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Serious childhood community injury in New South Wales 2009–10

Candice Harris and Sophie Pointer

NSW GOVERNMENT
Office of Communities
Commission for Children & Young People

Flinders UNIVERSITY

INJURY RESEARCH AND STATISTICS SERIES No. 76

Australian Government
Australian Institute of Health and Welfare

Authoritative information and statistics to promote better health and wellbeing

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Australian Institute of Health and Welfare
Canberra
Cat. no. INJCAT 152

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This publication is part of the Australian Institute of Health and Welfare's Injury research and statistics series. A complete list of the Institute's publications is available from the Institute's website <www.aihw.gov.au>.

ISSN 1444-3791
ISBN 978-1-74249-389-3

Suggested citation
AIHW: Harris CE & Pointer SC 2012. Serious childhood community injury in New South Wales 2009–10. Injury research and statistics series no. 76. Cat. no. INJCAT 152. Canberra: AIHW.

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Published by the Australian Institute of Health and Welfare

Please note that there is the potential for minor revisions of data in this report. Please check the online version at <www.aihw.gov.au> for any amendments.

Contents

Foreword

We are pleased to introduce the inaugural surveillance report on serious child injury in New South Wales (NSW). This has been undertaken from funding generously provided by the NSW Commission for Children and Young People, by the National Injury Surveillance Unit (NISU) of the Australian Institute of Health and Welfare (AIHW).

Reducing injuries in children is a priority within the National Injury Prevention and Safety Promotion Plan (2004–2014) as well as a priority for NSW Government agencies.

Each year over 20,000 NSW children and young people (0–17) are hospitalised as a result of an injury. While many of these injuries are relatively minor and most children will go on to make a full recovery, some injuries are serious and full recovery is not possible. Injury in children at any age can impact on the transition into adulthood and have long-term impacts on quality of life.

We hope that the information provided in this report will be useful to Government and non-Government agencies in their work to understand and prevent child injury in NSW as well as other jurisdictions. It is a truism that much of the child injury identified in this report is preventable by action of Government and non-Government agencies in partnership with the community. While there have been reductions in injury among children and the community as a whole in some areas, reliable evidence such as that provided in this report points to areas where further improvements should be achievable.

We would like to thank the staff of the NISU and AIHW, for their work in researching and writing this report, and acknowledge the assistance of Commission staff in commenting on early drafts.

David Kalisch

Director

Australian Institute of Health and Welfare

Megan Mitchell

Commissioner

New South Wales Commission for Children and Young People

Abbreviations

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
ATV	all-terrain vehicle
CI	confidence interval
ERPs	estimated resident population
HDSC	Health Data Standards Committee
ICD-10-AM	International Classification of Diseases, 10th revision, Australian Modification
NCCH	National Centre for Classification in Health
NHMD	National Hospital Morbidity Database
NISU	National Injury Surveillance Unit
NMDS	National minimum data set
NSW	New South Wales
METeOR	Metadata Online Registry
WHO	World Health Organization

Symbols

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

Summary

This report provides summary data on hospitalised injury in New South Wales (NSW) resident children and young people (0–17) for the period 1 July 2009 to 30 June 2010. It also provides information on trends in injury between 1 July 1999 and 30 June 2010.

More than 23,000 children and young people (0–17) were hospitalised in 2009–10 as a result of an injury. Roughly equal numbers of boys and girls were hospitalised under the age of 5. There were more boys hospitalised than girls aged 5–14.

A total of 31 children died in hospital over this period as a result of injury, mainly transport-related.

The age-standardised injury rate of children and young people was just over 1,460 per 100,000 population. The rate of injury for males was 1,864 per 100,000 population and increased with age. In contrast, the rate of injury in females was 1,036 per 100,000. Similar rates were observed in the different age groups.

Causes of injury

Falls were the most commonly reported cause of hospitalised injury (39% of cases). Transport injuries were also common (14%). The most frequent cause of hospitalised falls involved playground equipment.

Age differences

Falls in the home were a frequent cause of injury for children aged 4 and under. Injury associated with burns, accidental poisoning by pharmaceuticals and drowning were also much more common in very young children. Transport injuries accounted for 20% of hospitalisations in young people aged 15–17. Pedal cycles were the most commonly reported cause of hospitalised transport injury in NSW children aged 0–14. Motorcycle rider injuries were more common in young people aged 15–17.

Sex differences

Males were more likely to be hospitalised because of transport accidents, falls and assault while females were more likely to be hospitalised for intentional self-harm injuries.

Trends over time

Significant declines in hospitalised injury since 1999 were seen in rates for poisoning by pharmaceuticals (average 6% decline per year) and poisoning by other substances (4% decline per year). Smaller but significant declines were also noted for drowning (3%), transport injuries (2%) and assault (2%).

1 Introduction

An injury is the physical damage (for example, a bruise, broken bone or brain damage) that results when the human body is suddenly or briefly subjected to intolerable levels of energy (Langley & Brenner 2004). There are many causes of injury, including being struck by an object (a car for example), cut by a knife, falling, or coming in contact with fire or with a toxic chemical; these are referred to as the external causes of injury. Injuries are further categorised into two main types—unintentional injuries (for example motor vehicle crashes, falls) and intentional injuries (for example assault, self-harm). Injuries reported here are defined as injuries usually sustained within the community setting such as in the home, workplace, educational institution, street or natural environment (Berry & Harrison 2007).

Serious hospitalised injuries were defined for this report as requiring admission to hospital as a result of the injury event. They can range from fractures, to catastrophic injuries such as spinal cord injury which result in life-long disability at a substantial cost to the health system.

This report describes the occurrence of injuries requiring hospitalisation in NSW resident children between 1 July 1999 and 30 June 2010.

Methods

The focus of this report is on NSW resident children and young people who sustained an injury that resulted in an admission to hospital. It should be noted that not all NSW children and young people included in this report were hospitalised in NSW. About 5% were hospitalised in a different state or territory (see Appendix A: Data issues for more information).

The NSW Commission for Children and Young People administers the Commission for Children and Young People Act 1998 No 146 which defines a child as a person under the age of 18 years. As a result, the age range covered in this report is birth to 17 years. It should be noted that the age categories chosen for this report have been guided by the Commission. Different age ranges may have resulted in different patterns of results when comparisons were made between age groups.

Hospital separations data

NSW hospital separations data for children and young people were provided from the Australian Institute of Health and Welfare (AIHW) National Hospital Morbidity Database (NHMD). A separation was defined as:

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

Selecting injury and poisoning cases

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

- Hospital separations occurring in NSW resident children and young people aged 0–17 from 1 July 2009 to 30 June 2010; and
- the Mode of admission was not a transfer from another acute hospital; and

- the principal diagnosis code was in the range S00–T75 or T79 according to the 6th edition of ICD-10-AM (NCCH 2008).

Trend analysis was based on records that met the following criteria:

- Hospital separations occurring in NSW resident children and young people aged 0–17 from 1 July 1999 to 30 June 2010; and
- the Mode of admission was not a transfer from another acute hospital; and
- the principal diagnosis code was in the range S00–T75 or T79 (see Appendix A: Data issues section for more detail on ICD-10-AM editions over the time period).

Episodes of hospital care that occur in emergency departments and outpatient settings were not included in this report, nor were injuries that occur in the context of surgical or medical care.

Appendix A contains more information on the selection criteria including definitions of terms and an explanation of the method used for case estimation.

Injury severity

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

2 Community injury

2.1 Overview

During 2009–10, there were 23,879 cases of NSW resident children and young people aged 0–17 hospitalised due to all causes of community injury (Table 2.1). The rate of injury was higher for males than females, with an overall ratio of 1.9:1. About 6% of cases were high threat to life with males having a slightly higher proportion of high threat to life cases compared with females.

Table 2.1: Key indicators for hospitalised injury, NSW, 2009–10

Indicator	Males	Females	All children and young people
Separations due to community injury	17,380	9,153	26,533
Cases due to community injury[(a)]	15,624	8,255	23,879
Age-standardised rate/100,000 population[(b)]	1,863.9	1,036.2	1,460.4
Total patient days[(c)]	30,823	15,381	46,204
Mean length of stay (days)	2.0	1.9	1.9
Cases with a high threat to life[(d)]	945	414	1,359
Percentage of cases with a high threat to life	6.0	5.0	5.7

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

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

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

(d) High threat to life cases have ICD-based Injury Severity Score <0.941 following the method of (Stephenson et al. 2003).

During 2009–10, 31 children and young people hospitalised as a result of an injury died in hospital (data not shown). The highest proportion of deaths occurred as a result of transport injury (45%) followed by other unintentional injuries (23%) (data not shown). Due to small case numbers, further analysis of death by external cause is not presented.

An examination of hospitalised injury cases by age group reveals a number of differences between males and females (Table 2.2). The number of injured males was roughly equivalent to females in the 0–4 age range. In the older age groups, there were more injured males than females. The greatest difference between males and females can be seen in the 15–17 age group, where the ratio of cases was 2.5:1.

Table 2.2: Cases of hospitalised injury, by sex and age, NSW, 2009–10

	Age group										All children and young people	
	<1		1–4		5–8		9–14		15–17			
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Males	320	52.2	2,886	57.6	2,489	58.9	5,556	70.4	4,373	71.2	15,624	65.4
Females	293	47.8	2,123	42.4	1,734	41.1	2,337	29.6	1,768	28.8	8,255	34.6
Total	**613**	**100**	**5,009**	**100**	**4,223**	**100**	**7,893**	**100**	**6,141**	**100**	**23,879**	**100**

Figure 2.1 presents the age-specific rates of injury for males and females by age group. The rate of injury for males was highest in the older age groups. The highest rate of injury occurred in 15–17 year olds at 3,024 cases per 100,000 population. In contrast the rate of injury in females across the age categories was similar. The greatest difference in rate of injury between males and females occurred at 15–17 years with the rate of injury in females at 1,289 cases per 100,000 population.

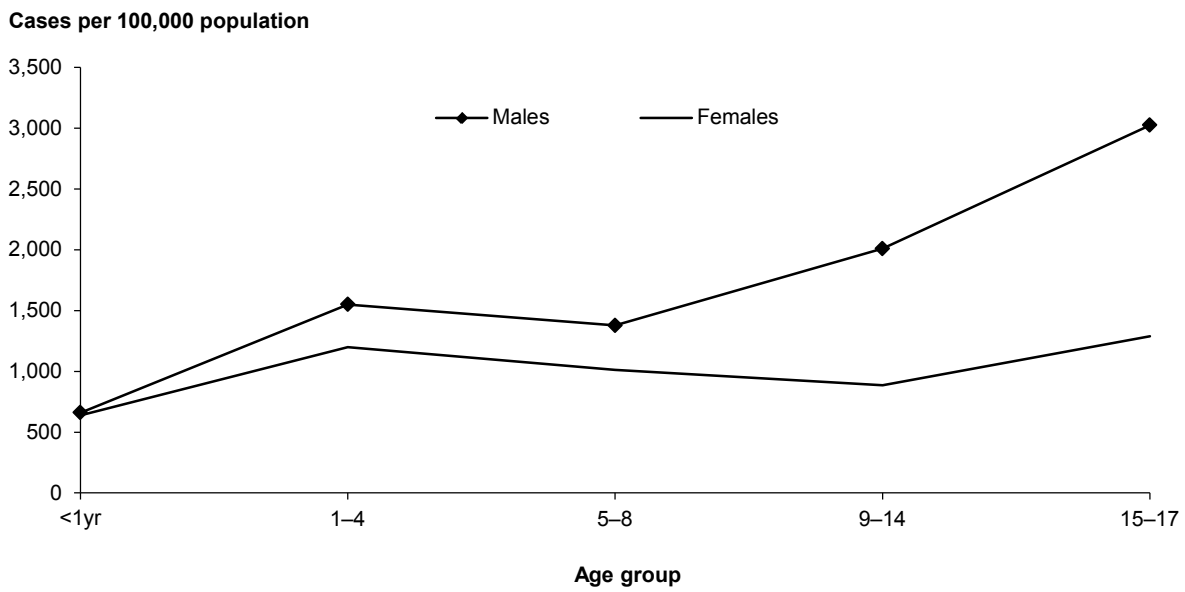


Figure 2.1: Age-specific rates of hospitalised injury, by age and sex, NSW, 2009–10

2.2 External causes of injury

Analyses presented in this and subsequent chapters were based on the first occurring external cause code in the hospital record. Cases with a principal diagnosis of S00–T75, T79 were included in the total of Table 2.3, 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 cases meet the principal diagnosis definition of community injury but lack a meaningful external cause. For cases of hospitalised injury in NSW children and young people 45 cases lacked a meaningful external cause.

During 2009–10, *Falls* were the most common external cause for both males (39%) and females (39%) (Table 2.3). Other unintentional injury was the second most common cause of hospitalised injury for both males (36%) and females (31%) followed by transport injuries, 16% for males and 12% for females.

Note that *Other unintentional* injuries is a broad category which includes the following external cause categories:

- Exposure to inanimate mechanical forces (W20–W49)
- Exposure to animate mechanical forces (W50–W64)
- 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)

In terms of the number of cases, males outnumbered females for all external causes of injury other than self-inflicted harm and poisoning by pharmaceuticals. The highest ratio between males and females (3.7:1) was seen in cases of assault. A higher proportion of females were hospitalised for intentional self-harm compared with males (females 8% versus males 1%).

Table 2.3: Cases of hospitalised injury, by external cause group and sex, NSW, 2009–10

	Males		Females		All children and young people		
External cause	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**Ratio**
Transportation	2,436	15.6	983	11.9	3,419	14.3	2.5
Drowning	47	0.3	38	0.5	85	0.4	1.2
Poisoning, pharmaceuticals	215	1.4	226	2.7	441	1.8	1.0
Poisoning, other substances	95	0.6	73	0.9	168	0.7	1.3
Falls	6,049	38.8	3,236	39.3	9,285	38.9	1.9
Exposure to heat, fire, smoke and hot substances	391	2.5	253	3.1	644	2.7	1.5
Other unintentional	5,613	36.0	2,557	31.0	8,170	34.2	2.2
Intentional, self-inflicted	193	1.2	658	8.0	851	3.6	3.4
Intentional, inflicted by another	442	2.8	121	1.5	563	2.4	3.7
Undetermined intent	112	0.7	96	1.2	208	0.9	1.2
Total[(a)]	**15,624**	**100**	**8,255**	**100**	**23,879**	**100.0**	**1.9**

(a) Includes cases with a first reported external cause code for complications of surgical and medical care, and cases with no first external cause code.

External causes of injury by age

Differences in the proportion of external causes of injury can also be seen according to age (Table 2.4). While the top two types of external cause, *Falls* (39%) and other unintentional (34%) were the highest in most of the age categories, differences emerge in the 15–17 category. Transport injuries were more common in the older age groups.

<1 year

Falls (46%) were the most commonly reported external cause of injury for children under 1, followed by other unintentional injury (30%). Burns associated with exposure to heat, fire, smoke and hot substances (12%) comprised the third most significant category. Combined, these three causes explain 88% of all causes for this age group.

1–4 years

Falls (42%) were the most commonly reported external cause of hospitalised injury in children aged 1–4 followed by other unintentional injury (36%). The next most common category was burns associated with exposure to heat, fire, smoke and hot substances (6%) then poisoning by pharmaceuticals (6%). These four categories account for 91% of all injuries for children 1–4 years. Children aged 1–4 represent 50% of all burns associated with exposure to heat, fire, smoke and hot substances and 69% of poisoning by pharmaceuticals injuries.

5–8 years

Falls (56%) were the most commonly reported external cause for children aged 5–8, followed by other unintentional injury (29%) and transport injuries (12%). These categories combined account for 96% of causes for this age group.

9–14 years

Falls (43%) were the most commonly reported external cause for children aged 9–14, followed by other unintentional injury (32%) and transport injuries (19%). These categories combined account for 94% of causes for this age group.

15–17 years

*O*ther unintentional injury (40%) was the most commonly reported external cause in young people aged 15–17. After other unintentional injury, the next most frequent external cause was transport injuries (20%) followed by *Falls* (19%). As a proportion of the total intentional injuries, young people aged 15–17 represent 77% of all *Intentional self-harm* injuries and 72% of all *Assault* related injuries.

Table 2.4: Cases of hospitalised injury, by external cause and age, NSW, 2009–10

	Age group										All children and young people	
	<1		1–4		5–8		9–14		15–17			
External cause	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Transportation	9	1.5	232	4.6	511	12.1	1,461	18.5	1,206	19.7	3,419	14.3
Drowning	11	1.8	54	1.1	6	0.1	9	0.1	5	0.1	85	0.4
Poisoning, pharmaceuticals	19	3.1	303	6.1	29	0.7	28	0.4	62	1.0	441	1.8
Poisoning, other substances	8	1.3	89	1.8	14	0.3	29	0.4	28	0.5	168	0.7
Falls	278	45.6	2,121	42.4	2,342	55.6	3,393	43.0	1,151	18.8	9,285	38.9
Fires/burns/scalds	74	12.1	322	6.4	79	1.9	96	1.2	73	1.2	644	2.7
Other unintentional	182	29.8	1,817	36.3	1,200	28.5	2,532	32.1	2,439	39.8	8,170	34.3
Intentional, self-inflicted	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	192	2.4	653	10.7	851	3.6
Intentional, inflicted by another	19	3.1	22	0.4	16	0.4	105	1.3	401	6.5	563	2.4
Undetermined intent	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	38	0.5	109	1.8	208	0.9
Total[(a)]	**613**	**100**	**5,009**	**100**	**4,223**	**100**	**7,893**	**100**	**6,141**	**100**	**23,879**	**100**

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

(a) Includes cases of complications of surgical and medical care, and cases with no first external cause code.

2.3 Principal diagnosis

Table 2.5 presents the principal diagnoses for cases of hospitalised injury by sex. While the proportions of cases in the principal diagnosis categories were similar for males and females there were a few differences. There was a slightly higher proportion of males with *Injuries to the elbow and forearm* (24%) compared with females (22%) and a higher proportion of males with *Injuries to the knee and lower leg* (11% versus 7% respectively).

Table 2.5: Cases of hospitalised injury, by principal diagnosis and sex, NSW, 2009–10

	Males		Females		
Principal diagnosis	**No.**	**Per cent**	**No.**	**Per cent**	**Ratio**
Injuries to the head	3,385	21.7	1,684	20.4	2.0
Injuries to the neck	262	1.7	169	2.0	1.6
Injuries to the thorax	148	0.9	72	0.9	2.1
Injuries to the abdomen, lower back, lumbar spine & pelvis	464	3.0	252	3.1	1.8
Injuries to the shoulder & upper arm	1,129	7.2	642	7.8	1.8
Injuries to the elbow & forearm	3,665	23.5	1,793	21.7	2.0
Injuries to the wrist & hand	2,261	14.5	840	10.2	2.7
Injuries to the hip & thigh	416	2.7	161	2.0	2.6
Injuries to the knee & lower leg	1,660	10.6	589	7.1	2.8
Injuries to the ankle & foot	616	3.9	342	4.1	1.8
Injuries involving multiple body regions	n.p.	n.p.	n.p.	n.p.	0.3
Injuries to unspecified parts of trunk, limb or body region	78	0.5	44	0.5	1.8
Effects of foreign body entering through natural orifice	375	2.4	353	4.3	1.1
Burns	483	3.1	303	3.7	1.6
Poisoning by drugs, medicaments & biological substances	373	2.4	787	9.5	0.5
Toxic effects of non-medical substances	186	1.2	147	1.8	1.3
Other & unspecified effects of causes	92	0.6	65	0.8	1.4
Certain early complications of trauma	n.p.	n.p.	n.p.	n.p.	4.8
Total	**15,624**	**100**	**8,255**	**100**	1.9

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

Principal diagnosis by age

Differences in the principal diagnosis of injury can be seen according to age (Table 2.6).

<1 year

The most commonly reported principal diagnosis for children under 1 was *Injuries to the head* (52%). The next most common principal diagnosis for this age group was *Burns* (13%).

1–4 years

Injuries to the head (33%) were the most commonly reported principal diagnosis for children aged 1–4. For all children and young people (0–17), 33% of head injuries occurred in this age group.

5–8 years

Injuries to the elbow and forearm (35%) were the most commonly reported principal diagnoses for children aged 5–8, followed by *Injuries to the head* (18%) then *Injuries to the shoulder and upper arm* (13%). For all children (0–17), 31% of *Injuries to the shoulder and upper arm* occurred in the 5–8 age group.

9–14 years

Injuries to the elbow and forearm (33%) were the most commonly reported principal diagnoses for children aged 9–14. *Injuries to the head* (15%) were the next most frequent principal diagnosis, followed by *Injuries to the wrist and hand* (13%) and *Injuries to the knee and lower leg* (12%).

15–17 years

Injuries to the wrist and hand (19%) were the most commonly reported principal diagnoses for young people aged 15–17, followed closely by *Injuries to the head* (18%), then *Injuries to the knee and lower leg* (14%), *Injuries to the elbow and forearm* (12%) and *Poisoning by drugs, medicaments and biological substances* (10%). For all children and young people aged 0–17, 53% of *Poisoning by drugs, medicaments and biological substances* occurred in the 15–17 age group as well as 50% of *Injuries to the thorax* and 40% of *Injuries to the head*.

Table 2.6: Cases of hospitalised injury, by principal diagnosis and age, NSW, 2009–10

	Age group										All children and young people	
	<1		1–4		5–8		9–14		15–17			
Principal diagnosis	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Injuries to the head	321	52.4	1,669	33.3	777	18.4	1,191	15.1	1,111	18.1	5,069	21.2
Injuries to the neck	n.p.	n.p.	n.p.	n.p.	53	1.3	174	2.2	174	2.8	431	1.8
Injuries to the thorax	n.p.	n.p.	n.p.	n.p.	21	0.5	72	0.9	110	1.8	220	0.9
Injuries to the abdomen, lower back, lumbar spine & pelvis	n.p.	n.p.	n.p.	n.p.	100	2.4	269	3.4	285	4.6	716	3.0
Injuries to the shoulder & upper arm	18	2.9	360	7.2	548	13.0	459	5.8	386	6.3	1,771	7.4
Injuries to the elbow & forearm	10	1.6	603	12.0	1,474	34.9	2,640	33.4	731	11.9	5,458	22.9
Injuries to the wrist & hand	25	4.1	521	10.4	388	9.2	1,003	12.7	1,164	19.0	3,101	13.0
Injuries to the hip & thigh	28	4.6	121	2.4	74	1.8	219	2.8	135	2.2	577	2.4
Injuries to the knee & lower leg	6	1.0	193	3.9	238	5.6	964	12.2	848	13.8	2,249	9.4
Injuries to the ankle & foot	11	1.8	179	3.6	160	3.8	343	4.3	265	4.3	958	4.0
Injuries involving multiple body regions	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	8	0.0
Injuries to unspecified parts of trunk, limb or body region	6	1.0	37	0.7	17	0.4	39	0.5	23	0.4	122	0.5
Effects of foreign body entering through natural orifice	51	8.3	356	7.1	168	4.0	90	1.1	63	1.0	728	3.0
Burns	78	12.7	364	7.3	101	2.4	143	1.8	100	1.6	786	3.3
Poisoning by drugs, medicaments & biological substances	20	3.3	308	6.1	33	0.8	183	2.3	616	10.0	1,160	4.9
Toxic effects of non-medical substances	10	1.6	123	2.5	53	1.3	71	0.9	76	1.2	333	1.4
Other & unspecified effects of causes	22	3.6	67	1.3	13	0.3	19	0.2	36	0.6	157	0.7
Certain early complications of trauma	n.p.	n.p.	5	0.1	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	35	0.1
Total	**613**	**100**	**5,009**	**100**	**4,223**	**100**	**7,893**	**100**	**6,141**	**100**	**23,879**	**100**

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

2.4 Body region injured

An analysis of the body region injured revealed some differences between males and females (Figure 2.2). Males (45%) had a slightly higher proportion of injuries to their shoulder and upper limbs compared with females (40%). Males (22%) also had a higher proportion of head injuries compared with females (20%).

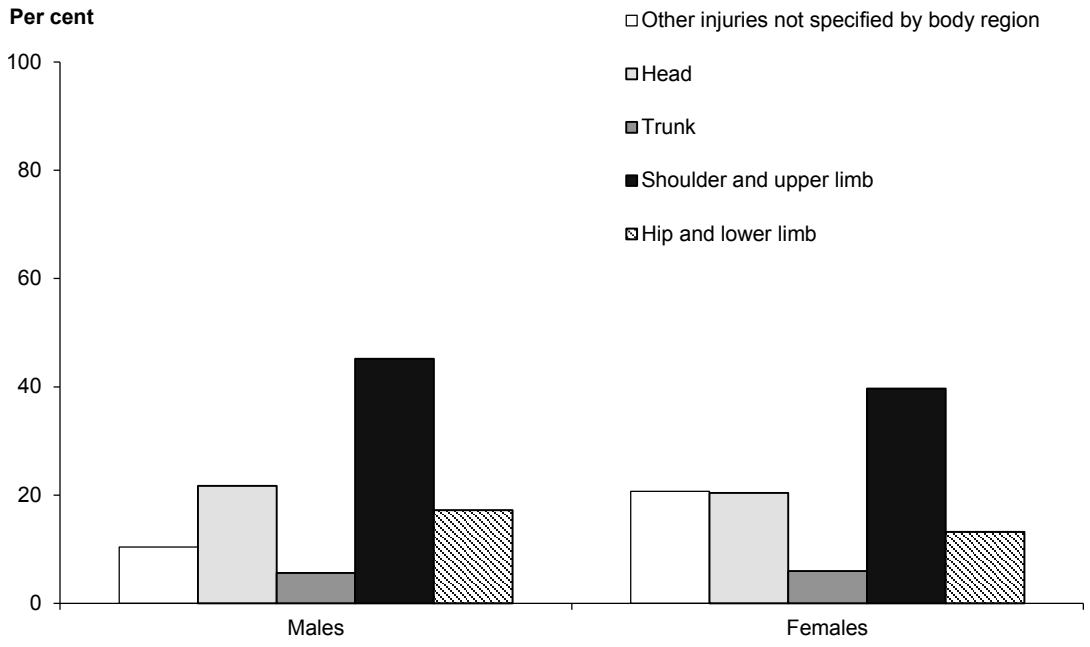


Figure 2.2: Body region injured, proportions and sex, NSW, 2009–10

A breakdown of body region injured by age revealed much stronger differences between the age groups (Figure 2.3). The proportion of shoulder and upper limb injuries increased with age. In contrast the proportion of head injuries was highest in the younger age groups.

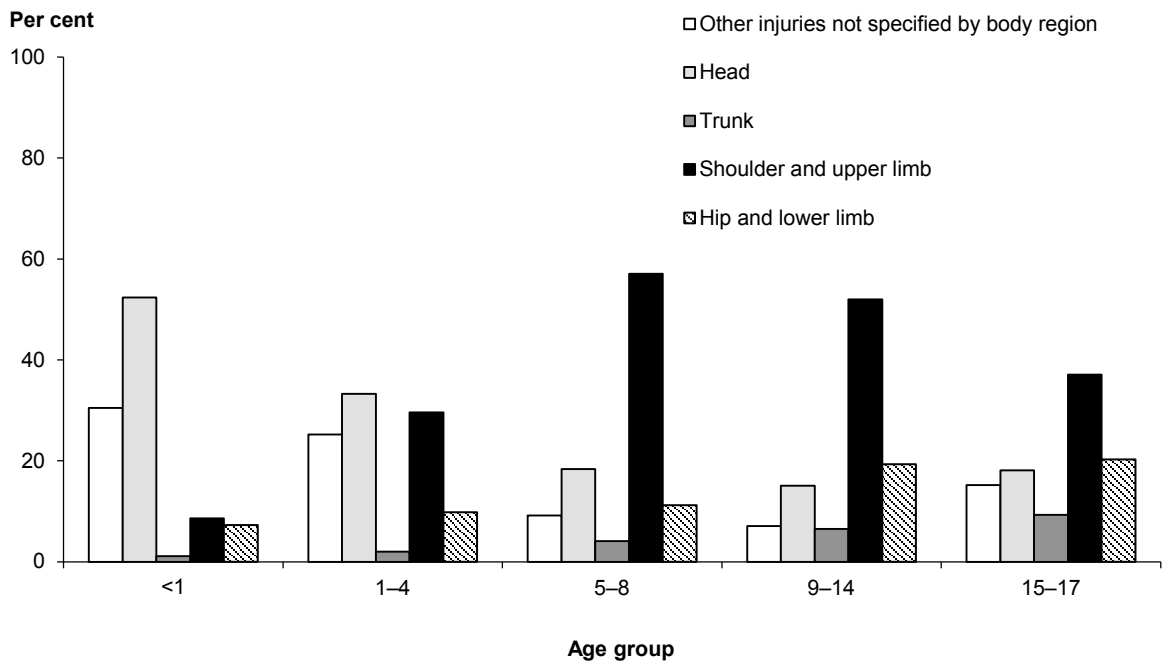


Figure 2.3: Body region injured, proportions and age, NSW, 2009–10

2.5 Place of injury

During 2009–10, almost half of all cases recorded an unspecified or missing place of occurrence (Table 2.7) (see Data issues for more information on place of injury coding). Similar proportions of specified places of occurrence were found in cases for males and females, 56% and 54% respectively. For males with a specified place of occurrence, 33% of injuries occurred within the *Home* followed by 26% at a *Sports or athletics area* (Figure 2.4). Of the specified total, females were most likely to be injured within the *Home* (52%), followed by *School* (12%), then *Sports or athletics area* (10%) (Figure 2.4). Males represent a total of 83% of all injuries in this location.

Table 2.7: Cases of hospitalised injury, by place of injury and sex, NSW, 2009–10

	Males		Females		All children and young people		
Place of occurrence	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**Ratio**
Home	2,779	17.8	2,302	27.9	5,081	21.3	1.2
Residential institution	19	0.1	22	0.3	41	0.2	0.9
School	1,209	7.7	540	6.5	1,749	7.3	2.2
Health service area	53	0.3	63	0.8	116	0.5	0.8
Other specified institution and public administrative area	56	0.4	37	0.4	93	0.4	1.5
Sports and athletics area	2,210	14.1	451	5.5	2,661	11.1	4.9
Street and highway	985	6.3	456	5.5	1,441	6.0	2.2
Trade and service area	144	0.9	97	1.2	241	1.0	1.5
Industrial and construction area	n.p.	n.p.	n.p.	n.p.	40	0.2	19.0
Farm	189	1.2	94	1.1	283	1.2	2.0
Other specified place of occurrence	853	5.5	395	4.8	1,248	5.2	2.2
Unspecified place of occurrence	7,077	45.3	3,789	45.9	10,866	45.5	1.9
Place not reported/not applicable	n.p.	n.p.	n.p.	n.p.	19	0.1	1.7
Total	**15,624**	**100**	**8,255**	**100**	**23,879**	**100**	**1.9**

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

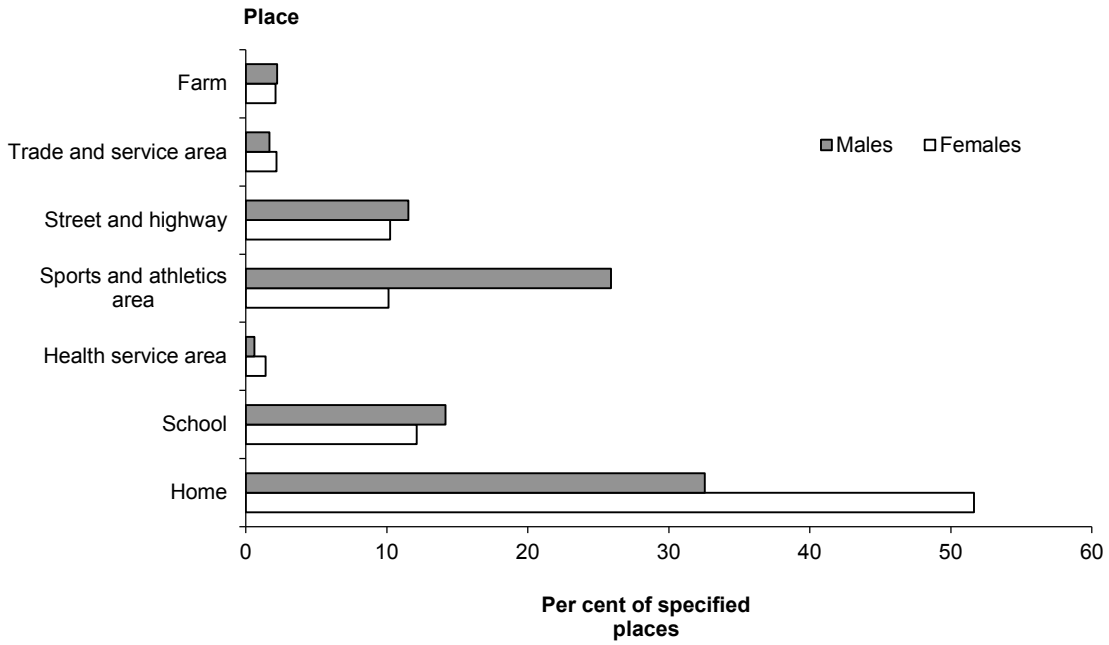


Figure 2.4: Proportion of selected specified places of occurrence, by sex, NSW, 2009–10

Place of injury by age

Differences in the place of occurrence of injuries can be seen according to age (Table 2.8). The *Home* was the most commonly specified place of occurrence for younger children. The following results are described in terms of the total number of specified places of occurrence; that is excluding cases coded to *Other specified place of occurrence*, *Unspecified place of occurrence*, and *Place not reported/not applicable*.

<1 year

The majority of injuries in children aged under 1 occurred in the *Home* (*n* = 363, 89%).

1–4 years

The majority of injuries in children aged 1–4 occurred in the *Home* (*n* = 2,209, 78%).

5–8 years

The *Home* was the place of occurrence of injury for 42% of 5–8 year olds followed by *School* (25%).

9–14 years

Injuries in a *Sports or athletic area* accounted for 32% of locations specified for children aged 9–14. The next most commonly reported place for injury was in the *Home* (20%) followed by *School* (19%).

15–17 years

Injuries in a *Sports or athletic area* accounted for 33% of locations specified for young people aged 15–17, followed by the *Home* (22%) and *Street and highway (*20%).

Table 2.8: Cases of hospitalised injury, by place of injury and age, NSW, 2009–10

	Age group								All children and young people	
	0–4		5–8		9–14		15–17			
Place of occurrence	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Home	2,572	45.8	902	21.4	844	10.7	735	12.0	5,053	21.2
Residential institution	n.p.	n.p.	n.p.	n.p.	12	0.2	21	0.3	41	0.2
School	146	2.6	542	12.8	796	10.1	265	4.3	1,749	7.3
Health service area	34	0.6	6	0.1	29	0.4	47	0.8	116	0.5
Other specified institution and public administrative area	n.p.	n.p.	20	0.5	41	0.5	n.p.	n.p.	93	0.4
Sports and athletics area	26	0.5	168	4.0	1,367	17.3	1,100	17.9	2,661	11.2
Street and highway	110	2.0	170	4.0	504	6.4	657	10.7	1,441	6.0
Trade and service area	85	1.5	37	0.9	29	0.4	90	1.5	241	1.0
Industrial and construction area	n.p.	n.p.	n.p.	n.p.	1	0.0	37	0.6	40	0.2
Farm	24	0.4	41	1.0	133	1.7	85	1.4	283	1.2
Other specified place of occurrence	202	3.6	243	5.8	488	6.2	315	5.1	1,248	5.2
Unspecified place of occurrence	2,386	42.5	2,081	49.3	3,636	46.1	2,763	45.1	10,866	45.6
Place not reported/not applicable	6	0.1	n.p.	n.p.	7	0.1	n.p.	n.p.	19	0.1
Total	**5,612**	**100**	**4,219**	**100**	**7,887**	**100**	**6,133**	**100**	**23,851**	**100**

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

Note: Due to small case numbers, counts for children under 1 were combined with 1–4.

2.6 Activity at time of injury

For all children and young people during 2009–10, 52% of cases had an unspecified activity at the time of injury (Table 2.9 and Table 2.10) (see Data issues for more information on activity at time of injury coding). Of the specified activities, the most common was *While engaged in sports* (45%) with 5,174 cases. Males were more likely than females to report being injured while playing sport.

Table 2.9: Cases of hospitalised injury, by activity at time of injury and sex, NSW, 2009–10

	Males		Females		
Activity	**No.**	**Per cent**	**No.**	**Per cent**	**Ratio**
While engaged in sports	4,083	26.1	1,091	13.2	3.7
While engaged in leisure	1,419	9.1	808	9.8	1.8
While working for income	135	0.9	23	0.3	5.9
While engaged in other types of work	184	1.2	98	1.2	1.9
While resting, sleeping, eating, etc.	272	1.7	245	3.0	1.1
Other specified activity	1,716	11.0	1,357	16.4	1.3
Unspecified activity	7,769	49.7	4,609	55.8	1.7
Activity not reported/not applicable	46	0.3	24	0.3	1.9
Total	**15,624**	**100**	**8,255**	**100**	**1.9**

Activity by age

Differences in activity according to age were apparent, essentially reflecting the increased participation in sport as children age. The following results are described in terms of the number of specified activities at the time of injury.

<1 year

The most commonly reported activity in children less than 1 year of age was *While resting, sleeping, or eating* (49%).

1–4 years

While engaged in leisure was the most commonly reported activity for 35% of 1–4 year olds.

5–8 years

The most commonly specified activity at time of injury for 5–8 years was *While engaged in leisure* activities (36%). Another commonly report activity was *While engaged in sports* (26%).

9–14 years

While engaged in sports accounted for 61% of the specified total in 9–14 years. Another commonly report activity was *While engaged in leisure* (16%).

15–17 years

The most common activity for young people aged 15–17 was *While engaged in sports* with 58% of the specified activity total.

Table 2.10: Cases of hospitalised injury, by activity at time of injury and age, NSW, 2009–10

	Age group										All children and young people	
	<1		1–4		5–8		9–14		15–17			
Activity	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
While engaged in sports	n.p.	n.p.	n.p.	n.p.	533	12.6	2,755	34.9	1,764	28.7	5,174	21.7
While engaged in leisure	8	1.3	604	12.1	745	17.6	701	8.9	169	2.8	2,227	9.3
While working for income	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	10	0.1	147	2.4	158	0.7
While engaged in other types of work	n.p.	n.p.	13	0.3	53	1.3	118	1.5	96	1.6	282	1.2
While resting, sleeping, eating, etc.	77	12.6	197	3.9	82	1.9	106	1.3	55	0.9	517	2.2
Other specified activity	63	10.3	786	15.7	621	14.7	790	10	813	13.2	3,073	12.9
Unspecified activity	456	74.4	3,272	65.3	2,176	51.5	3,393	43	3,081	50.2	12,378	51.8
Activity not reported/not applicable	6	1.0	n.p.	n.p.	n.p.	n.p.	20	0.3	16	0.3	70	0.3
Total	**613**	**100**	**5,009**	**100**	**4,223**	**100**	**7,893**	**100**	**6,141**	**100**	**23,879**	**100**

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

2.7 Seasonal variation

During 2009–10, there was little variation by of season of injury by sex (Table 2.11 and Figure 2.5). For males the highest proportion of injuries occurred in autumn (27%) and the lowest in summer (24%). For females the highest proportion of injuries occurred in spring (26%) and the lowest in winter (24%). (See Data issues for information on classification of season of injury.)

Table 2.11: Cases of hospitalised injury, by season of injury and sex, NSW, 2009–10

	Males		Females		
Season	Number	Per cent	Number	Per cent	Ratio
Summer	3,769	24.1	2,054	24.9	1.8
Autumn	4,222	27.0	2,109	25.5	2.0
Winter	3,794	24.3	1,944	23.5	2.0
Spring	3,839	24.6	2,148	26.0	1.8
Total	**15,624**	**100**	**8,255**	**100**	**1.9**

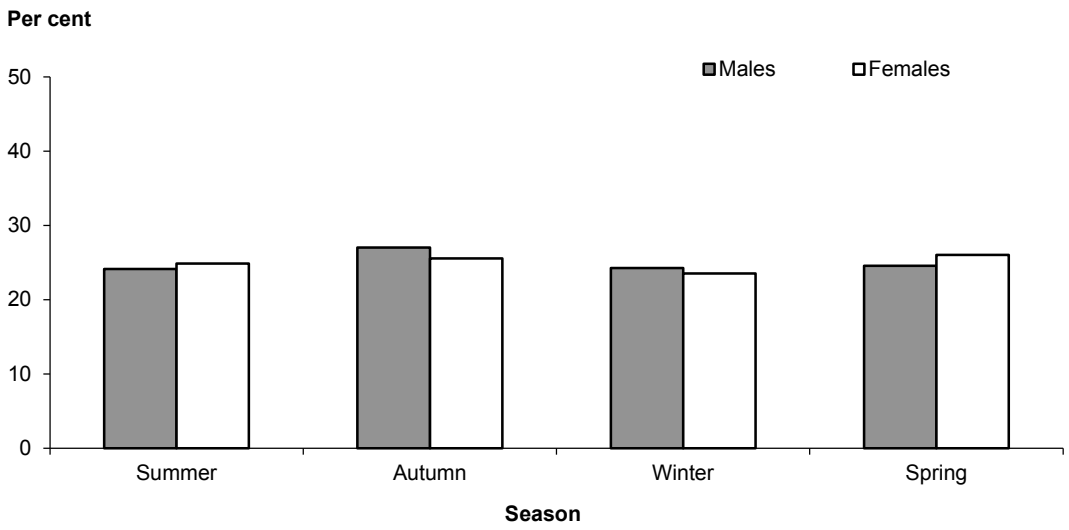


Figure 2.5: Season of injury, by sex, NSW, 2009–10

Season of injury by age

There were slight variations in the season of injury by age group (Table 2.12).

<1 year

Children in this age group were most likely to be injured in winter (26%).

1–4 years

Children in this age group were most likely to be injured in summer (27%).

5–8 years

Children in this age group were most likely to be injured in autumn (27%).

9–14 years

Children in this age group were most likely to be injured in autumn (27%).

15–17 years

Young people in this age group were most likely to be injured in autumn (27%).

Table 2.12: Cases of hospitalised injury, by season of injury and age, NSW, 2009–10

	Age group										All children and young people	
	<1		1–4		5–8		9–14		15–17			
Season	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Summer	151	24.6	1,338	26.7	1,127	26.7	1,825	23.1	1,382	22.5	5,823	24.4
Autumn	151	24.6	1,252	25.0	1,149	27.2	2,106	26.7	1,673	27.2	6,331	26.5
Winter	161	26.3	1,124	22.4	901	21.3	1,935	24.5	1,617	26.3	5,738	24.0
Spring	150	24.5	1,295	25.9	1,046	24.8	2,027	25.7	1,469	23.9	5,987	25.1
Total	**613**	**100**	**5,009**	**100**	**4,223**	**100**	**7,893**	**100**	**6,141**	**100**	**23,879**	**100**

Month of injury

An examination of injury by month of occurrence revealed only small differences in hospitalised injury for males and females (Table 2.13 and Figure 2.6). The lowest proportion of injuries for males and females occurred in July.

Table 2.13: Cases of hospitalised injury, by month and sex, NSW, 2009–10

	Males		Females		
Month	Number	Per cent	Number	Per cent	Ratio
January	1,238	7.9	692	8.4	1.8
February	1,248	8.0	695	8.4	1.8
March	1,416	9.1	709	8.6	2.0
April	1,400	9.0	747	9.0	1.9
May	1,406	9.0	653	7.9	2.2
June	1,216	7.8	642	7.8	1.9
July	1,118	7.2	572	6.9	2.0
August	1,460	9.3	730	8.8	2.0
September	1,335	8.5	731	8.9	1.8
October	1,258	8.1	679	8.2	1.9
November	1,246	8.0	738	8.9	1.7
December	1,283	8.2	667	8.1	1.9
Total	**15,624**	**100**	**8,255**	**100**	**1.9**

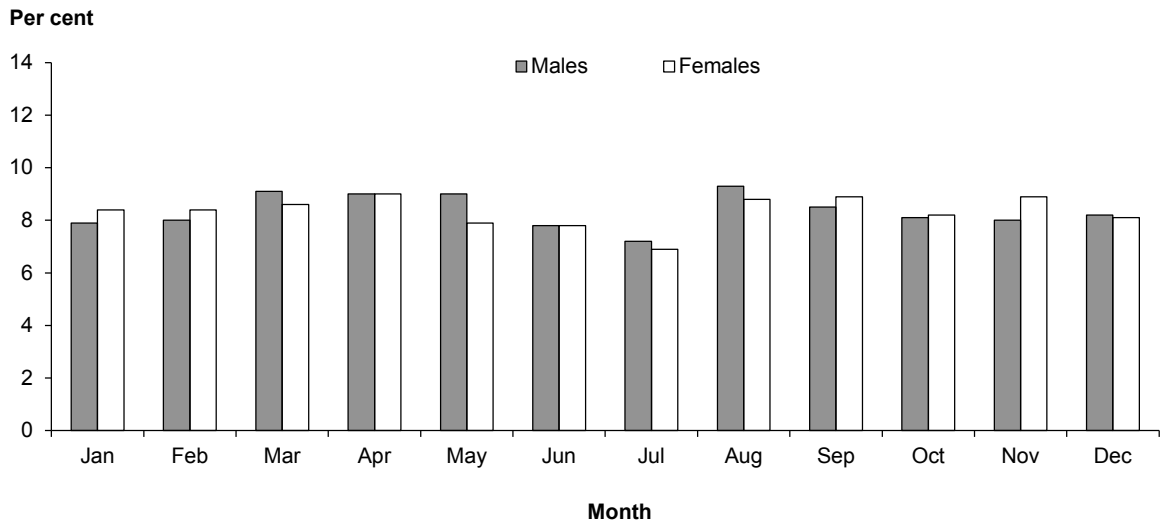


Figure 2.6: Month of injury, by sex, 0–17 years, NSW, 2009–10

Month of injury by age

An examination of month of injury by age also revealed very little difference in the proportion of hospitalised injuries occurring in each month for each age group (Table 2.14).

<1 year

Children aged under 1 had the highest proportion of injuries in both March (10%) and November (10%).

1–4 years

Children 1–4 years had the highest proportion of injuries in January (9%).

5–8 years

Children 5–8 years had the highest proportion of injuries in March (10%).

9–14 years

Children 9–14 years had the highest proportion of injuries in August (10%).

15–17 years

Young people aged 15–17 had higher proportions of injury in May (10%) and August (9%).

Table 2.14: Cases of hospitalised injury, by month of injury and age, NSW, 2009–10

	Age group										All children and young people	
	<1		1–4		5–8		9–14		15–17			
Month	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
January	57	9.3	469	9.4	372	8.8	596	7.6	436	7.1	1,930	8.1
February	49	8.0	421	8.4	380	9.0	631	8.0	462	7.5	1,943	8.1
March	64	10.4	404	8.1	421	10.0	699	8.9	537	8.7	2,125	8.9
April	48	7.8	464	9.3	409	9.7	726	9.2	500	8.1	2,147	9.0
May	39	6.4	384	7.7	319	7.6	681	8.6	636	10.4	2,059	8.6
June	51	8.3	404	8.1	262	6.2	614	7.8	527	8.6	1,858	7.8
July	53	8.6	316	6.3	293	6.9	565	7.2	463	7.5	1,690	7.1
August	57	9.3	404	8.1	346	8.2	756	9.6	627	10.2	2,190	9.2
September	47	7.7	449	9.0	358	8.5	668	8.5	544	8.9	2,066	8.7
October	41	6.7	401	8.0	361	8.5	667	8.5	467	7.6	1,937	8.1
November	62	10.1	445	8.9	327	7.7	692	8.8	458	7.5	1,984	8.3
December	45	7.3	448	8.9	375	8.9	598	7.6	484	7.9	1,950	8.2
Total	**613**	**100**	**5,009**	**100**	**4,223**	**100**	**7,893**	**100**	**6,141**	**100**	**23,879**	**100**

2.8 Trends over time

The number of cases of hospitalised injury in NSW children and young people was fairly stable over time (Table 2.15). The highest number of cases was recorded in 2005–06 (n = 24,754) and the lowest in 2008–09 (n = 22,619). For males, the highest number of cases occurred in 2006–07 (n = 16,230) and the lowest in 2007–08 (n = 15,405). For females, the highest number of cases occurred in 2003–04 (n = 8,772) and the lowest in 2008–09 (n = 7,642).

Table 2.15: Cases of hospitalised injury, by age, sex and year of hospitalisation, NSW, 1999–2010

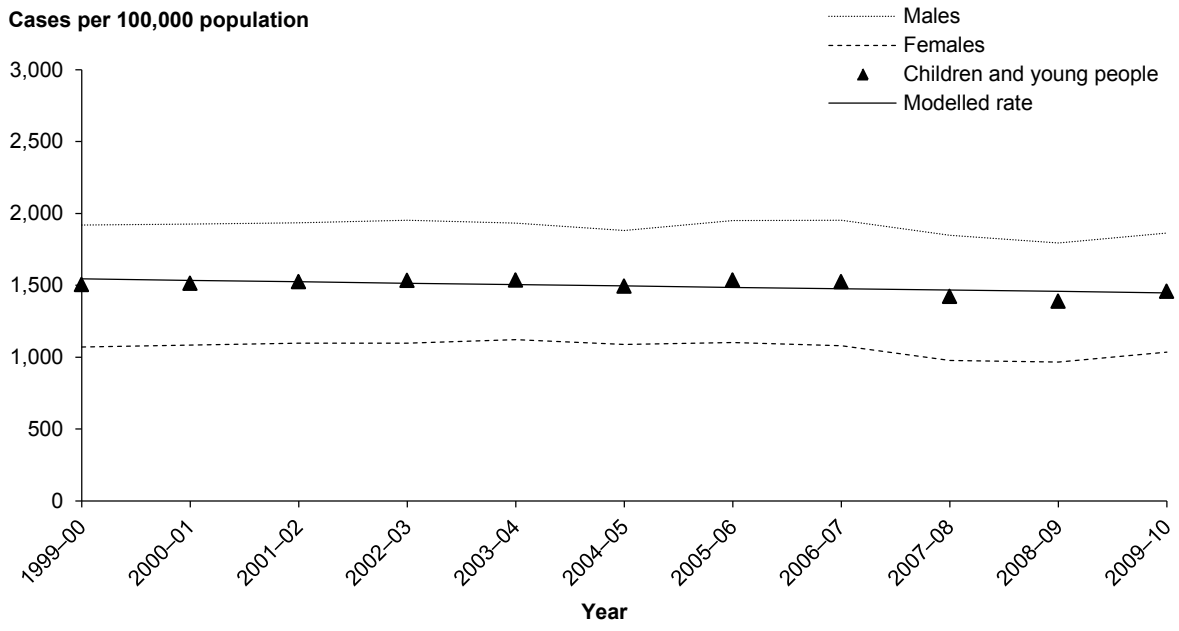
	99–00	00–01	01–02	02–03	03–04	04–05	05–06	06–07	07–08	08–09	09–10
Males											
Count	15,650	15,852	16,010	16,121	15,905	15,491	16,128	16,230	15,405	14,977	15,624
Per cent	65.2	65.1	64.9	65.2	64.5	64.6	65.2	65.7	66.7	66.2	65.4
Females											
Count	8,342	8,496	8,620	8,598	8,772	8,489	8,625	8,477	7,688	7,642	8,255
Per cent	34.8	34.9	34.9	34.8	35.5	35.4	34.8	34.3	33.3	33.8	34.6
All children and young people[(a)]											
Count	23,992	24,348	24,631	24,719	24,677	23,981	24,754	24,708	23,093	22,619	23,879
Per cent	100	100	100	100	100	100	100	100	100	100	100

(a) The summary *All children and young people* counts for each year include cases for which sex was not stated.

Rate of injury

The highest age-standardised rate of injury in children and young people occurred in 2003–04 (1,538 cases per 100,000 population) and the lowest in 2008–09 (1,391 cases per 100,000). Rates were higher for males than females for the entire period.

Overall, the age-standardised rates of hospitalised injury cases for NSW children and young people decreased slowly over the period to 1999–2010 (Figure 2.7). Using negative binomial regression techniques, the decrease in rate was 0.6% per year (95% CI: –1.1%, –0.2%). This result was statistically significant (p = 0.01).



Note: The line represents the modelled rate over the eleven-year period, while the symbols represent the actual age-standardised rate value for all children and young people for each year. Age-standardised rates for males and females are also shown.

Figure 2.7: Age-standardised rates of hospitalised injury, by sex, 0–17 years, NSW, 1999–2010

Trends over time by age group

An analysis of each age group over time reveals slight changes in age-specific rate for some age categories (Figures 2.8 to 2.12).

<1 year

Overall there was no indication of an upward or downward trend over the period. The highest rate of injury in children occurred in 1999–00 (817 cases per 100,000 population) and the lowest in 2008–09 (607 per 100,000). The rate of injury for males was slightly higher than females across the period.

1–4 years

A slight decline over time in the rate of injury in children aged 1–4 was evident. The highest rate of injury was in 2001–02 (1,601 per 100,000 population) and the lowest in 2007–08 (1,374 per 100,000). The rate for males was higher than females across the period.

5–8 years

A slight decline over time in the rate of injury in children aged 5–8 was evident. The highest rate was in 2001–02 (1,377 cases per 100,000 population) and the lowest in 2007–08 (1,151 per 100,000). The rate of injury for males was higher than females across the period.

9–14 years

There was no indication of an upward or downward trend for children aged 9–14. The highest rate of injury was in 2003–04 (1,529 cases per 100,000 population) and the lowest in 2007–08 (1,373 per 100,000). The difference in the rates of injury between males and females was larger in the 9–14 age group compared with the younger age groups. This difference was steady across the period.

15–17 years

The highest rate of injury was in 2005–06 (2,247 cases per 100,000 population) and the lowest in 2001–02 (1,973 per 100,000). The rate of injury between males and females was greatest in the 15–17 age category. This difference increased from around the middle of the period.

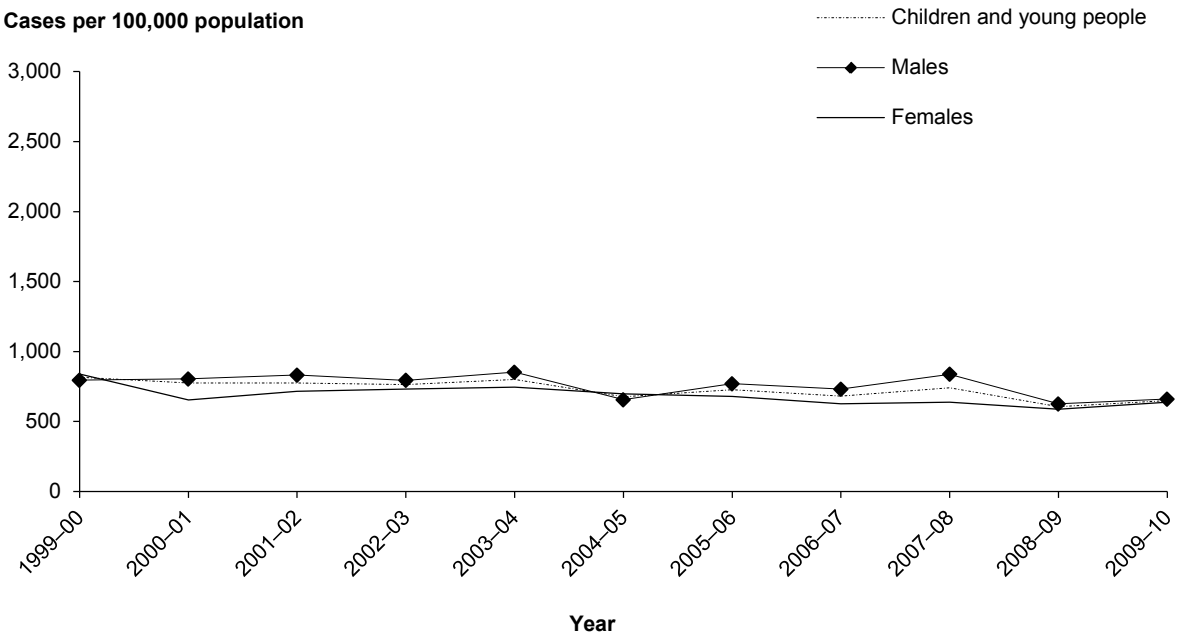


Figure 2.8: Age-specific rates of hospitalised injury, by sex, children aged under 1, NSW, 1999–2010

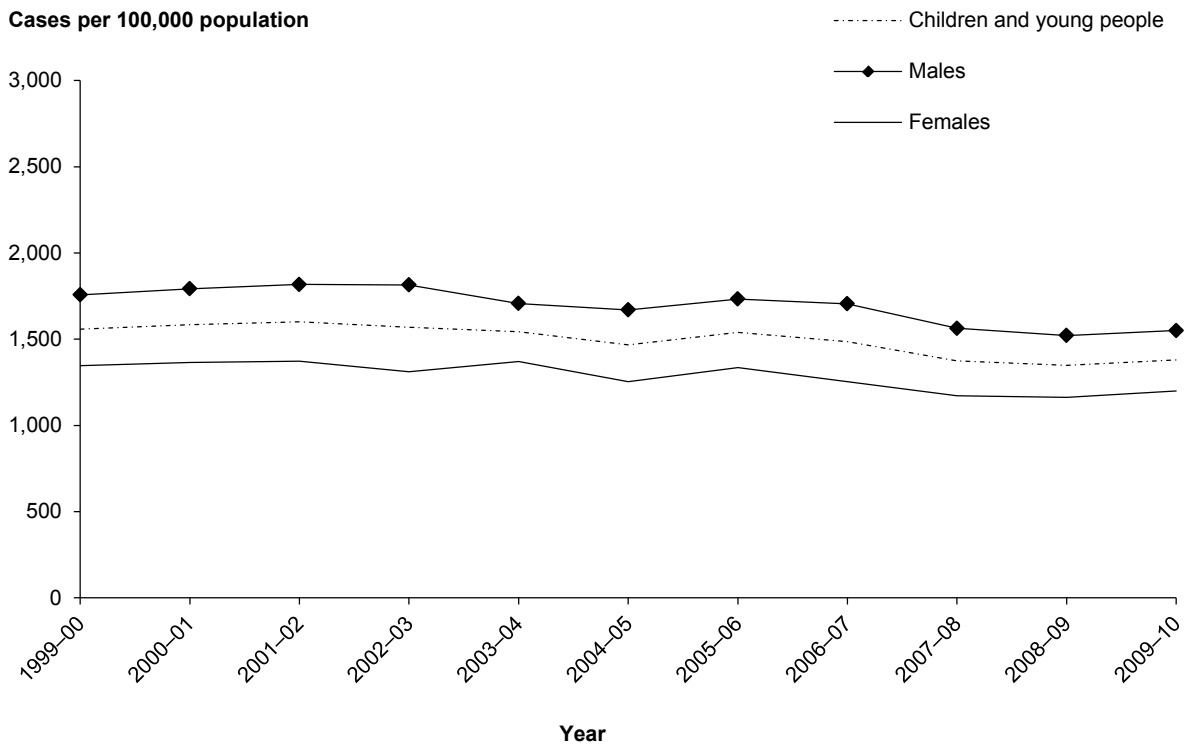


Figure 2.9: Age-specific rates of hospitalised injury, by sex, children 1–4, NSW, 1999–2010

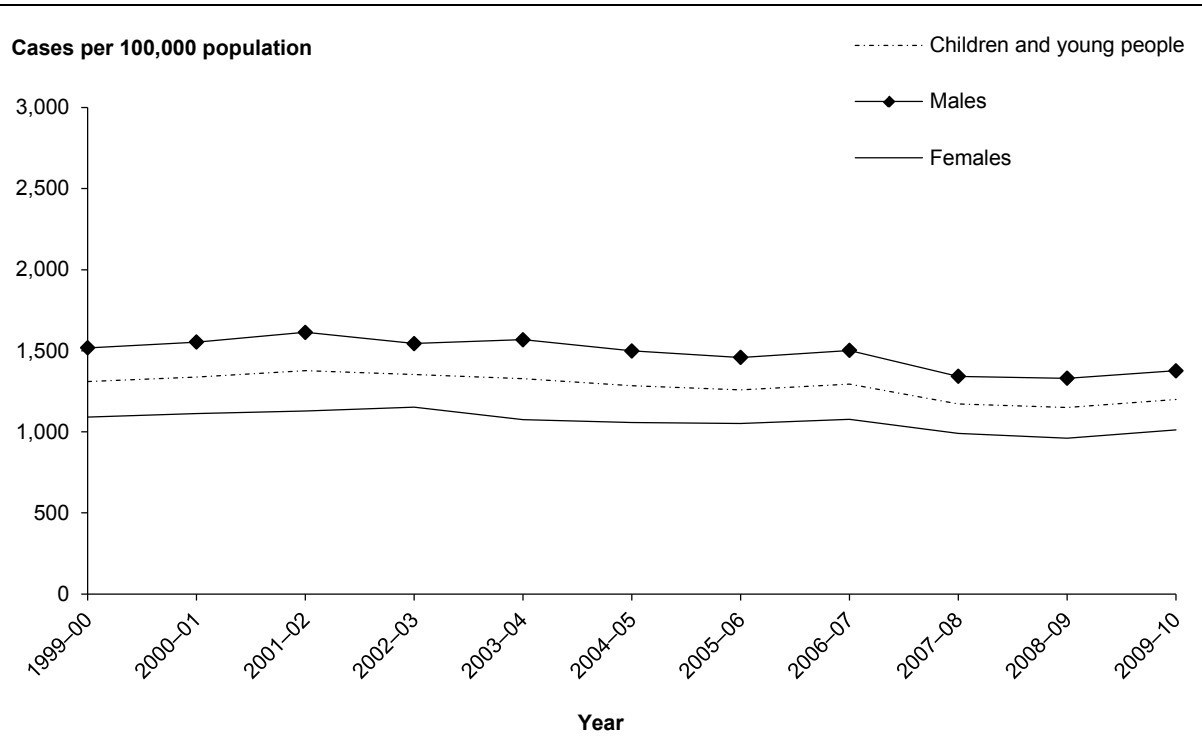


Figure 2.10: Age-specific rates of hospitalised injury, by sex, children 5–8, NSW, 1999–2010

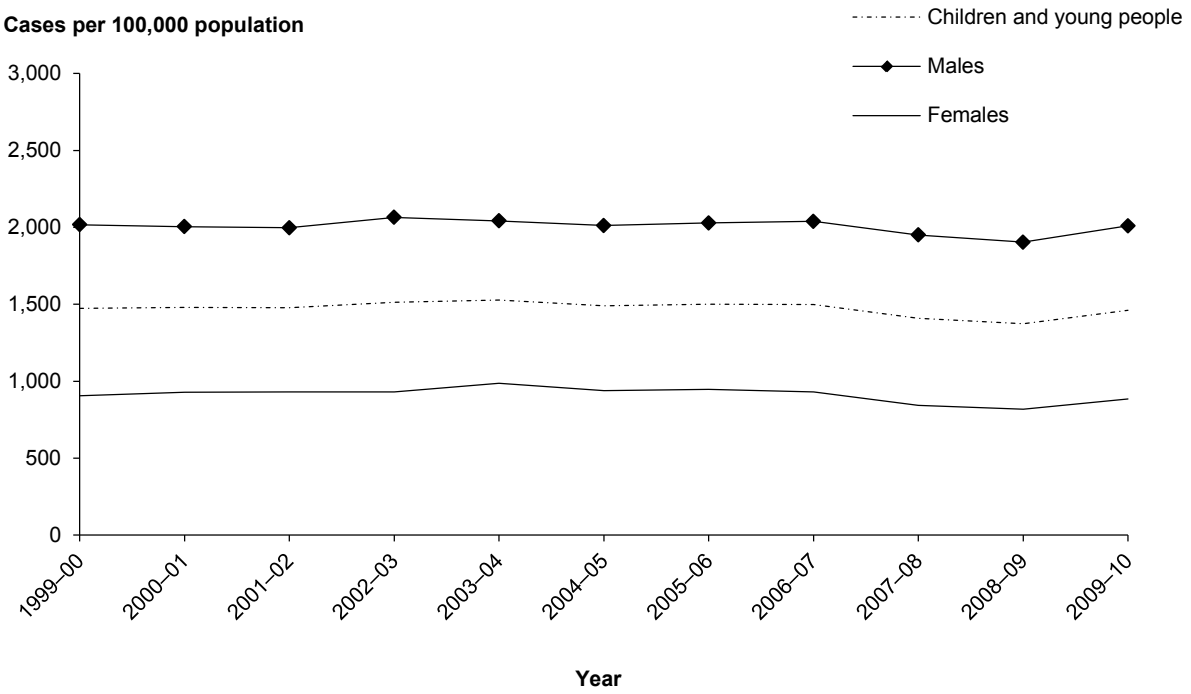


Figure 2.11: Age-specific rates of hospitalised injury, by sex, children 9–14, NSW, 1999–2010

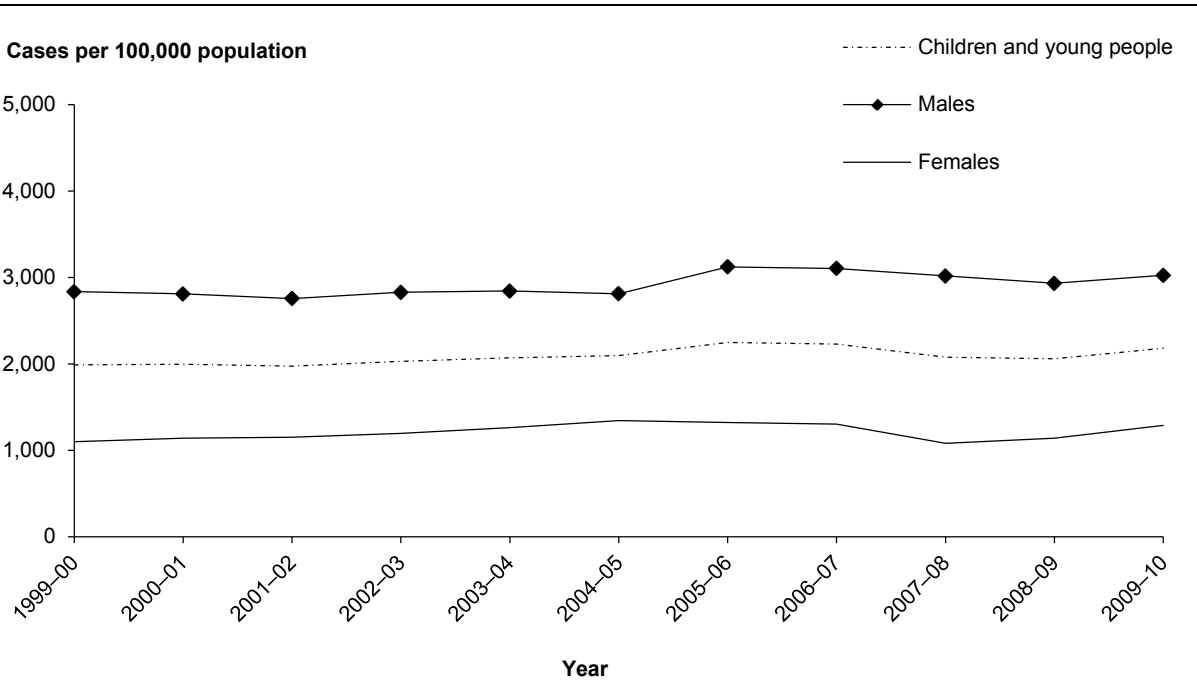


Figure 2.12: Age-specific rates of hospitalised injury, by sex, young people 15–17, NSW, 1999–2010

2.9 Summary

During 2009–10, there were 23,879 cases of NSW children and young people aged 0–17, hospitalised due to injury. The number of cases has remained fairly stable of over time. The highest number of cases was in 2005–06 (*n* = 24,754) and the lowest in 2008–09 (*n* = 22,619).

The rate of injury was much higher for males than females, with an overall ratio of males to females of 1.9:1. The rate of injury for males increased with age, while the rate for females was steady.

Falls were the most common external cause for both males (40%) and females (39%). Other unintentional injury was the second most common cause for both males (36%) and females (31%) followed by transport injuries, 16% for males and 12% for females. There was a higher proportion of *Poisoning by drugs, medicaments and biological substances* in females (3%) than males (1%).

A total of 31 children and young people hospitalised as a result of an injury died in hospital during 2009–10. The highest proportion of deaths occurred as a result of transport injuries (45%) followed by other unintentional injury (23%).

Differences between males and females were found according to place of occurrence. The place of occurrence was unspecified or missing in almost half of all cases. For cases with a specified place of occurrence, 33% of male injuries occurred within the *Home* and 26% at a sports area. Of the specified total, females commonly reported being injured within the *Home* (52%), followed by *School* (12%). The *Home* was the most common specified place of occurrence for younger children.

Of the specified activities associated with injury, the most common was *While engaged in sports* (45%). For all children and young people, about 52% of cases had an unspecified activity at the time of injury.

Part A: Unintentional injuries

3 Transportation

ICD-10-AM case inclusion

Principal diagnosis: S00–T75, T79 and

First reported external cause: V01–V99

3.1 Overview

This chapter covers all hospitalisations due to unintentional transport injuries (V01–V99). During 2009–10, there were 3,419 cases of children and young people aged 0–17 hospitalised due to transport injury (Table 3.1). The rate and number of males hospitalised as a result of a transport injury was much higher than females. A total of 10,526 days were spent in hospital at an average length of stay of 3.1 days. Almost 14% of cases were high threat to life with males having a higher proportion of high threat to life cases compared with females.

Table 3.1: Key indicators for hospitalised transport injury, NSW, 2009–10

Indicator	Males	Females	All children and young people
Cases due to community injury[(a)]	15,624	8,255	23,879
Cases due to transport injury[(a)]	2,436	983	3,419
Percentage of all cases due to injury and poisoning	15.6	11.9	14.3
Age-standardised rate/100,000 population[(b)]	291.0	123.9	209.5
Total patient days[(c)]	7,862	2,664	10,526
Mean length of stay (days)	3.2	2.7	3.1
Cases with a high threat to life[(d)]	365	119	484
Percentage of cases with a high threat to life	15.0	12.1	14.2

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

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

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

(d) High threat to life cases have ICD-based Injury Severity Score <0.941 following the method of (Stephenson et al. 2003).

An examination of transport injury cases by age group reveals a number of differences between males and females (Table 3.2). The number of injured males was consistently higher compared with females in each age group. The greatest difference between males and females was seen in the 15–17 age group, where the ratio of cases was 2.8:1.

Table 3.2: Cases of hospitalised transport injury, by sex and age, NSW, 2009–10

	Age group								All children and young people	
	0–4		5–8		9–14		15–17			
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Males	164	68.0	319	62.4	1,062	72.7	891	73.9	2,436	71.2
Females	77	32.0	192	37.6	399	27.3	315	26.1	983	28.8
Total	**241**	**100**	**511**	**100**	**1,461**	**100**	**1,206**	**100**	**3,419**	**100**

Figure 3.1 presents the age-specific rates of hospitalised transport injury for males and females by age group. The rate of transport injury for males increased with age. The highest rate of injury occurred in the oldest age category (616 cases per 100,000 population).

In contrast the increase in rate of hospitalised transport injury in females was less steep. The greatest difference in rate of transport injury between males and females occurs for the 15–17 age group, with the rate of transport injury in females at 230 cases per 100,000 population.

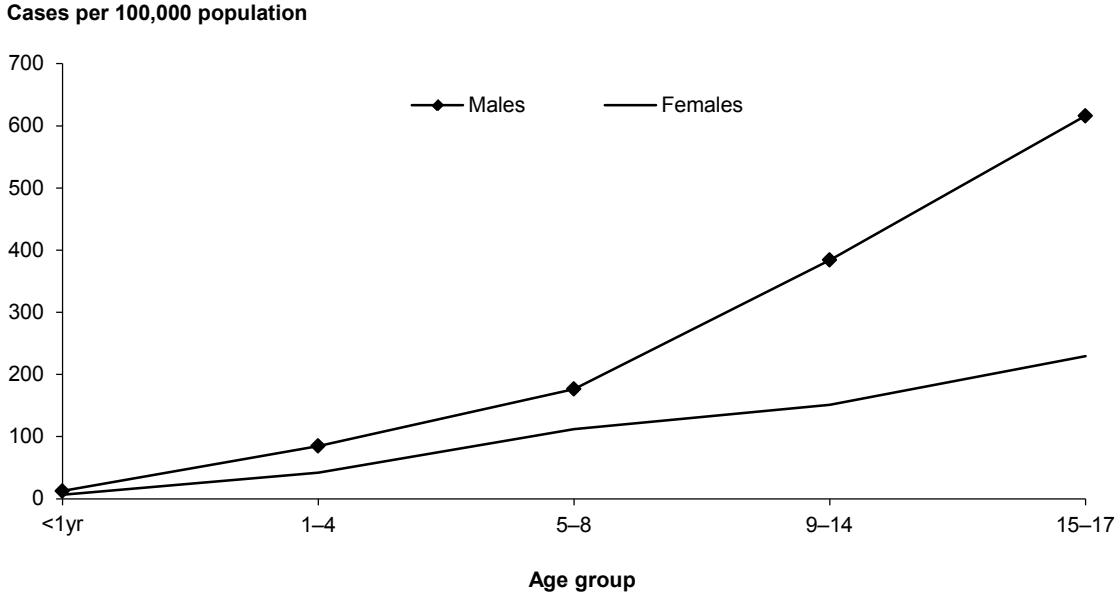
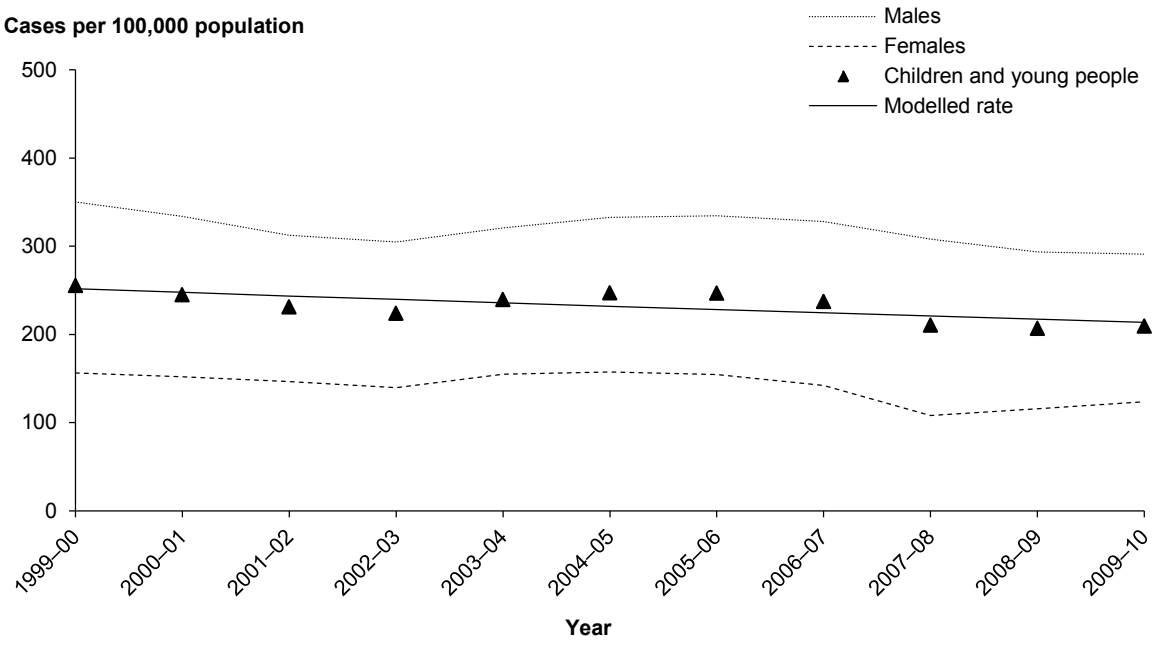


Figure 3.1: Age-specific rates of hospitalised transport injury, by age and sex, NSW, 2009–10

3.2 Trends over time

The highest age-standardised rate of hospitalised transport injury in children and young people occurred in 1999–00 (256 cases per 100,000 population) and the lowest in 2008–09 (207 cases per 100,000 population) (Figure 3.2). Rates were higher for males than females for the entire period. The number of cases occurring in each year by age can be found in Appendix B.

The age-standardised rates of hospitalised transport injury cases for NSW children and young people decreased over the period to 1999–2010 (Figure 3.2). Using negative binomial regression techniques, the decrease in rate was 1.6% per year (95% CI: –2.5%, –0.7%). This result was statistically significant (p = 0.01).



Note: The line represents the modelled rate over the eleven-year period, while the symbols represent the actual age-standardised rate value for all children and young people for each year. Age-standardised rates for males and females are also shown.

Figure 3.2: Age-standardised rates of hospitalised transport injury, by sex, 0–17 years, NSW, 1999–2010

3.3 Mode of transport

Table 3.3 shows sex differences for injuries by mode of transport. For males, the majority of hospitalised transport injury cases occurred on a *Pedal cycle* (n = 905, 37%) followed by a *Motorcycle* (n = 821, 34%). In contrast, females were more likely to have been in a *Car* (n = 287, 29%) followed by an *Animal or animal-drawn vehicle* (n = 211, 22%).

More than six times as many males than females were injured due to *Motorcycle* accidents and more than four times as many females than males were injured in *Animal or animal-drawn vehicle* accidents.

Table 3.3: Cases of hospitalised transport injury, by mode of transport and sex, NSW, 2009–10

	Males		Females		
Mode of transport	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
Pedestrian	178	7.3	83	8.4	2.1
Pedal cycle	905	37.2	175	17.8	5.2
Motorcycle	821	33.7	130	13.2	6.3
Car	313	12.8	287	29.2	1.1
Animal or animal-drawn vehicle	49	2.0	211	21.5	0.2
Special all-terrain or off-road vehicle	60	2.5	24	2.4	2.5
Other land transport	22	0.9	22	2.2	1.0
Water transport	35	1.4	16	1.6	2.2
All other injured person vehicle types[(a)]	26	1.1	23	2.3	1.1
Other and unspecified transport	27	1.1	12	1.2	2.3
Total	**2,436**	**100**	**983**	**100**	**2.5**

(a) All other injured person vehicle types includes: Pick-up truck or van, heavy transport vehicle, bus.

An analysis of transport injury by mode of transport by age group is shown in Table 3.4. A pedal cycle was the most common vehicle for children aged 5–14. Other age-specific results were as follows:

1–4 years

The most common mode of transport causing injury in this age group was a *Pedal cycle* (32%).

5–8 years

Children in this age group were most likely to be injured while riding a *Pedal cycle* (37%).

9–14 years

The most common mode of transport causing injury in children aged 9–14 was a *Pedal cycle* (37%). Of all pedal cyclists injured in transport accidents the highest proportion (51%) occurred in this age group.

15–17 years

Motorcycles (33%) were the most common mode of transport for injury in young people aged 15–17, followed by *Car occupant injured in transport accident* (27%).

Table 3.4: Cases of hospitalised transport injury, by mode of transport and age, NSW, 2009–10

	Age group								All children and young people	
	0–4		5–8		9–14		15–17			
Mode of transport	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Pedestrian	60	24.9	45	8.8	92	6.3	64	5.3	261	7.6
Pedal cycle	77	32.0	187	36.6	547	37.4	269	22.3	1,080	31.6
Motorcycle	12	5.0	96	18.8	441	30.2	402	33.3	951	27.8
Car	56	23.2	81	15.9	141	9.7	322	26.7	600	17.5
Animal or animal-drawn vehicle	12	5.0	47	9.2	139	9.5	62	5.1	260	7.6
Special all-terrain or off-road vehicle	6	2.5	17	3.3	30	2.1	31	2.6	84	2.5
Other land transport	n.p.	n.p.	n.p.	n.p.	16	1.1	15	1.2	44	1.3
Water transport	n.p.	n.p.	n.p.	n.p.	24	1.6	14	1.2	51	1.5
Other and unspecified transport	8	3.3	13	2.5	13	0.9	5	0.4	39	1.1
All other injured person vehicle types[(a)]	n.p.	n.p.	n.p.	n.p.	18	1.2	22	1.8	49	1.4
Total	**241**	**100**	**511**	**100**	**1,461**	**100**	**1,206**	**100**	**3,419**	**100**

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

(a) All other injured person vehicle types includes: Pick-up truck or van, heavy transport vehicle, bus.

Note: Due to small case numbers, counts for children under 1 were combined with 1–4.

3.4 Body region injured

For hospitalised transport injury cases, a few differences can be seen between males and females in the body region injured (Table 3.5). There were slightly higher proportions of males with *Injuries to the elbow and forearm* (22%) compared with females (20%) and a higher proportion of *Injuries to the knee and lower leg* in males (16%) than females (10%). There was a higher proportion of *Injuries to the head in females* (25%) than males (23%) and a higher proportion of *Injuries to the neck* in females (7%) than males (3%).

Injuries sustained in transport accidents involved different body regions with differing frequency across age groups (Table 3.6).

0–4 years

Injuries to the head (49%) were the most commonly reported principal diagnosis for children aged 0–4.

5–8 years

Injuries to the shoulder and upper limbs (23%) were the most commonly reported principal diagnoses for children aged 5–8, followed by *Injuries to the head* (26%).

9–14 years

Injuries to the shoulder and upper limbs (42%) were the most commonly reported principal diagnoses in children aged 9–14. *Injuries to the head* accounted for 19% of principal diagnoses.

15–17 years

Injuries to the shoulder and upper limbs (31%) were the most commonly reported principal diagnoses for young people aged 15–17. This was followed by *Injuries to the hip and lower limbs* (24%) and *Injuries to the head* (22%).

Table 3.5: Cases of hospitalised transport injury, by body region injured and sex, NSW, 2009–10

	Males		Females		
Body region	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
Injuries to the head	548	22.5	245	24.9	2.2
Injuries to the neck	70	2.9	66	6.7	1.1
Injuries to the thorax	61	2.5	35	3.6	1.7
Injuries to the abdomen, lower back, lumbar spine & pelvis	212	8.7	100	10.2	2.1
Injuries to the shoulder & upper arm	207	8.5	104	10.6	2.0
Injuries to the elbow & forearm	545	22.4	201	20.4	2.7
Injuries to the wrist & hand	139	5.7	48	4.9	2.9
Injuries to the hip & thigh	141	5.8	34	3.5	4.1
Injuries to the knee & lower leg	381	15.6	96	9.8	4.0
Injuries to the ankle & foot	83	3.4	30	3.1	2.8
Other injuries not specified by body region	49	2.0	20	2.0	2.5
Total[(a)]	**2,436**	**100**	**983**	**100.1**	**2.5**

(a) Includes injuries involving multiple body regions.

Table 3.6: Cases of hospitalised transport injury, by body region injured and age, NSW, 2009–10

	Age group								All children and young people	
	0–4		5–8		9–14		15–17			
Body region	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Head	117	48.5	131	25.6	277	19.0	268	22.2	793	23.2
Trunk	18	7.5	74	14.5	201	13.8	251	20.8	544	15.9
Shoulder and upper limb	55	22.8	201	39.3	610	41.8	378	31.3	1,244	36.4
Hip and lower limb	34	14.1	91	17.8	347	23.8	293	24.3	765	22.4
Other injuries not specified by body region	17	7.1	14	2.7	26	1.8	16	1.3	73	2.1
Total	**241**	**100**	**511**	**100**	**1,461**	**100**	**1,206**	**100**	**3,419**	**100**

Note: Due to small case numbers, counts for children under 1 were combined with 1–4.

3.5 Season of injury

During 2009–10, the overall proportions of season of transport injury varied according to sex (Table 3.7). For males, the highest proportion of injuries occurred in spring (28%) and for females the highest proportion was in autumn (28%).

Table 3.7: Cases of hospitalised transport injury, by season of injury and sex, NSW, 2009–10

	Males		Females		
Season	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
Summer	636	26.1	244	24.8	2.6
Autumn	582	23.9	276	28.1	2.1
Winter	544	22.3	218	22.2	2.5
Spring	674	27.7	245	24.9	2.8
Total	**2,436**	**100**	**983**	**100**	**2.5**

Season of injury by age

The season of transport injury varied slightly according to age (Table 3.8).

Table 3.8: Cases of hospitalised transport injury, by season of injury and age, NSW, 2009–10

	Age group								All children and young people	
	0–4		5–8		9–14		15–17			
Season	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Summer	73	30.3	148	29.0	394	27.0	265	22.0	880	25.7
Autumn	50	20.7	125	24.5	361	24.7	322	26.7	858	25.1
Winter	48	19.9	111	21.7	315	21.6	288	23.9	762	22.3
Spring	70	29.0	127	24.9	391	26.8	331	27.4	919	26.9
Total	**241**	**100**	**511**	**100**	**1,461**	**100**	**1,206**	**100**	**3,419**	**100**

Note: Due to small case numbers, counts for children under 1 were combined with 1–4.

0–4 years

Children in this age group were most commonly injured in summer (30%).

5–8 years

Children in this age group were most commonly injured in summer (29%).

9–14 years

Children in this age group were equally likely to be injured in summer and spring (27%).

15–17 years

Young people in this age group were equally likely to be injured in autumn and spring (27%).

3.6 Vehicle/pedestrian accidents in driveways

Forty-one cases of hospitalised transport injury occurred in driveways during 2009–10. Most of these were classified as non-traffic (88%), that is they did not occur on a public road. As can be seen in Table 3.9, the majority of children and young people injured in a transport incident in a driveway were pedestrians (44%) followed by a smaller proportion on pedal cycles (29%).

Table 3.9: Cases of hospitalised transport injury (traffic and non-traffic) in a driveway, by mode of transport, NSW, 2009–10

Mode of transport	Number	Per cent
Car	5	12.2
Motorcycle	n.p.	n.p.
Pedal cycle	12	29.3
Pedestrian	19	46.3
Special all-terrain or off-road vehicle	n.p.	n.p.
Unknown	1	2.4
Total	**41**	**100**

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

Note: Place of occurrence was not reported for 45.5% of all hospitalised injuries in NSW resident children.

The majority of cases (n = 18, 44%) occurred in the youngest age group (0–4), with case numbers smaller in older age groups (5–8 years n = 12; 9–17 years n = 9). Due to small case numbers, further analysis of transport injuries occurring in driveways is not presented.

3.7 Off-road all-terrain vehicle accidents

Eighty-two cases of hospitalised transport injury involving an off-road or all-terrain vehicle (ATV) were recorded in 2009–10. The most common place of injury recorded was on the farm (28%) (Table 3.10). The majority of cases across all age categories were male (*n* = 58). There were no cases of injury on off-road/ATV for children aged under 1.

Table 3.10: Cases of hospitalised transport injury, by off-road/ATV, place and age, NSW, 2009–10

	Age group						All children and young people	
	1–8		9–14		15–17			
Place of occurrence	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Home	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	5	6.1
Farm	5	21.7	11	36.7	7	24.1	23	28.0
All other specified locations	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	20	24.4
Unspecified locations	11	47.8	11	36.7	12	41.4	34	41.5
Total	**23**	**100**	**30**	**100**	**29**	**100**	**82**	**100**

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

4 Drowning and near-drowning

ICD-10-AM case inclusion

Principal diagnosis: S00–T75, T79 and

First reported external cause: W65–W74

4.1 Overview

During 2009–10, there were 85 cases of children and young people aged 0–17 hospitalised due to drowning and near-drowning (Table 4.1). Increasingly, the term 'drowning' is used to refer to 'the process of experiencing respiratory impairment from submersion/immersion in liquid' (van Beek et al. 2005). Framed this way, drowning can have various outcomes: death, survival with lasting consequences of greater or lesser severity, survival with transient morbidity or survival with no detectable consequences. 'Near-drowning' is less well defined. It can refer to survived episodes of respiratory impairment from submersion/immersion in liquid. It can also refer to episodes in which a person nearly, but not quite, experiences respiratory impairment from submersion/immersion in liquid (for example, a person who becomes exhausted while swimming, but manages to reach a shore, perhaps with assistance).

The rate and number of males hospitalised as a result of a drowning and near-drowning was slightly higher than females. A total of 118 days were spent in hospital at an average length of stay of 1.4 days. Despite the relatively low number of cases, almost four fifths (88%) of cases were classified as high threat to life, the highest proportion of all the external cause types.

Table 4.1: Key indicators for hospitalised drowning and near-drowning, NSW, 2009–10

Indicator	Males	Females	All children and young people
Cases due to community injury[(a)]	15,624	8,255	23,879
Cases due to drowning and near-drowning[(a)]	47	38	85
Percentage of all cases due to drowning and near-drowning	0.3	0.5	0.4
Age-standardised rate/100,000 population[(b)]	5.5	4.7	5.1
Total patient days[(c)]	73	45	118
Mean length of stay (days)	1.6	1.2	1.4
Cases with a high threat to life[(d)]	40	35	75
Percentage of cases with a high threat to life	85.1	92.1	88.2

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

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

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

(d) High threat to life cases have ICD-based Injury Severity Score <0.941 following the method of (Stephenson et al. 2003).

An examination cases by age group reveals some differences between males and females (Table 4.2). The number of injured males was equivalent to females up until age 8. Thereafter, the number of cases of drowning was greater in males (data not shown due to small case numbers).

Table 4.2: Cases of hospitalised drowning and near-drowning, by sex and age, NSW, 2009–10

	Age group						All children and young people	
	<1		1–4		5–17			
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Males	6	54.5	27	50.0	14	70.0	47	55.3
Females	5	45.5	27	50.0	6	30.0	38	44.7
Total	**11**	**100**	**54**	**100**	**20**	**100**	**85**	**100**

Note: Due to small case numbers, counts and proportions for children aged 5–8, 9–14 and 15–17 have been combined.

Figure 4.1 presents the age adjusted rates of drowning and near-drowning for males and females by age group. The rate of drowning and near-drowning for males was highest in children 1–4 (14.5 cases per 100,000 population). The lowest rate of drowning and near-drowning was seen in the 5–17 age group (2.3 per 100,000). Similarly, rates for females closely match the males with the highest rate occurring in the 1–4 age group (15.3 per 100,000). The lowest rate for females occurred in the 5–17 age group at 1.0 per 100,000 population.

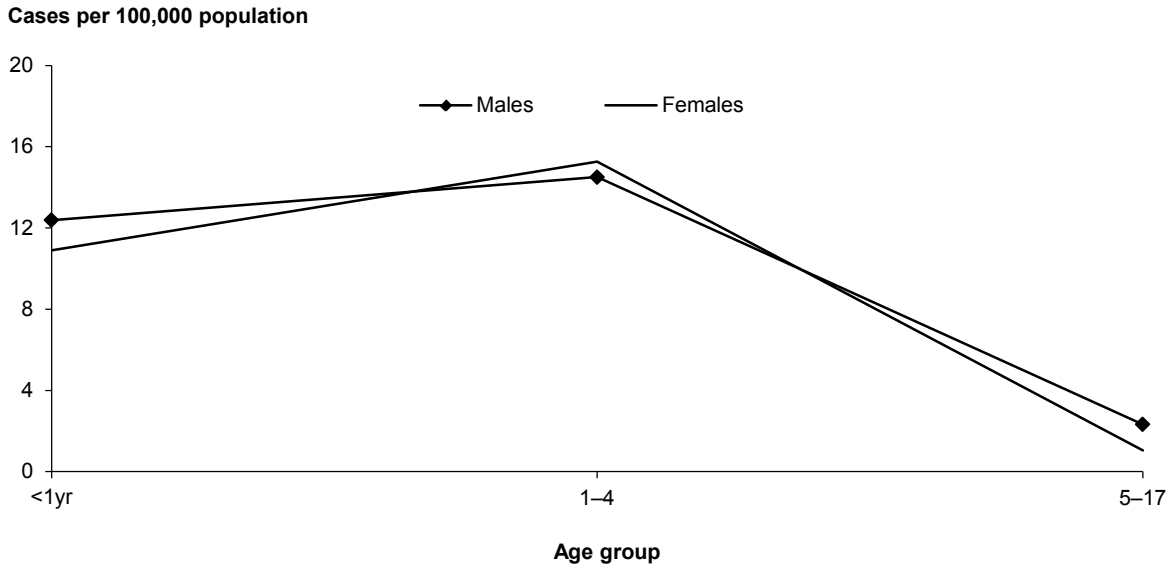
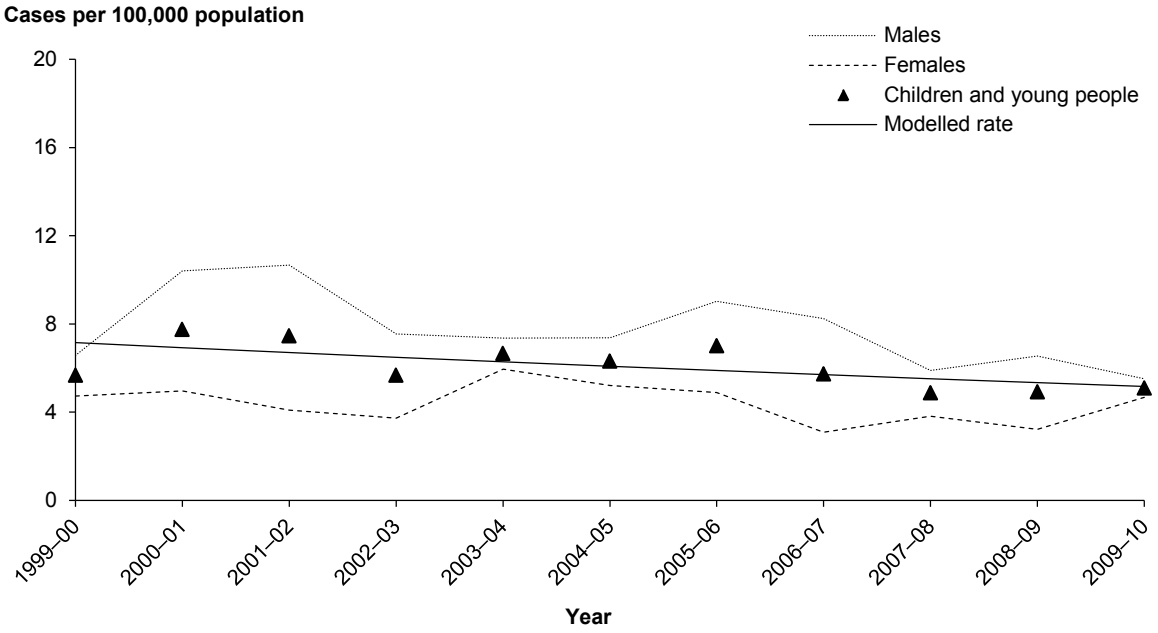


Figure 4.1: Age-specific rates of hospitalised drowning and near-drowning, by age and sex, NSW, 2009–10

4.2 Trends over time

The age-standardised rates of hospitalised drowning and near-drowning cases for NSW children and young people decreased over the period to 1999–2010 (Figure 4.2). The rate of drowning and near-drowning varied over the period by sex and was generally higher for males than females. The number of cases occurring in each year can be found in Appendix B.

As seen in Figure 4.2, the highest rate of injury in children and young people occurred in 2000–01 (7.8 cases per 100,000 population) and the lowest in both 2007–08 and 2008–09 (4.9 cases per 100,000 population) (Figure 4.2). Using negative binomial regression techniques, the decrease in rate was 3.2% per year (95% CI: –5.4%, –1.0%). This result was statistically significant (p = 0.01).



Note: The line represents the modelled rate over the eleven-year period, while the symbols represent the actual age-standardised rate value for all children and young people for each year. Age-standardised rates for males and females are also shown.

Figure 4.2: Age-standardised rates of hospitalised drowning and near-drowning, by sex, 0–17 years, NSW, 1999–2010

4.3 Place of injury

Over the 2009–10 period, swimming pools were the most common setting for drowning and near-drowning cases, constituting 42% of all locations (Table 4.3). Males (13%) had a higher proportion of drowning and near-drowning cases occurring in bodies of natural water compared with females (5%).

For children aged 0–4, the swimming pool was the most common location for drowning and near-drowning (43%) (Table 4.4). Due to very small case numbers in older age groups, data have been suppressed. The further breakdown into place means older age groups were unable to be presented within the table.

Table 4.3: Estimated number of children hospitalised for drowning and near-drowning, by sex and place, NSW, 2009–10

	Males		Females		
Place of occurrence	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
Swimming pool	19	40.4	16	42.1	1.2
Natural water	n.p.	n.p.	n.p.	n.p.	3.0
Bathtub	n.p.	n.p.	n.p.	n.p.	1.3
Other or unspecified[(a)]	17	36.2	16	42.1	1.1
Total	**47**	**100**	**38**	**100**	**1.2**

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

(a) Other and unspecified includes cases coded to Other specified drowning and submersion (W73) and Unspecified drowning and submersion (W74).

Table 4.4: Estimated number of children hospitalised for drowning and near-drowning, by age, NSW, 2009–10

	0–4		All children and young people	
Place of occurrence	**Number**	**Per cent**	**Number**	**Per cent**
Swimming pool	28	43.1	35	41.2
Natural water	n.p.	n.p.	8	9.4
Bathtub	n.p.	n.p.	9	10.6
Other or unspecified[(a)]	26	40.0	33	38.8
Total	**65**	**100**	**85**	**100**

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

(a) Other and unspecified includes cases coded to Other specified drowning and submersion (W73) and Unspecified drowning and submersion (W74).

Note: Due to small case numbers, counts for children aged under 1 have been combined with the 1–4 age group and all other age groups have been included in the total.

4.4 Activity at time of injury

Due to very small case numbers, only summary information can be presented concerning the type of activity at the time of the drowning and near-drowning. For all children and young people 34% of activity for drowning and near-drowning was reported as unspecified. Of the specified totals, males were most likely to be injured while engaging in leisure (31%) while 52% of females were engaged in sports at time of drowning or near-drowning. The majority of cases for children aged 0–4 were unspecified (54%) as to activity. The small number of cases negates further analysis.

4.5 Season of injury

For all children and young people, the highest proportion of drowning and near-drowning occurred in summer (42%) (data not shown). Similar results were observed for males and females (Table 4.5), with more drowning hospitalisations in the summer months. Insufficient case numbers meant that analysis by age group was not possible.

Table 4.5: Cases of drowning and near-drowning, by season of injury and sex, NSW, 2009–10

	Males		Females		All children and young people	
Season	**Number**	**Per cent**	**Number**	**Per cent**	**Number**	**Per cent**
Summer	18	38.3	18	47.4	36	42.4
Autumn	n.p.	n.p.	n.p.	n.p.	15	17.6
Winter	n.p.	n.p.	n.p.	n.p.	6	7.1
Spring	15	31.9	13	34.2	28	32.9
Total	**47**	**100**	**38**	**100**	**85**	**100**

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

5 Poisoning, pharmaceuticals

ICD-10-AM case inclusion

Principal diagnosis: S00–T75, T79 and

First reported external cause: X40–X44

5.1 Overview

This chapter describes injury admissions where the first reported external cause code refers to accidental poisoning by a drug or medicament. It includes drugs given or taken in error or inadvertently, and accidental over-dosage. The data do not distinguish between prescribed and non-prescribed pharmaceuticals; illicitly used drugs would be included.

During 2009–10, there were 441 cases of children and young people aged 0–17 hospitalised due to poisoning by pharmaceuticals (Table 5.1). The rate and number of males hospitalised as a result of poisoning by pharmaceuticals was similar to that of females. A total of 565 days were spent in hospital at an average length of stay of 1.3 days. Less than 1% of cases were classified as high threat to life.

Table 5.1: Key indicators for hospitalised poisoning by pharmaceuticals, NSW, 2009–10

Indicator	Males	Females	All children and young people
Cases due to community injury[(a)]	15,624	8,255	23,879
Cases due to poisoning by pharmaceutical injury[(a)]	215	226	441
Percentage of all cases due to injury and poisoning	1.4	2.7	1.8
Age-standardised rate/100,000 population[(b)]	25.2	27.8	26.5
Total patient days[(c)]	267	298	565
Mean length of stay (days)	1.2	1.3	1.3
Cases with a high threat to life[(d)]	n.p.	n.p.	n.p.
Percentage of cases with a high threat to life	0.9	0.4	0.7

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

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

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

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

(d) High threat to life cases have ICD-based Injury Severity Score <0.941 following the method of (Stephenson et al. 2003).

An examination of poisoning by pharmaceuticals by age group and sex reveals a number of differences (Table 5.2). The number of injured males and females was highest at 1–4 years. At ages 15–17, the number of cases of females hospitalised as a result of poisoning by pharmaceuticals was higher than males.

Table 5.2: Cases of hospitalised poisoning by pharmaceuticals, by sex and age, NSW, 2009–10

	Age group										All children and young people	
	<1		1–4		5–8		9–14		15–17			
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Males	7	36.8	161	53.1	19	65.5	9	32.1	19	30.6	215	48.8
Females	12	63.2	142	46.9	10	34.5	19	67.9	43	69.4	226	51.2
Total	**19**	**100**	**303**	**100**	**29**	**100**	**28**	**100**	**62**	**100**	**441**	**100**

Figure 5.1 presents the age-specific rates of hospitalised poisoning by pharmaceuticals, for males and females by age group. The pattern of rates by age was very similar for males and females up until the 15-17 year age group, where the rate was higher in females (32 per 100,000 population) than males (13 per 100,000). The rate was highest in both males (87 per 100,000) and females (80 per 100,000) in the 1–4 age group.

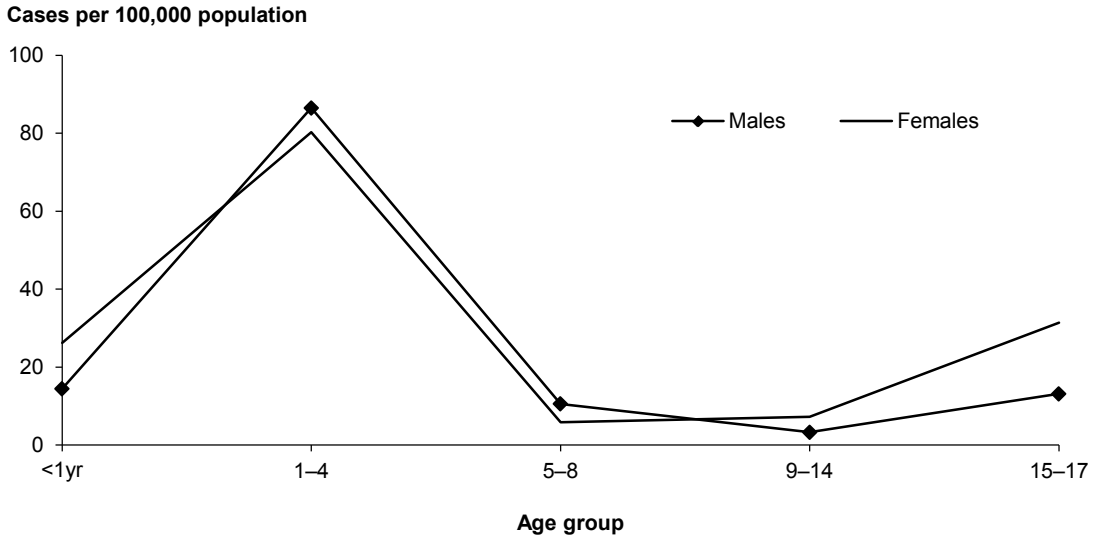
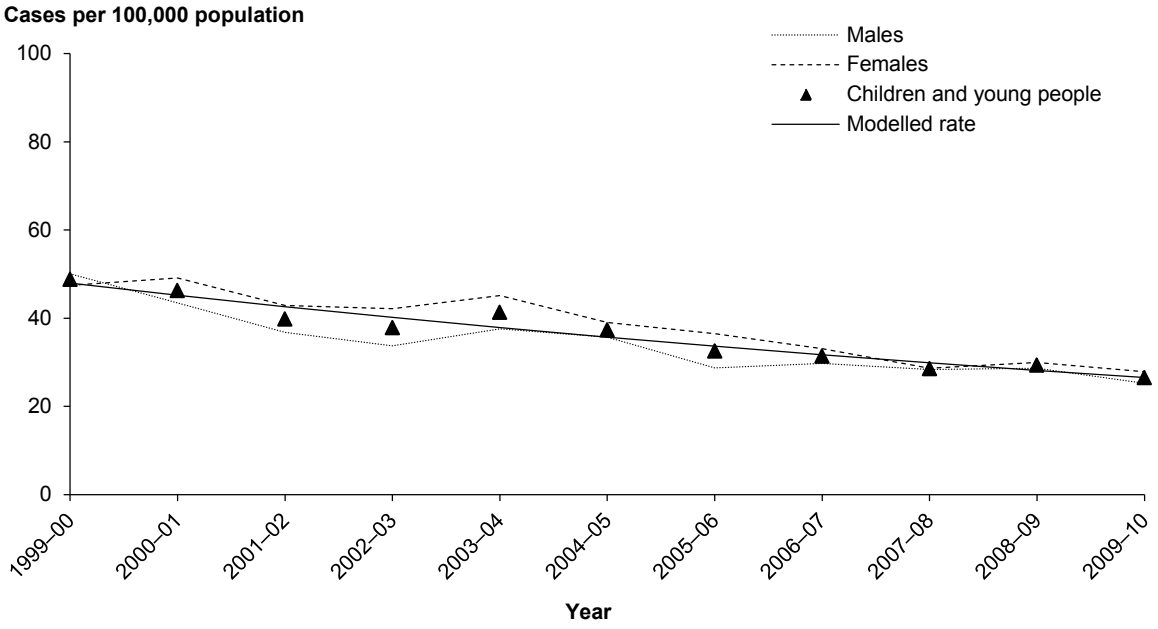


Figure 5.1: Age-specific rates of hospitalised poisoning by pharmaceuticals, by age and sex, NSW, 2009–10

5.2 Trends over time

The highest rate of poisoning by pharmaceutical injury in children and young people occurred in 1999–00 (48.8 cases per 100,000 population) and the lowest in 2009–10 (26.5 cases per 100,000 population) (Figure 5.2). The rates for males and females followed a similar pattern. The number of cases occurring in each year can be found in Appendix B.

The age-standardised rates of hospitalised poisoning by pharmaceuticals for NSW children and young people decreased over the period to 1999–2010 (Figure 5.2). Using negative binomial regression techniques, the decrease in rate was 5.7% per year (95% CI: –6.6%, –4.9%). This result was statistically significant (p = 0.01).



Note: The line represents the modelled rate over the eleven-year period, while the symbols represent the actual age-standardised rate value for all children and young people for each year. Age-standardised rates for males and females are also shown.

Figure 5.2: Age-standardised rates of hospitalised poisoning by pharmaceuticals, by sex, 0–17 years, NSW, 1999–2010

5.3 Mechanism

The type of substance for hospitalised poisoning by pharmaceuticals cases, by age and sex, is described in Table 5.3. Age categories have been combined due to small numbers. For all children, 35% of cases were *Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified.* This category includes benzodiazepines (*n* = 55). For all children and young people the most common age for poisoning by pharmaceuticals injury was in children aged 0–4 (74%). *Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances (X44)* accounted for 33% (*n* = 145), the majority were in children aged 0–4.

For males, the most common drug in poisoning by pharmaceuticals cases was benzodiazepines (*n* = 30). For females, the most common drug in poisoning by pharmaceuticals was 4-Aminophenol derivatives (for example, paracetamol) (*n* = 39). The majority of these cases occurred in the 15–17 age category (*n* = 19). The second most common drug was benzodiazepines (*n* = 25) with the majority of cases in the 0–4 age category (*n* = 20).

Table 5.3: Cases of hospitalised poisoning by pharmaceuticals, by type, age and sex, NSW, 2009–10

	Age group				All children and young people	
	0–4		5–17			
Accidental poisoning by and exposure to:	No.	Per cent	No.	Per cent	No.	Per cent
Males						
Nonopioid analgesics, antipyretics and antirheumatics	23	13.7	9	19.1	32	14.9
Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified	59	35.1	19	40.4	78	36.3
Narcotics and psychodysleptics [hallucinogens], not elsewhere classified	n.p.	n.p.	n.p.	n.p.	17	7.9
Other drugs acting on the autonomic nervous system	n.p.	n.p.	n.p.	n.p.	9	4.2
Other and unspecified drugs, medicaments and biological substances	66	39.3	13	27.7	79	36.7
Total	**168**	**100**	**47**	**100**	**215**	**100**
Females						
Nonopioid analgesics, antipyretics and antirheumatics	13	8.4	32	44.4	45	19.9
Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified	55	35.7	25	34.7	80	35.4
Narcotics and psychodysleptics [hallucinogens], not elsewhere classified	n.p.	n.p.	n.p.	n.p.	22	9.7
Other drugs acting on the autonomic nervous system	n.p.	n.p.	n.p.	n.p.	13	5.8
Other and unspecified drugs, medicaments and biological substances	59	38.3	7	9.7	66	29.2
Total	**154**	**100**	**72**	**100**	**226**	**100**

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

Note: Due to small case numbers, counts for children aged under 1 were combined with the 1–4 age group and all other ages were combined with the 5–17 age group.

5.4 Place of injury

During 2009–10, most cases of hospitalised poisoning by pharmaceuticals (67%) occurred in the home (Table 5.4). Similar proportions of poisoning by pharmaceuticals in the home occurred in males and females, 70% and 65% respectively.

The *Home* was the most frequent location of poisoning by pharmaceutical injuries in each age group (Table 5.5). As children aged, the proportion of poisoning by pharmaceutical injuries at schools increased as did the proportion of cases with no specified place of occurrence. Limited case numbers prevents additional analysis.

Table 5.4: Cases of hospitalised poisoning by pharmaceuticals, by place and sex, NSW, 2009–10

	Males		Females		
Place of occurrence	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
Home	151	71.2	143	64.7	1.1
School, other institution & public administration area	13	6.1	22	10.0	0.6
Unspecified place of occurrence	48	22.6	56	25.3	0.9
Total[(a)]	**212**	**100**	**221**	**100**	**1.0**

(a) Contains a total of 9 cases with other specified locations.

Table 5.5: Cases of hospitalised poisoning by pharmaceuticals, by place and age, NSW, 2009–10

	Age group								All children and young people	
	0–4		5–8		9–14		15–17			
Place of occurrence	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Home	239	75.2	18	64.3	14	51.9	23	39.7	294	67.9
School, other institution & public administration area	17	5.3	n.p.	n.p.	n.p.	n.p.	9	15.5	35	8.1
Unspecified place of occurrence	62	19.5	n.p.	n.p.	n.p.	n.p.	26	44.8	104	24.0
Total[(a)]	**318**	**100**	**28**	**100**	**27**	**100**	**58**	**100**	**433**	**100**

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

(a) Contains a total of 9 cases with other specified locations.

Note: Due to small case numbers, counts for children under 1 were combined with 1–4.

5.5 Activity at time of injury

About 77% of cases had no specified activity listed at the time of injury. Due to small case numbers, further analysis by sex and age is not presented.

5.6 Season of injury

There was little variation in the overall proportions of season of injury by sex other than a slightly higher proportion of poisoning by pharmaceutical injuries occurring during spring for females (29%) (Table 5.6). For males, the highest proportion of injuries occurred in autumn (26%).

The season of injury varied according to age (Table 5.7). Younger children (0–4) were most likely to be injured in spring (27%) and least likely to be injured in summer (23%). Young people (15–17) were most likely to be injured in summer (30%) and least likely to be injured in winter (23%).

Table 5.6: Cases of hospitalised poisoning by pharmaceuticals, by season of injury and sex, NSW, 2009–10

	Males		Females		
Season	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
Summer	49	22.8	56	24.8	0.9
Autumn	58	27.0	52	23.0	1.1
Winter	54	25.1	53	23.5	1.0
Spring	54	25.1	65	28.8	0.8
Total	**215**	**100**	**226**	**100**	**1.0**

Table 5.7: Cases of hospitalised poisoning by pharmaceuticals, by season of injury and age, NSW, 2009–10

	Age group								All children and young people	
	0–4		5–8		9–14		15–17			
Season	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Summer	74	23.0	n.p.	n.p.	n.p.	n.p.	18	29.0	105	23.8
Autumn	78	24.2	8	27.6	9	32.1	15	24.2	110	24.9
Winter	82	25.5	n.p.	n.p.	n.p.	n.p.	14	22.6	107	24.3
Spring	88	27.3	8	27.6	8	28.6	15	24.2	119	27.0
Total	**322**	**100**	**29**	**100**	**28**	**100**	**62**	**100**	**441**	**100**

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

Note: Due to small case numbers, counts for children under 1 were combined with 1–4.

6 Poisoning, other substances

ICD-10-AM case inclusion

Principal diagnosis: S00–T75, T79 and

First reported external cause: X45–X49

6.1 Overview

This chapter includes hospitalisations arising from the toxic effects of accidental contact with substances which are chiefly non-medicinal.

During 2009–10, there were 168 cases of children and young people aged 0–17 hospitalised due to poisoning by other substances (Table 6.1). The rate and number of males hospitalised as a result of poisoning by other substances was slightly higher than that of females. A total of 501 days were spent in hospital at an average length of stay of 3 days. Less than 3% of cases were classified as high threat to life.

Table 6.1: Key indicators for hospitalised poisoning, by other substances, NSW, 2009–10

Indicator	Males	Females	All children and young people
Cases due to community injury[(a)]	15,624	8,255	23,879
Cases due to poisoning by other substance injury[(a)]	95	73	168
Percentage of all cases due to injury and poisoning	0.6	0.9	0.7
Age-standardised rate/100,000 population[(b)]	11.2	9.2	10.2
Total patient days[(c)]	158	343	501
Mean length of stay (days)	1.7	4.7	3.0
Cases with a high threat to life[(d)]	n.p.	n.p.	n.p.
Percentage of cases with a high threat to life	1.1	4.1	2.4

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

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

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

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

(d) High threat to life cases have ICD-based Injury Severity Score <0.941 following the method of (Stephenson et al. 2003).

Where appropriate, age categories have been combined due to small numbers of cases. An examination of cases by age group and sex reveals a number of differences between males and females (Table 6.2). The largest number of cases occurred in children aged 0–4. The number of injured males was higher in all age groups compared with females.

Table 6.2: Cases of hospitalised poisoning by other substances, by sex and age, NSW, 2009–10

	Age group						All children and young people	
	0–4		5–14		15–17			
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Males	53	54.6	24	55.8	18	64.3	95	56.5
Females	44	45.4	19	44.2	10	35.7	73	43.5
Total	**97**	**100**	**43**	**100**	**28**	**100**	**168**	**100**

Note: Due to small case numbers, counts for children under 1 have been combined with 1–4 and 5–8 has been combined with 9–14.

Figure 6.1 presents the age-specific rates of injury for males and females by age group. Rates of injury for both males and females were highest in the 0–4 age group (22.6 cases per 100,000 population and 19.7 per 100,000 respectively), and lowest for the 5–14 age group (5.2 per 100,000 and 4.4 per 100,000 respectively).

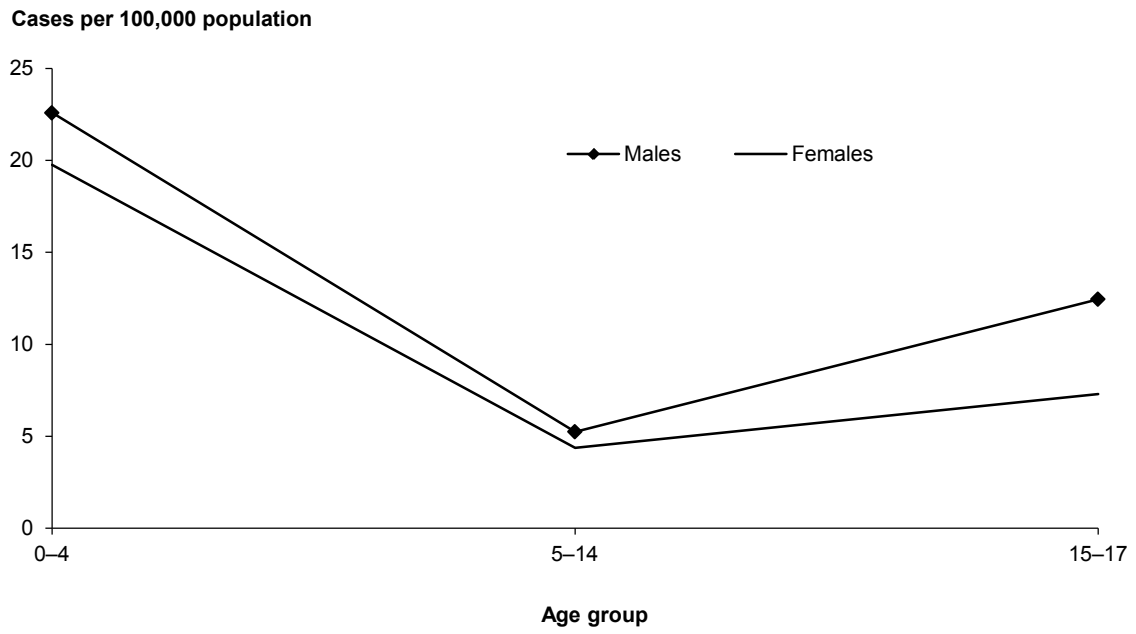
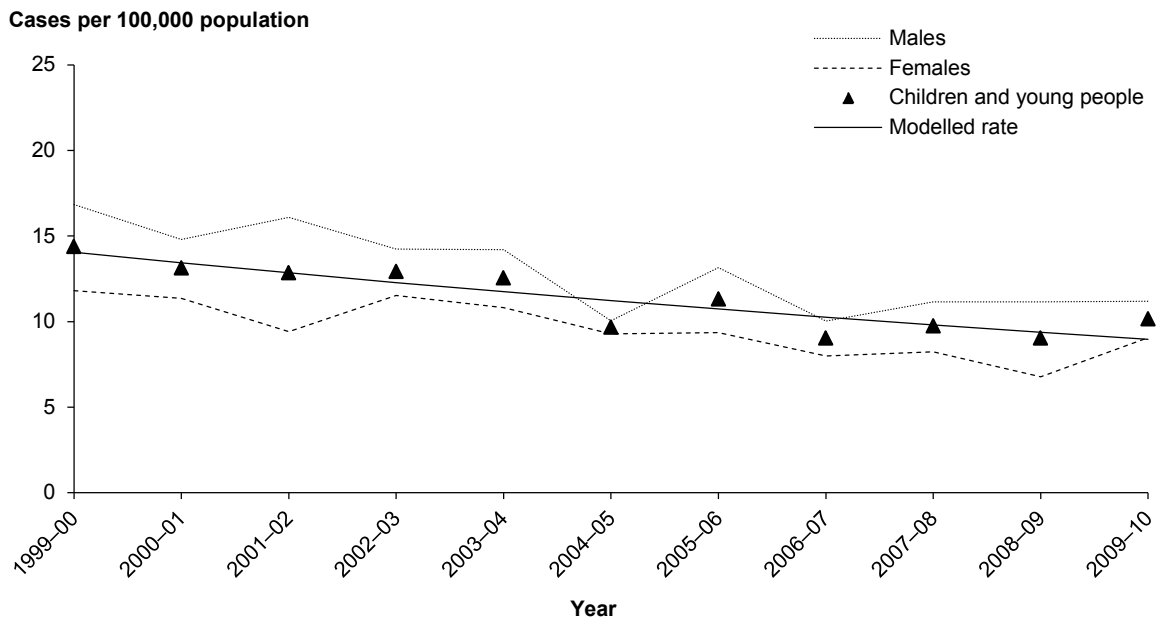


Figure 6.1: Age-specific rates of hospitalised poisoning by other substances, by age and sex, NSW, 2009–10

6.2 Trends over time

The highest rate of poisoning by other substances injury in children and young people occurred in 1999–00 (14.4 cases per 100,000 population) and the lowest in 2006–07 (9.0 cases per 100,000 population) (Figure 6.2). The rates for males and females followed a similar pattern. The number of cases occurring in each year can be found in Appendix B.

The age-standardised rates of hospitalised poisoning by other substances for NSW children and young people decreased over the period to 1999–2010 (Figure 6.2). Using negative binomial regression techniques, the decrease in rate was 4.4% per year (95% CI: –5.7%, –3.1%). This result was statistically significant (p = 0.01).



Note: The line represents the modelled rate over the eleven-year period, while the symbols represent the actual age-standardised rate value for all children and young people for each year. Age-standardised rates for males and females are also shown.

Figure 6.2: Age-standardised rates of hospitalised poisoning by other substances, by sex, 0–17 years, NSW, 1999–2010

6.3 Mechanism

Information on the mechanism of poisoning by other substances cases can be seen in Table 6.3. For all children, 64% of cases were coded as *Other and unspecified chemicals and noxious substances* (X49). This category includes corrosive aromatics, acids and caustic alkalis, glues and adhesives, metals including fumes and vapours, paints and dyes, plant food and fertilisers, poisoning not otherwise specified, poisonous foodstuffs and poisonous plants, soaps and detergents.

For males, *Other and unspecified chemicals and noxious substances* (X49) accounted for 68% of all cases due to poisoning by other substances (n = 65), followed by *Organic solvents and halogenated hydrocarbons and their vapours* (X46) (10%).

For females, the most common category was *Other and unspecified chemical and noxious substances* (X49) (n = 43; 59%), followed by *Pesticides* (X48) (15%).

For all children and young people, the most common age for poisoning by other substances was 0–4 (58%) and the most common mechanism was *Other and unspecified chemicals and noxious substances* (X49) (60%) (Table 6.4). In children aged 5–14, the most common mechanism was *Other and unspecified chemicals and noxious substances* (73%), followed by *Other gases and vapours* (17%). For young people 15–17, the most common mechanism was *Other and unspecified chemicals and noxious substances* (60%), followed by *Alcohol* (27%).

Table 6.3: Cases of hospitalised poisoning by other substances, by sex, NSW, 2009–10

	Males		Females		
Accidental poisoning by and exposure to:	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
Alcohol	n.p.	n.p.	n.p.	n.p.	0.7
Organic solvents and halogenated hydrocarbons and their vapours	10	10.5	6	8.2	1.7
Other gases and vapours	9	9.5	7	9.6	1.3
Pesticides	n.p.	n.p.	n.p.	n.p.	0.6
Other and unspecified chemicals and noxious substances	65	68.4	43	58.9	1.5
Total	**95**	**100**	**73**	**100**	**1.3**

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

Table 6.4: Cases of hospitalised poisoning by other substances, by age, NSW, 2009–10

	Age group						All children and young people	
	0–4		5–14		15–17			
Accidental poisoning by and exposure to:	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Alcohol	n.p.	n.p.	n.p.	n.p.	6	21.4	10	6.0
Organic solvents and halogenated hydrocarbons and their vapours	12	12.4	n.p.	n.p.	n.p.	n.p.	16	9.5
Other gases and vapours	7	7.2	n.p.	n.p.	n.p.	n.p.	16	9.5
Pesticides	18	18.6	n.p.	n.p.	n.p.	n.p.	18	10.7
Other and unspecified chemicals and noxious substances	58	59.8	32	74.4	18	64.3	108	64.3
Total	**97**	**100**	**43**	**100**	**28**	**100**	**168**	**100**

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

Note: Due to small case numbers, counts for children under 1 have been combined with 1–4 and 5–8 has been combined with 9–14.

6.4 Place of injury

During 2009–10, 35% of all poisoning by other substance injuries were unspecified. Of the remaining specified locations, the majority occurred in the *Home* (Table 6.5). The *Home* was the most frequent location of poisoning by other substances in younger age groups (Table 6.6). In the older age groups, the proportion of poisoning by other substances cases with no specified place of occurrence rose. Limited case numbers prevent additional analysis.

Table 6.5: Cases of hospitalised poisoning by other substances, by place and sex, NSW, 2009–10

	Males		Females		
Place of occurrence	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
Home	49	51.6	45	61.6	1.1
Unspecified place of occurrence	37	38.9	21	28.8	1.8
Total[(a)]	**95**	**100**	**74**	**100**	**1.3**

(a) Contains a total of 16 cases with other specified locations.

Table 6.6: Cases of hospitalised poisoning by other substances, by place and age, NSW, 2009–10

	Age group						All children and young people	
	0–4		5–14		15–17			
Place of occurrence	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Home	73	75.3	15.	34.9	6	21.4	94	56
Unspecified place of occurrence	22	22.4	19	44.2	17	60.7	58	34.5
Total[(a)]	**97**	**100**	**43**	**100**	**28**	**100**	**168**	**100**

(a) Contains a total of 16 cases with other specified locations.

Note: Due to small case numbers, counts for children under 1 have been combined with 1–4 and 5–8 has been combined with 9–14.

6.5 Activity at time of injury

About 64% of cases had no specified activity listed at the time of injury. Due to small case numbers, further analysis by sex and age is not presented.

6.6 Season of injury

The overall proportions of season of injury for hospitalised poisoning by other substances cases (Table 6.7) varied according to sex. For males, the highest proportion of injuries occurred in autumn (34%) and for females the highest proportion was in summer (30%).

Table 6.7: Cases of hospitalised poisoning by other substances, by season of injury and sex, NSW, 2009–10

	Males		Females		
Season	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
Summer	21	22.1	22	30.1	1.0
Autumn	32	33.7	14	19.2	2.3
Winter	18	18.9	20	27.4	0.9
Spring	24	25.3	17	23.3	1.4
Total	**95**	**100**	**73**	**100**	**1.3**

Season of injury by age

The season of injury varied according to age (Table 6.8). Age categories with small case counts have been combined. Caution should be taken in interpreting the results presented for the 15–17 age group due to small numbers of cases.

Table 6.8: Cases of hospitalised poisoning by other substances, by season of injury and age, NSW, 2009–10

	Age group						All children and young people	
	0–4		5–14		15–17			
Season	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Summer	28	28.9	9	20.9	6	21.4	43	25.6
Autumn	27	27.8	10	23.3	9	32.1	46	27.4
Winter	19	19.6	13	30.2	6	21.4	38	22.6
Spring	23	23.7	11	25.6	7	25.0	41	24.4
Total	**97**	**100**	**43**	**100**	**28**	**100**	**168**	**100**

Note: Due to small case numbers, counts for children under 1 were combined with 1–4 and children 5–8 were combined with 9–14.

0–4 years

Children in this age group were most likely to be injured in summer (29%).

5–14 years

Children in this age group were most likely to be injured in winter (30%).

7 Falls

ICD-10-AM case inclusion

Principal diagnosis: S00–T75, T79 and

First reported external cause: W00–W19

7.1 Overview

This chapter describes hospitalised injury due to *Falls* (W00–W19). During 2009–10, there were 9,285 cases of children and young people aged 0–17 hospitalised due to falls (Table 7.1). The rate and number of males hospitalised as a result of a fall injury was higher than that of females. A total of 16,189 days were spent in hospital at an average length of stay of 1.7 days. Less than 5% of cases were classified as high threat to life.

Table 7.1: Key indicators for hospitalised fall injury, NSW, 2009–10

Indicator	Males	Females	All children and young people
Cases due to community injury[(a)]	15,624	8,255	23,879
Cases due to fall injury[(a)]	6,049	3,236	9,285
Percentage of all cases due to injury and poisoning	38.7	39.2	38.9
Age-standardised rate/100,000 population[(b)]	726.9	409.7	572.2
Total patient days[(c)]	11,057	5,132	16,189
Mean length of stay (days)	1.8	1.6	1.7
Cases with a high threat to life[(d)]	273	129	402
Percentage of cases with a high threat to life	4.5	4.0	4.3

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

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

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

(d) High threat to life cases have ICD-based Injury Severity Score <0.941 following the method of (Stephenson et al. 2003).

An examination of hospitalised fall injury cases by age group reveals a number of differences between males and females (Table 7.2). The number of injured males and females were roughly equivalent in the younger age groups. The greatest difference between males and females occurred in the 15–17 age group, where the ratio of cases was 4.6:1.

Table 7.2: Cases of hospitalised fall injury, by sex and age, NSW, 2009–10

	Age group										All children and young people	
	<1		1–4		5–8		9–14		15–17			
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Males	146	52.5	1,189	56.1	1,333	56.9	2,434	71.7	947	82.3	6,049	65.1
Females	132	47.5	932	43.9	1,009	43.1	959	28.3	204	17.7	3,236	34.9
Total	**278**	**100**	**2,121**	**100**	**2,342**	**100**	**3,393**	**100**	**1,151**	**100**	**9,285**	**100**

Figure 7.1 presents the age specific rates of fall injury for males and females by age group. The rate of injury for males increased with age to reach 873.8 cases per 100,000 population at 9–14 years. In contrast, the highest rate in females occurred at 5–8 years (586.2 per 100,000). The lowest rate occurred in 15–17 year old females (149.5 per 100,000).

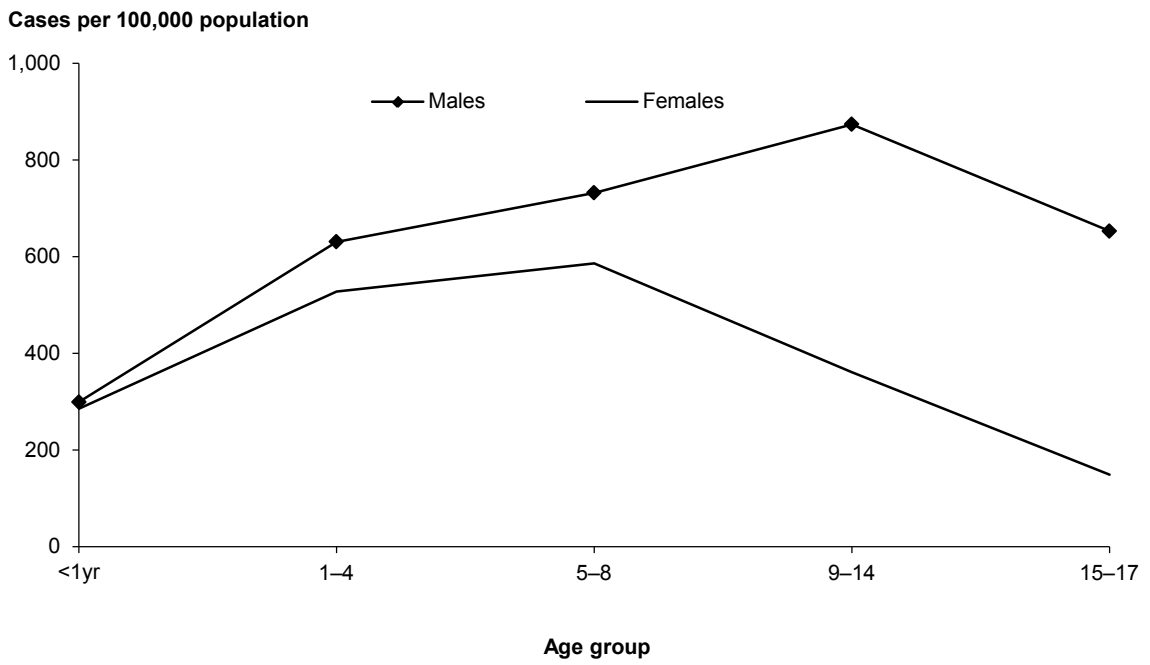
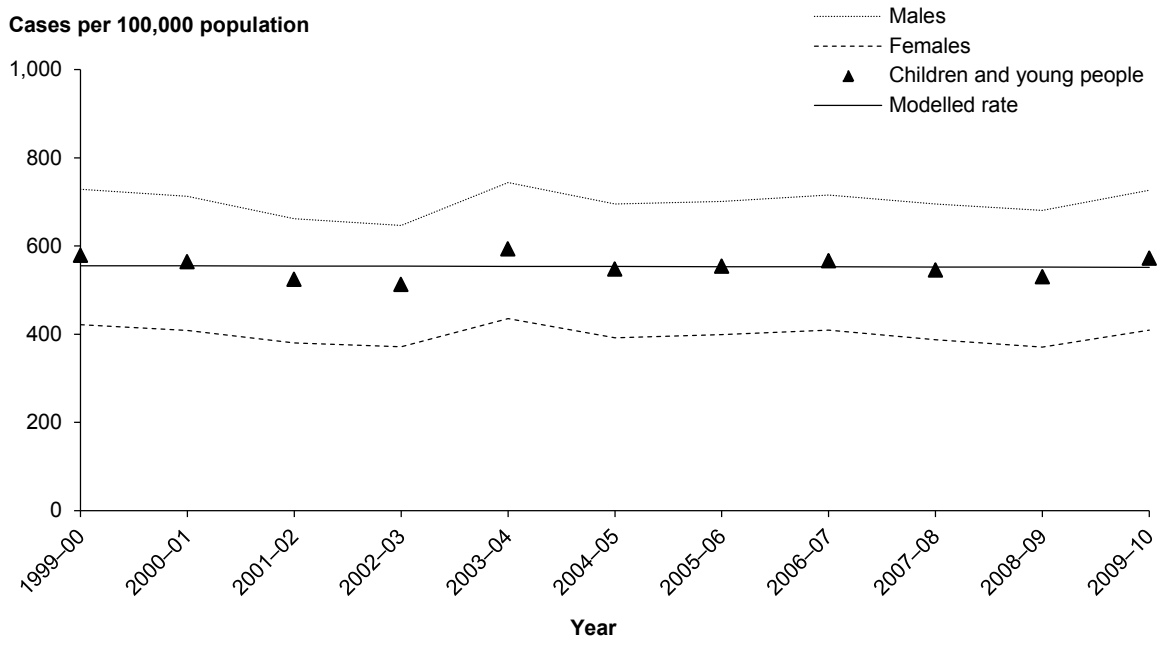


Figure 7.1: Age-specific rates of hospitalised fall injury, by age and sex, NSW, 2009–10

7.2 Trends over time

The highest rate of fall injury in children and young people occurred in 2003–04 (593.5 cases per 100,000 population) and the lowest in 2002–03 (512.8 cases per 100,000 population) (Figure 7.2). Rates were higher for males than females for the entire period. The number of cases occurring in each year can be found in Appendix B.

The age-standardised rates of hospitalised fall injury cases for NSW children and young people decreased over the period to 1999–2010 (Figure 7.2). Using negative binomial regression techniques, the decrease in rate was 0.1% per year (95% CI: –0.8%, 0.7%). This result was not statistically significant (p = 0.869).



Note: The line represents the modelled rate over the eleven-year period, while the symbols represent the actual age-standardised rate value for all children and young people for each year. Age-standardised rates for males and females are also shown.

Figure 7.2: Age-standardised rates of hospitalised fall injury, by sex, 0–17 years, NSW, 1999–2010

7.3 External cause

Table 7.3 presents the types of external cause of fall injury by sex. Overall the most common cause of a fall in all children and young people was a *Fall involving playground equipment* (17%). For females the most commonly reported type of fall was a *Fall involving playground equipment* (22%). For males, the most commonly reported type of fall was split between by *Fall involving playground equipment* (15%) and *Fall from pedestrian conveyance* (15%). Pedestrian conveyances include things such as bicycles and skateboards.

Table 7.3: Cases of hospitalised fall injury, by type of fall and sex, NSW, 2009–10

	Males		Females		All children and young people	
External cause	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Fall on same level from slipping, tripping and stumbling	612	10.1	389	12	1,001	10.8
Fall involving pedestrian conveyances	889	14.7	327	10.1	1,216	13.1
Other fall on same level due to collision with, or pushing by, another person	779	12.9	82	2.5	861	9.3
Fall while being carried or supported by other persons	63	1.0	58	1.8	121	1.3
Fall involving bed	186	3.1	161	5.0	347	3.7
Fall involving chair	199	3.3	199	6.1	398	4.3
Fall involving other furniture	83	1.4	79	2.4	162	1.7
Fall involving playground equipment	910	15.0	708	21.9	1,618	17.4
Fall on and from stairs and steps	157	2.6	116	3.6	273	2.9
Fall on and from ladder	15	0.2	14	0.4	29	0.3
Fall from, out of or through building or structure	267	4.4	134	4.1	401	4.3
Fall from tree	161	2.7	58	1.8	219	2.4
Fall from cliff	24	0.4	12	0.4	36	0.4
Diving or jumping into water causing injury other than drowning or submersion	39	0.6	29	0.9	68	0.7
Other fall from one level to another	373	6.2	197	6.1	570	6.1
Other fall on same level	790	13.1	390	12.1	1,180	12.7
Unspecified fall	494	8.2	283	8.7	777	8.4
Total[(a)]	**6,049**	**100**	**3,236**	**100**	**9,285**	**100**

(a) Includes cases of Fall on or from scaffolding and Fall involving a wheelchair.

External cause by age

The causes of fall injury differ by age group (Table 7.4).

Table 7.4: Cases of hospitalised fall injury, by type of fall and age, NSW, 2009–10

	Age group										All children and young people	
	<1		1–4		5–8		9–14		15–17			
External cause	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Fall on same level from slipping, tripping and stumbling	7	2.5	222	10.5	222	9.5	414	12.2	136	11.8	1,001	10.8
Fall involving pedestrian conveyances	20	7.2	72	3.4	218	9.3	764	22.5	142	12.3	1,216	13.1
Other fall on same level due to collision with, or pushing by, another person	n.p.	n.p.	24	1.1	53	2.3	464	13.7	319	27.7	861	9.3
Fall while being carried or supported by other persons	72	25.9	27	1.3	11	0.5	n.p.	n.p.	n.p.	n.p.	121	1.3
Fall involving bed	52	18.7	188	8.9	74	3.2	n.p.	n.p.	n.p.	n.p.	347	3.7
Fall involving chair	25	9.0	254	12.0	69	2.9	44	1.3	6	0.5	398	4.3
Fall involving other furniture	39	14.0	91	4.3	25	1.1	n.p.	n.p.	n.p.	n.p.	162	1.7
Fall involving playground equipment	n.p.	n.p.	401	18.9	833	35.6	355	10.5	27	2.3	1,618	17.4
Fall on and from stairs and steps	14	5.0	107	5.0	50	2.1	68	2	34	3	273	2.9
Fall on and from ladder	n.p.	n.p.	14	0.7	5	0.2	n.p.	n.p.	n.p.	n.p.	29	0.3
Fall from, out of or through building or structure	n.p.	n.p.	118	5.6	133	5.7	107	3.2	42	3.6	401	4.3
Fall from tree	n.p.	n.p.	n.p.	n.p.	78	3.3	114	3.4	14	1.2	219	2.4
Fall from cliff	n.p.	n.p.	n.p.	n.p.	7	0.3	19	0.6	9	0.8	36	0.4
Diving or jumping into water causing injury other than drowning or submersion	n.p.	n.p.	n.p.	n.p.	7	0.3	31	0.9	29	2.5	68	0.7
Other fall from one level to another	25	9.0	164	7.7	153	6.5	166	4.9	62	5.4	570	6.1
Other fall on same level	16	5.8	204	9.6	226	9.6	530	15.6	204	17.7	1,180	12.7
Unspecified fall	n.p.	n.p.	219	10.3	174	7.4	266	7.8	114	9.9	777	8.4
Total[(a)]	**278**	**100**	**2,121**	**100**	**2,342**	**100**	**3,393**	**100**	**1,151**	**100**	**9,285**	**100**

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

(a) Includes cases of Fall on or from scaffolding and Fall involving a wheelchair.

<1 year

The most commonly reported cause of fall injury was falling while being carried (26%), followed by a *Fall involving a bed* (19%).

1–4 years

Unlike their younger counterparts, children aged 1–4 were more likely to be injured in a *Fall involving playground equipment* (19%). This was followed by falls involving chairs (12%).

5–8 years

The most commonly reported cause of a fall for children aged 5–8 was a *Fall involving playground equipment* (36%). The next most common cause was a *Fall on the same level from slipping, tripping and stumbling* (10%).

9–14 years

For children and young people aged 9–14 the most commonly reported cause was a *Fall involving pedestrian conveyances* (23%) followed by *Other fall on the same level* (16%).

15–17 years

The most commonly reported cause in young people 15–17 years was *Other fall on same level due to collision with, or pushing by, another person* (28%). This was followed by *Other fall on the same level* (18%).

7.4 Body region injured and type of fracture

The proportions of body regions injured as a result of a fall were similar for males and females (Table 7.5). There were slightly higher proportions of males with injuries to the *Hip and lower limb* (15%) compared with females (11%).

Table 7.5: Cases of hospitalised fall injury, by body region and sex, NSW, 2009–10

	Males		Females		
Body region	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
Head	1,342	22.2	829	25.6	1.6
Trunk	251	4.1	164	5.1	1.5
Shoulder and upper limb	3,531	58.4	1,886	58.3	1.9
Hip and lower limb	900	14.9	347	10.7	2.6
Other injuries not specified by body region	25	0.4	10	0.3	2.5
All body regions	**6,049**	**100**	**3,236**	**100**	**1.9**

By far the most common injury sustained during a fall was a fracture. About two-thirds (66%) of all falls resulted in a fracture (Table 7.6). The location of the fracture was similar between males and females with the most common fracture for males (41%) and females (40%) being a fracture of the forearm.

Table 7.6: Top 5 types of fracture for hospitalised fall injury, by sex, NSW, 2009–10

	Males		Females		All children and young people	
Type of fracture	**Number**	**Per cent**	**Number**	**Per cent**	**No.**	**Per cent**
Fracture of forearm	2,487	41.1	1,299	40.1	3,786	40.8
Fracture of shoulder and upper arm	629	10.4	456	14.1	1,085	11.7
Fracture of lower leg, including ankle	518	8.6	175	5.4	693	7.5
Fracture of skull and facial bones	201	3.3	101	3.1	302	3.3
Fracture at wrist and hand level	176	2.9	51	1.6	227	2.4
Subtotal of all injury types	**4,011**	**66.3**	**2,082**	**64.3**	**6,093**	**65.6**

Body region injured and type of fracture by age

The proportions of body regions injured as a result of a fall differ by age (Table 7.7). Injuries to the shoulder and upper limb area were the most common site of injury for all age groups.

Table 7.7: Cases of hospitalised fall injury, by body region and age, NSW, 2009–10

	Age group								All children and young people	
	0–4		5–8		9–14		15–17			
Body region	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Head	1,234	51.8	362	15.5	384	11.4	191	16.6	2,171	23.4
Trunk	47	2.0	53	2.3	186	5.5	129	11.2	415	4.5
Shoulder and upper limb	858	36.0	1,763	75.3	2,262	67.0	534	46.5	5,417	58.3
Hip and lower limb	245	10.3	163	7.0	544	16.1	295	25.7	1,247	13.4
All body regions[(a)]	**2,384**	**100**	**2,341**	**100**	**3,376**	**100**	**1,149**	**100**	**9,285**	**100**

(a) Includes cases coded to Other injuries not specified by body region.

Note: Due to small case numbers, counts for children under 1 were combined with 1–4.

0–4 years

Injuries to the head (52%) was the most commonly reported body region injured followed by *Injuries to the shoulder and upper limb* (36%).

5–8 years

Injuries to the shoulder and upper limb area (75%) were the most commonly reported body regions injured followed by *Injuries to the head* (16%).

9–14 years

Injuries to the shoulder and upper limb area (67%) were the most commonly reported body regions injured followed by *Injuries to the hip and lower limb* (16%).

15–17 years

Injuries to the shoulder and upper limb area (47%) were the most commonly reported body regions followed by *Injuries to the hip and lower limb* (26%).

Of the fractures sustained during a fall, the location of the fracture varied with age (Table 7.8). All age groups had high proportions of fractures to the forearm, thereafter differences were seen according to age. For very young children fractures of the shoulder and upper arm were followed by fractures of the lumbar spine and pelvis. Children aged 5–8 had a higher proportion of shoulder and upper arm fractures compared with other age groups. For older children and young people lower leg fractures were common after fractures of the forearm.

Table 7.8: Top 6 types of fracture for hospitalised fall injury, by age, NSW, 2009–10

	Age group								All children and young people	
	0–4		5–8		9–14		15–17			
Type of fracture	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Fracture of forearm	485	20.2	1,207	51.5	1,820	53.6	274	23.8	3,786	40.8
Fracture of shoulder and upper arm	314	13.1	459	19.6	229	6.7	83	7.2	1,085	11.7
Fracture of lower leg, including ankle	99	4.1	84	3.6	338	10.0	172	14.9	693	7.5
Fracture of lumbar spine and pelvis	165	6.9	40	1.7	66	1.9	31	2.7	302	3.3
Fracture of shoulder and upper arm	6	0.3	25	1.1	117	3.4	79	6.9	227	2.4
Sub-total of all injury types	**1,069**	**44.6**	**1,815**	**77.5**	**2,570**	**75.7**	**639**	**55.5**	**6,093**	**65.6**

Note: Due to small case numbers, counts for children under 1 were combined with 1–4.

7.5 Place of injury

Just under half (44%) of all cases recorded an unspecified or missing place of occurrence (Table 7.9). There were similar proportions of unspecified places for males and females, 40% and 44% respectively. When restricted to specified cases, 32% of injuries in males occurred within the *Home* and 31% at a *Sports and athletics area*. Females were most likely to be injured within the *Home* (48%) followed by *School* (23%). The ratio of males to females injured at a *Sports and athletics area* was 5.2:1.

Table 7.9: Cases of hospitalised fall injury, by place of injury and sex, NSW, 2009–10

	Males		Females		
Place of occurrence	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
Home	1,158	19.1	867	26.8	1.3
Residential institution	n.p.	n.p.	n.p.	n.p.	0.4
School, other institution & public administration area	830	13.7	418	12.9	2.0
Sports and athletics area	1,121	18.4	217	6.7	5.2
Street and highway	115	1.9	45	1.3	2.6
Trade and service area	50	0.7	56	1.7	0.9
Industrial and construction area	n.p.	n.p.	n.p.	n.p.	2.0
Farm	6	0.1	7	0.2	0.9
Other specified place of occurrence	349	5.8	201	6.2	1.7
Unspecified place of occurrence	2,416	39.9	1,419	43.9	1.7
Total	**6,049**	**100**	**3,227**	**100**	**1.9**

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

Place of injury by age

Differences in the place of occurrence of fall injuries can be seen according to age (Table 7.10).

Table 7.10: Cases of hospitalised fall injury, by place of injury and age, NSW, 2009–10

	Age group								All children and young people	
	0–4		5–8		9–14		15–17			
Place of occurrence	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Home	1,135	48.3	493	21.1	305	9.0	92	8.0	2,025	21.8
School, other institution & public administration area	130	5.5	469	20.0	554	16.3	95	8.3	1,248	13.5
Sports and athletics area	16	0.7	105	4.5	773	22.8	444	38.6	1,338	14.4
Street and highway	13	0.6	17	0.7	92	2.6	38	3.3	160	1.7
Trade and service area	6	0.3	22	0.9	16	0.4	15	1.3	106	1.1
Other specified place of occurrence	118	5.0	161	6.8	196	5.7	75	6.5	550	6.0
Unspecified place of occurrence	928	39.5	1,069	45.6	1,450	42.7	388	33.7	3,835	41.3
Total[(a)]	**2,352**	**100**	**2,342**	**100**	**3,393**	**100**	**1,151**	**100**	**9,285**	**100**

(a) Total includes cases occurring in industrial and construction areas, farms and residential institutions; small case numbers preclude publication.

Note: Due to small case numbers, counts for children under 1 were combined with 1–4.

0–4 years

Excluding cases with an unspecified place of occurrence, almost all (80%) fall injuries occurred in the *Home* for the youngest children.

5–8 years

Excluding cases with an unspecified place of occurrence, at 5–8 approximately equal numbers of fall related injuries occurred in the *Home* (39%) and at *School* (37%).

9–14 years

Injuries in *Sports and athletic area* accounted for 40% of the specified locations for children aged 9–14. The next most commonly reported place was at a *School* (29%).

15–17 years

Excluding cases with an unspecified place of occurrence, 58% of injuries occurred in a *Sports and athletics area* (39%).

7.6 Activity at time of injury

For all children and young people during 2009–10, 41% of cases had an unspecified activity at the time of injury (Table 7.11). *While engaged in sports* was the most common specified activity recorded for fall injury cases for males. Females were more likely to report being injured while engaged in other types of leisure activity.

Table 7.11: Cases of hospitalised fall injury, by type of activity and sex, NSW, 2009–10

	Males		Females		
Activity	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
While engaged in sports	1,935	32.0	518	16.0	3.7
While engaged in leisure	922	15.2	576	17.8	1.6
While engaged in other types of work	50	0.8	34	1.1	1.5
While resting, sleeping, eating, etc.	89	1.5	98	3.0	0.9
Other specified activity	774	12.8	452	14.0	1.7
Unspecified activity	2,264	37.4	1,547	47.8	1.5
Total[(a)]	**6,042**	**100**	**3,232**	**100**	**1.9**

(a) Includes 11 cases While working for income and 15 cases with missing information.

For all children the three most common sporting activities associated with a fall related injury were football (n = 1,166; 13%), skate boarding (n = 369; 4%), and scooter riding (n = 160; 2%).

Activity by age

Differences in activity by age were also apparent, essentially reflecting the increased participation in sport as children age (Table 7.12).

Table 7.12: Cases of hospitalised fall injury, by type of activity and age, NSW, 2009–10

	Age group								All children and young people	
	0–4		5–8		9–14		15–17			
Activity	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
While engaged in sports	51	2.1	300	12.8	1,440	42.5	662	57.7	2,453	26.4
While engaged in leisure	409	17.1	582	24.9	452	13.3	55	4.8	1,498	16.1
While engaged in other types of work	7	0.0	34	1.5	37	1.1	6	0.5	84	0.9
While resting, sleeping, eating, etc.	122	0.3	24	1.0	27	0.8	14	1.2	187	2.0
Other specified activity	403	5.1	415	17.7	346	10.2	62	5.4	1,226	13.2
Unspecified activity	1,400	16.8	984	42.1	1,089	32.1	338	29.4	3,811	41.0
Total[(a)]	**2,392**	**58.5**	**2,339**	**100**	**3,391**	**100**	**1,148**	**100**	**9,285**	**100**

(a) Includes 12 cases While working for income and 12 cases where activity was not reported.

Note: Due to small case numbers, counts for children under 1 were combined with 1–4.

7.7 Season of injury

During 2009–10, there was little variation in the overall proportions of season of injury by sex other than a slightly higher proportion of fall injuries occurring during autumn (Table 7.13). For males and females the highest proportion of injuries occurred in autumn; 29% and 27% respectively.

Table 7.13: Cases of hospitalised fall injury, by season of injury and sex, NSW, 2009–10

	Males		Females		
Season	Number	Per cent	Number	Per cent	Ratio
Summer	1,482	24.5	812	25.1	1.8
Autumn	1,732	28.6	869	26.9	2.0
Winter	1,418	23.4	742	22.9	1.9
Spring	1,417	23.4	813	25.1	1.7
Total	**6,049**	**100**	**3,236**	**100**	**1.9**

Season of injury by age

There were slight variations in the season of injury by age group (Table 7.14).

Table 7.14: Cases of hospitalised fall injury, by season of injury and age, NSW, 2009–10

	Age group										All children and young people	
	<1		1–4		5–8		9–14		15–17			
Season	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Summer	73	26.3	611	28.8	619	26.4	746	22.0	245	21.3	2,294	24.7
Autumn	70	25.2	534	25.2	672	28.7	986	29.1	339	29.5	2,601	28.0
Winter	68	24.5	444	20.9	461	19.7	845	24.9	342	29.7	2,160	23.3
Spring	67	24.1	532	25.1	590	25.2	816	24.0	225	19.5	2,230	24.0
Total	**278**	**100**	**2,121**	**100**	**2,342**	**100**	**3,393**	**100**	**1,151**	**100**	**9,285**	**100**

<1 year

Children in this age group were most likely to be injured in summer (26%).

1–4 years

Children in this age group were most likely to be injured in summer (29%).

5–8 years

Children in this age group were most likely to be injured in autumn (29%).

9–14 years

Children in this age group were most likely to be injured in autumn (29%).

15–17 years

Young people in this age group were most likely to be injured in winter (30%).

7.8 Falls from windows

The total number of cases coded as a *Fall out of or through window* (W13.1) for children during the period was 46. For all children and young people, falls from windows were more common in males than females (Table 7.15). Due to small case numbers, age categories have been combined. Younger children aged 0–4 were slightly more likely to be injured as a result of a fall out or through a window.

Table 7.15: Cases of falls out or through windows, by sex and age, NSW, 2009–10

	Age group				All children and young people	
	0–4		5–17			
	Number	Per cent	Number	Per cent	No.	Per cent
Males	18	72.0	16	76.2	34	73.9
Females	7	28.0	5	23.8	12	26.1
Children	**25**	**100**	**21**	**100**	**46**	**100**

Note: Due to small case numbers, counts for children under 1 have been combined with 1–4, and counts for children 5–8, 9–14 and 15–17 have been combined.

With respect to place coding 17% of cases had an unspecified place of occurrence. Of the locations for a *Fall out of or through window* where a location was specified, the most common place of occurrence was within the home (82%) (Table 7.16). Within the home 8 cases occurred in a bedroom. A small number of children also fell from windows at school.

Table 7.16: Cases of falls out or through windows, by place, NSW, 2009–10

	All children and young people	
Place	**Number**	**Per cent**
Home	27	58.7
School	6	13.0
Other specified place of occurrence[(a)]	5	11.1
Unspecified place of occurrence	8	17.4
Total	**45**	**100**

(a) Other specified place includes *Health service area*, and *Sidewalk, Café, hotel and restaurant*.

8 Exposure to smoke, fire, heat and hot substances

ICD-10-AM case inclusion

Principal diagnosis: S00–T75, T79 and

First reported external cause: X00–X19

8.1 Overview

This chapter includes injury cases in which the first reported external cause was unintentional *Exposure to smoke, fire and flames* (X00–X09) or *Contact with heat and hot substances* (X10–X19).

During 2009–10, there were 644 cases of children and young people aged 0–17 hospitalised due to exposure to heat, fire, smoke and hot substances (Table 8.1). The rate and number of males hospitalised as a result of exposure to heat, fire, smoke and hot substance was higher than that of females. A total of 1,929 days were spent in hospital at an average length of stay of 2.9 days. Ten per cent of cases were classified as high threat to life.

Table 8.1: Key indicators for exposure to smoke, fire, heat and hot substances hospitalised injury, NSW, 2009–10

Indicator	Males	Females	All children and young people
Cases due to community injury[(a)]	15,624	8,255	23,879
Cases due to exposure to smoke, fire, heat and hot substances related injury[(a)]	391	253	644
Percentage of all cases due to injury and poisoning	2.5	3.1	2.7
Age-standardised rate/100,000 population[(b)]	46.1	31.3	38.9
Total patient days[(c)]	1,065	864	1,929
Mean length of stay (days)	2.7	3.1	2.9
Cases with a high threat to life[(d)]	37	29	66
Percentage of cases with a high threat to life	9.5	11.5	10.2

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

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

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

(d) High threat to life cases have ICD-based Injury Severity Score <0.941 following the method of (Stephenson et al. 2003).

An examination of hospitalised injury cases by age group reveals a number of differences between males and females (Table 8.2). The number of injured males was higher than for females for all but the youngest age group. The greatest differences were seen in the older age groups where the average ratio of cases was 2:1.

Table 8.2: Cases of exposure to smoke, fire, heat and hot substances hospitalised injury, by sex and age, NSW, 2009–10

	Age group										All children and young people	
	<1		1–4		5–8		9–14		15–17			
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Males	34	45.9	198	61.5	45	57	66	68.8	48	65.8	391	60.7
Females	40	54.1	124	38.5	34	43	30	31.3	25	34.2	253	39.3
Total	**74**	**100**	**322**	**100**	**79**	**100**	**96**	**100**	**73**	**100**	**644**	**100**

Figure 8.1 presents the age-specific rates of injury for males and females by age group. The highest rate of injury for males (106.4 cases per 100,000 population) occurred at 1–4 years. For females, the highest rate of injury (87.2 per 100,000) occurred at under 1 year. Rates of injury were lowest for males and females in older age groups.

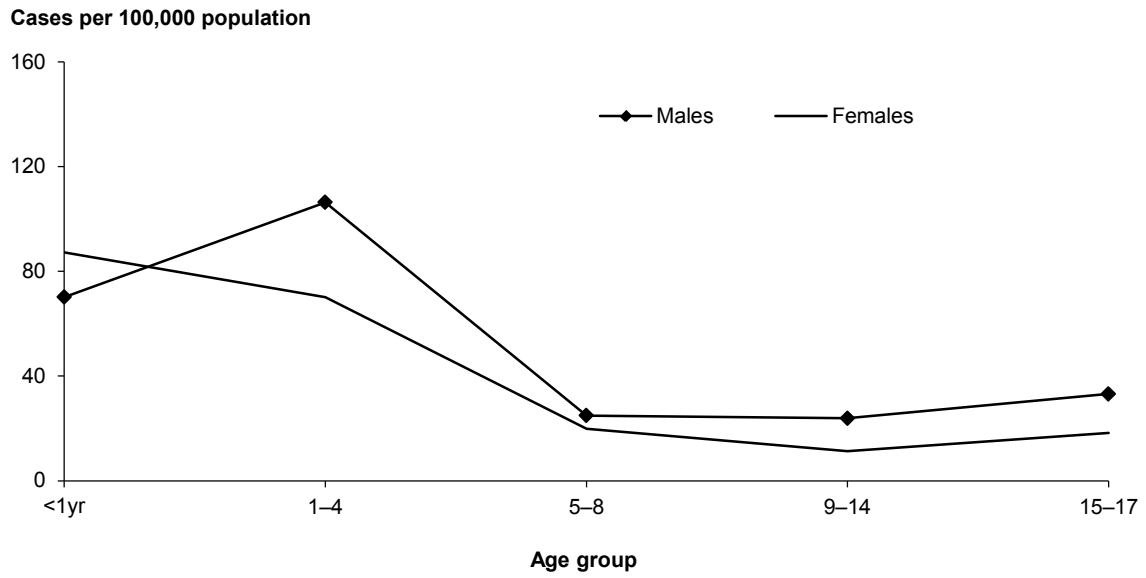
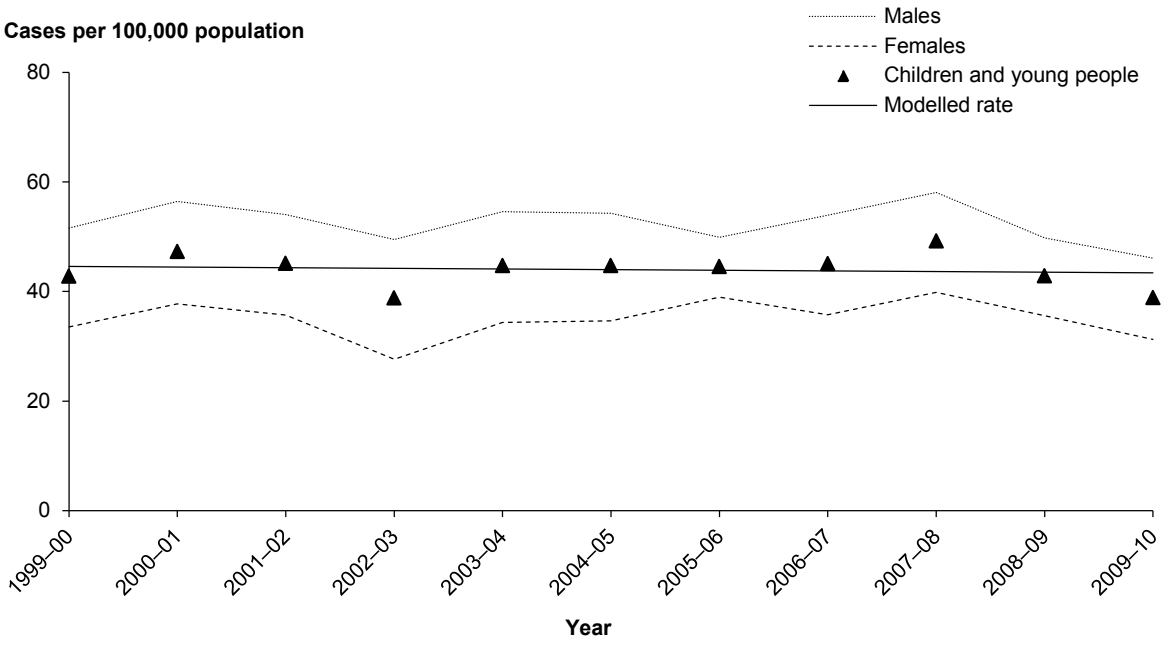


Figure 8.1: Age-specific rates of exposure to smoke, fire, heat and hot substances hospitalised injury, by age and sex, NSW, 2009–10

8.2 Trends over time

The highest rate of exposure to heat, fire, smoke and hot substances related injury in children and young people occurred in 2007–08 (49.2 cases per 100,000 population) and the lowest in 2002–03 (38.8 cases per 100,000 population) (Figure 8.2). Rates were higher for males than females for the entire period. The number of cases occurring in each year can be found in Appendix B.

The age-standardised rates of hospitalised heat, fire, smoke and hot substances related injury children and young people decreased over the period to 1999–2010 (Figure 8.2). Using negative binomial regression techniques, the decrease in rate was 0.3% per year (95% CI: –1.5%, 1.0%). This result was not statistically significant ($p = 0.650$).



Note: The line represents the modelled rate over the eleven-year period, while the symbols represent the actual age-standardised rate value for all children and young people for each year. Age-standardised rates for males and females are also shown.

Figure 8.2: Age-standardised rates of exposure to smoke, fire, heat and hot substances hospitalised injury, by sex, 0–17 years, NSW, 1999–2010

8.3 External cause

For children and young people of all ages, *Contact with hot drinks, foods, fats and cooking oils* (30%) was the leading cause of hospitalised exposure to smoke, fire, heat and hot substances injuries, followed by contact with *Other hot fluids e.g. water heated on a stove* (19%) (Table 8.3). There were some differences by sex, although the most common cause of hospitalisation for both sexes was *Contact with hot drinks, food, fats and cooking oils* (26% for males and 38% for females).

Table 8.3: Cases of exposure to smoke, fire, heat and hot substances hospitalised injury, by type of exposure and sex, NSW, 2009–10

	Males		Females		All children and young people	
External cause	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Exposure to controlled fire in building or structure (for example, fireplace, stove)	7	1.8	5	2.0	12	1.9
Exposure to controlled fire, not in building or structure (for example, camp-fire)	21	5.4	10	4.0	31	4.8
Exposure to ignition of highly flammable material (for example, gasoline, kerosene, petrol)	n.p.	n.p.	n.p.	n.p.	24	3.7
Exposure to ignition or melting of other clothing and apparel	n.p.	n.p.	n.p.	n.p.	6	0.9
Exposure to other specified smoke, fire and flames	24	6.2	8	3.2	32	5
Exposure to unspecified smoke, fire and flames	16	4.1	9	3.6	25	3.9
Contact with hot drinks, food, fats and cooking oils	99	25.5	95	37.8	194	30.1
Contact with hot tap-water	27	7.0	19	7.6	46	7.1
Contact with other hot fluids (for example, water heated on stove)	73	18.8	48	19.1	121	18.8
Contact with steam and hot vapours	n.p.	n.p.	n.p.	n.p.	9	1.4
Contact with hot household appliances	32	8.2	26	10.4	58	9
Contact with hot heating appliances, radiators and pipes	14	3.6	7	2.8	21	3.3
Contact with hot engines, machinery and tools	25	6.4	13	5.2	38	5.9
Contact with other and unspecified heat and hot substances	15	3.9	7	2.8	22	3.4
Total[(a)]	**391**	**100**	**253**	**100**	**644**	**100**

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

(a) Includes a total of 5 cases of Exposure to uncontrolled fire, not in building or structure (for example, forest fire) and Contact with other hot metals.

For all age groups, other than the oldest, admission to hospital due to *Contact with hot drinks, food, fats and cooking oils* and *Contact with other hot fluids* were the two most common causes of injury (Table 8.4). As children aged, the number of cases decreased and other causes of exposure to smoke, fire, heat and hot substances were more common.

Table 8.4: Cases of exposure to smoke, fire, heat and hot substances hospitalised injury, by age, NSW, 2009–10

	Age group								All children and young people	
	0–4		5–8		9–14		15–17			
External cause	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Exposure to controlled fire in building or structure (for example, fireplace, stove)	6	1.5	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	12	1.9
Exposure to controlled fire, not in building or structure (for example, camp-fire)	9	2.3	n.p.	n.p.	n.p.	n.p.	14	19.4	31	4.8
Exposure to ignition of highly flammable material (for example, gasoline, kerosene, petrol)	6	1.5	n.p.	n.p.	7	7.4	8	11.1	24	3.7
Exposure to ignition or melting of other clothing and apparel	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	6	0.9
Exposure to other specified smoke, fire and flames	14	3.5	n.p.	n.p.	6	6.4	11	15.3	32	5
Exposure to unspecified smoke, fire and flames	6	1.5	n.p.	n.p.	5	5.3	11	15.3	25	3.9
Contact with hot drinks, food, fats and cooking oils	142	35.9	21	26.6	26	27.7	5	6.9	194	30.1
Contact with hot tap-water	34	8.6	6	7.6	n.p.	n.p.	n.p.	n.p.	46	7.1
Contact with other hot fluids (for example, water heated on stove)	74	18.7	18	22.8	20	21.3	9	12.5	121	18.8
Contact with steam and hot vapours	5	1.3	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	9	1.4
Contact with hot household appliances	47	11.9	n.p.	n.p.	6	6.4	n.p.	n.p.	58	9
Contact with hot heating appliances, radiators and pipes	17	4.3	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	21	3.3
Contact with hot engines, machinery and tools	16	4.0	11	13.9	7	7.4	n.p.	n.p.	38	5.9
Contact with other and unspecified heat and hot substances	n.p.	n.p.	5	6.3	n.p.	n.p.	n.p.	n.p.	22	3.4
Total[(a)]	**396**	**100**	**79**	**100**	**96**	**100**	**73**	**100**	**644**	**100**

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

(a) Includes a total of 5 cases of Exposure to uncontrolled fire, not in building or structure (for example, forest fire) and Contact with other hot metals.

Note: Due to small case numbers, counts for children under 1 have been combined with 1–4.

8.4 Body region injured

The majority of exposure to smoke, fire, heat and hot substances injuries were ascribed to the six specific sites shown in Table 8.5 (98%, *n* = 632). The most common site of burns injury for males was the wrist and hand (24%). For females, the most common site was the trunk (24%), which was the second most common site for males (22%).

Table 8.5: Top 6 body regions injured for exposure to smoke, fire, heat and hot substances hospitalised injury, by sex, NSW, 2009–10

	Males		Females		All children and young people	
Body region	**Number**	**Per cent**	**Number**	**Per cent**	**No.**	**Per cent**
Burn of head & neck	56	14.3	35	13.8	91	14.1
Burn of trunk	84	21.5	60	23.7	144	22.4
Burn of shoulder & upper limb	55	14.1	40	15.8	95	14.8
Burn of wrist & hand	94	24.0	39	15.4	133	20.7
Burn of hip & lower limb	63	16.1	45	17.8	108	16.8
Burn of ankle & foot	30	7.7	29	11.5	59	9.2
Total[(a)]	**391**	**100**	**253**	**100**	**644**	**100**

(a) Total includes Burn, body region unspecified, Burn of multiple body regions, and cases not classified by burn site (*n* = 10 in total).

Body region injured by age

The body region injured as a result of exposure to smoke, fire, heat and hot substances differed considerably by age (Table 8.6).

<1 year

The majority of burns in this age group occurred to the wrist and hand (35%) followed by burns to the hip and lower limbs (24%).

1–4 years

A quarter of burns occurred to the trunk (25%) followed by the wrist and hand (22%).

5–8 years

The majority of burns occurred to the trunk (30%) followed by the hip and lower limbs (24%).

9–14 years

The majority of burns occurred to the hip and lower limbs (28%) followed by burns to the trunk (18%).

15–17 years

A quarter of burns occurred to the head and neck (24%) followed by the shoulder and upper limbs, and hip and lower limbs (18% each).

Table 8.6: Cases of exposure to smoke, fire, heat and hot substances hospitalised injury, by body region and age, NSW, 2009–10

	Age group										All children and young people	
	<1		1–4		5–8		9–14		15–17			
Body region	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Burn of head & neck	n.p.	n.p.	47	14.6	n.p.	n.p.	14	14.6	17	23.3	91	14.1
Burn of trunk	13	17.6	81	25.2	24	30.4	17	17.7	9	12.3	144	22.4
Burn of shoulder & upper limb	7	9.5	58	18.0	6	7.6	11	11.5	13	17.8	95	14.8
Burn of wrist & hand	26	35.1	70	21.7	8	10.1	17	17.7	12	16.4	133	20.7
Burn of hip & lower limb	18	24.3	31	9.6	19	24.1	27	28.1	13	17.8	108	16.8
Burn of ankle & foot	n.p.	n.p.	30	9.3	n.p.	n.p.	8	8.3	6	8.2	59	9.2
Total[(a)]	**74**	**100**	**322**	**100**	**79**	**100**	**96**	**100**	**73**	**100**	**644**	**100**

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

(a) Total includes Burn, body region unspecified, Burn of multiple body regions, and cases not classified by burn site (*n* = 10 in total).

8.5 Place of injury

During 2009–10, a quarter of all smoke, fire, heat and hot substances injury cases recorded an unspecified or missing place of occurrence (Table 8.7). Similar proportions of unspecified places of occurrence were found in cases for males and females, 25% and 24% respectively. For cases with a specified place of occurrence, for both males and females, the majority of exposure to smoke, fire, heat and hot substances occurred within the *Home*. The ratio of males to females was greatest at trade and service areas (9.0:1).

Table 8.7: Cases of exposure to smoke, fire, heat and hot substances hospitalised injury, by place and sex, NSW, 2009–10

	Males		Females		
Place of occurrence	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
Home	253	64.7	167	66.0	1.5
School	n.p.	n.p.	n.p.	n.p.	2.0
Street and highway	n.p.	n.p.	n.p.	n.p.	0.4
Trade and service area	n.p.	n.p.	n.p.	n.p.	10.0
Farm	n.p.	n.p.	n.p.	n.p.	1.7
Other specified place of occurrence	22	5.6	15	5.9	1.5
Unspecified place of occurrence	97	24.8	61	24.1	1.6
Total	**391**	**100**	**253**	**100**	**1.5**

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

Where place within the home was specified (n = 175), the majority of exposure to smoke, fire, heat and hot substances occurred in the kitchen (72%; n = 126). This was true for a higher proportion of females (53%) than males (47%). In contrast, males (85%) reported a much higher proportion of exposure to smoke, fire, heat and hot substances in outdoor areas compared with females (15%).

Place of injury by age

Differences in the place of occurrence of exposure to smoke, fire, heat and hot substances can be seen according to age, however the major difference lies in the increasing proportions of unspecified location in the older age groups (Table 8.8). The majority of exposure to smoke, fire, heat and hot substances injuries for which a place of occurrence was specified still occurred in the home, regardless of age. The kitchen also remains the most frequent location within the home for exposure to smoke, fire, heat and hot substances for all age groups other than the oldest.

Table 8.8: Cases of exposure to smoke, fire, heat and hot substances hospitalised injury, by place and age, NSW, 2009–10

	Age group								All children and young people	
	0–4		5–8		9–14		15–17			
Place of occurrence	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Home	293	74.0	52	65.8	53	55.2	22	30.1	420	65.2
Other specified place of occurrence	13	3.3	5	6.3	n.p.	n.p.	n.p.	n.p.	37	5.7
All other specified places[(a)]	9	2.4	9	11.4	n.p.	n.p.	n.p.	n.p.	29	4.5
Unspecified place of occurrence	81	20.5	13	16.5	30	31.3	34	46.6	158	24.5
Total	**396**	**100**	**79**	**100**	**96**	**100**	**73**	**100**	**644**	**100**

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

(a) Includes cases occurring on at *School*, on a *Street and highway*, in a *Trade and service area*, and on a *Farm*,

Note: Due to small case numbers, counts for children under 1 were combined with 1–4.

8.6 Activity at time of injury

For all children during 2009–10, 57% of cases had an unspecified activity at the time of injury (Table 8.9). Where a specific activity was recorded it was most often while resting or another specified activity; this was true of males and females.

Table 8.9: Cases of exposure to smoke, fire, heat and hot substances hospitalised injury, by activity and sex, NSW, 2009–10

	Males		Females		
Activity	Number	Per cent	Number	Per cent	Ratio
While engaged in sports	n.p.	n.p.	n.p.	n.p.	1.0
While engaged in leisure	27	6.9	8	3.2	3.4
While working for income	n.p.	n.p.	n.p.	n.p.	2.5
While engaged in other types of work	10	2.6	11	4.3	0.9
While resting, sleeping, eating, etc.	40	10.3	42	16.6	1.0
Other specified activity	83	21.3	43	17.0	1.9
Unspecified activity	223	57.2	145	57.3	1.5
Total[(a)]	**391**	**100**	**253**	**100**	**1.5**

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

(a) Includes cases where activity was not recorded.

Activity by age

Due to small case numbers, further analysis by age is not presented.

8.7 Season of injury

During 2009–10, the highest proportion of injuries occurred as a result of exposure to smoke, fire, heat and hot substances occurred in winter for males (33%) and females (30%) (Table 8.10).

Table 8.10: Cases of exposure to smoke, fire, heat and hot substances hospitalised injury, by season of injury and sex, NSW, 2009–10

	Males		Females		
Season	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
Summer	76	19.4	49	19.4	1.6
Autumn	104	26.6	66	26.1	1.6
Winter	129	33.0	76	30.0	1.7
Spring	82	21.0	62	24.5	1.3
Total	**391**	**100**	**253**	**100**	**1.5**

Season of injury by age

There were slight variations according to age in the size of the proportions of exposure to smoke, fire, heat and hot substances occurring by season. Apart from burn injuries in 1–4 year olds, the greatest proportion of injuries were sustained in winter (Table 8.11).

Table 8.11: Cases of exposure to smoke, fire, heat and hot substances hospitalised injury, by season of injury and age, NSW, 2009–10

	Age group										All children and young people	
	<1		1–4		5–8		9–14		15–17			
Season	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Summer	11	14.9	54	16.8	20	25.3	23	24	17	23.3	125	19.4
Autumn	13	17.6	101	31.4	21	26.6	22	22.9	13	17.8	170	26.4
Winter	33	44.6	89	27.6	30	38	27	28.1	26	35.6	205	31.8
Spring	17	23	78	24.2	8	10.1	24	25	17	23.3	144	22.4
Total	**74**	**100**	**322**	**100**	**79**	**100**	**96**	**100**	**73**	**100**	**644**	**100**

9 Other unintentional injuries

ICD-10-AM case inclusion

Principal diagnosis: S00–T75, T79 and

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

9.1 Overview

Other unintentional injury includes the following external cause categories:

- Exposure to inanimate mechanical forces (W20–W49)
- Exposure to animate mechanical forces (W50–W64)
- 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)

During 2009–10, there were 8,170 cases of children and young people aged 0–17 hospitalised due to other unintentional injuries (Table 9.1). The rate and number of males hospitalised as a result of other unintentional injuries was higher than that of females. A total of 12,497 days were spent in hospital at an average length of stay of 1.5 days. About 3% of cases were classified as high threat to life.

Table 9.1: Key indicators for hospitalised other unintentional injury, NSW, 2009–10

Indicator	Males	Females	All children and young people
Cases due to community injury[(a)]	15,624	8,255	23,879
Cases due to other unintentional injury[(a)]	5,613	2,557	8,170
Percentage of all cases due to injury and poisoning	35.9	31.0	34.2
Age-standardised rate/100,000 population[(b)]	667.1	320.4	498.1
Total patient days[(c)]	8,571	3,926	12,497
Mean length of stay (days)	1.5	1.5	1.5
Cases with a high threat to life[(d)]	137	66	203
Percentage of cases with a high threat to life	2.4	2.6	2.5

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

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

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

(d) High threat to life cases have ICD-based Injury Severity Score <0.941 following the method of (Stephenson et al. 2003).

An examination of hospitalised other unintentional injury cases by age group reveals a number of differences between males and females (Table 9.2). The number of injured males was higher than for females for all age groups. The greatest differences were in the older age groups where the average ratio of cases was 3.5:1.

Table 9.2: Cases of hospitalised other unintentional injury, by sex and age, NSW, 2009–10

	Age group										All children and young people	
	<1		1–4		5–8		9–14		15–17			
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Males	101	55.5	1,056	58.1	734	61.2	1,820	71.9	1,902	78.0	5,613	68.7
Females	81	44.5	761	41.9	466	38.8	712	28.1	537	22.0	2,557	31.3
Total	**182**	**100**	**1,817**	**100**	**1,200**	**100**	**2,532**	**100**	**2,439**	**100**	**8,170**	**100**

Figure 9.1 presents the age-specific rates of injury for males and females. Generally speaking, the rate of injury for males increased with age. The highest rate for males was 1,315 cases per 100,000 population in 15–17 year olds, whereas the highest rate for females was 430 per 100,000 in the 1-4 age group.

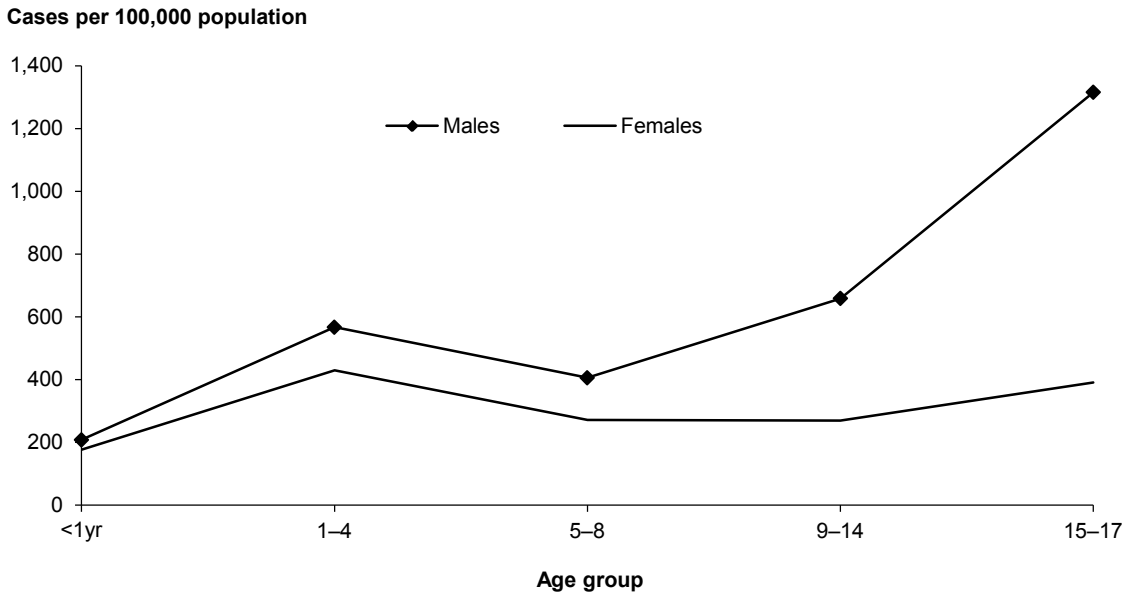
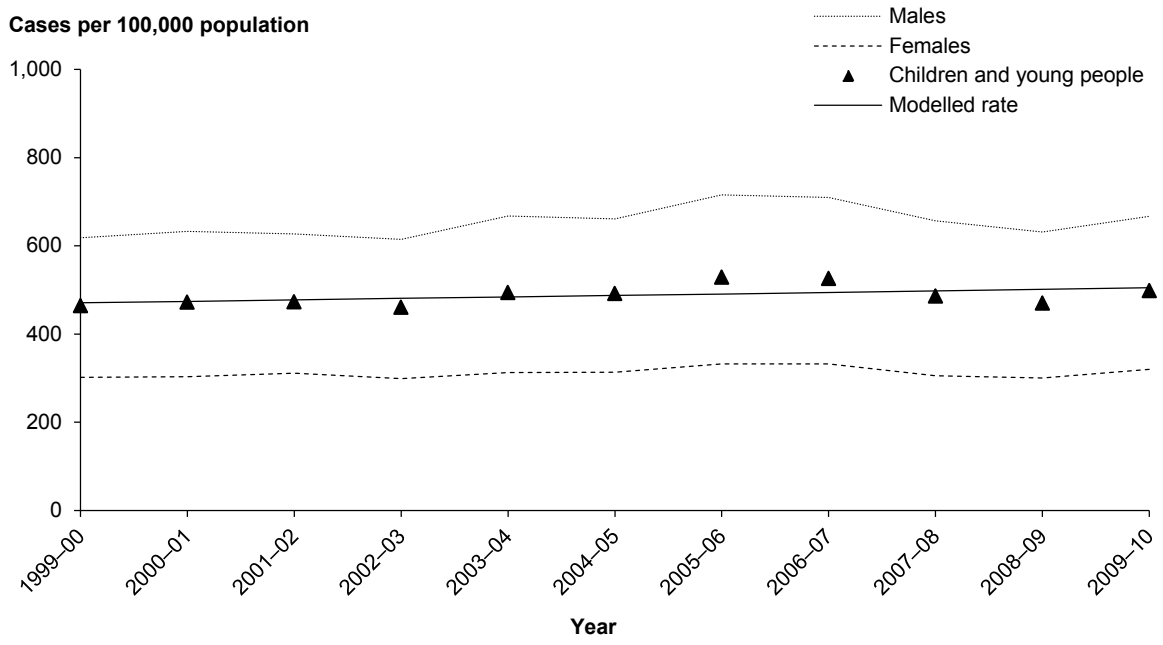


Figure 9.1: Age-specific rates of hospitalised other unintentional injury, by age and sex, NSW, 2009–10

9.2 Trends over time

The highest rate of exposure to other unintentional injury in children and young people occurred in 2005–06 (529 cases per 100,000 population) and the lowest in 2002–03 (460.7 cases per 100,000 population) (Figure 9.2). Rates were higher for males than females for the entire period. The number of cases occurring in each year can be found in Appendix B.

The age-standardised rates of hospitalised other unintentional injury cases for NSW children and young people increased over the period to 1999–2010 (Figure 9.2). Using negative binomial regression techniques, the increase in rate was 0.7% per year (95% CI: 0.0%, 1.4%). This result was not statistically significant (p = 0.0650).



Note: The line represents the modelled rate over the eleven-year period, while the symbols represent the actual age-standardised rate value for all children and young people for each year. Age-standardised rates for males and females are also shown.

Figure 9.2: Age-standardised rates of hospitalised other unintentional injury, by sex, 0–17 years, NSW, 1999–2010

9.3 External cause

The most common category of external causes was *Exposure to inanimate mechanical forces* (n = 3,887, 48%) (Table 9.3). As a proportion, slightly more females (51%) were injured as a result of this than males (46%). This category includes W22 *Striking against or struck by other object* (n = 700); W44 *Foreign body entering into or through eye or natural orifice* (n = 613); W23 *Contact with sharp glass* (n = 429); and W25 *Caught, crushed, jammed or pinched in or between objects* (n = 388).

Table 9.3: Cases of hospitalised other unintentional injury, by external cause and sex, NSW, 2009–10

	Males		Females		All children and young people	
External cause	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Exposure to inanimate mechanical forces	2,577	45.9	1,310	51.2	3,887	47.6
Exposure to animate mechanical forces	964	17.2	339	13.3	1,303	15.9
Other accidental threats to breathing	26	0.5	24	0.9	50	0.6
Exposure to electric current, radiation, extreme temperature & pressure	n.p.	n.p.	n.p.	n.p.	20	0.2
Contact with venomous animals and plants	125	2.2	74	2.9	199	2.4
Exposure to forces of nature	n.p.	n.p.	n.p.	n.p.	7	0.1
Overexertion, travel and privation	229	4.1	116	4.5	345	4.2
Accidental exposure to other and unspecified factors	1,670	29.8	689	26.9	2,359	28.9
Total	**5,613**	**100**	**2,557**	**100**	**8,170**	**100**

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

The second most common category, *Accidental exposure to other and unspecified factors*, accounted for 29% (n = 2,359) of other unintentional hospitalised injury cases. The majority of these were attributed to unspecified factors (93.6%, n = 2,207).

The third most common type of external cause was *Exposure to animate mechanical forces* (W50–W64). Over half of these were coded as being hit, struck, kicked, twisted, bitten or scratched by another person (45%, n = 586). Within the category *Exposure to animate mechanical forces, Being bitten or struck by a dog* accounted for 15% (n = 200) of hospitalised other unintentional injuries. A higher proportion of females (24%) reported *Being bitten or struck by a dog* compared with males (12%).

External cause by age

The most common category of external cause for each age group other than the oldest was *Exposure to inanimate mechanical forces* (Table 9.4). More detailed analysis by age group is given below.

Table 9.4: Cases of hospitalised other unintentional injury, by external cause and age, NSW, 2009–10

	Age group										All children and young people	
	<1		1–4		5–8		9–14		15–17			
External cause	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Exposure to inanimate mechanical forces	75	41.2	1,184	65.2	707	58.9	1,032	40.8	889	36.4	3,887	47.6
Exposure to animate mechanical forces	14	7.7	222	12.2	186	15.5	511	20.2	370	15.2	1,303	15.9
Other accidental threats to breathing	22	12.1	19	1.0	5	0.4	n.p.	n.p.	n.p.	n.p.	50	0.6
Exposure to electric current, radiation, extreme temperature & pressure	n.p.	n.p.	n.p.	n.p.	5	0.4	7	0.3	5	0.2	20	0.2
Contact with venomous animals and plants	n.p.	n.p.	49	2.7	47	3.9	65	2.6	n.p.	n.p.	199	2.4
Exposure to forces of nature	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	7	0.1
Overexertion, travel and privation	n.p.	n.p.	n.p.	n.p.	22	1.8	148	5.8	154	6.3	345	4.2
Accidental exposure to other and unspecified factors	63	34.6	323	17.8	228	19.0	765	30.2	980	40.2	2,359	28.9
Total	**182**	**100**	**1,817**	**100**	**1,200**	**100**	**2,532**	**100**	**2,439**	**100**	**8,170**	**100**

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

<1 year

The most common category of external cause was *Exposure to inanimate mechanical forces* (41%). Within this category, the majority were coded as W44 *Foreign body entering into or through eye or natural orifice* (*n* = 22, 29%).

1–4 years

Exposure to inanimate mechanical forces (65%) was the most common category. As with the youngest age group, the majority were coded as W44 *Foreign body entering into or through eye or natural orifice* (*n* = 303, 26%). Within the category *Accidental exposure to animate mechanical forces*, 35% (*n* = *77*) had been *Bitten or struck by a dog*.

5–8 years

Exposure to inanimate mechanical forces (59%) was most common, and the majority of cases were coded as W44 *Foreign body entering into or through eye or natural orifice* (*n* = 148, 21%). Within the category *Accidental exposure to animate mechanical forces*, 33% (*n* =61) had been *Hit, struck, kicked, twisted, bitten or scratched by another person*.

9–14 years

Exposure to inanimate mechanical forces (41%) was most common, and the majority were coded as W22 *Striking against or struck by other objects* (*n* = 192, 19%). Within the category *Accidental exposure to animate mechanical forces*, 33% (*n* =280) had been *Hit, struck, kicked, twisted, bitten or scratched by another person*.

15–17 years

Accidental exposure to other and unspecified factors (40%) was most common, followed by *Accidental exposure to inanimate mechanical forces* (36%). Within this latter category, the majority of cases were coded as W25 *Contact with sharp glass* (*n* = 178, 20%). Within the category *Exposure to animate mechanical forces*, 58% (*n* =216) had been *Hit, struck, kicked, twisted, bitten or scratched by another person.*

9.4 Principal diagnosis

Injuries to the wrist and hand (29%) were the most common results of other unintentional injuries followed by *Injuries to the head* (21%) (Table 9.5). Males and females had similar proportions of diagnoses, other than for *Injuries to the wrist and hand* and *Effects of foreign body entering through natural orifice.*

Table 9.5: Cases of hospitalised other unintentional injury, by principal diagnosis and sex, NSW, 2009–10

	Males		Females		All children and young people	
Principal diagnosis	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Injuries to the head	1,187	21.1	530	20.7	1,717	21.0
Injuries to the neck	72	1.3	30	1.2	102	1.2
Injuries to the thorax	30	0.5	14	0.5	44	0.5
Injuries to the abdomen, lower back, lumbar spine & pelvis	110	2.0	56	2.2	166	2.0
Injuries to the shoulder & upper arm	213	3.8	67	2.6	280	3.4
Injuries to the elbow & forearm	534	9.5	205	8.0	739	9.0
Injuries to the wrist & hand	1,742	31.0	637	24.9	2,379	29.1
Injuries to the hip & thigh	87	1.5	52	2.0	139	1.7
Injuries to the knee & lower leg	601	10.7	253	9.9	854	10.5
Injuries to the ankle & foot	461	8.2	259	10.1	720	8.8
Injuries to unspecified parts of trunk, limb or body region	37	0.7	17	0.7	54	0.7
Effects of foreign body entering through natural orifice	365	6.5	338	13.2	703	8.6
Burns	36	0.6	21	0.8	57	0.7
Toxic effects of substances non-medicinal	96	1.7	61	2.4	157	1.9
Other and unspecified effects of external causes	24	0.4	10	0.4	34	0.4
Total[(a)]	**5,613**	**100**	**2,557**	**100**	**8,170**	**100**

(a) Total includes 3 cases involving multiple body regions and 22 cases of certain early complications of trauma.

Principal diagnosis by age

Principal diagnosis varied according to age for other unintentional injuries (Table 9.6). In children aged 0–4, *Injuries to the head* were the most common (31%). In the age range 5–17, *Injuries to the wrist and hand* and *Injuries to the head* were prominent.

Table 9.6: Cases of hospitalised other unintentional injury, by principal diagnosis and age, NSW, 2009–10

	Age group								All children and young people	
	0–4		5–8		9–14		15–17			
Principal diagnosis	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Injuries to the head	599	30.0	277	23.1	460	18.2	381	15.6	1,717	21.0
Injuries to the neck	8	0.4	10	0.8	42	1.7	42	1.7	102	1.2
Injuries to the thorax	n.p.	n.p.	n.p.	n.p.	13	0.5	20	0.8	44	0.5
Injuries to the abdomen, lower back, lumbar spine & pelvis	18	0.9	28	2.3	57	2.3	63	2.6	166	2.0
Injuries to the shoulder & upper arm	38	1.9	27	2.3	74	2.9	141	5.8	280	3.4
Injuries to the elbow & forearm	85	4.3	118	9.8	355	14.0	181	7.4	739	9.0
Injuries to the wrist & hand	495	24.8	294	24.5	731	28.9	859	35.2	2,379	29.1
Injuries to the hip & thigh	26	1.3	21	1.8	57	2.3	35	1.4	139	1.7
Injuries to the knee & lower leg	54	2.7	63	5.3	309	12.2	428	17.5	854	10.5
Injuries to the ankle & foot	171	8.6	131	10.9	250	9.9	168	6.9	720	8.8
Injuries to unspecified parts of trunk, limb or body region	23	1.2	11	0.9	12	0.5	8	0.3	54	0.7
Effects of foreign body entering through natural orifice	399	20.0	162	13.5	88	3.5	54	2.2	703	8.6
Burns	19	1.0	11	0.9	18	0.7	9	0.4	57	0.7
Toxic effects of substances non-medicinal	39	2.0	40	3.3	46	1.8	32	1.3	157	1.9
Other and unspecified effects of external causes	n.p.	n.p.	n.p.	n.p.	10	0.4	11	0.5	34	0.4
Total[(a)]	**1,999**	**100**	**1,200**	**100**	**2,532**	**100**	**2,439**	**100**	**8,170**	**100**

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

(a) Total includes 3 cases involving multiple body regions and 21 cases of certain early complications of trauma.

Note: Due to small case numbers, counts for children under 1 were combined with 1–4.

9.5 Place of injury

During 2009–10, more than half of all cases recorded an unspecified or missing place of occurrence (Table 9.7). Similar proportions of unspecified places of occurrence were found in males and females, 55% and 59% respectively. Males were more likely to be injured within the *Home* or at a *Sports and athletics area*. Females were more likely to be injured within the *Home*. The ratio of males to females injured at a *Sports and athletics area* was 4.6:1.

Table 9.7: Cases of hospitalised other unintentional injury, by place of injury and sex, NSW, 2009–10

	Males		Females		
Place of occurrence	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
Home	865	15.4	571	22.3	1.5
Residential institution	n.p.	n.p.	n.p.	n.p.	3.3
School, other institution & public administration area	381	6.8	130	5.1	2.9
Sports and athletics area	880	15.6	190	7.5	4.6
Street and highway	20	0.4	8	0.2	2.5
Trade and service area	52	0.9	25	1.0	2.1
Industrial and construction area	n.p.	n.p.	n.p.	n.p.	31.0
Farm	30	0.5	17	0.7	1.8
Other specified place of occurrence	238	4.1	103	4.0	2.3
Unspecified place of occurrence	3,103	55.3	1,508	59.0	2.1
Total[(a)]	**5,613**	**100**	**2,557**	**100**	**2.2**

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

(a) Total includes cases with missing place information.

Place of injury by age

Differences in the place of occurrence of injuries can be seen according to age (Table 9.8). For the youngest age groups (0–4 and 5–8), the *Home* was the most common location of other unintentional injury ranging from 36% in 0-4 year olds to 22% in 5–8 year olds. In young people aged 15–17, the most common location of injury was the *Sports and athletics area* (22%).

Table 9.8: Cases of hospitalised other unintentional injury, by place of injury and age, NSW, 2009–10

	Age group								All children and young people	
	0–4		5–8		9–14		15–17			
Place of occurrence	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Home	705	35.3	269	22.4	279	11	183	7.5	1,436	17.6
Residential institution	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	7	0.3	13	0.1
School, other institution & public administration area	40	2.0	90	7.5	239	9.4	142	5.8	511	6.3
Sports and athletics area	5	0.3	48	4.0	490	19.2	527	21.7	1,070	12.9
Street and highway	n.p.	n.p.	n.p.	n.p.	11	0.4	10	0.5	28	0.4
Trade and service area	24	1.2	n.p.	n.p.	n.p.	n.p.	40	1.7	77	1
Industrial and construction area	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	30	1.2	32	0.4
Farm	10	0.5	6	0.5	16	0.6	15	0.6	47	0.6
Other specified place of occurrence	41	2.1	49	4.2	150	5.9	101	4.2	341	4.1
Unspecified place of occurrence	1,164	58.2	724	60	1,339	53	1,384	57	4,611	56
Total[(a)]	**1,997**	**100**	**1,200**	**100**	**2,530**	**100**	**2,439**	**100**	**8,168**	**100**

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

(a) Total includes cases with missing place information.

Note: Due to small case numbers, counts for children under 1 were combined with 1–4.

9.6 Activity at time of injury

During 2009–10, 60% of cases had an unspecified activity at the time of injury (Table 9.9). *While engaged in sports* was commonly reported for males (25%) and females (13%).

Table 9.9: Cases of hospitalised other unintentional injury, by activity and sex, NSW, 2009–10

	Males		Females		
Activity	Number	Per cent	Number	Per cent	Ratio
While engaged in sports	1,411	25.1	326	12.7	4.3
While engaged in leisure	265	4.7	169	6.6	1.6
While working for income	107	1.9	10	0.4	10.7
While engaged in other types of work	106	1.9	44	1.7	2.4
While resting, sleeping, eating, etc.	108	1.9	71	2.8	1.5
Other specified activity	427	7.6	211	8.3	2.0
Unspecified activity	3,182	56.7	1,723	67.4	1.8
Total[(a)]	**5,613**	**100**	**2,557**	**100**	**2.2**

(a) Total includes cases with missing place information.

Activity by age

Differences in activity by age were apparent, essentially reflecting the increased participation in sport as children age. For the two older groups, the proportion of cases recorded as occurring *While engaged in sports* was 33%. At younger ages (0–8) large proportions of cases were unspecified as to activity, ranging from 80% (under 1) to 68% (5–8).

9.7 Season of injury

During 2009–10, there was little variation in the overall proportions of season of injury by sex other than a slightly higher proportion of other unintentional injuries occurring during autumn for males (Table 9.10).

Table 9.10: Cases of hospitalised other unintentional injury, by season of injury and sex, NSW, 2009–10

	Males		Females		
Season	Number	Per cent	Number	Per cent	Ratio
Summer	1,269	22.6	639	25.0	2.0
Autumn	1,533	27.3	605	23.7	2.5
Winter	1,458	26.0	633	24.8	2.3
Spring	1,353	24.1	680	26.6	2.0
Total	**5,613**	**100**	**2,557**	**100**	**2.2**

Season of injury by age

The season of injury varied slightly according to age (Table 9.11). Younger children were more likely to sustain other unintentional injuries in summer. Young people were most likely to sustain other unintentional injuries in autumn and winter.

Table 9.11: Cases of hospitalised other unintentional injury, by season of injury and age, NSW, 2009–10

	Age group										All children and young people	
	<1		1–4		5–8		9–14		15–17			
Season	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Summer	49	26.9	462	25.4	311	25.9	557	22	529	21.7	1,908	23.4
Autumn	42	23.1	454	25	315	26.3	648	25.6	679	27.8	2,138	26.2
Winter	42	23.1	432	23.8	278	23.2	659	26	680	27.9	2,091	25.6
Spring	49	26.9	469	25.8	296	24.7	668	26.4	551	22.6	2,033	24.9
Total	**182**	**100**	**1,817**	**100**	**1,200**	**100**	**2,532**	**100**	**2,439**	**100**	**8,170**	**100**

Part B: Intentional injuries

10 Self-harm

ICD-10-AM case inclusion

Principal diagnosis: S00–T75, T79 and

First reported external cause: X60–X84

10.1 Overview

This section includes suicide and attempts of suicide, as well as cases where people have intentionally hurt themselves, but not necessarily with the intention to kill, for example, self-mutilation. A discussion of the issues relevant to the analysis of intentional self-harm cases in general, and specific to children, is included at the end of this chapter.

During 2009–10, there were 851 cases of children and young people aged 0–17 hospitalised due to self-harm (Table 10.1). The rate and number of females hospitalised as a result of a self-harm injury was much higher than males (ratio of 3.5:1 females to males). A total of 1,989 days were spent in hospital at an average length of stay of 2.3 days. Overall 3% of cases were high threat to life and males had a much higher proportion of high threat to life cases compared with females.

Table 10.1: Key indicators for hospitalised intentional self-harm injury, NSW, 2009–10

Indicator	Males	Females	All children and young people
Cases due to community injury[(a)]	15,624	8,255	23,879
Cases due to self-harm injury[(a)]	193	658	851
Percentage of all cases due to injury and poisoning	1.2	8.0	3.6
Age-standardised rate/100,000 population[(b)]	22.5	80.9	51.0
Total patient days[(c)]	473	1,516	1,989
Mean length of stay (days)	2.5	2.3	2.3
Cases with a high threat to life[(d)]	15	12	27
Percentage of cases with a high threat to life	7.8	1.8	3.2

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

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

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

(d) High threat to life cases have ICD-based Injury Severity Score <0.941 following the method of (Stephenson et al. 2003).

An examination of self-harm injury cases by age group was limited to those aged 9 and over due to small case numbers in younger children (n = 6 all younger age groups combined) (Table 10.2). The number of injured females was higher in both 9–14 and 15–17 year olds.

Table 10.2: Cases of hospitalised intentional self-harm injury, by sex and age, NSW, 2009–10

	Age group				All children and young people[(a)]	
	9–14		15–17			
	Number	Per cent	Number	Per cent	No.	Per cent
Males	33	17.2	154	23.6	193	22.7
Females	159	82.8	499	76.4	658	77.3
Total	**192**	**100**	**653**	**100**	**851**	**100**

(a) Includes cases from all age categories.

Figure 10.1 presents age-specific rates of intentional self-harm injury for males and females. The highest rate of intentional self-harm for females was in 15–17 year olds (359 cases per 100,000 population). The highest rate of intentional self-harm for males also occurred in this age group but was considerably lower (103 per 100,000).

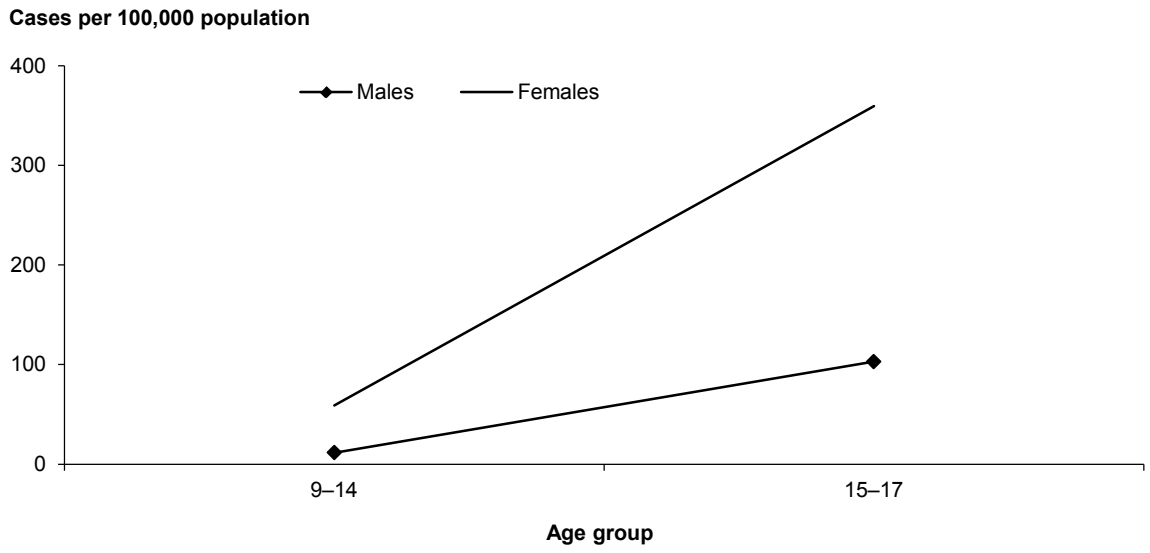
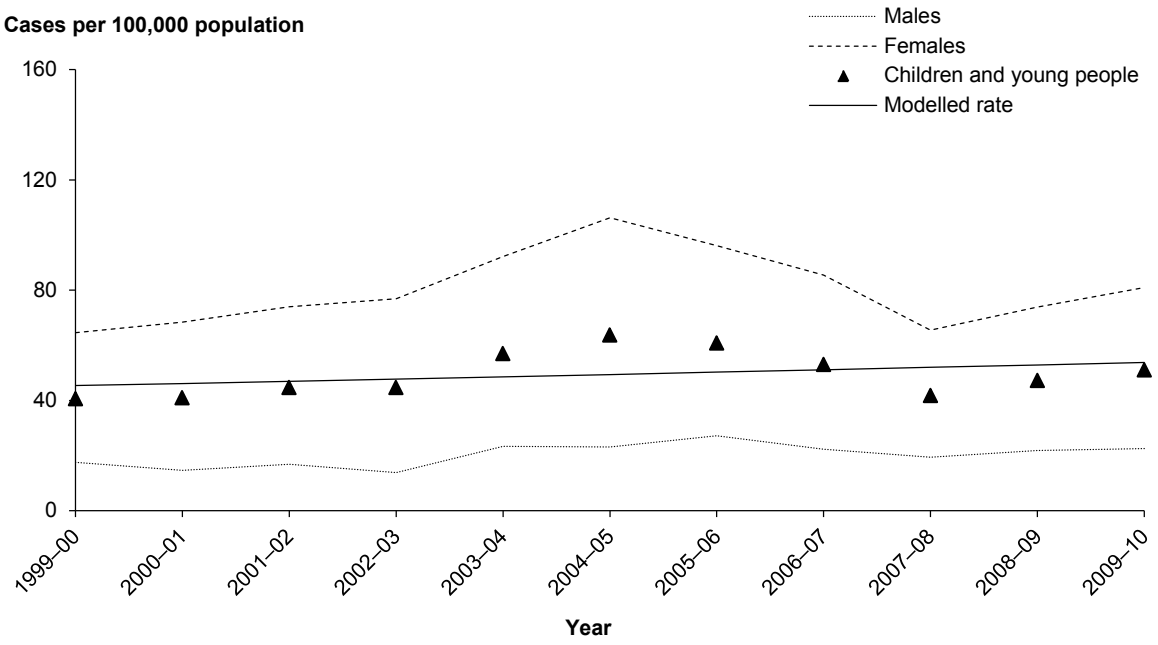


Figure 10.1: Age-specific rates of hospitalised intentional self-harm injury, by age and sex, 9–17 years, NSW, 2009–10

10.2 Trends over time

The highest rate of intentional self-harm injury in children and young people occurred in 2004–05 (63.7 cases per 100,000 population) and the lowest in 1999–00 (40.5 cases per 100,000 population) (Figure 10.2). Rates were higher for females than males for the entire period. The number of cases occurring in each year can be found in Appendix B. The age-standardised rates of hospitalised intentional self-harm injury cases for NSW children and young people increased over the period to 1999–2010 (Figure 10.2). Using negative binomial regression techniques, the increase in rate was 1.8% per year (95% CI: –1.1%, 4.6%). This result was not statistically significant (p = 0.215).



Note: The line represents the modelled rate over the eleven-year period, while the symbols represent the actual age-standardised rate value for all children and young people for each year. Age-standardised rates for males and females are also shown.

Figure 10.2: Age-standardised rates of hospitalised intentional self-harm injury, by sex, 0–17 years, NSW, 1999–2010

10.3 Mechanism

The majority of cases (77%) of hospitalised intentional self-harm were due to poisoning (Table 10.3). Almost four times as many females as males used this method. Intentional self-harm by a sharp object accounted for 16% of cases and slightly more males than females used this method. Hanging, strangulation and suffocation accounted for 3% of intentional self-harm cases. Males (7%) had a higher proportion than females (2%) within this category.

The mechanism of intentional self-harm by age group can be seen in Table 10.4. Poisoning was the most common mechanism with 75% of 9-14 year olds and 78% of 15-17 year olds. Intentional self-harm by sharp object was the second most common mechanism used among 9–14 (19%) and 15–17 year olds (16%).

Table 10.3: Cases of hospitalised intentional self-harm injury, by type of substance and sex, NSW, 2009–10

	Males		Females		All children and young people	
External cause	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Intentional self-poisoning by and exposure to:						
nonopioid analgesics, antipyretics and antirheumatics	48	24.9	268	40.7	316	37.1
antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs	70	36.3	183	27.8	253	29.7
narcotics and psychodysleptics [hallucinogens]	n.p.	n.p.	n.p.	n.p.	20	2.4
other drugs acting on the autonomic nervous system	n.p.	n.p.	n.p.	n.p.	5	0.6
other and unspecified drugs, medicaments and biological substances	13	6.7	36	5.5	49	5.8
other and unspecified chemicals and noxious substances	n.p.	n.p.	n.p.	n.p.	8	0.9
Intentional self-harm by hanging, strangulation and suffocation	14	7.3	11	1.7	25	2.9
Intentional self-harm by sharp object	31	16.1	108	16.4	139	16.3
Intentional self-harm by other specified means	n.p.	n.p.	n.p.	n.p.	11	1.3
Intentional self-harm by unspecified means	n.p.	n.p.	n.p.	n.p.	9	1.1
Intentional self-harm by all other means	6	3.1	6	0.9	12	1.4
Total[(a)]	**193**	**100**	**658**	**100**	**851**	**100**

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

(a) Includes cases of *Intentional self-poisoning by alcohol*.

Table 10.4: Cases of hospitalised intentional self-harm injury, by type of substance and age, NSW, 2009–10

	Age group				All children and young people	
	9–14		15–17			
External cause	No.	Per cent	No.	Per cent	No.	Per cent
Intentional self-poisoning by and exposure to:						
nonopioid analgesics, antipyretics and antirheumatics	60	31.3	256	39.2	316	37.1
antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs	59	30.7	193	29.6	253	29.7
narcotics and psychodysleptics [hallucinogens]	n.p.	n.p.	n.p.	n.p.	20	2.4
other drugs acting on the autonomic nervous system	n.p.	n.p.	n.p.	n.p.	5	0.6
other and unspecified drugs, medicaments and biological substances	17	8.9	31	4.7	49	5.8
other and unspecified chemicals and noxious substances	n.p.	n.p.	n.p.	n.p.	8	0.9
Intentional self-harm by hanging, strangulation and suffocation	6	3.1	18	2.8	25	2.9
Intentional self-harm by sharp object	37	19.3	101	15.5	139	16.3
Intentional self-harm by other specified means	n.p.	n.p.	n.p.	n.p.	11	1.3
Intentional self-harm by unspecified means	n.p.	n.p.	n.p.	n.p.	9	1.1
Intentional self-harm by all other means	n.p.	n.p.	n.p.	n.p.	12	1.4
Total[(a)]	**192**	**100**	**653**	**100**	**851**	**100**

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

(a) Includes cases of *Intentional self-poisoning by alcohol*.

Note: Due to small case numbers, counts for children under 1, 1–4 and 5–8 are excluded from the table but included in the All Children and young people total.

10.4 Place of injury

During 2009–10, more than 36% of all cases recorded an unspecified or missing place of occurrence (Table 10.5). Similar proportions of unspecified place of occurrence were found in cases for males and females, 37% and 36% respectively. For cases with a specified place of occurrence, most intentional self-harm injuries took place within the *Home*.

Very little difference in the place of occurrence of intentional self-harm injuries was seen according to age (Table 10.6). For both age groups, the *Home* was the most commonly reported location for intentional self-harm injuries.

Table 10.5: Cases of hospitalised intentional self-harm injury, by place and sex, NSW, 2009–10

	Males		Females		
Place of occurrence	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
Home	92	47.7	349	53.0	0.3
Residential institution	n.p.	n.p.	n.p.	n.p.	0.4
School, other institution & public administration area	14	7.3	48	7.3	0.3
Trade and service area	n.p.	n.p.	n.p.	n.p.	3.0
Other specified place of occurrence	6	3.1	8	1.2	0.8
Unspecified place of occurrence	71	36.8	235	35.7	0.3
Total[(a)]	**193**	**100**	**658**	**100**	**0.3**

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

(a) Total includes a total of 5 cases occurring in sports and athletics areas and on streets and highways and missing 2 cases.

Table 10.6: Cases of hospitalised intentional self-harm injury, by place and age, NSW, 2009–10

	Age group				All children and young people	
	9–14		15–17			
Place of occurrence	**Number**	**Per cent**	**Number**	**Per cent**	**Number**	**Per cent**
Home	106	55.2	333	51.0	441	51.8
Residential institution	n.p.	n.p.	n.p.	n.p.	13	1.5
School, other institution & public administration area	18	9.4	44	6.7	62	7.4
Trade and service area	n.p.	n.p.	n.p.	n.p.	8	0.9
Other specified place of occurrence	n.p.	n.p.	n.p.	n.p.	14	1.6
Unspecified place of occurrence	56	29.2	246	37.7	306	36
Total[(a)]	**192**	**100**	**653**	**100**	**851**	**100**

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

(a) Total includes a total of 5 cases occurring in sports and athletics areas and on streets and highways and missing 2 cases.

10.5 Activity at time of injury

For all children and young people during 2009–10, 25% of cases had an unspecified activity at the time of injury. For the remaining cases almost all were coded as *Other specified activity.* There were no discernible differences between males and females or by age for type of activity.

10.6 Season of injury

During 2009–10, there was some variation in the overall proportions of season of injury by sex (Table 10.7). Males were most likely to have an intentional self-harm injury in autumn (29%) and least likely in summer (20%). Females were most likely to have an intentional self-harm injury in spring (28%).

There were some variations in the season of injury by age group (Table 10.8). Children aged 9–14 were most likely to have an intentional self-harm injury in spring (31%) and least likely

in autumn (22%). Young people aged 15–17 were most likely to have an intentional self-harm injury in autumn (28%) and least likely in summer (22%).

Table 10.7: Cases of hospitalised intentional self-harm injury, by season of injury and sex, NSW, 2009–10

	Males		Females		
Season	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
Summer	39	20.2	151	22.9	0.3
Autumn	55	28.5	172	26.1	0.3
Winter	52	26.9	148	22.5	0.4
Spring	47	24.4	187	28.4	0.3
Total	**193**	**100**	**658**	**100**	**0.3**

Table 10.8: Cases of hospitalised intentional self-harm injury, by season of injury and age, NSW, 2009–10

	Age group					
	9–14		15–17		All children and young people	
Season	**Number**	**Per cent**	**Number**	**Per cent**	**No.**	**Per cent**
Summer	45	23.4	144	22.1	190	22.3
Autumn	42	21.9	183	28.0	227	26.7
Winter	46	24.0	153	23.4	200	23.5
Spring	59	30.7	173	26.5	234	27.5
Total	**192**	**100**	**653**	**100**	**851**	**100**

Ascertainment of intentional self-harm

According to inclusion notes in ICD-10-AM, cases should be assigned codes in the range X60–X84 if they are purposely self-inflicted poisoning or injury, suicide, or attempted suicide (NCCH 2006). Determining whether an injury 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 them being coded as such. In this situation, the case can be coded to an 'undetermined intent' category (for example, Y30 *Falling, jumping or pushed from a high place, undetermined intent* or Y32 *Crashing of motor vehicle, undetermined intent*). It is possible that through the coding process, some types of injury may be more readily attributed to intentional self-harm than others, for example, 'intentional self-harm by hanging' as opposed to 'falling from a building structure' (for example, W13, out of a window, bridge or roof).

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

11 Assault

ICD-10-AM case inclusion

Principal diagnosis: S00–T75, T79 and

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

11.1 Overview

This section includes all cases in which a person, or more than one person, intentionally injured another person.

During 2009–10, there were 563 cases of children and young people aged 0–17 hospitalised due to assault injury (Table 11.1). The rate and number of males hospitalised as a result of an assault was much higher than females. A total of 1,132 days were spent in hospital at an average length of stay of 2.0 days. Overall, 14% of cases were high threat to life.

Table 11.1: Key indicators for hospitalised assault injury, NSW, 2009–10

Indicator	Males	Females	All children and young people
Cases due to community injury[(a)]	15,624	8,255	23,879
Cases due to assault injury[(a)]	442	121	563
Percentage of all cases due to injury and poisoning	2.8	1.5	2.4
Age-standardised rate/100,000 population[(b)]	51.6	14.9	33.7
Total patient days[(c)]	752	380	1,132
Mean length of stay (days)	1.7	3.1	2.0
Cases with a high threat to life[(d)]	63	16	79
Percentage of cases with a high threat to life	14.3	13.2	14.0

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

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

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

(d) High threat to life cases have ICD-based Injury Severity Score <0.941 following the method of (Stephenson et al. 2003).

An examination of hospitalised assault injury cases by age group reveals a number of differences between males and females (Table 11.2). The number of injured males was similar to females in the youngest age groups. The greatest differences were seen in the older age groups where the average ratio of males to females was 4.7:1.

Table 11.2: Cases of hospitalised assault injury, by sex and age, NSW, 2009–10

	Age group						All children and young people	
	0–4		5–14		15–17			
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Males	22	53.7	91	75.2	329	82.0	442	78.5
Females	19	46.3	30	24.8	72	18.0	121	21.5
Total	**41**	**100**	**121**	**100**	**401**	**100**	**563**	**100**

Note: Due to small case numbers, counts for children under 1 were combined with 1–4, and 5–8 were combined with 9–14.

Figure 11.1 presents the age-specific rates of assault injury for males and females. The rate of assault injury for males increased with age. The highest rate occurred at 15–17 years (226 cases per 100,000 population). In contrast, the increase in the rate of assault injury in females aged 15–17 was much smaller. The greatest difference between males and females was in the 15–17 year age group with the rate of assault injury in females at 51 cases per 100,000 population.

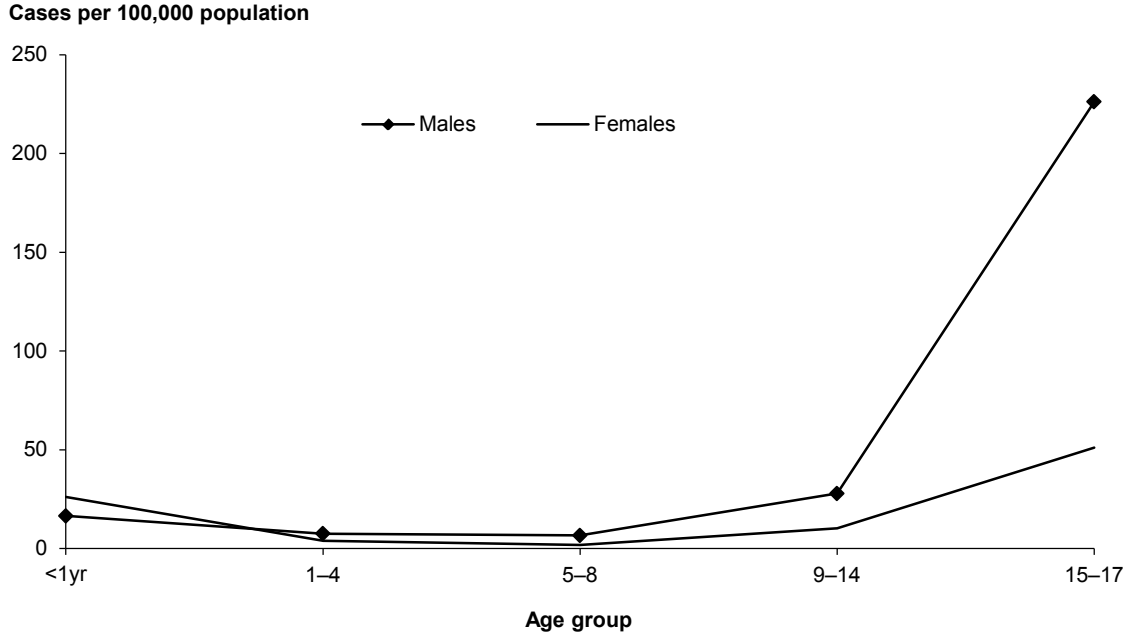
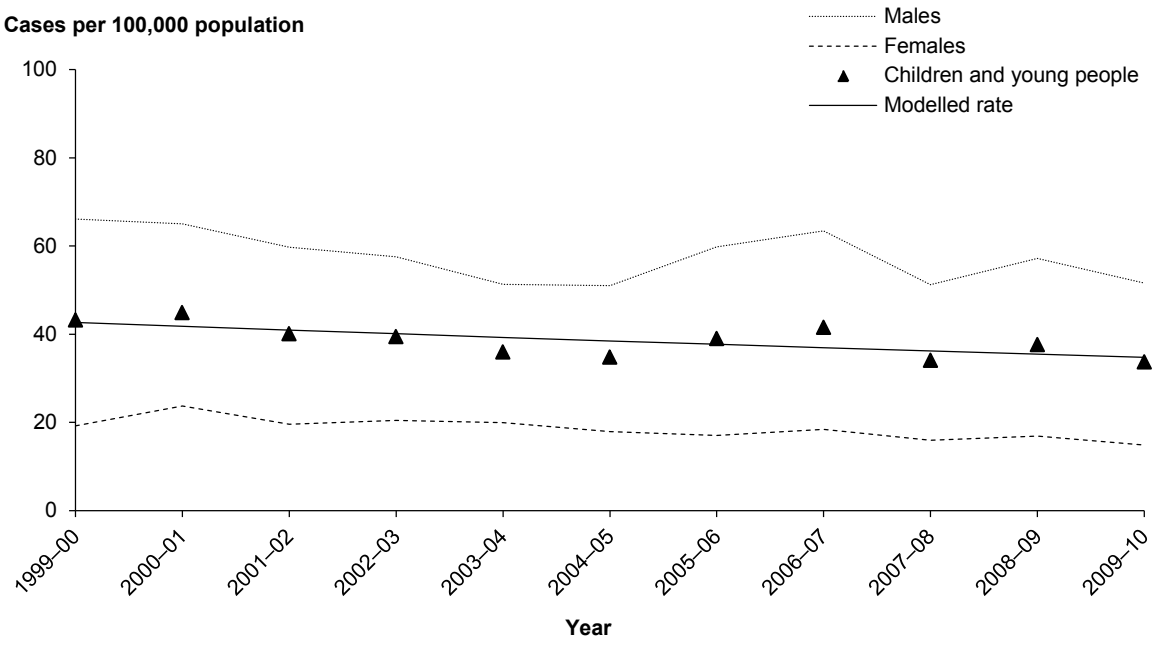


Figure 11.1: Age-specific rates of hospitalised assault injury, by age and sex, NSW, 2009–10

11.2 Trends over time

The highest rate of assault injury in children and young people occurred in 2000–01 (44.9 cases per 100,000 population) and the lowest in 2009–10 (33.7 cases per 100,000 population) (Figure 11.2). Rates were higher for males than females for the entire period. The number of cases occurring in each year can be found in Appendix B.

The age-standardised rate of hospitalised assault injury for NSW children and young people decreased over the period to 1999–2010 (Figure 11.2). Using negative binomial regression techniques, the decrease in rate was 2.0% per year (95% CI: –3.2%, –0.8%). This result was statistically significant (p = 0.01).



Note: The line represents the modelled rate over the eleven-year period, while the symbols represent the actual age-standardised rate value for all children and young people for each year. Age-standardised rates for males and females are also shown.

Figure 11.2: Age-standardised rates of hospitalised assault injury, by sex, 0–17, NSW, 2009–10

11.3 External cause

The majority of cases (65%) of assault in males and females were caused by bodily force (Table 11.3). Almost four and a half times as many males as females were hospitalised due to *Assault by bodily force*. Table 11.4 presents the external causes of assault injury according to age. Due to small numbers, age categories have been combined. The most notable difference by age was the higher proportion of *Other maltreatment syndrome* cases in the youngest age group (n = 20). *Other maltreatment syndrome* can include cases of mental cruelty, physical abuse, sexual abuse, and torture.

Table 11.3: Cases of hospitalised assault injury, by external cause and sex, NSW, 2009–10

	Males		Females		All children and young people	
External cause	**Number**	**Per cent**	**Number**	**Per cent**	**Number**	**Per cent**
Assault by sharp object	52	11.8	9	7.4	61	10.8
Assault by blunt object	34	7.7	8	6.6	42	7.5
Assault by bodily force	297	67.2	70	57.9	367	65.2
Sexual assault by bodily force	n.p.	n.p.	n.p.	n.p.	6	1.1
Other maltreatment syndromes	14	3.2	22	18.2	36	6.4
Assault by other specified means	n.p.	n.p.	n.p.	n.p.	8	1.4
Assault by unspecified means	n.p.	n.p.	n.p.	n.p.	33	5.9
Intentional assault by all other means	n.p.	n.p.	n.p.	n.p.	10	1.8
Total	**442**	**100**	**121**	**100**	**563**	**100**

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

Table 11.4: Cases of hospitalised assault injury, by external cause and age, NSW, 2009–10

	Age group						All children and young people	
	0–4		5–14		15–17			
External cause	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Assault by sharp object	n.p.	n.p.	n.p.	n.p.	49	12.2	61	10.8
Assault by blunt object	n.p.	n.p.	n.p.	n.p.	30	7.5	42	7.5
Assault by bodily force	12	29.3	80	66.1	275	68.6	367	65.2
Sexual assault by bodily force	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	6	1.1
Other maltreatment syndromes	20	48.8	9	7.4	7	1.7	36	6.4
Assault by other specified means	n.p.	n.p.	n.p.	n.p.	5	1.2	8	1.4
Assault by unspecified means	n.p.	n.p.	n.p.	n.p.	28	7.0	33	5.9
Assault by all other means	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	10	1.8
Total	**41**	**100**	**121**	**100**	**401**	**100**	**563**	**100**

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

Note: Due to small case numbers, counts for children under 1 were combined with 1–4, and 5–8 were combined with 9–14.

11.4 Body region injured

The five most commonly reported principal diagnoses accounted for 84% of all diagnoses for assault. The most common body region injured based on the principal diagnosis for all children and young people with an assault injury was *Injuries to the head* (61%) followed by *Injuries to the wrist and hand* (10%) (Table 11.5). *Injuries to the head* were the most common diagnosis for both males and females (64% and 52% respectively).

Table 11.6 presents the top 5 body regions injured, for assault injury by age. The most common body region injured in each age category was *Injuries to the head*. *Injuries to the wrist and hand* increased in proportion in older age groups.

Table 11.5: Top 5 body regions injured for hospitalised assault injury, by sex, NSW, 2009–10

	Males		Females		All children and young people	
Body region	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Injuries to the head	281	63.7	64	52.9	345	61.3
Injuries to the wrist & hand	49	11.1	9	7.4	58	10.3
Injuries to the abdomen, lower back, lumbar spine & pelvis	21	4.8	8	6.6	29	5.2
Injuries to the elbow & forearm	n.p.	n.p.	n.p.	n.p.	22	3.9
Injuries to the thorax	n.p.	n.p.	n.p.	n.p.	20	3.6
Sub total	**388**	**88.0**	**86**	**71.1**	**474**	**84.3**

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

Table 11.6: Top 5 body regions injured for hospitalised assault injury, by age, NSW, 2009–10

	Age group						All children and young people	
	0–4		5–14		15–17			
Body region	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Injuries to the head	17	41.5	65	53.7	263	65.6	345	61.3
Injuries to the abdomen, lower back, lumbar spine & pelvis	n.p.	n.p.	n.p.	n.p.	18	4.5	29	5.2
Injuries to the elbow & forearm	n.p.	n.p.	n.p.	n.p.	15	3.7	22	3.9
Injuries to the wrist & hand	n.p.	n.p.	n.p.	n.p.	41	10.2	58	10.3
Other and unspecified effects of external causes	8	19.5	6	5.0	9	2.2	23	4.1
Total	**29**	**70.7**	**102**	**84.3**	**346**	**86.2**	**477**	**84.8**

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

Note: Due to small case numbers, counts for children under 1 were combined with 1–4, and 5–8 were combined with 9–14.

11.5 Perpetrator

The perpetrator code is used when a code within the range of external cause categories describing *Assault* (X85–Y09) or *Legal intervention and operations of war* (Y35–Y36) is present in a record. The following results should be interpreted cautiously. For many reasons, victims of assault may choose not to identify a perpetrator to hospital staff or may be unable to. A high proportion of unspecified perpetrators can be seen for all children and more so for males (Table 11.7).

For males, the most common perpetrator was *Multiple persons unknown to the victim,* accounting for 25% of all specified perpetrators. For females, the most common perpetrator was a *Parent*, accounting for 31% of all specified perpetrators.

Table 11.7: Cases of hospitalised assault injury, by perpetrator and sex, NSW, 2009–10

	Males		Females		All children and young people	
Perpetrator	**Number**	**Per cent**	**Number**	**Per cent**	**Number**	**Per cent**
Parent	25	5.7	26	21.5	51	9.1
Other family member	21	4.8	18	14.9	39	6.9
Acquaintance or friend	27	6.1	8	6.6	35	6.2
Person unknown to the victim	24	5.4	7	5.8	31	5.5
Multiple persons unknown to the victim	51	11.5	10	8.3	61	10.8
Other specified person[(a)]	47	10.6	16	13.2	63	11.2
Unspecified person[(b)]	247	55.9	36	29.8	283	50.3
Total	**442**	**100**	**121**	**100**	**563**	**100**

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

(a) Includes *Other specified person*, *Spouse or domestic partner*, *Official authorities and Carer*.

(b) Includes *Unspecified person* and missing cases.

Perpetrator by age

Table 11.8 presents the type of perpetrator by age group. Due to small case numbers, age categories have been combined. Half of all assault cases in 0–4 year olds were inflicted by a parent.

Table 11.8: Cases of hospitalised assault injury, by perpetrator and age, NSW, 2009–10

	Age group						All children and young people	
	0–4		5–14		15–17			
Perpetrator	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Parent	20	50.0	17	14.2	14	3.5	51	9.1
Other family member	6	15.0	16	13.3	17	4.3	39	6.9
Acquaintance or friend	n.p.	n.p.	n.p.	n.p.	24	6.1	35	6.2
Person unknown to the victim	n.p.	n.p.	n.p.	n.p.	27	6.8	31	5.5
Multiple persons unknown to the victim	n.p.	n.p.	n.p.	n.p.	54	13.7	61	10.8
Other specified person[(a)]	n.p.	n.p.	n.p.	n.p.	28	7.1	63	11.2
Unspecified person[(b)]	11	27.5	41	34.2	231	58.5	283	50.3
Total	**40**	**100**	**120**	**100**	**395**	**100**	**563**	**100**

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

(a) Includes *Other specified person*, *Spouse or domestic partner*, *Official authorities and Carer*.

(b) Includes *Unspecified person* and missing cases.

Note: Due to small case numbers, counts for children under 1 were combined with 1–4, and 5–8 were combined with 9–14.

11.6 Place of injury

About half of all cases of hospitalised assault injury recorded an unspecified or missing place of occurrence (Table 11.9). Males (55%) recorded a slightly higher proportion of unspecified places than females (46%). A higher proportion of assault injuries in males occurred at a *Residential institution* followed by a *School*. Females were most likely to be assaulted within the *Home* (35%).

Table 11.9: Cases of hospitalised assault injury, by place and sex, NSW, 2009–10

	Males		Females		All children and young people	
Place of occurrence	**Number**	**Per cent**	**Number**	**Per cent**	**Number**	**Per cent**
Home	36	8.1	41	33.9	77	13.7
Residential institution	54	12.2	7	5.8	61	10.8
School, other institution & public administration area	48	10.9	5	4.1	53	9.4
Other specified place of occurrence	n.p.	n.p.	n.p.	n.p.	40	7.1
Unspecified place of occurrence	245	55.4	55	45.5	300	53.3
All other places combined	n.p.	n.p.	n.p.	n.p.	32	5.7
Total	**442**	**100**	**121**	**100**	**563**	**100**

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

Place of injury by age

Differences in the place of occurrence of hospitalised assault injury cases were seen by age including a rise in unspecified places of occurrence with age. The highest proportion of unspecified places was in the 15–17 age group (60%). Small case numbers in many of the categories prevents presentation of a detailed breakdown, however individual results of note are discussed here. For the youngest age groups combined (0–4), the *Home* was the most common location of assault (n = 21, 51%). For children aged 5–14, the *Home* (n = 26, 22%) was the second most common location of assault, behind *School* (n = 36, 30%). In young people aged 15–17, the most common location for an assault was *Street and highway* (n = 44, 11%). This age group also had the highest proportion of unspecified location (61%).

11.7 Activity at time of injury

For all children during 2009–10, 80% of cases had an unspecified activity at the time of injury. For the remaining cases, almost all were coded as *Other specified activity*. There were no discernible differences between males and females or by age.

11.8 Season of injury

There was little variation in the overall proportions of season of assault injury by sex. For males and females, assaults were more likely to occur in spring and summer than autumn and winter (Table 11.10).

Table 11.10: Cases of hospitalised assault injury, by season of injury and sex, NSW, 2009–10

	Males		Females		
Season	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
Summer	141	31.9	30	24.8	4.7
Autumn	86	19.5	24	19.8	3.6
Winter	86	19.5	24	19.8	3.6
Spring	129	29.2	43	35.5	3.0
Total	**442**	**100**	**121**	**100**	**3.7**

Season of injury by age

The season of injury varied slightly according to age (Table 11.11). Younger children were more likely to be assaulted in summer (32%). As with the pattern by sex, for all other age groups assaults were more likely to occur in spring and summer than autumn and winter.

Table 11.11: Cases of hospitalised assault injury, by season of injury and age, NSW, 2009–10

	Age group						All children and young people	
	0–4		5–14		15–17			
Season	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Summer	13	31.7	33	27.3	125	31.2	171	30.4
Autumn	7	17.1	24	19.8	79	19.7	110	19.5
Winter	10	24.4	22	18.2	78	19.5	110	19.5
Spring	11	26.8	42	34.7	119	29.7	172	30.6
Total	**41**	**100**	**121**	**100**	**401**	**100**	**563**	**100**

Note: Due to small case numbers, counts for children under 1 were combined with 1–4 and 5–8 were combined with 9–14.

12 Undetermined intent

ICD-10-AM case inclusion

Principal diagnosis: S00–T75, T79 and

First reported external cause: Y10–Y34

12.1 Overview

This chapter includes cases where intent was unspecified, unstated or could not be determined. Injuries where the intent was undetermined accounted for 0.9% of all injury hospitalisations in 2009–10.

The coding of the external cause of injury is based on a review of the discharge summary and hospital record by medical coders. The external cause codes Y10–Y34, undetermined intent, 'are designed for use when the intent is unspecified, unstated or cannot be determined. That is, the injuries are not specified as accidental (unintentional), self-inflicted with intent to self-harm, or assault' (NCCH 2006).

During 2009–10, there were 208 cases of children and young people aged 0–17 hospitalised due to injuries of undetermined intent (Table 12.1). The rate and number of males hospitalised was slightly higher than females. A total of 365 days were spent in hospital at an average length of stay of 1.6 days. Overall, 5% of cases were high threat to life. Males had a much higher proportion of high threat to life cases compared with females.

Table 12.1: Key indicators for hospitalised undetermined intent injury, NSW, 2009–10

Indicator	Males	Females	All children and young people
Cases due to community injury[(a)]	15,624	8,255	23,879
Cases due to undetermined intent injury[(a)]	112	96	208
Percentage of all cases due to injury and poisoning	0.7	1.2	0.9
Age-standardised rate/100,000 population[(b)]	13.2	11.8	12.5
Total patient days[(c)]	171	168	339
Mean length of stay (days)	1.5	1.8	1.6
Cases with a high threat to life[(d)]	n.p.	n.p.	11
Percentage of cases with a high threat to life	3.4	1.9	5.3

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

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

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

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

(d) High threat to life cases have ICD-based Injury Severity Score <0.941 following the method of Stephenson et al. (2003).

An examination of hospitalised injury cases by sex and age group reveals a number of differences (Table 12.2). There were higher numbers of males hospitalised in the younger age groups. In the 15–17 age group, there were similar numbers of males and females.

Table 12.2: Cases of hospitalised undetermined intent injury, by sex and age, NSW, 2009–10

	Age group								All children and young people	
	0–4		5–8		9–14		15–17			
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Males	31	64.6	8	61.5	23	60.5	50	45.9	112	53.8
Females	17	35.4	5	38.5	15	39.5	59	54.1	96	46.2
Total	**48**	**100**	**13**	**100**	**38**	**100**	**109**	**100**	**208**	**100**

Note: Due to small case numbers, counts, children under 1 are combined with 1–4.

Figure 12.1 presents the age-specific rates of cases of undetermined intent injury for males and females by age group. The rate of cases of injuries of undetermined intent for males and females was highest after 9–14. The highest rate of injury in males was 34 cases per 100,000 population at 15–17 compared with 43 cases per 100,000 in females at the same age.

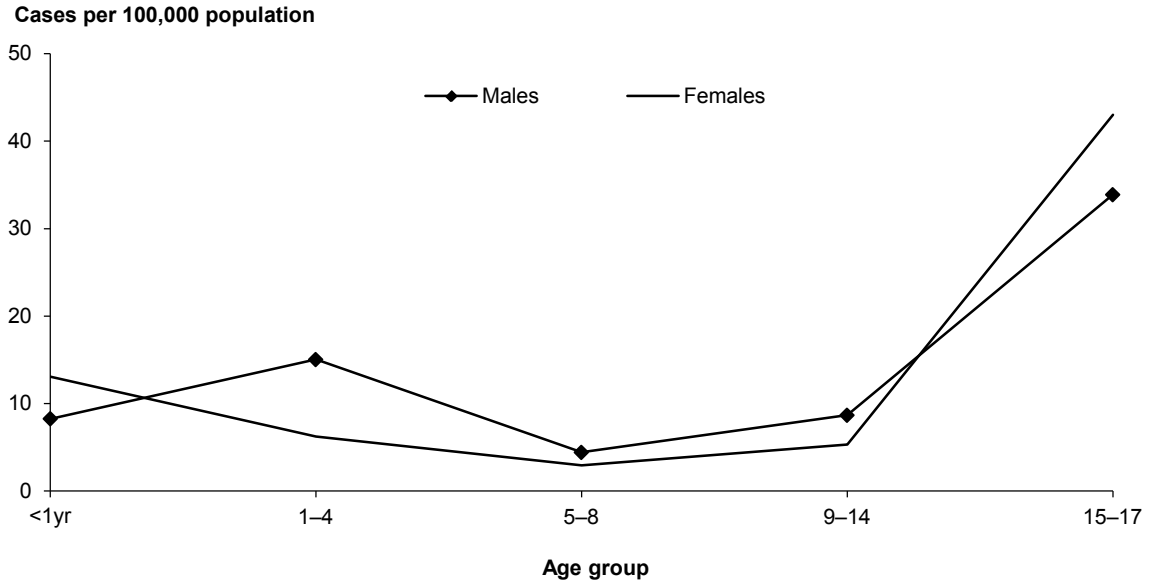
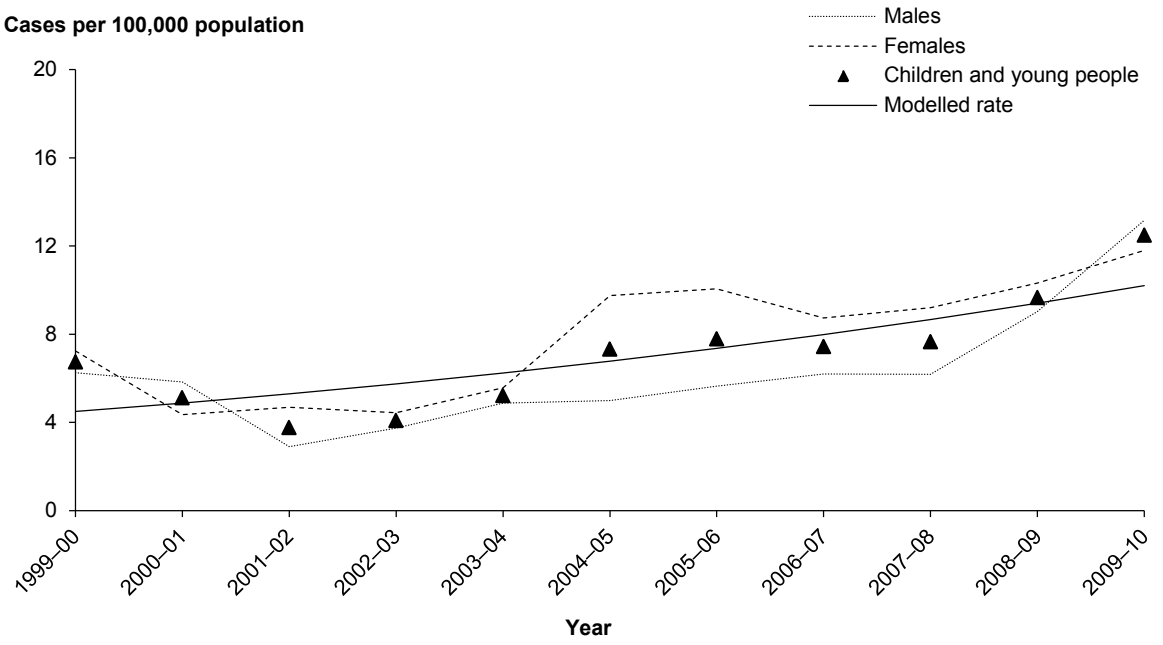


Figure 12.1: Age-specific rates of hospitalised undetermined intent injury, by age and sex, NSW, 2009–10

12.2 Trends over time

The highest rate of undetermined intent injury in children and young people occurred in 2009–10 (12.5 cases per 100,000 population) and the lowest in 2001–02 (3.8 cases per 100,000 population) (Figure 12.2). Rates for males and females fluctuated over the period. The number of cases occurring in each year can be found in Appendix B.

The age-standardised rates of hospitalised undetermined intent injury cases for NSW children and young people increased over the period to 1999–2010 (Figure 12.2). Using negative binomial regression techniques, the increase in rate was 8.5% per year (95% CI: 4.6%, 12.6%). This result was statistically significant (p = 0.01). Reasons for the rise in cases of undetermined intent are unknown but may be due to changes in coding practice.



Note: The line represents the modelled rate over the eleven-year period, while the symbols represent the actual age-standardised rate value for all children and young people for each year. Age-standardised rates for males and females are also shown.

Figure 12.2: Age-standardised rates of hospitalised undetermined intent injury, by sex, 0–17 years, NSW, 2009–10

12.3 Mechanism

Due to the small number of cases spread over a large number of external causes of undetermined intent, data are not shown for males and females. Where larger case numbers exist, differences between males and females are discussed within the text.

Overall, 42% of injuries of undetermined intent resulted from poisoning (Table 12.3). A higher proportion of cases involving females were coded as poisoning (n = 61, 64%) than cases involving males (n = 26, 23%). The second most common mechanism of injury for both males and females was *Contact with blunt object* (35% and 19%, respectively).

Table 12.3: Cases of hospitalised undetermined intent injury, by external cause, NSW, 2009–10

	All children and young people	
External cause	**Number**	**Per cent**
Poisoning by and exposure to:		
nonopioid analgesics, antipyretics and antirheumatics	25	12
antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs	30	14.4
narcotics and psychodysleptics [hallucinogens]	6	2.9
other and unspecified drugs, medicaments and biological substances	9	4.3
alcohol	5	2.4
organic solvents and their halogenated hydrocarbons and their vapours	n.p.	n.p.
other gases and vapours (for example, Carbon monoxide)	n.p.	n.p.
other and unspecified chemicals and noxious substances	9	4.3
Hanging, strangulation and suffocation	n.p.	n.p.
Drowning and submersion	n.p.	n.p.
Other and unspecified firearm discharge	n.p.	n.p.
Exposure to smoke, fire and flames	9	4.3
Contact with steam, hot vapours and hot objects	n.p.	n.p.
Contact with sharp object	24	11.5
Contact with blunt object	57	27.4
Falling, jumping or pushed from a high place	5	2.4
Falling, lying or running before or into moving object	n.p.	n.p.
Other specified events	9	4.3
Unspecified event	5	2.4
Total	**208**	**100**

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

External cause by age

As discussed above, the small number of cases available for analysis over a large number of external causes of undetermined intent makes further breakdown by age difficult. The majority (70%) of undetermined intent cases occurred in children over 9 and were commonly a form of poisoning.

12.4 Body region injured

The majority of admitted injury cases due to undetermined intent did not specify a particular body region that was injured (Table 12.4). This reflects the fact that the mechanism in most cases was poisoning. *Injuries to the shoulder and upper limb* (20%) were the most commonly reported body region injured followed by injuries to the head (14%). The proportions of body regions injured differed by sex, reflective of the larger number of undetermined poisoning cases in females.

Table 12.4: Cases of hospitalised undetermined intent injury, by body region and sex, NSW, 2009–10

	Males		Females		All children and young people	
Body region	**Number**	**Per cent**	**Number**	**Per cent**	**Number**	**Per cent**
Head	19	17	11	11.5	30	14.4
Trunk	n.p.	n.p.	n.p.	n.p.	6	2.9
Shoulder and upper limb	32	28.6	9	9.4	41	19.7
Hip and lower limb	n.p.	n.p.	n.p.	n.p.	20	9.6
Other injuries not specified by body region	44	39.3	67	69.8.	111	53.4
All body regions	**112**	**100**	**96**	**100**	**208**	**100**

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

Body region by age

An analysis of body region by age group was not provided due to small numbers of cases in each age group.

12.5 Place of injury

During 2009–10, almost half of all cases (45%) recorded an unspecified or missing place of occurrence (Table 12.5). A slightly higher proportion of unspecified places of occurrence were found in cases for males (53%). For cases with a specified place of occurrence, the majority of male and females injuries occurred within the *Home*, 30% and 46% respectively.

Table 12.5: Cases of hospitalised undetermined intent injury, by place and sex, NSW, 2009–10

	Males		Females		
Place of occurrence	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
Home	34	30.4	44	45.8	0.8
School, other institution & public administration area	8	7.1	6	6.3	1.3
Other specified place of occurrence	5	4.5	5	5.2	1
Unspecified place of occurrence	59	52.7	35	36.5	1.7
All other specified places occurrence	6	5.4	6	6.3	1
Total	**112**	**100**	**96**	**100**	**1.2**

Place of injury by age

Due to the large proportion of cases unspecified as to location (45%) or recorded as *Home* (38%), a breakdown by age category was not provided.

12.6 Activity at time of injury

For all children during 2009–10, 90% of cases had either an *Unspecified activity* (66%) or an *Other specified activity* (24%) recorded at the time of injury. There were no discernible differences between males and females or by age and results were not provided.

12.7 Season of injury

During 2009–10, there was some variation in the overall proportions of season of injury by sex. For males spring was the most common season of injury while for females it was summer (Table 12.6).

Table 12.6: Cases of hospitalised undetermined intent injury, by season of injury and sex, NSW, 2009–10

	Males		Females		
Season	**Number**	**Per cent**	**Number**	**Per cent**	**Ratio**
Summer	28	25.0	32	33.3	0.9
Autumn	27	24.1	22	22.9	1.2
Winter	20	17.9	21	21.9	1.0
Spring	37	33.0	21	21.9	1.8
Total	**112**	**100**	**96**	**100**	**1.2**

Season of injury by age

The season of injury varied slightly according to age (Table 12.7). Younger children were more likely to sustain injuries of undetermined intent in spring. Older children and young people were most likely to sustain them in summer.

Table 12.7: Cases of undetermined intent, by season of injury and age, NSW, 2009–10

	Age group						All children and young people	
	0–4		5–14		15–17			
Season	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Summer	13	27.1	16	31.4	31	28.4	60	28.8
Autumn	10	20.8	10	19.6	29	26.6	49	23.6
Winter	10	20.8	8	15.7	23	21.1	41	19.7
Spring	15	31.3	17	33.3	26	23.9	58	27.9
Total	**48**	**100**	**51**	**100**	**109**	**100**	**208**	**100**

Note: Due to small case numbers, counts for children under 1 were combined with 1–4 and 5–8 were combined with 9–14.

Appendix A: Data issues

Data sources

The data on hospital separations were provided by the Australian Institute of Health and Welfare (AIHW), from the National Hospital Morbidity Database (NHMD). Comprehensive information on the quality of the data is available in Australian hospital statistics 2009–10 (AIHW 2011).

Crude and age-specific rates were calculated using as population data the final estimate of the estimated resident population (ERP) as at 31 December 2009 by state of usual residence (NSW) as provided by the AIHW. Australian ERPs for 30 June 2001 were used as the standardising population throughout the report.

Definitions

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

An external cause was 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.

ICD-10-AM

Data on principal diagnosis and external cause of injury was coded according to five editions (covering the period 1999 to 2009) of the Australian clinical modification of ICD-10, ICD-10-AM. Changes across the ICD-10-AM over the five revisions have not impacted on the analysis. Where analyses have been undertaken using specific editions of the ICD-10-AM, this has been stipulated within the text.

Place and activity coding

External cause codes in the range W00 to Y34, except Y06 and Y07, must be accompanied by a place of occurrence code. External cause codes V01 to Y34 must be accompanied by an activity code. Variability may exist in the completeness of the coding of the activity being undertaken at the time of injury and the place of occurrence. For example, injuries that occur at work or while working for income may be better coded than other injuries. The activity and place of occurrence codes may have a different distribution for cases not given a code compared with injury cases that have a specified activity or place of occurrence.

Selection criteria

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

Period

This report is restricted to admitted patient episodes that ended in the period 1 July 2009 to 30 June 2010 for the single year analyses, and admitted patient episodes that ended in the period 1 July 1999 to 30 June 2010 for the multi-year or trend analyses.

Scope

As a starting point we included data from all hospitals that contributed to the NHMD in the relevant time periods. This includes all public and private hospitals that provide acute care services. Further information on inclusion scope can be found in Australian Hospital Statistics 2009–10 (AIHW 2011). Data was selected on the basis of the patient's usual state of residence. A small number of NSW resident children and young people included in this report were admitted to hospitals in states and territories other than NSW (Table A1.1).

Table A1.1: State of hospitalisation for children resident of NSW hospitalised as a result of an injury, 2009–10

	Number	Per cent
New South Wales	22,723	95.2
Other states and territories	1,156	4.8
Total[(a)]	**23,879**	**100**

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

An analysis of the time series data used in the trends sections of this report identified about 3.5% of NSW resident children and young people who were admitted to hospitals in states and territories other than NSW over the period (Table A1.2).

Table A1.2: State of hospitalisation for children resident of NSW hospitalised as a result of an injury, 1999–2010

	Number	Per cent
New South Wales	256,070	96.5
Other states and territories	9,331	3.5
Total[(a)]	**265,401**	**100.0**

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

Age range

The NSW Commission for Children and Young People administers the *Commission for Children and Young People Act 1998 No. 146* which defines a child as a person under the age of 18 years. As a result the age range covered in this report is birth to 17 years. It should be noted that the age categories chosen for this report are guided by the Commission. They differ from age ranges used in other AIHW reports.

Injury

The operational definition of injury used in this report is NHMD records that were assigned, as the principal diagnosis, an ICD-10-AM code in particular ranges. The code range S00–T75 and T79 has been used to designate community injury.

Estimating incident cases

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

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

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

Information in the NHMD enables this problem to be reduced, though not eliminated. The approach used for this report makes use of the Mode of Admission variable, which indicates whether the current episode commenced with inward transfer from another acute care hospital. Episodes of this type with injury as the principal diagnosis are likely to have been preceded by another episode, also meeting the case selection criteria for injury. This procedure should correct for over-estimation of cases that is due to transfers, but will not correct for over-estimation that is due to readmissions.

Length of stay

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

Denominators and rates

Nearly all injury/poisoning cases are thought to be included in the data reported, representing minimal risk of sampling error. Data were based on the financial year of separation, but choice of this time period is arbitrary. Use of calendar year would result in different rates, particularly where case numbers are small.

Age-standardised rates were reported for the 0–17 year age group. This adjustment allows for comparison without distortion due to population group differences within the 0–17 bracket. Direct standardisation was used to age-standardise rates, using the Australian population in 2001 as the standard (ABS 2003). All age-specific rates in this report were calculated using, as the denominator, the final estimate of the ERP as at 31 December in the relevant year (for example, 31 December 2006 for 2006–07 data).

Age-standardised rates were calculated in Stata version 10.1 statistical software (Stata Corporation 2008) using the -dstdize- command. Estimated trends in age-standardised rates were reported as annual per cent change obtained using negative binomial regression modelling performed in Stata. The use of the terms 'significant' or 'significantly' throughout this report indicate an outcome which was statistically significant.

Seasonal variation

Seasonal variation was assessed by aggregating cases by month of separation according to the following commonly accepted practice:

- Summer: December, January, February
- Autumn: March, April, May
- Winter: June, July, August
- Spring: September, October, November.

Suppression of small cell counts in data tables

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

Errors, inconsistencies and uncertainties

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

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

Appendix B: External cause case counts by year and age

Table B1.1: Cases of hospitalised transport injury, by year and age, NSW, 2009–10

	<1		1–4		5–8		9–14		15–17		All children and young people	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1999–00	23	12.0	389	11.9	725	11.0	1,731	9.5	1,194	9.1	4,062	9.8
2000–01	26	13.5	328	10.1	708	10.7	1,676	9.2	1,195	9.1	3,933	9.5
2001–02	23	12.0	287	8.8	634	9.6	1,658	9.1	1,139	8.7	3,741	9.1
2002–03	13	6.8	327	10.0	626	9.5	1,593	8.8	1,064	8.1	3,623	8.8
2003–04	16	8.3	300	9.2	619	9.4	1,762	9.7	1,173	9.0	3,870	9.4
2004–05	24	12.5	278	8.5	678	10.3	1,831	10.1	1,177	9.0	3,988	9.7
2005–06	20	10.4	341	10.5	592	9.0	1,742	9.6	1,300	9.9	3,995	9.7
2006–07	13	6.8	265	8.1	595	9.0	1,727	9.5	1,261	9.6	3,861	9.3
2007–08	14	7.3	257	7.9	451	6.8	1,543	8.5	1,167	8.9	3,432	8.3
2008–09	11	5.7	255	7.8	458	6.9	1,452	8.0	1,199	9.2	3,375	8.2
2009–10	9	4.7	232	7.1	511	7.7	1,461	8.0	1,206	9.2	3,419	8.3
Total	**192**	**100**	**3,259**	**100**	**6,597**	**100**	**18,176**	**100**	**13,705**	**100**	**41,299**	**100**

Table B1.2: Cases of hospitalised drowning and near-drowning injury, by year and age, NSW, 2009–10

	<1		1–4		5–8		9–14		15–17		All children and young people	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1999–00	9	8.4	55	8.0	11	9.2	8	8.7	8	10.3	91	8.4
2000–01	9	8.4	87	12.7	16	13.4	7	7.6	6	7.7	125	11.6
2001–02	17	15.9	82	12.0	9	7.6	n.p.	n.p.	n.p.	n.p.	120	11.1
2002–03	7	6.5	55	8.0	10	8.4	10	10.9	9	11.5	91	8.4
2003–04	10	9.3	68	9.9	9	7.6	10	10.9	9	11.5	106	9.8
2004–05	10	9.3	60	8.7	13	10.9	9	9.8	8	10.3	100	9.2
2005–06	8	7.5	75	10.9	9	7.6	9	9.8	11	14.1	112	10.4
2006–07	6	5.6	50	7.3	21	17.6	8	8.7	7	9.0	92	8.5
2007–08	7	6.5	48	7.0	10	8.4	7	7.6	7	9.0	79	7.3
2008–09	13	12.1	52	7.6	5	4.2	n.p.	n.p.	n.p.	n.p.	81	7.5
2009–10	11	10.3	54	7.9	6	5.0	9	9.8	5	6.4	85	7.9
Total	**107**	**100**	**686**	**100**	**119**	**100**	**92**	**100**	**78**	**100**	**1,082**	**100**

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

Table B1.3: Cases of hospitalised poisoning by pharmaceuticals, by year and age, NSW, 2009–10

	<1		1–4		5–8		9–14		15–17		All children and young people	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1999–00	44	17.1	508	11.8	36	10.2	66	13.2	127	12.6	781	12.1
2000–01	35	13.6	507	11.7	42	11.9	48	9.6	112	11.1	744	11.6
2001–02	21	8.2	427	9.9	31	8.8	44	8.8	118	11.7	641	10.0
2002–03	27	10.5	407	9.4	25	7.1	56	11.2	92	9.2	607	9.4
2003–04	24	9.3	446	10.3	39	11.0	48	9.6	101	10.0	658	10.2
2004–05	21	8.2	379	8.8	39	11.0	52	10.4	102	10.1	593	9.2
2005–06	10	3.9	341	7.9	29	8.2	40	8.0	100	10.0	520	8.1
2006–07	18	7.0	329	7.6	29	8.2	39	7.8	92	9.2	507	7.9
2007–08	23	8.9	310	7.2	30	8.5	45	9.0	55	5.5	463	7.2
2008–09	15	5.8	361	8.4	25	7.1	33	6.6	44	4.4	478	7.4
2009–10	19	7.4	303	7.0	29	8.2	28	5.6	62	6.2	441	6.9
Total	**257**	**100**	**4,318**	**100**	**354**	**100**	**499**	**100**	**1,005**	**100**	**6,433**	**100**

Table B1.4: Cases of hospitalised poisoning by other substances, by year and age, NSW, 2009–10

	<1		1–4		5–8		9–14		15–17		All children and young people	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1999–00	23	19.2	119	11.3	16	8.9	23	8.5	49	12.8	230	11.4
2000–01	12	10.0	114	10.8	17	9.5	31	11.4	37	9.6	211	10.5
2001–02	10	8.3	107	10.1	15	8.4	34	12.5	41	10.7	207	10.3
2002–03	16	13.3	99	9.4	28	15.6	26	9.6	38	9.9	207	10.3
2003–04	19	15.8	107	10.1	22	12.3	31	11.4	21	5.5	200	10.0
2004–05	11	9.2	78	7.4	12	6.7	14	5.1	39	10.2	154	7.7
2005–06	n.p.	n.p.	99	9.4	n.p.	n.p.	22	8.1	43	11.2	181	9.0
2006–07	n.p.	n.p.	77	7.3	n.p.	n.p.	26	9.6	30	7.8	146	7.3
2007–08	6	5.0	82	7.8	19	10.6	21	7.7	30	7.8	158	7.9
2008–09	11	9.2	84	8.0	10	5.6	15	5.5	28	7.3	148	7.4
2009–10	8	6.7	89	8.4	14	7.8	29	10.7	28	7.3	168	8.4
Total	**120**	**100**	**1,055**	**100**	**179**	**100**	**272**	**100**	**384**	**100**	**2,010**	**100**

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

Table B1.5: Cases of hospitalised fall injury, by year and age, NSW, 2009–10

	<1		1–4		5–8		9–14		15–17		All children and young people	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1999–00	273	9.1	2,093	9.3	2,533	9.6	3,250	9.4	1,093	9.5	9,242	9.4
2000–01	259	8.6	2,084	9.3	2,520	9.6	3,201	9.3	1,010	8.8	9,074	9.3
2001–02	284	9.5	1,969	8.7	2,369	9.0	2,903	8.4	936	8.1	8,461	8.6
2002–03	248	8.3	1,889	8.4	2,247	8.5	2,858	8.3	1,003	8.7	8,245	8.4
2003–04	280	9.3	2,179	9.7	2,597	9.9	3,410	9.9	1,041	9.1	9,507	9.7
2004–05	242	8.1	2,057	9.1	2,359	9.0	3,089	9.0	999	8.7	8,746	8.9
2005–06	302	10.1	2,115	9.4	2,348	8.9	3,097	9.0	1,009	8.8	8,871	9.1
2006–07	294	9.8	2,175	9.7	2,450	9.3	3,107	9.0	1,069	9.3	9,095	9.3
2007–08	276	9.2	1,970	8.8	2,302	8.7	3,105	9.0	1,127	9.8	8,780	9.0
2008–09	265	8.8	1,855	8.2	2,288	8.7	3,080	8.9	1,054	9.2	8,542	8.7
2009–10	278	9.3	2,121	9.4	2,342	8.9	3,393	9.8	1,151	10.0	9,285	9.5
Total	**3,001**	**100**	**22,507**	**100**	**26,355**	**100**	**34,493**	**100**	**11,492**	**100**	**97,848**	**100**

Table B1.6: Cases of hospitalised smoke, fire, heat and hot substances injury, by year and age, NSW, 2009–10

	<1		1–4		5–8		9–14		15–17		All children and young people	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1999–00	90	10.3	365	8.9	64	7.4	99	8.2	67	9.0	685	8.8
2000–01	92	10.6	391	9.5	69	8.0	127	10.5	83	11.1	762	9.8
2001–02	72	8.3	369	9.0	86	10.0	138	11.4	61	8.2	726	9.3
2002–03	62	7.1	355	8.6	67	7.8	82	6.8	55	7.4	621	8.0
2003–04	80	9.2	380	9.3	75	8.7	104	8.6	73	9.8	712	9.1
2004–05	79	9.1	346	8.4	81	9.4	134	11.1	70	9.4	710	9.1
2005–06	79	9.1	381	9.3	79	9.2	109	9.0	65	8.7	713	9.1
2006–07	59	6.8	402	9.8	85	9.9	120	9.9	59	7.9	725	9.3
2007–08	109	12.5	408	9.9	95	11.0	99	8.2	87	11.6	798	10.2
2008–09	74	8.5	386	9.4	82	9.5	104	8.6	54	7.2	700	9.0
2009–10	74	8.5	322	7.8	79	9.2	96	7.9	73	9.8	644	8.3
Total	**870**	**100**	**4,105**	**100**	**862**	**100**	**1,212**	**100**	**747**	**100**	**7,796**	**100**

Table B1.7: Cases of hospitalised other unintentional injury, by year and age, NSW, 2009–10

	<1		1–4		5–8		9–14		15–17		All children and young people	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1999–00	186	9.8	1,812	9.2	1,301	9.2	2,336	8.4	1,756	7.6	7,391	8.5
2000–01	148	7.8	1,864	9.4	1,363	9.6	2,428	8.8	1,781	7.7	7,584	8.8
2001–02	157	8.3	1,923	9.7	1,427	10.1	2,381	8.6	1,746	7.5	7,634	8.8
2002–03	173	9.1	1,702	8.6	1,302	9.2	2,448	8.8	1,795	7.7	7,420	8.6
2003–04	205	10.8	1,762	8.9	1,301	9.2	2,646	9.5	2,024	8.7	7,938	9.2
2004–05	141	7.4	1,764	8.9	1,287	9.1	2,619	9.4	2,081	9.0	7,892	9.1
2005–06	185	9.8	1,874	9.5	1,331	9.4	2,733	9.9	2,402	10.4	8,525	9.8
2006–07	165	8.7	1,813	9.2	1,316	9.3	2,731	9.9	2,502	10.8	8,527	9.8
2007–08	192	10.1	1,700	8.6	1,166	8.2	2,483	9.0	2,371	10.2	7,912	9.1
2008–09	160	8.4	1,700	8.6	1,144	8.1	2,385	8.6	2,276	9.8	7,665	8.8
2009–10	182	9.6	1,817	9.2	1,200	8.5	2,532	9.1	2,439	10.5	8,170	9.4
Total	**1,894**	**100**	**19,731**	**100**	**14,138**	**100**	**27,722**	**100**	**23,173**	**100**	**86,658**	**100**

Table B1.8: Cases of hospitalised intentional self-harm injury, by year and age, NSW, 2009–10

	<1		1–4		5–8		9–14		15–17		All children and young people	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1999–00	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	170	8.2	467	6.9	640	7.2
2000–01	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	151	7.2	500	7.4	654	7.3
2001–02	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	167	8.0	553	8.1	723	8.1
2002–03	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	164	7.9	552	8.1	723	8.1
2003–04	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	225	10.8	695	10.2	923	10.4
2004–05	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	245	11.8	787	11.6	1,036	11.6
2005–06	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	249	11.9	745	11.0	997	11.2
2006–07	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	216	10.4	663	9.8	880	9.9
2007–08	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	143	6.9	554	8.2	699	7.8
2008–09	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	162	7.8	626	9.2	790	8.9
2009–10	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	192	9.2	653	9.6	851	9.5
Total	**n.p.**	**n.p.**	**24**	**100**	**n.p.**	**n.p.**	**2,084**	**100**	**6,795**	**100**	**8,916**	**100**

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

Table B1.9: Cases of hospitalised assault injury, by year and age, NSW, 2009–10

	<1		1–4		5–8		9–14		15–17		All children and young people	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1999–00	52	13.1	70	15.2	31	13.0	142	10.1	390	8.8	685	9.9
2000–01	49	12.4	62	13.4	20	8.4	145	10.3	444	10.1	720	10.4
2001–02	41	10.4	45	9.8	21	8.8	134	9.5	407	9.2	648	9.4
2002–03	30	7.6	45	9.8	28	11.8	136	9.7	398	9.0	637	9.2
2003–04	40	10.1	47	10.2	24	10.1	98	7.0	370	8.4	579	8.4
2004–05	32	8.1	41	8.9	26	10.9	127	9.0	337	7.6	563	8.1
2005–06	39	9.8	42	9.1	12	5.0	139	9.9	406	9.2	638	9.2
2006–07	42	10.6	26	5.6	26	10.9	129	9.2	465	10.5	688	9.9
2007–08	25	6.3	27	5.9	23	9.7	115	8.2	377	8.5	567	8.2
2008–09	27	6.8	34	7.4	11	4.6	135	9.6	421	9.5	628	9.1
2009–10	19	4.8	22	4.8	16	6.7	105	7.5	401	9.1	563	8.1
Total	**396**	**100**	**461**	**100**	**238**	**100**	**1,405**	**100**	**4,416**	**100**	**6,916**	**100**

Table B1.10: Cases of hospitalised undetermined intent injury, by year and age, NSW, 2009–10

	<1		1–4		5–8		9–14		15–17		All children and young people	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1999–00	n.p.	n.p.	17	9.8	n.p.	n.p.	34	10.7	45	6.9	107	8.5
2000–01	n.p.	n.p.	n.p.	n.p.	5	6.4	27	8.5	41	6.3	82	6.5
2001–02	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	18	5.6	35	5.4	61	4.8
2002–03	n.p.	n.p.	8	4.6	n.p.	n.p.	20	6.3	32	4.9	66	5.2
2003–04	n.p.	n.p.	12	6.9	n.p.	n.p.	21	6.6	42	6.4	84	6.7
2004–05	n.p.	n.p.	12	6.9	n.p.	n.p.	25	7.8	63	9.6	118	9.4
2005–06	n.p.	n.p.	17	9.8	n.p.	n.p.	28	8.8	75	11.5	127	10.1
2006–07	n.p.	n.p.	25	14.5	n.p.	n.p.	25	7.8	64	9.8	122	9.7
2007–08	6	15.8	12	6.9	n.p.	n.p.	43	13.5	60	9.2	126	10.0
2008–09	n.p.	n.p.	23	13.3	n.p.	n.p.	40	12.5	87	13.3	160	12.7
2009–10	10	26.3	38	22.0	13	16.7	38	11.9	109	16.7	208	16.5
Total	**38**	**100**	**173**	**100**	**78**	**100**	**319**	**100**	**653**	**100**	**1,261**	**100**

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

Glossary

Definitions in the *Glossary* contain an identification number from the Metadata Online Registry (METeOR). METeOR is Australia's central repository for health, community services and housing assistance metadata, or 'data about data'. It provides definitions for data for health and community services-related topics and specifications for related national minimum data sets (NMDSs), such as the NMDSs that form the basis of this report. METeOR can be viewed on the AIHW website at <www.aihw.gov.au>. For further information on the terms used in this report, refer to the definitions in the *National health data dictionary,* version 14 (HDSC 2008).

Activity when injured: The type of activity being undertaken by a person at the time of injury. METeOR identifier: 361025.

Acute: Having a short and relatively severe course.

Acute care: See Care type.

Acute care hospital: See Establishment type.

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

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

Average length of stay: The average number of patient days for admitted patient episodes. Patients admitted and separated on the same day are allocated a length of stay of 1 day.

Episode of care: The period of admitted patient care between a formal or statistical admission and a formal or statistical separation, characterised by only one care type (see Care type and Separation). METeOR identifier: 270174 (Care type). METeOR identifier: 268956 (Episode of admitted patient care).

External cause: The environmental event, circumstance or condition as the cause of injury, poisoning and other adverse effect. METeOR identifier: 361926.

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

Inpatient: See Admitted patient. METeOR identifier: 268957.

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

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

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

Mode of separation: Status at separation of person (discharge/transfer/death) and place to which person is released (where applicable). METeOR identifier: 270094.

Patient days: The total number of days for patients who were admitted for an episode of care and who separated during a specified reference period. A patient who is admitted and separated on the same day is allocated 1 patient day. METeOR identifier: 270045.

Place of occurrence of external cause: The place where the external cause of injury, poisoning or adverse effect occurred. METeOR identifier: 391334.

Principal diagnosis: The diagnosis established after study to be chiefly responsible for occasioning an episode of admitted patient care. METeOR identifier: 391326.

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

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

Same-day patient: An admitted patient who is admitted and separated on the same date.

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

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

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

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This report provides summary data on hospitalised injury of children and young people (aged 0–17 years) in New South Wales from 1 July 2009 to 30 June 2010. During the 12 months, more than 23,000 children and young people were hospitalised as a result of an injury.

Falls were the most commonly reported cause of hospitalised injury (39% of cases), and these frequently involved playground equipment. Transport injuries were also common (14%).