in adolescents (15–17 years), by sex, 2017–18

Type of exposure to inanimate mechanical forces	Boys		Girls		Children	
	Number	%	Number	%	Number	%
Striking against or struck by other objects	393	19.5	91	13.4	484	17.9
Contact with other sharp object(s) (includes knife)	323	16.0	115	17.0	438	16.2
Striking against or struck by sports equipment	334	16.5	95	14.0	429	15.9
Contact with sharp glass	268	13.3	109	16.1	377	14
Foreign body entering into or through eye or natural orifice	87	4.3	95	14	182	6.7
Other types of exposure	615	30.5	173	25.4	788	29.2
Total	2,020	100.0	678	100.0	2,698	100.0

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Remoteness of usual residence

The age-specific rate of injury in adolescents increased with increasing remoteness. The rate of injury for residents of *Very remote* regions (5,058 per 100,000 population) was more than twice the rate for residents of *Major cities* (2,027 per 100,000) (Table 7.8).

Table 7.8: Hospitalised injury cases, by remoteness of usual residence for adolescents (15–17 years), 2017–18

Indicators	Remoteness of usual residence					Total ^(a)
	Major cities	Inner regional	Outer regional	Remote	Very remote	
Estimated injury cases	12,306	4,284	2,350	393	355	19,835
Proportion of estimated injury cases (%)	62.0	21.6	11.8	2.0	1.8	100.0
Age-specific rate/100,000 population	2,027	2,562	3,076	4,061	5,058	2,287

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

Source: AIHW NHMD.

Aboriginal and Torres Strait Islander children

There were 1,750 cases of Aboriginal and Torres Strait Islander adolescents hospitalised due to injury and poisoning during 2017–18 (Table 7.9). Rates of injury for Indigenous adolescent boys were higher than for Indigenous adolescent girls. The rate of injury for Indigenous adolescent girls was almost twice that of other adolescent girls.

Table 7.9: Hospitalised injury cases for adolescents (15–17 years), by Indigenous status and sex, 2017–18

Indicators	Indigenous Australians			Other Australians		
	Boys	Girls	Children	Boys	Girls	Children
Estimated injury cases	976	774	1,750	11,328	6,753	18,085
Age-specific rate/100,000 population	3,717.4	3,094.8	3,413.6	2,707.6	1,697.6	2,215.9

Notes

1. Children total includes cases for which age and/or sex were not reported.
2. Other Australians include non-Indigenous Australians and cases where Indigenous status is not reported.

Source: AIHW NHMD.

8 Young adulthood (18–24 years)

As young adults, people aged 18–24 are exposed to a wide range of activities that carry a risk of injury, including driving, employment, socialising with alcohol, and participation in sport. Risk-taking behaviour in this age group, particularly among men, is common (AIHW 2011). Hazard perception and decision-making skills are still developing in young people at this age and can contribute to injury risk (Seah & Mitchell 2020; Spear 2000).

Overview

There were 52,718 cases of young adults aged 18 to 24 hospitalised as a result of an injury in 2017–18 (Table 8.1), representing 40% of all hospitalised injury cases in children and young people (0–24). The age-specific rate of injury was 2,390 per 100,000 population and men had a rate of injury twice that of women. In comparison, the overall age-specific rate of injury in children and young people (0–24) was 1,804 cases per 100,000. The highest rate of age-specific injury for males occurred in the 18–24 age range.

Table 8.1: Key indicators for hospitalised injury cases in young adults (18–24 years), 2017–18

Indicators	18–24		
	Males	Females	Persons
Estimated injury cases	37,187	15,529	52,718
Age-specific rate/100,000 population	3,298	1,440	2,390

Note: Persons total includes cases for which age and/or sex were not reported.

Source: AIHW NHMD.

External cause of injury

During 2017–18, the most common cause of hospitalised injury among young adults was *Transport crashes* (420 cases per 100,000 population) (Table 8.2). Rates of hospitalisation were also high for cases occurring as a result of *Exposure to inanimate mechanical forces* (418 cases per 100,000), *Falls* (314) and *Intentional self-harm* (271). While rates of *Other external causes of unintentional injury* were high (394 cases per 100,000) over three-quarters of these cases were coded to *Accidental exposure to other and unspecified factors*.

Table 8.2: Major external cause groups for hospitalised injury cases in young adults (18–24 years), by sex, 2017–18

External cause	Males		Females		Persons		M:F ratio
	Number	Rate	Number	Rate	Number	Rate	
Unintentional injuries							
Transport crashes	6,479	538.8	3,385	295.3	9,865	420.0	1.9
Accidental drowning and submersion	42	3.5	14	1.2	56	2.4	3.0
Accidental poisoning	618	51.4	544	47.5	1,162	49.5	1.1
Falls	4,961	412.6	2,408	210.1	7,370	313.8	2.1
Thermal injury	437	36.3	194	16.9	631	26.9	2.3
Exposure to inanimate mechanical forces	7,853	653.1	1,953	170.4	9,806	417.5	4.0
Exposure to animate mechanical forces	2,547	211.8	977	85.2	3,524	150.0	2.6
Other external causes of unintentional injury	6,824	567.5	2,429	211.9	9,254	394.0	2.8
Intentional injuries							
Intentional self-harm	2,057	171.1	4,312	376.2	6,371	271.3	0.5
Assault	2,823	234.8	1,305	113.9	4,128	175.8	2.2
Undetermined intent	438	36.4	324	28.3	762	32.4	1.4
Total	35,424	2,946.1	17,955	1,566.5	53,384	2,273.0	2.0

Notes

1. Persons total includes cases for which age and/or sex were not reported.
2. Total external cause count includes other external causes of injury and cases missing external cause information.

Source: AIHW NHMD.

Key causes of injury hospitalisations in young adults

Transport crashes

Collisions involving cars were the most common cause of hospitalised injury due to transport for this age group (44%); the second most common cause involved a motorcycle (29%) (Table 8.3). Young men (40%) were more likely than young women (8%) to have sustained a *Transport crash* related injury while riding a motorcycle. Young women (14%) were far more likely to have been injured as a result of being an animal rider or an occupant of an animal-drawn vehicle than young men (2%). For young women, 472 of these cases were associated with riding a horse.

Table 8.3: Types of vehicle for *Transport crash* hospitalised injury cases in young adults (18–24 years), by sex, 2017–18

Type of vehicle	Males		Females		Persons	
	Number	%	Number	%	Number	%
Car	2,200	34.0	2,090	61.7	4,290	43.5
Motorcycle	2,572	39.7	264	7.8	2,836	28.8
Pedal cycle	769	11.9	167	4.9	936	9.5
Animal or animal-drawn vehicle	154	2.4	482	14.2	637	6.5
Pedestrian	283	4.4	176	5.2	459	4.7
All other vehicle types	500	7.7	206	6.1	706	7.2
Total	6,478	100.0	3,385	100.0	9,864	100.0

Notes

1. Persons total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

A young adult car occupant was more likely to have been injured in a collision with a car, pick-up truck or van (43%) (Table 8.4). Young women were more likely to have been injured in a collision with a car, pick-up truck or van (53%) than young men (33%). The main cause of motorcycle-related injuries in both young men (56%) and women (60%) was a non-collision event (Table 8.5).

Table 8.4: Types of collision for car occupants in *Transport crash* hospitalised injury cases in young adults (18–24 years), by sex, 2017–18

Car occupant injured in collision with:	Males		Females		Persons	
	Number	%	Number	%	Number	%
Collision with car, pick-up truck or van	733	33.3	1,110	53.1	1,843	43.0
Collision with fixed or stationary object	694	31.5	426	20.4	1,120	26.1
Noncollision transport accident	579	26.3	399	19.1	978	22.8
Collision with heavy transport vehicle or bus	58	2.6	64	3.1	122	2.8
Collision with pedestrian or animal	33	1.5	10	0.5	43	1.0
All other vehicle types or objects	39	1.8	19	0.9	58	1.4
Total	2,200	100.0	2,090	100.0	4,290	100.0

Notes

1. Persons total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Table 8.5: Types of collision for motorcycle riders in *Transport crash* hospitalised injury cases in young adults (18–24), by sex, 2017–18

Motorcycle rider injured in collision with:	Males		Females		Persons	
	Number	%	Number	%	Number	%
Noncollision transport accident	1,440	56.0	159	60.2	1,599	56.4
Collision with car, pick-up truck or van	408	15.9	39	14.8	447	15.8
Collision with fixed or stationary object	300	11.7	29	11.0	329	11.6
Collision with two- or three-wheeled motor vehicle	60	2.3	7	2.7	67	2.4
Collision with pedestrian or animal	n.p.	n.p.	n.p.	n.p.	39	1.4
All other vehicle types or objects	n.p.	n.p.	n.p.	n.p.	82	2.9
Total	2,572	100.0	264	100.0	2,836	100.0

Notes

1. Persons total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Exposure to inanimate mechanical forces

Table 8.6 provides a closer examination of the types of *Exposure to inanimate mechanical forces* experienced by young men and women. *Contact with other sharp object(s)* including a knife was the most common individual cause of hospitalised injury by *Exposure to inanimate mechanical forces* for both young men (19%) and young women (21%) (Table 8.6).

The second most common cause among young men (17%) was *Striking against or struck by other objects*, followed by *Contact with sharp glass* (13%). Among young women, the second and third most common causes were *Contact with sharp glass* (19%) and *Striking against or struck by other objects* (13%).

Table 8.6: Types of *Exposure to inanimate mechanical forces* for hospitalised injury cases in young adults (18–24 years), by sex, 2017–18

Type of exposure to inanimate mechanical forces	Males		Females		Persons	
	Number	%	Number	%	Number	%
Contact with other sharp object(s) (includes knife)	1,490	19.0	405	20.7	1,895	19.3
Striking against or struck by other objects	1,298	16.5	261	13.4	1,559	15.9
Contact with sharp glass	1,043	13.3	379	19.4	1,422	14.5
Exposure to other and unspecified inanimate mechanical forces	886	11.3	24	1.2	910	9.3
Caught, crushed, jammed or pinched in or between objects	530	6.7	164	8.4	694	7.1
Other types of exposure	2,606	33.2	719	36.8	3,325	33.9
Total	7,853	100.0	1,953	100.0	9,806	100.0

Notes

1. Persons total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Intentional self-harm

This section covers cases of suicide, suicide attempts, and cases where people have intentionally hurt themselves, but not with the intention of dying (see Box 1.3).

As evident in Table 8.7, intentional self-poisoning by exposure to drugs, medicaments and biological substances of all types was the most common form of self-harm for young women (83%) and young men (72%). *Intentional self-harm by hanging, strangulation and suffocation* was the next most common type of *Intentional self-harm* for young women (12%) and young men (16%).

Table 8.7: Types of *Intentional self-harm* for hospitalised injury cases in young adults (18–24 years), 2017–18

External cause	Males		Females		Persons	
	Number	%	Number	%	Number	%
Intentional self-poisoning (all types)	1,474	71.7	3,593	83.3	5,069	79.6
Intentional self-harm by hanging, strangulation and suffocation	326	15.8	531	12.3	857	13.5
Intentional self-harm by sharp object	136	6.6	72	1.7	208	3.3
All other types of intentional self-harm	121	5.9	116	2.7	237	3.7
Total	2,057	100.0	4,312	100.0	6,371	100.0

Notes

1. Persons total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Table 8.8 presents a closer look at the types of substances involved in hospitalised cases of *Intentional self-harm* by poisoning. As a proportion of all types of substances, antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs were the most common substances involved for *Intentional self-harm* in young females (47%) and young males (50%). Nonopioid analgesics, antipyretics and antirheumatics (for example, paracetamol) were the second most common substances for young women (36%) and young men (27%).

Table 8.8: Types of intentional self-poisoning for hospitalised injury cases in young adults (18–24 years), 2017–18

Type of intentional self-poisoning by and exposure to	Males		Females		Persons	
	Number	%	Number	%	Number	%
Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs	738	50.1	1,702	47.4	2,441	48.2
Nonopioid analgesics, antipyretics and antirheumatics	404	27.4	1,291	35.9	1,695	33.4
Other and unspecified drugs, medicaments and biological substances	125	8.5	274	7.6	400	7.9
Narcotics and psychodysleptics [hallucinogens], not elsewhere classified	n.p.	n.p.	n.p.	n.p.	260	5.1
All other substances	n.p.	n.p.	n.p.	n.p.	273	5.4
Total	1,474	100.0	3,593	100.0	5,069	100.0

Notes

1. Persons total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Assault

Assault by bodily force was the most frequent cause of hospitalised *Assault* injury for both young males (66%) and young females (61%) (Table 8.9). In young males, *Assault by sharp object* was the second most common cause (13%) of injury while in young women (13%) it was *Assault by blunt object*.

Table 8.9: Types of Assault for hospitalised injury cases in young adults (18–24) years, 2017–18

External cause	Males		Females		Persons	
	Number	%	Number	%	Number	%
Assault by bodily force	1,865	66.1	793	60.8	2,658	64.4
Assault by sharp object	374	13.2	117	9.0	491	11.9
Assault by blunt object	278	9.8	167	12.8	445	10.8
Assault by unspecified means	111	3.9	159	12.2	270	6.5
All other assault types	195	6.9	69	5.3	264	6.4
Total	2,823	100.0	1,305	100.0	4,128	100.0

Notes

1. Persons total includes cases for which age and/or sex were not reported.
2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Information about the recorded perpetrator of the assault is shown in Table 8.10 (see also Box 1.5). The high proportion of cases lacking specific information about the perpetrator may be partly the result of information not being reported by or on behalf of victims, or information not being recorded in the patient's hospital record.

There are 2 standout differences between young men and young women with respect to the perpetrator of assault (Table 8.10). For young women, 48% of injuries were perpetrated by a spouse or domestic partner. In contrast, the proportion of young males reporting an assault by a spouse or domestic partner was just 2%.

For young men, the majority of *Assault* cases had an unspecified person recorded as the perpetrator (54%). In comparison, 20% of young female assault victims had an unspecified person recorded as the perpetrator.

Table 8.10: Types of perpetrator of Assault for hospitalised injury cases in young adults (18–24 years), 2017–18

Type of perpetrator	Males		Females		Persons	
	Number	%	Number	%	Number	%
Spouse or domestic partner	51	1.8	626	48.0	677	16.4
Parent	33	1.2	34	2.6	67	1.6
Other family member	141	5.0	120	9.2	261	6.3
Carer	n.p.	n.p.	0	0.0	n.p.	n.p.
Acquaintance or friend	241	8.5	98	7.5	339	8.2
Official authorities	24	0.9	9	0.7	33	0.8
Person unknown to the victim	332	11.8	64	4.9	396	9.6
Multiple persons unknown to the victim	303	10.7	32	2.5	335	8.1
Other specified person	n.p.	n.p.	64	4.9	n.p.	n.p.
Unspecified person	1,535	54.4	257	19.7	1,792	43.4
Total	2,823	100.0	1,305	100.0	4,128	100.0

Notes

1. Persons total includes cases for which age and/or sex were not reported and also includes cases where perpetrator was not coded.

2. Due to rounding, the sum of the percentages in tables may not equal 100%.

Source: AIHW NHMD.

Remoteness of usual residence

The age-specific rate of injury in young adults aged 18 to 24 increased with increasing remoteness (Table 8.11). The rate of injury for residents of *Very remote* regions (5,840 per 100,000 population) was more than twice the rate for residents of *Major cities* (1,927 per 100,000).

Table 8.11: Hospitalised injury cases, by remoteness of usual residence for young adults (18–24 years), 2017–18

Indicators	Remoteness of usual residence					Total ^(a)
	Major cities	Inner regional	Outer regional	Remote	Very remote	
Estimated injury cases	34,635	9,801	5,189	1,171	1,037	53,384
Proportion of estimated injury cases (%)	64.9	18.4	9.7	2.2	1.9	100.0
Age-specific rate/100,000 population	1,927.0	2,759.9	3,284.1	5,640.7	5,840.4	2,273.0

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

Source: AIHW NHMD.

Aboriginal and Torres Strait Islander young adults

There were 3,546 cases of young Aboriginal and Torres Strait Islander adults hospitalised due to injury and poisoning during 2017–18 (Table 8.12). Rates of injury were higher among Indigenous young adults (4,331 cases per 100,000 population) than among other Australian young adults (2,329). Rates of injury in young Indigenous women were almost 3 times those of other young Australian women.

Table 8.12: Hospitalised injury cases for young adults (18–24 years), by Indigenous status and sex, 2017–18

Indicators	Indigenous Australians			Other Australians		
	Males	Females	Persons	Males	Females	Persons
Estimated injury cases	2,062	1,484	3,546	35,125	14,045	49,172
Age-specific rate/100,000 population	4,894	3,734	4,331	3,244	1,366	2,329

Notes

1. Persons total includes cases for which age and/or sex were not reported.
2. Other Australians include non-Indigenous Australians and cases where Indigenous status is not reported.

Source: AIHW NHMD.

Appendix A: Data issues

Data sources

The data on hospital separations are from the Australian Institute of Health and Welfare's National Hospital Morbidity Database (NHMD). Comprehensive information on the quality of the data for 2017–18 is available in *Admitted patient care 2017–18: Australian hospital statistics* (AIHW 2019) and in the data quality statement provided in this appendix. Nearly all injury cases admitted to hospitals in Australia are included in the NHMD data reported.

Diagnosis and external cause data for 2017–18 were reported to the 10th edition of the International Statistical Classification of Diseases and Related Health Problems, 10th revision, Australian modification (ICD-10-AM) (ACCD 2016), incorporating the Australian Classification of Health Interventions.

Denominators for most age-specific and age-standardised rates are estimated resident population (ERP) values as at 31 December of the relevant year. Australian ERPs for 30 June 2001 were used as the standardising population throughout the report. Data from other sources, mostly based on ERPs, were used as denominators for rates categorised by remoteness of usual residence and by Indigenous status (see 'Rates', further in this appendix).

Selection criteria

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

Period

This report is restricted to admitted-patient episodes that ended in the period 1 July 2017 to 30 June 2018. Selection was based on the financial year of separation, but choice of this time period is arbitrary. Use of a calendar year would result in different rates, particularly where case numbers were small.

Selecting injury separations

Injury separations were defined as records that contained a principal diagnosis in the ICD-10-AM range S00–T75 or T79, using 'Chapter XIX Injury, poisoning and certain other consequences of external causes' codes but excluding any with *Z50 Care involving use of rehabilitation procedures* appearing in any additional diagnosis field. Nearly all injury separations were thought to be included in the data reported, representing minimal risk of sampling error.

Estimating incident cases

Each record in the NHMD refers to a single episode of care in a hospital. Some injuries result in more than 1 episode in hospital and, hence, more than 1 NHMD record.

This can occur in 2 main ways:

- a person is admitted to 1 hospital, then transferred to another or has a change in care type (for example, from acute to rehabilitation) within the same hospital

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

The NHMD does not include information designed to enable the set of records belonging to the same injury case to be recognised as such. Hence, there is potential for some incident injury cases to be counted more than once. This occurs when a single incident injury case results in 2 or more NHMD records being generated, all of which satisfy the selection criteria being used.

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

This procedure should largely correct for over-estimation of cases due to transfers but will not correct for overestimation due to re-admissions.

Adjusting for changes to rehabilitation coding

A change in coding practice for ICD-10-AM *Z50 Care involving the use of rehabilitation procedures* has necessitated a change to the standard record inclusion criteria for National Injury Surveillance Unit (NISU) reports of hospital-admitted injury cases. The change applies to episodes that ended on 1 July 2015, or later. For details of the change, see 'Box 4.2' in *Admitted patient care 2015–16: Australian hospital statistics* (AIHW 2017).

Due to the change in coding practice, an increase in the numbers of separations in 2015–16 with a principal diagnosis in the ICD-10-AM *Chapter 19 Injury, poisoning and certain other consequences of external causes (S00–T98)* range occurred (around an additional 60,000 records).

To minimise the effect of the coding change on the estimation of injury occurrence and trends, a change to the case estimation method used by the NISU was required. Records with Z50—either as Principal diagnosis or as Additional diagnosis—are now omitted by the NISU in data-years both before and after the coding change. The change to data before 2015–16 amounts to an adjustment of less than 0.1% of records. Where injury trends are presented by Principal diagnosis for years before 2015–16, data will not be directly comparable with data for previous reporting periods.

Changes to NHMD inclusions for 2017–18

The emergency department admission policy was changed for New South Wales hospitals in 2017–18. Episodes of care delivered entirely within a designated emergency department or urgent care centre are no longer categorised as an admission, regardless of the amount of time spent in the hospital. This narrowing of the categorisation has had the effect of reducing the number of admissions recorded in New South Wales for the 2017–18 financial year. For New South Wales, the effect was a significant decrease (3.7%) in all public hospital admissions in 2017–18 compared with 2016–17. The impact of the change was felt disproportionately among hospitalisations for injury and poisoning. According to NSW Health, the number of hospitalisations for injury and poisoning in New South Wales decreased by 7.6% between 2016–17 and 2017–18, compared with a usual yearly increase of 2.8% (Centre for Epidemiology and Evidence 2019).

The change in New South Wales's emergency department admission policy may have had different effects on case numbers within different external cause categories. This is because different types of injury have a different likelihood of requiring prolonged care in an emergency department, but without an admission to a hospital ward.

Hence, for most analyses, fewer injury separations are reported than would have been had the New South Wales policy not changed.

Due to the size of the contribution of New South Wales data to the national total, Australian data from 2017–18 should not be compared with data from previous years.

Rates

Age-standardisation

Cases per 100,000 population are reported as directly age-standardised rates based on the Australian population as at 30 June of the year of interest. The Australian population as at 30 June 2001 was used as the reference population for this report. Age-standardisation of rates enables valid comparison across years and/or jurisdictions without being affected by the differences in age distributions.

All populations, except those used for analyses by Indigenous status, are based on the 2011 Census data.

Population denominators

General population

Rates were calculated using the final ERP as at 31 December in the relevant year as the denominator (for example, 31 December 2017 for 2017–18 data) from the 2016 Australian Bureau of Statistics (ABS) Census data. Where tables of 31 December ERPs were not available, but tables of 30 June ERPs were available, population denominators were calculated as the average of 30 June estimates for adjacent years. This method was used to produce denominators for rates by remoteness of usual residence and Indigenous populations.

Indigenous population

Separation rates by Indigenous status were directly age standardised, using the projected Indigenous population (low series) as at 30 June 2017. The population for other Australians was based on the ERPs as at 30 June 2017, based on 2011 Census data.

Classification of remoteness area

Data on geographical location of the patient's usual residence and of the hospital location are defined using the ABS Australian Statistical Geography Standard (ASGS).

For 2017–18, data on remoteness area of usual residence are defined using the ABS ASGS Remoteness Structure 2016 (ABS 2016). The ASGS Remoteness Structure 2016 categorises geographical areas in Australia into remoteness areas, described in detail at www.abs.gov.au, which includes detail of the nature of the changes between the ASGS 2011 and ASGS 2016. The classification is as follows:

- Major cities—for example, Sydney, Melbourne, Brisbane, Adelaide, Perth, Canberra and Newcastle

- Inner regional—for example, Hobart, Launceston, Wagga Wagga, Bendigo and Murray Bridge
- Outer regional—for example, Darwin, Moree, Mildura, Cairns, Charters Towers, Whyalla and Albany
- Remote—for example, Port Lincoln, Esperance, Queenstown and Alice Springs
- Very remote—for example, Mount Isa, Cobar, Coober Pedy, Port Hedland, Tennant Creek and Norfolk Island.

Indigenous status

In this report, the term ‘Indigenous Australians’ is used to refer to persons identified as such in Australian hospital separations data and population data collections. For this report, the term ‘Other Australians’ includes all separations for persons identified as ‘not Indigenous’ and where Indigenous status was not stated.

Quality of Indigenous status data

The AIHW report *Indigenous identification in hospital separations data: quality report* (AIHW 2013) presents the latest findings on the quality of Indigenous identification in hospital separations data in Australia, based on studies conducted in public hospitals during 2011. Private hospitals were not included in the assessment. The results of the study indicate that, overall, the quality of Indigenous identification in hospital separations data was similar to that achieved in a previous study (AIHW 2010). However, the survey for the 2013 report was performed on larger samples for each jurisdiction/region and is therefore considered more robust than that for the previous study.

The report recommends using data from all jurisdictions in national analyses of Indigenous admitted-patient care for data from 2010–11 onwards.

Data quality statement: National Hospital Morbidity Database

The National Hospital Morbidity Database (NHMD) is a compilation of episode-level records from admitted-patient morbidity data collection systems in Australian hospitals. The data supplied are based on the National Minimum Data Set (NMDS) for admitted-patient care and include demographic, administrative and length-of-stay data, as well as data on the diagnoses of the patients, the procedures they underwent in hospital and external causes of injury and poisoning.

The purpose of the NMDS for admitted-patient care is to collect information about care provided to admitted patients in Australian hospitals. The scope of the NMDS is episodes of care for admitted patients in all public and private acute and psychiatric hospitals, free-standing day hospital facilities, and alcohol and drug treatment centres in Australia. Hospitals operated by the Australian Defence Force, correction authorities and in Australia’s offshore territories are not in scope, but some are included.

The reference period for this data set is 2017–18. A complete data quality statement for the NHMD is available online at <https://meteor.aihw.gov.au/content/index.phtml/itemId/181162>.

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Abbreviations

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
ASGS	Australian Statistical Geography Standard
ERP	estimated resident population
ICD 10 AM	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification
NSW	New South Wales
NHMD	National Hospital Morbidity Database
NISU	National Injury Surveillance Unit
NMDS	National Minimum Data Set

Symbols

n.p.	not publishable because of small numbers, confidentiality or other concerns about the quality of the data
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Glossary

Registry (METeOR). METeOR is Australia's central repository for health, community services and housing assistance metadata, or 'data about data'. It provides definitions for data for topics related to health and community services and specifications for related national minimum data sets. METeOR can be viewed on the AIHW website at www.meteor.aihw.gov.au.

acute: Having a short and relatively severe course.

acute care: See **care type**.

additional diagnosis: A condition or complaint either coexisting with the **principal diagnosis** or arising during the episode of **admitted-patient** care, episode of residential care or attendance at a health care establishment. METeOR identifier: 641014.

admitted patient: A patient who undergoes a hospital's admission process to receive treatment and/or care. This treatment and/or care is provided over a period of time and can occur in hospital and/or in the person's home (for hospital-in-the-home patients). METeOR identifier: 268957.

age-standardisation: A set of techniques used to remove, as far as possible, the effects of differences in age when comparing 2 or more populations.

care type: The overall nature of a clinical service provided to an **admitted patient** during an **episode of care** (admitted care), or the type of service provided by the hospital for boarders or posthumous organ procurement (care other than admitted care). METeOR identifier: 491557.

Admitted-patient care consists of:

- acute care
- rehabilitation care
- palliative care
- geriatric evaluation and management
- psychogeriatric care
- maintenance care
- newborn care
- other admitted-patient care—this is where the principal clinical intent does not meet the criteria for any of the above.

Care other than admitted care includes:

- posthumous organ procurement
- hospital boarder.

episode of care: The period of **admitted-patient care** between a formal or statistical admission and a formal or statistical **separation**, characterised by only 1 **care type**. METeOR identifier: 491557 (Care type). METeOR identifier: 268956 (Episode of admitted-patient care).

external cause: The environmental event, circumstance or condition given as the cause of injury, poisoning and other adverse effect. METeOR identifier: 514295.

hospital: A health-care facility established under Commonwealth, state or territory legislation as a hospital or a free-standing day procedure unit and authorised to provide treatment and/or care to patients. METeOR identifier: 268971.

International Classification of Diseases and Related Health Conditions (ICD): The World Health Organization's internationally accepted classification of diseases and related health conditions. The tenth revision, Australian modification (ICD-10-AM), is currently in use in Australian hospitals for admitted patients.

length of stay: The length of stay of an overnight patient is calculated by subtracting the date the patient is admitted from the date of **separation** and deducting days the patient was on leave. A **same-day patient** is allocated a length of stay of 1 day. METeOR identifier: 269982.

mode of admission: The mechanism by which a person begins an episode of **admitted-patient** care. METeOR identifier: 269976.

principal diagnosis: The diagnosis established, after study, to be chiefly responsible for occasioning an episode of **admitted-patient** care. METeOR identifier: 514273.

private hospital: A privately owned and operated institution, catering for patients who are treated by a doctor of their own choice. Patients are charged fees for accommodation and other services provided by the **hospital** and relevant medical and paramedical practitioners. **Acute care** and psychiatric hospitals are included, as are private free-standing day hospital facilities.

public hospital: A **hospital** controlled by a state or territory health authority. Public hospitals offer free diagnostic services, treatment, care and accommodation to all eligible patients.

same-day patient: An **admitted patient** who is admitted and separates on the same date.

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

separation rate: The total number of **episodes of care** for **admitted patients**, divided by the total number of persons in the population under study. Often presented as a rate per 10,000 or 100,000 members of a population. Rates may be crude or standardised.

separations: The total number of **episodes of care** for **admitted patients**, which can be total hospital stays (from admission to discharge, transfer or death) or portions of hospital stays beginning or ending in a change of type of care (for example, from acute to rehabilitation) that cease during a reference period. METeOR identifier: 270407.

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Related publications

- [*Australia's children*](#)
- [*Injury in Australia, 2017–18*](#)
- [*Hospitalised injury due to land transport crashes*](#)
- [*Hospitalised sports injury in Australia, 2016–17.*](#)
- [*Hospitalised assault injuries among men and boys.*](#)
- [*Hospitalised assault injuries among women and girls fact sheet.*](#)



Around 130,000 children and young people were hospitalised because of an injury in 2017–18, males outnumbering females by almost 2 to 1. The most common cause of hospitalised injury among children and young people was a fall of some type.

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