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Accident Research Centre



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**UNINTENTIONAL (ACCIDENTAL)  
HOSPITAL-TREATED INJURY  
VICTORIA**

**2006**

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# Unintentional (accidental) hospital-treated injury in Victoria 2006

## Summary results

This is the third of a series of regular E-bulletins that provide an overview of the injury profile for Victoria utilising two injury surveillance datasets that separately record hospital admissions and Emergency Department (ED) presentations for injury. This edition provides an overview of unintentional ('accidental') hospital-treated injury in 2006. Overall there were 361,442 hospital-treated injury cases in Victoria in 2006 (excluding complications of surgical and medical care, adverse effects of drugs in therapeutic use and late effects of injury), 87% of which were unintentional (n=314,749).

## All ages

- More than 300,000 Victorians (more than 6 in every 100) were treated in hospital for unintentional injury during 2006 (87,659 admissions and 227,090 ED presentations).
- Hospital admissions (frequency and rate) and ED presentations (frequency) have increased significantly over the 11-year period 1996 to 2006. The frequency of admissions increased by 47% and the admission rate by 31% if same day admissions are included in the analysis, reducing to 22% and 8% if same day admissions are excluded (the latter method produces a more stable indicator of trend). The frequency of ED presentations increased by 70%.
- Males were overrepresented accounting for 60% of all hospital-treated injury cases (56% of admissions and 62% of ED presentations).
- Falls were the leading cause of injury admissions and ED presentations accounting for more than one-third of all hospital-treated injury cases (36%), followed by hit/struck/crush (18%), cutting and piercing (10%) and transport (9%).
- The home was the most common location of injury (22% of hospital admissions and 37% of ED presentations). Persons were also commonly injured on roads, streets and highways (12% of admissions and 9% of ED presentations), sports and athletics areas (6% of admissions and 8% of ED presentations) and schools and public buildings (6% of admissions and 6% of ED presentations).
- Coding of hospital admissions for activity is poor with most cases coded to unspecified activity (58%). Sport is recorded as the activity being undertaken at the time of injury in 11% of hospital admissions. ED presentations are better coded for activity. Leisure is the most common activity recorded for ED presentations (41%) and sports and working for income each account for a further 10% and 9% of injury cases respectively.

## Children (0-14 years)

- Nearly 80,000 Victorian children (more than 8 in every 100) were treated in hospital for unintentional injury during 2006 (13,036 admissions and 66,056 ED presentations).
- The frequency of child ED presentations increased by 78% over the 11-year period 1996 to 2006. The frequency of admissions increased by 14% and the admission rate by 12% if same day admissions are included in the analysis. However if same-day admissions are excluded the frequency of admissions decreased by 18% and the admission rate by 20%.
- Males were overrepresented accounting for 59% of all hospital-treated injury cases (62% of admissions and 59% of ED presentations).
- Falls were the leading cause of hospital-treated injury (43%) followed by hit/struck/crush (21%).

- Almost 20% of hospital admissions and half of ED presentations (46%) were for injuries that occurred in the home. Children were also commonly injured in schools and other public buildings (13% of admissions and 15% of ED presentations) and sports and athletics areas (7% of admissions and 7% of ED presentations).
- The activity engaged in at the time of injury was unspecified for more than half of all child injury admissions (57%) and recorded as 'other specified' for a further 16% of admission. Sport was the most common specified activity for hospital admissions (18%). Leisure was recorded as the activity engaged in at the time of injury for 53% of child ED presentations, followed by sports (10%) and education (4%).

### **Adolescents and young adults (15-24 years)**

- Almost 60,000 Victorian adolescents and young adults (9 in every 100) were treated in hospital for unintentional injury during 2006 (12,208 admissions and 47,507 ED presentations).
- The frequency of adolescent and young adult ED presentations increased by 44% over the 11-year period 1996 to 2006. The frequency of admissions increased by 28% and the admission rate by 17% if same day admissions are included in the analysis. However if same-day admissions are excluded the frequency of admissions was stable and the admission rate decreased by 9%.
- Males were overrepresented accounting for 70% of all hospital-treated injury cases (74% of admissions and 69% of ED presentations).
- Transport is the leading cause of admissions (26%), yet accounts for only 10% of ED presentations. Falls is the second most common cause of both hospital admissions and ED presentations accounting for approximately one-quarter of both admissions and ED presentations. Hit/struck/crush is the leading cause of ED presentations (26%) and accounts for 16% of hospital admissions.
- The road, street and highway is the most common place of occurrence of adolescent and young adult injuries resulting in hospital admission (19%) whereas the home is the leading place of occurrence for injuries resulting in ED presentation (23%).
- The activity engaged in at the time of injury was unspecified for half of adolescent and young adult injury admissions and recorded as 'other specified' for a further 11% of injuries. Sports (26%) and working for income (8%) were the activities recorded for a substantial proportion of admissions. Leisure was recorded as the activity engaged in at the time of injury for 35% of ED presentations, followed by sports (19%) and working for income (12%).

### **Adults (25-64 years)**

- Almost 130,000 Victorian adults (5 in every 100) were treated in hospital for unintentional injury during 2006 (34,086 admissions and 94,885 ED presentations).
- Adult hospital admissions (frequency and rate) and ED presentations (frequency) have increased significantly over the 11-year period 1996 to 2006. The frequency of admissions increased by 54% and the admission rate by 33% if same day admissions are included in the analysis, reducing to 25% and 8% if same day admissions are excluded. The frequency of ED presentations increased by 73%.
- Males were overrepresented accounting for 64% of all hospital-treated injury cases (64% of both admissions and ED presentations).
- The leading cause of adult hospital injury admissions and ED presentations is falls - 32% of hospital admissions and 24% of ED presentations. Other major causes are transport (20% of admissions and 8% of ED presentations hit/struck/crush (9% of admissions and 20% of ED presentations) and cutting and piercing (8% of admissions and 15% of ED presentations).
- 16% of hospital admissions and 36% of ED presentations were for injuries that occurred in the home. Other major locations for injury were: roads, streets and highways (15% of admissions and 10% of ED presentations); trade

and service areas (3% of admissions and 9% of ED presentations) and sports and athletics areas (6% of admissions and 6% of ED presentations).

- The activity engaged in at the time of injury was unspecified for more than half of adult injury hospital admissions (56%) and recorded as 'other specified' for a further 12% of injuries. Working for income (11%) and sports (11%) were the activities recorded for a substantial number of older adult admissions. Leisure was recorded as the activity engaged in at the time of injury for 35% of adult ED presentations, followed by working for income (16%) and sports (7%).

### **Older adults (65+ years)**

- More than 46,000 Victorian older adults (7 in every 100) were treated in hospital for unintentional injury during 2006 (28,239 admissions and 18,642 ED presentations).
- Older adult hospital admissions (frequency and rate) and ED presentations (frequency) have increased significantly over the 11-year period 1996 to 2006. The frequency of admissions increased by 74% and the admission rate by 41% if same day admissions are included in the analysis, reducing to 51% and 22% if same day admissions are excluded. The frequency of ED presentations increased by 108%.
- Females were overrepresented accounting for 63% of all hospital-treated injury cases (65% of admissions and 58% of ED presentations).
- Falls account for more than three-quarters of hospital admissions (77%) and more than half of ED presentations (54%) in this age group.
- Almost 40% of hospital admissions and more than half ED presentations were for injuries that occurred in the home (39% and 51%).
- The activity engaged in at the time of injury was unspecified for two-thirds of older adult injury admissions and recorded as 'other specified' for a further 13% of injuries. Vital activities such as resting, eating and sleeping were the activities recorded for a substantial number of older adult admissions (13%). Leisure was recorded as the activity engaged in at the time of injury for 41% of older adult ED presentations, followed by vital activities such as resting, eating and sleeping (9%).



## Introduction

This E-bulletin provides information on unintentional hospital-treated injury in 2006. Overall there were 361,442 hospital-treated injury cases in Victoria in 2006 (excluding complications of surgical and medical care, adverse effects of drugs in therapeutic use and late effects of injury medical injury), 87% of which were unintentional (n=314,749). The remaining injury cases were either intentional i.e. self harm or assault (6%, n=21,059) or of undetermined intent (7%, n=25,634).

## Method

Hospital admissions data were extracted from the Victorian Admitted Episodes Dataset (VAED) and ED presentations from the Victorian Emergency Minimum Dataset (VEMD). The VAED records all hospital admissions in public and private hospitals in the state of Victoria and the VEMD records all presentations to Victorian public hospitals with 24-hour emergency departments (38 hospitals). Deaths were excluded from the hospital admissions dataset as injury deaths are covered in separate E-Bulletins. ED presentations that resulted in death or admission have been excluded from the ED presentations dataset to avoid double counting with the hospital admissions data provided in this edition. Data were selected if the admission (VAED) or presentation (VEMD) date occurred in 2006 and if the injury was unintentional (VAED external cause code in the range V00-X59, VEMD human intent=1). Transfers within and between hospitals were excluded from the hospital admissions data and injuries that occur in the context of medical and surgical care (often referred to as complications) were excluded from both datasets. For ease of comparison VEMD causes, where possible, were recoded to match VAED cause groups.

The age groups (0-14, 15-24, 25-64, 65+) have been selected to match those in the *National Injury Prevention and Safety Promotion Plan: 2004 - 2014* (NIPSPP Plan).

## Data issues

Hospital admissions activity and place of occurrence information should be interpreted with caution due to the high proportion of unspecified data.

Rates per 100,000 population have been calculated for all years for hospital admissions data (VAED) and for 2006 for ED presentations data (VEMD). ED presentation rates were also calculated for 2005 but not calculated for other years covered in the trend analysis as all hospitals with 24-hour emergency departments have not contributed to the data collection over that time.

Trend data are reported for all admissions (including same-day admissions) and for admissions excluding same-day admissions. The exclusion of same-day admissions minimises the influence of admission policy changes across time and between hospitals. Frequencies and rates for 2006 hospital admissions reported in the trend sections differ slightly from those reported elsewhere in the report because a stricter inclusion criterion based on primary injury diagnosis was used for the trend calculations. Frequencies for hospital admissions reported in trend sections differ from those reported elsewhere in the report because only hospitals that contributed data to VEMD over the whole 11-year period were included in the trend analysis of ED presentations frequency data (24 of the current 38 hospitals contributing to the surveillance system).

Trends were determined using a log-linear regression model of the rate data assuming a Poisson distribution of injuries. The statistics relating to the trend curves, slope and intercept, estimated annual percentage change, estimated overall change, 95% confidence intervals around these estimated changes and the p-value, were calculated using the regression model in SAS® 9.1.5. A trend was considered to be statistically significant if the p-value of the slope of the regression model was less than 0.05.

For further discussion of data sources and issues refer to Appendix 1 (page 41).





## All ages

Table 1 provides an overview of hospital-treated injury in Victoria during 2006. Overall, there were almost 315,000 hospital treated injury cases recorded in this period (87,659 admissions and 227,090 ED presentations) giving a rate of 6,182 hospital-treated injury cases per 100,000 Victorians.

- The hospital admission rate is highest in older adults (4,077 per 100,000 persons) and lowest in adults (1,247 per 100,000 persons)
- The ED presentation rate is highest in children (6,871/100,000) and lowest in older adults (2,683/100,000).
- Adolescents and young adults have the highest overall hospital-treated injury rate (admissions and presentations combined, 8,517/100,000), followed by children (8,227/100,000) and older adults (6,760/100,000). Adults aged 25-64 years have the lowest hospital-treated injury rate (4,717/100,000).

**Table 1 Hospital treated injury frequency and rates by broad age group, Victoria 2006.**

	Children 0-14 years		Adolescents and young adults 15-24 yrs		Adults 25-64 yrs		Older adults 65+ yrs		ALL	
	Freq.	Rate / 100,000	Freq.	Rate / 100,000	Freq.	Rate / 100,000	Freq.	Rate / 100,000	Freq.	Rate / 100,000
<b>Admissions</b>	13,036	1,355.9	12,208	1,741.2	34,086	1,246.6	28,239	4,077.3	87,659	1,721.6
<b>ED presentations</b>	66,056	6,870.7	47,507	6,775.7	94,885	3,470.2	18,642	2,683.1	227,090	4,460.0
<b>Hospital-treated</b>	79,092	8,226.6	59,715	8,516.9	128,971	4,716.8	46,881	6,760.4	314,749	6,181.6

Figure 1 shows hospital admission injury rates by age and gender for Victoria in 2006. In 2006, age-specific injury hospital admission rates rose after childhood, were higher in adolescents and young adults than in adults and peaked in older adults. The overall male age-specific injury hospital admission rate was higher than the female rate in all 5-year age groups to age 65 years.

**Figure 1 Hospital admissions injury rates by age group and gender, Victoria 2006.**

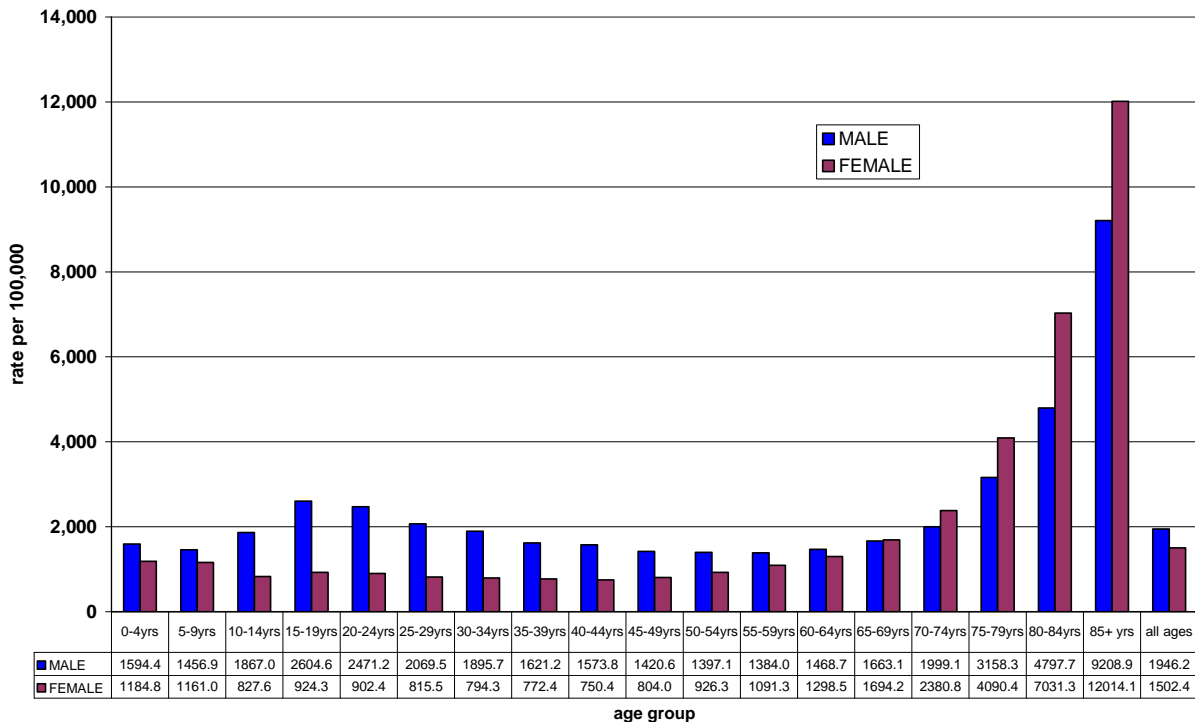
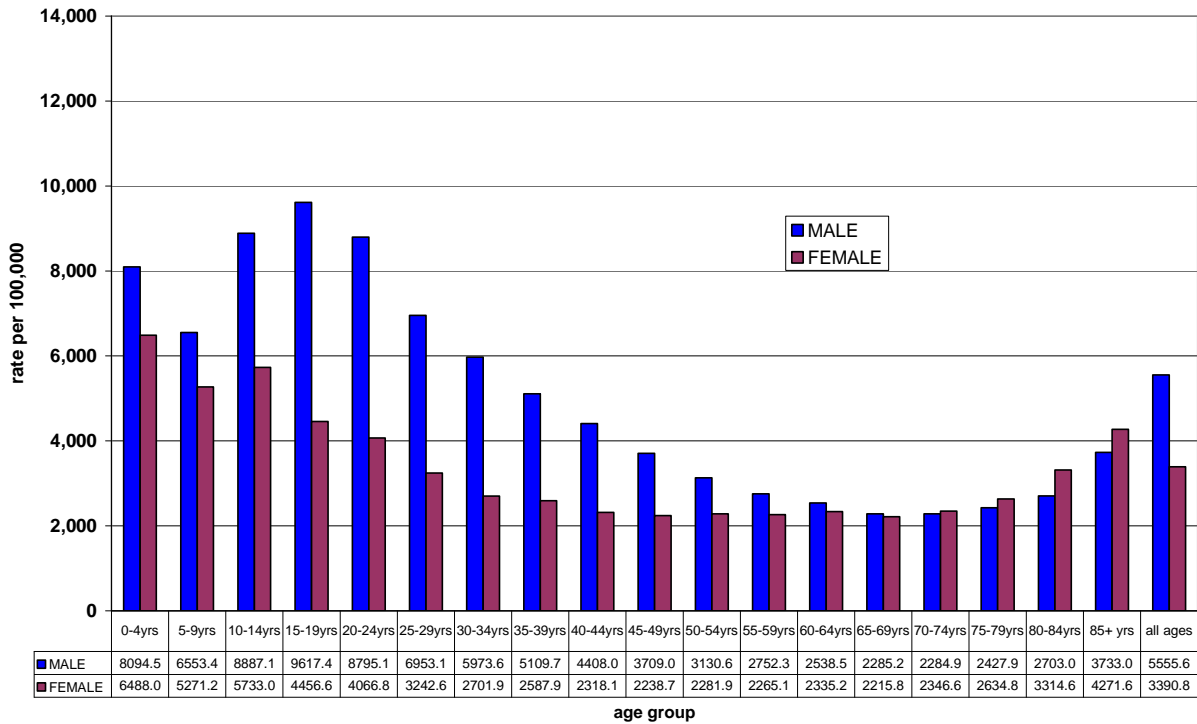


Figure 2 shows ED presentation rates by age and gender for Victoria in 2006. In 2006, age-specific injury ED presentation rates were high in children (0-9 years), highest in older children (10-14 years) adolescents and young adults, and then decreased throughout the adult age groups until age 75 when rates showed a slight increase. The overall male age-specific injury hospital admissions rate was higher than the female rate in all 5-year age groups to age 70 years.

**Figure 2 ED presentation injury rates by age group and gender, Victoria 2006.**



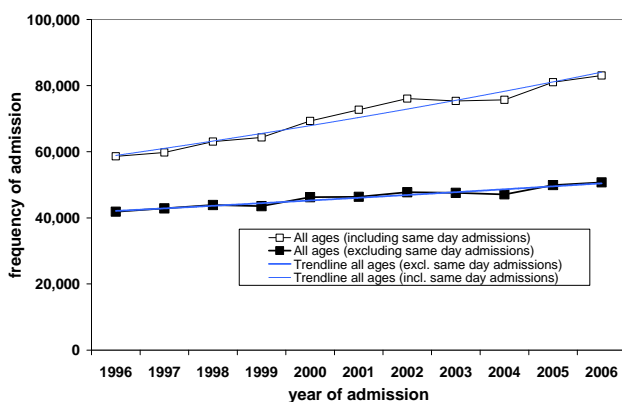
## Trend

### FREQUENCY

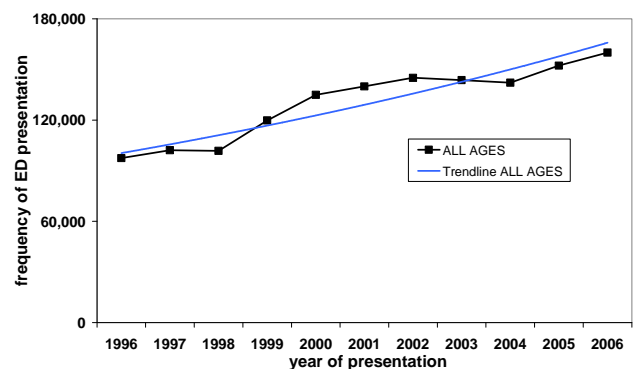
Frequency and rate data for 2006 reported here differ slightly from those reported elsewhere in this report because stricter inclusion criteria based on primary injury diagnosis (for admissions) and hospital site (for ED presentations) are used for the trend calculations.

- The frequency of ALL AGES unintentional injury and poisoning admissions (INCLUDING same-day admissions) increased significantly over the 11-year period from 58,625 in 1996 to 83,067 in 2006, representing an estimated annual change of 3.6% (95% confidence interval 3.0% to 4.1%) and an overall increase of 47% (38% to 55%) based on the trend line.
- The frequency of ALL AGES unintentional injury and poisoning admissions (EXCLUDING same-day admissions) increased significantly over the 11-year period from 41,872 in 1996 to 50,740 in 2006, representing an estimated annual change of 1.8% (1.5% to 2.2%) and an overall increase of 22% (17% to 27%) based on the trend line.
- The frequency of ALL AGES unintentional injury and poisoning ED presentations increased significantly over the 11-year period from 97,468 in 1996 to 160,021 in 2006, representing an estimated annual change of 5.0 % (3.5% to 6.2%) and an overall increase of 70% (46% to 94%) based on the trend line.

**Figure 3: Trend in the frequency of injury hospital admissions, Victoria 1996-2006**



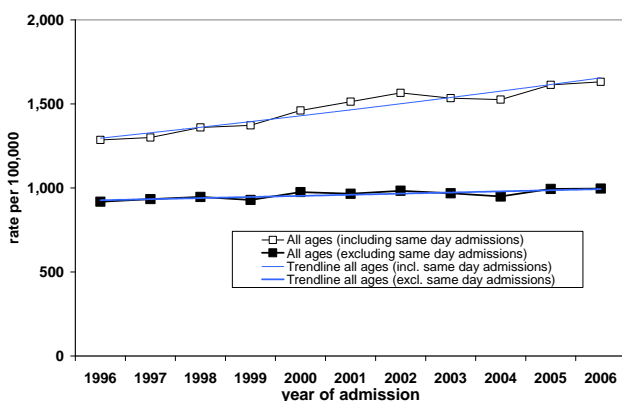
**Figure 4: Trend in the frequency of injury ED presentations, Victoria 1996-2006**



### RATE

- The ALL AGES unintentional injury and poisoning admission rate (INCLUDING same-day admissions) increased significantly over the 11-year period from 1,286/100,000 in 1996 to 1,631/100,000 in 2006, representing an estimated annual change of 2.5% (1.9% to 3.0%) and an overall increase of 31% (23% to 38%) based on the trend line.
- The ALL AGES unintentional injury and poisoning admission rate (EXCLUDING same-day admissions) increased significantly over the 11-year period from 918/100,000 in 1996 to 997/100,000 in 2006, representing an estimated annual change of 0.7% (0.3% to 1.1%) and an overall increase of 8% (3.7% to 12.2%) based on the trend line.
- The trend in the ED presentation rate cannot be determined because numerator data are not complete.

**Figure 5: Trend in the hospital admission rates per 100,000 population, Victoria 1996-2006**

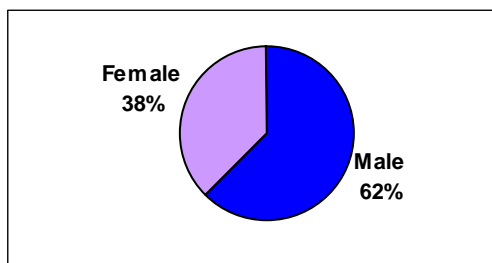


Rates cannot be calculated for ED presentations because numerator data are not complete for the 11-year period.

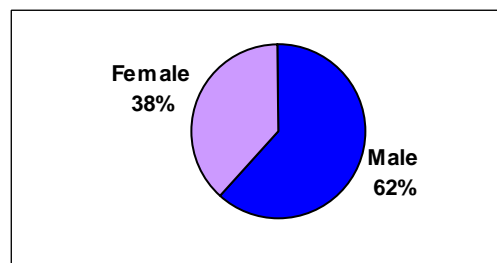
## Gender

- Males are overrepresented accounting for 56% of hospital admissions (n=48,945) and 62% of ED presentations (n=139,717) in Victoria in 2006. (Figures 6 & 7)

**Figure 6: Hospital injury admissions by gender, Victoria 2006**



**Figure 7: ED injury presentations by gender, Victoria 2006**



- The rate of hospital admission and ED presentation is also higher for males than females (1,946 & 5,556/100,000 vs. 1,502 & 3,391/100,000). (Table 2)

**Table 2. Frequency and rate of hospital admission and ED presentation, Victoria 2006.**

	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
Male	48945	1946.2	139717	5555.6
Female	38714	1502.4	87373	3390.8
All	87659	1721.6	227090	4460.0

## Age

- Persons aged 65 years and older have the highest rate of hospital admissions (4,077.3/100,000) and adults aged 25-64 have the lowest (1,246.6/100,000).
- Young persons aged 0-14 and 15-24 have the highest ED presentation (non-admission) rates, 6,870.7 and 6,775.7/100,000 respectively.

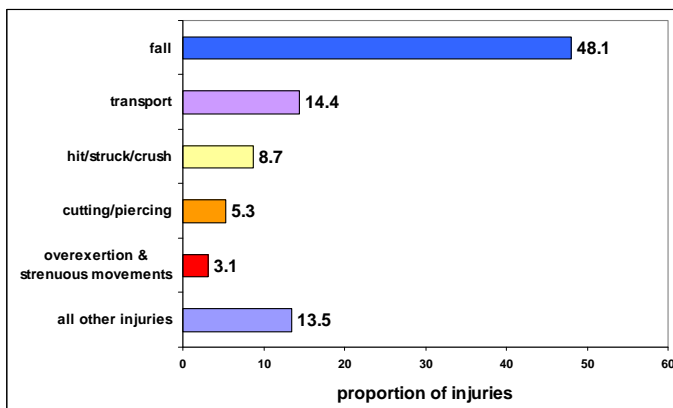
**Table 3. Frequency and rate of hospital admission and ED presentation, Victoria 2006.**

	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
0-14	13,036	1,355.9	66,056	6,870.7
15-24	12,208	1,741.2	47,507	6,775.7
25-64	34,086	1,246.6	94,885	3,470.2
65+	28,239	4,077.3	18,642	2,683.1
All	87,659	1,721.6	227,090	4,460.0

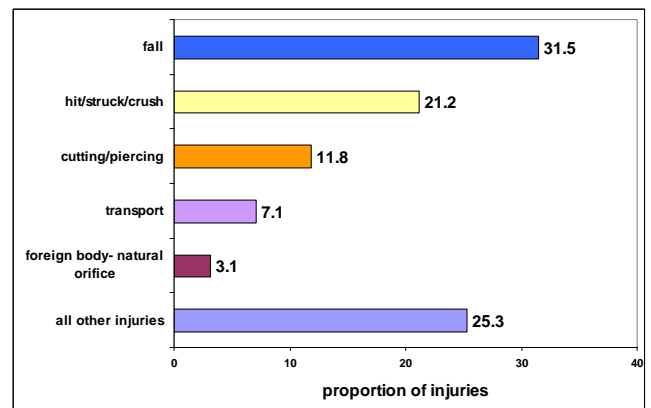
## Leading causes of injury

- Four of the five major causes of hospital admissions and ED presentations are the same although the ranking on frequency of cases is different.
- The leading cause of both hospital admissions and ED presentations is falls. Falls account for 48% (n=42,148) of hospital admissions and 32% (n=71,439) of ED presentations.
- Transport accounts for 14% of admissions (n=12,603) but just 7% of presentations (n=16,134) which indicates that transport injuries are more severe than injuries from other causes.
- Hit/struck/crush injuries account for 9% of admissions (n=7,589) but a higher proportion (21%) of ED presentations (n=48,129).
- Cutting and piercing injuries account for 5% of admissions (n=4,671) and 12% of ED presentations (n=26,818).
- The fifth ranking cause of hospital admissions is overexertion and strenuous movements (3%, n=2,731) whereas for ED presentations it is injuries caused by a foreign body in a natural orifice e.g. ear, nose, eye (3%, n=7,095).

**Figure 8: Hospital admissions by cause, Victoria 2006**



**Figure 9: ED presentations by cause, Victoria 2006**



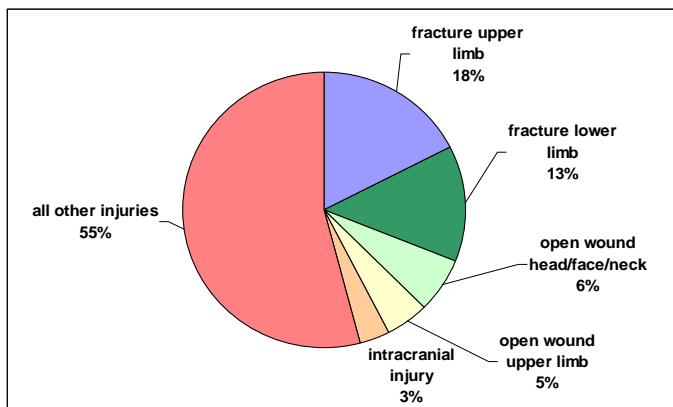
Note: 'Other specified' and 'unspecified' cases were included in the 'all other injuries' category regardless of their ranking

## Major injury type (body site and nature of injury)

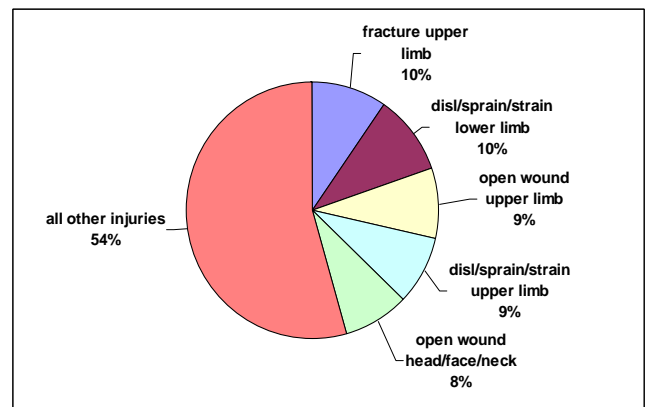
Figures 10 & 11 show the five most common specific injury types for hospital admissions and ED presentations.

- Fracture to the upper limb account for 18% of hospital injury admissions and 10% of ED presentations.
- Fracture to the lower limb is the second most common type of injury requiring hospital admission (13%).
- Dislocations/sprains and strains to the lower limb (10%) and upper limb (9%) are common among ED presentations.
- Open wounds to the head/face/neck account for 6% of hospital injury admissions and 8% of ED presentations.

**Figure 10: Major injury type, hospital admissions, Victoria 2006**



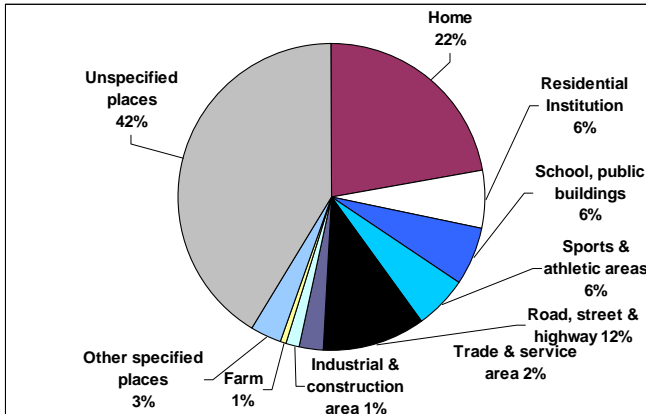
**Figure 11: Major injury type, ED presentations, Victoria 2006**



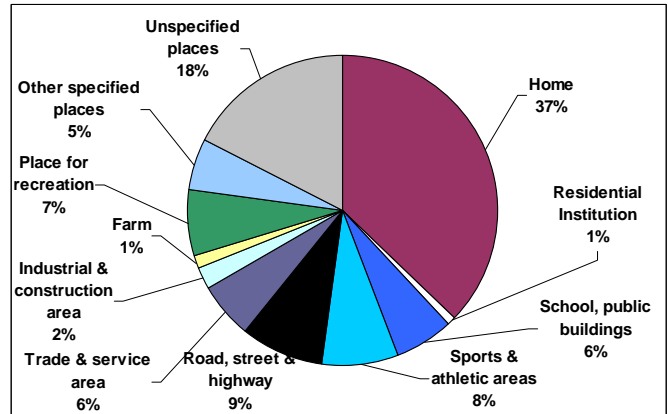
## Place of injury occurrence

- At least 22% of all injuries requiring hospital admission and 37% of injuries resulting in ED presentation occurred in the home.
- Persons were also commonly injured on roads, streets and highways (12% of admissions and 9% of ED presentations), sports and athletics areas (6% of admissions and 8% of ED presentations) and schools and public buildings (6% of admissions and 6% of ED presentations).

**Figure 12: Hospital admissions by place of occurrence, Victoria 2006**



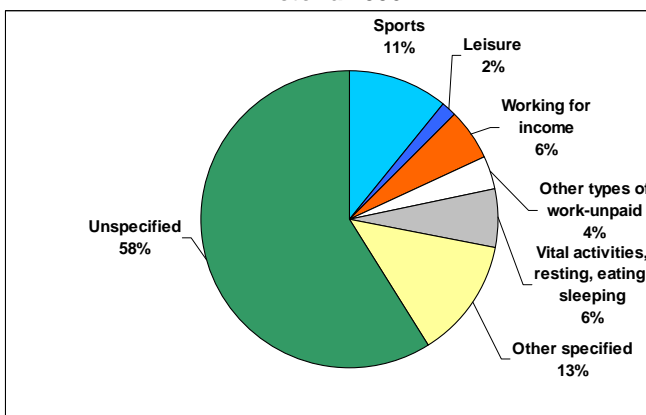
**Figure 13: ED presentations by place of occurrence, Victoria 2006**



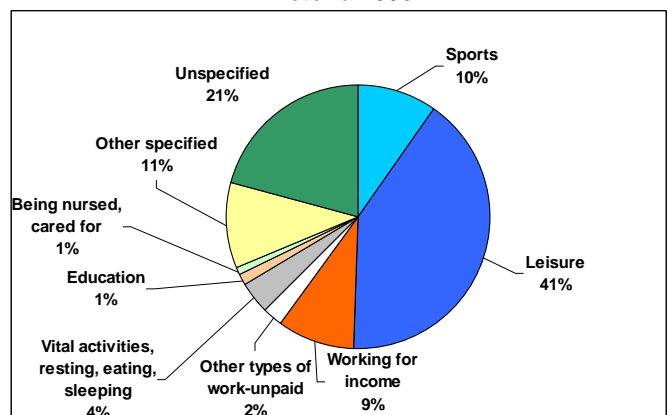
## Activity when injured

- Hospital admissions are mostly coded to unspecified activity (58%, n=51,508). Sport is recorded as the activity at the time of injury for more than 10% hospital admissions (11%).
- Leisure is the most common activity recorded for ED presentations (41%, n=92,770) and sports and working for income account for a further 10% and 9% of injuries respectively.

**Figure 14: Hospital admissions by activity when injured, Victoria 2006**



**Figure 15: ED presentations by activity when injured, Victoria 2006**



**Table 4 Ranking of causes for hospital admissions and ED presentations, all ages, 2006**

AGE GROUP	RANK	ADMISSIONS			PRESENTATIONS		
		CAUSE	FREQ	%	CAUSE	FREQ	%
0-14 years	1	fall	6,201	47.6	fall	27,560	41.7
	2	hit/struck/crush	1,878	14.4	hit/struck/crush	14,779	22.4
	3	transport	1,621	12.4	other specified unintentional	6,022	9.1
	4	cutting/piercing	669	5.1	cutting/piercing	4,626	7.0
	5	unspecified factor	526	4.0	unspecified factor	4,381	6.6
	6	poisoning	500	3.8	transport	2,724	4.1
	7	foreign body- natural orifice	475	3.6	foreign body- natural orifice	2,025	3.1
	8	natural/environmental/animals	400	3.1	natural/environmental/animals	1,655	2.5
	9	fires/burns/scalds	241	1.8	fires/burns/scalds	1,425	2.2
	10	overexertion & strenuous movements	154	1.2	poisoning	667	1.0
	11	other specified unintentional	151	1.2	choking/suffocation	122	<1
	12	choking/suffocate	144	1.1	machinery	43	<1
	13	near drowning	37	<1	near drowning	23	<1
	14	machinery	30	<1	explosions/firearms	4	<1
	15	explosions/firearms	9	<1	overexertion & strenuous movements	N/A	N/A
		ALL	13,036	100.0	ALL	66,056	100.0
15-24 years	1	transport	3,121	25.6	hit/struck/crush	12,472	26.3
	2	fall	3,111	25.5	fall	10,984	23.1
	3	hit/struck/crush	1,997	16.4	cutting/piercing	6,329	13.3
	4	cutting/piercing	1,023	8.4	transport	4,957	10.4
	5	unspecified factor	979	8.0	other specified unintentional	4,670	9.8
	6	poisoning	466	3.8	unspecified factor	3,722	7.8
	7	overexertion & strenuous movements	454	3.7	natural/environmental/animals	1,221	2.6
	8	machinery	267	2.2	fires/burns/scalds	1,197	2.5
	9	other specified unintentional	249	2.0	foreign body- natural orifice	930	2.0
	10	natural/environmental/animals	205	1.7	poisoning	504	1.1
	11	fires/burns/scalds	171	1.4	machinery	456	1.0
	12	foreign body- natural orifice	100	<1	choking/suffocation	45	<1
	13	choking/suffocate	42	<1	near drowning	15	<1
	14	explosions/firearms	21	<1	explosions/firearms	5	<1
	15	near drowning	2	<1	overexertion & strenuous movements	N/A	N/A
		ALL	12,208	100.0	ALL	47,507	100.0
25-64 years	1	fall	10,996	32.3	fall	22,750	24.0
	2	transport	6,662	19.5	hit/struck/crush	19,165	20.2
	3	unspecified factor	3,388	9.9	cutting/piercing	14,285	15.1
	4	hit/struck/crush	3,046	8.9	other specified unintentional	10,332	10.9
	5	cutting/piercing	2,655	7.8	unspecified factor	8,231	8.7
	6	overexertion & strenuous movements	1,615	4.7	transport	7,713	8.1
	7	poisoning	1,208	3.5	foreign body- natural orifice	3,743	3.9
	8	natural/environmental/animals	1,187	3.5	natural/environmental/animals	3,335	3.5
	9	machinery	1,160	3.4	fires/burns/scalds	2,582	2.7
	10	other specified unintentional	750	2.2	machinery	1,748	1.8
	11	foreign body- natural orifice	571	1.7	poisoning	832	<1
	12	fires/burns/scalds	463	1.4	choking/suffocation	124	<1
	13	choking/suffocate	298	<1	near drowning	33	<1
	14	explosions/firearms	66	<1	explosions/firearms	13	<1
	15	near drowning	21	<1	overexertion & strenuous movements	N/A	N/A
		ALL	34,086	100.0	ALL	94,886	100.0
65+ years	1	fall	21,840	77.1	fall	10,145	54.4
	2	unspecified factor	1,200	4.2	unspecified factor	1,730	9.3
	3	transport	1,199	4.2	hit/struck/crush	1,713	9.2
	4	choking/suffocate	709	2.5	cutting/piercing	1,578	8.5
	5	hit/struck/crush	668	2.4	other specified unintentional	1,436	7.7
	6	poisoning	520	1.8	transport	740	4.0
	7	overexertion & strenuous movements	508	1.8	natural/environmental/animals	412	2.2
	8	natural/environmental/animals	468	1.7	foreign body- natural orifice	397	2.1
	9	cutting/piercing	324	1.1	fires/burns/scalds	194	1.0
	10	foreign body- natural orifice	316	1.1	machinery	133	<1
	11	other specified unintentional	229	<1	poisoning	126	<1
	12	fires/burns/scalds	185	<1	choking/suffocation	35	<1
	13	machinery	152	<1	explosions/firearms	2	<1
	14	explosions/firearms	8	<1	near drowning	1	<1
	15	near drowning	3	<1	overexertion & strenuous movements	N/A	N/A
		ALL	28,329	100.0	ALL	18,642	100.0





# Children (0-14 years)

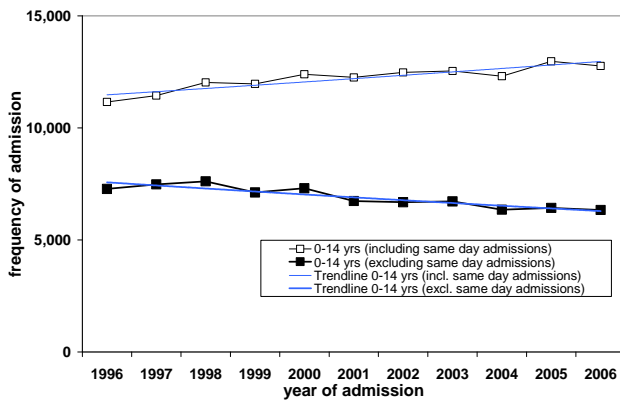
## Trend

### FREQUENCY

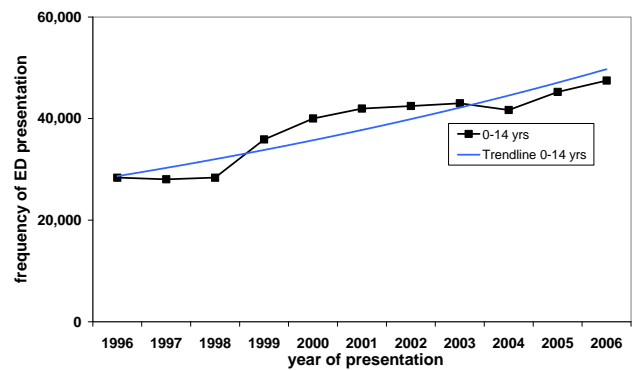
Frequency and rate data for 2006 reported here differ slightly from those reported elsewhere in this report because stricter inclusion criteria based on primary injury diagnosis (for admissions) and hospital site (for ED presentations) are used for the trend calculations.

- The frequency of CHILD unintentional injury and poisoning admissions (INCLUDING same-day admissions) increased significantly over the 11-year period from 11,159 in 1996 to 12,765 in 2006, representing an estimated annual change of 1.2% (95% confidence interval 0.8% to 1.6%) and an overall increase of 14% (9% to 20%) based on the trend line.
- The frequency of CHILD unintentional injury and poisoning admissions (EXCLUDING same-day admissions) decreased significantly over the 11-year period from 7,276 in 1996 to 6,338 in 2006, representing an estimated annual decrease of 1.8% (-2.4% to -1.3%) and an overall reduction of 18% (-24% to -13%) based on the trend line.
- The frequency of CHILD unintentional injury and poisoning ED presentations increased significantly over the 11-year period from 28,375 in 1996 to 47,467 in 2006, representing an estimated annual change of 5.4% (3.5% to 7.0%) and an overall increase of 78% (46% to 111%) based on the trend line.

**Figure 16: Trend in the frequency of hospital admissions, Victoria 1996-2006**



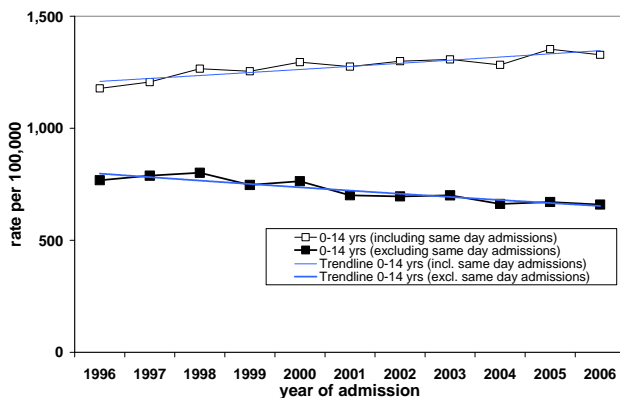
**Figure 17: Trend in the frequency of injury ED presentations, Victoria 1996-2006**



### RATE

- The CHILD unintentional injury and poisoning admission rate (INCLUDING same-day admissions) increased significantly over the 11-year period from 1,178/100,000 in 1996 to 1,328/100,000 in 2006, representing an estimated annual change of 1.1% (0.7% to 1.5%) and an overall increase of 13% (8% to 18%) based on the trend line.
- The CHILD unintentional injury and poisoning admission rate (EXCLUDING same-day admissions) decreased significantly over the 11-year period from 768/100,000 in 1996 to 660/100,000 in 2006, representing an estimated annual decrease of 2% (-2.6% to -1.4%) and an overall reduction of 20% (-25% to -14%) based on the trend line.
- The trend in the ED presentation rate cannot be determined because numerator data are not complete.

**Figure 18: Trend in hospital admission rates per 100,000 population, Victoria 1996-2006**

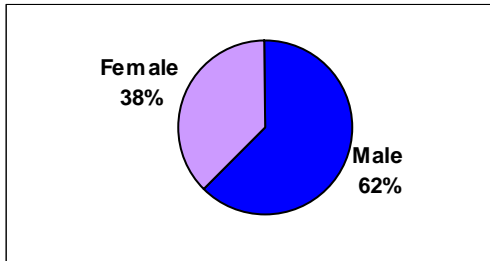


Rates cannot be calculated for ED presentations because numerator data are not complete for the 11-year period.

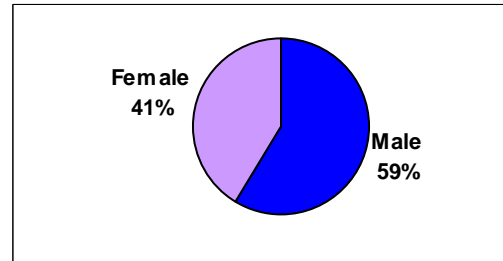
## Gender

- Males are overrepresented in child hospital-treated injury cases, accounting for 62% of hospital admissions (n=8,101) and 59% of ED presentations (n=38,752) in Victoria in 2006.

**Figure 19: Child hospital injury admissions by gender, Victoria 2006**



**Figure 20: Child ED injury presentations by gender, Victoria 2006**



- The child hospital admission and ED presentation rates are also higher for males than females (1,644 & 7,864/100,000 vs. 1,053 & 5,826/100,000). (Table 5)

**Table 5. Frequency and rate of hospital admission and ED presentation in children, Victoria 2006.**

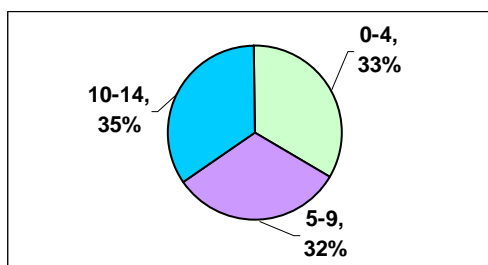
	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
Male	8,101	1,644.0	38,752	7,864.2
Female	4,935	1,053.0	27,304	5,826.1
All	13,036	1,355.9	66,056	6,870.7

## Age

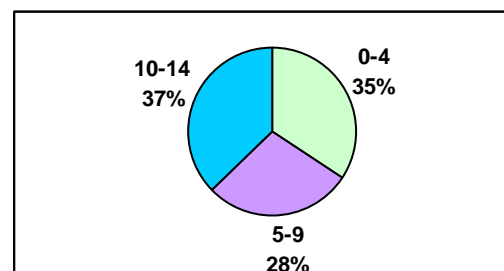
Child injury hospital admissions and ED presentations are fairly evenly distributed across the 5-year age groups.

- Children aged 0-4 years account for one-third of child admissions and 35% of child ED presentations.
- Children aged 5-9 years account for 32% of child hospital admissions and 28% of child ED presentations.
- Children aged 10-14 years account for 35% of child admissions and 37% of child ED presentations.

**Figure 21: Child hospital admissions by age group, Victoria 2006**



**Figure 22: Child ED presentations by age group, Victoria 2006**



- Hospital admission rates are slightly higher in 0-4 year olds than 5-9 or 10-14 year olds while ED presentations rates are slightly higher in 10-14 year olds than 0-4 or 5-9 year olds. (Table 6)

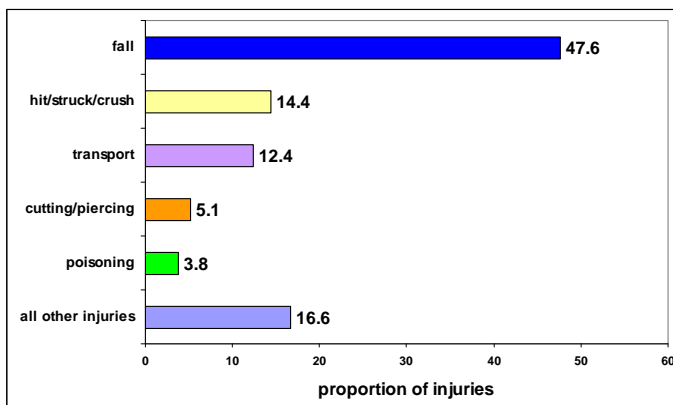
**Table 6. Frequency and rate of hospital admission and ED presentation in children, Victoria 2006.**

	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
0-4 years	4,348	1,394.7	22,793	7,311.2
5-9 years	4,144	1,312.5	18,716	5,927.9
10-14 years	4,544	1,360.8	24,547	7,350.9
All	13,036	1,355.9	66,056	6,870.7

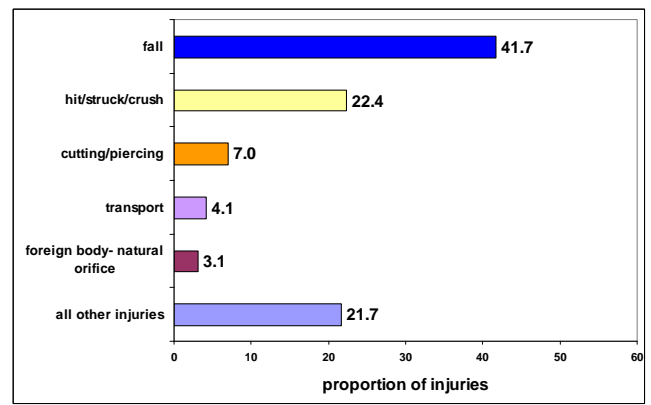
## Leading causes of injury

- Four of the five leading causes of child hospital admissions and ED presentations are the same although the ranking on frequency of cases is different.
- The leading cause of child hospital admissions and ED presentations is falls accounting for 48% (n=6,201) of child hospital admissions and 42% (n=27,560) of ED presentations.
- Hit/struck/crush injuries are the next major cause of injury accounting for 14% of admissions (n=1,878) and 22% of ED presentations (n=14,779).
- Transport accounts for 12% of admissions (n=1,621) and only 4% of ED presentations (n=2,724).
- Cutting and piercing injuries account for 5% of admissions (n=669) and 7% of ED presentations (n=4,626).
- The fifth ranking cause of hospital admissions is poisoning (4%, n=500) whereas for ED presentations it is injuries caused by a foreign body in a natural orifice e.g. ear, nose, eye (3%, n=2,025).

**Figure 23: Child hospital admissions by cause, Victoria 2006**



**Figure 24: Child ED presentations by cause, Victoria 2006**



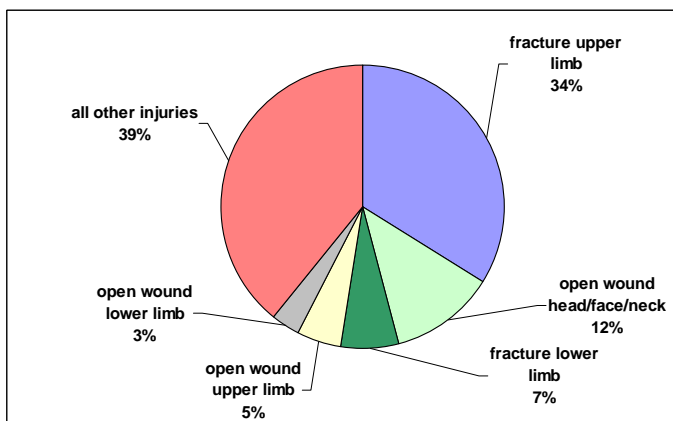
*Note: 'Other specified' and 'unspecified' cases were included in the 'all other injuries' category regardless of their ranking*

## Major injury type (body site and nature of injury)

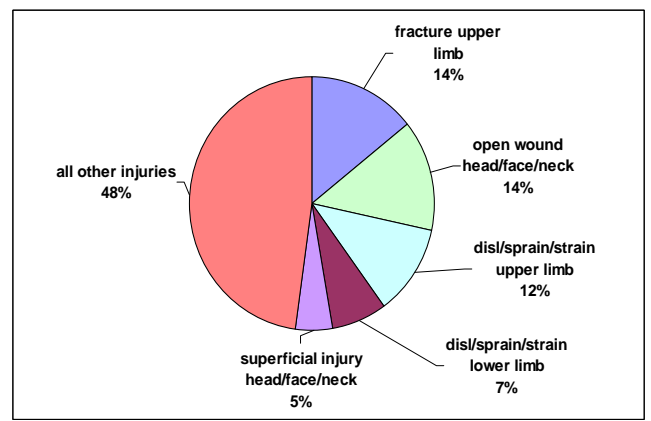
Figures 25 & 26 show the five major injury types for child hospital admissions and presentations.

- Fracture to the upper limb accounts for more than one-third of child hospital injury admissions (34%) and 14% of ED presentations.
- Open wounds to the head/face/neck account for 12% of child hospital injury admissions and 14% of ED presentations.

**Figure 25: Major injury type, child hospital admissions, Victoria 2006**



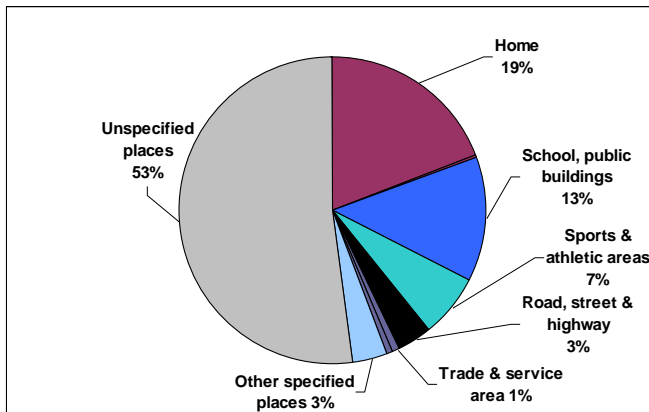
**Figure 26: Major injury type, child ED presentations, Victoria 2006**



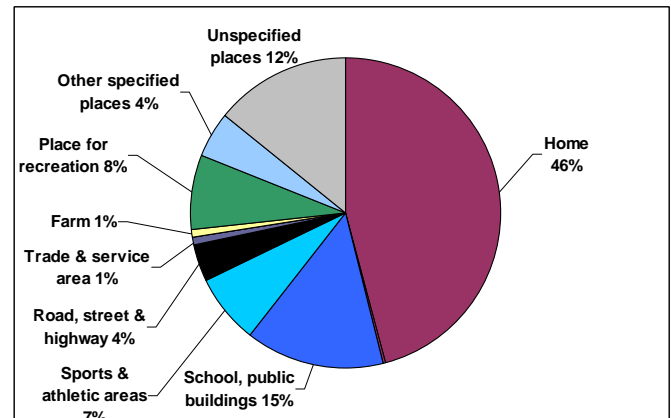
## Place of injury occurrence

- The major place of occurrence (location) of injury was the home (20% of hospital admissions and 46% of ED presentations).
- Children were also commonly injured in schools and other public buildings (13% of admissions and 15% of ED presentations) and sports and athletics areas (7% of admissions and 7% of ED presentations).

**Figure 27: Child hospital admissions by place of occurrence, Victoria 2006**



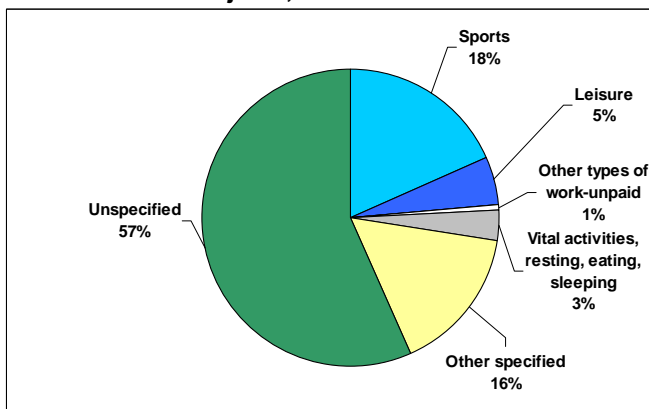
**Figure 28: Child ED presentations by place of occurrence, Victoria 2006**



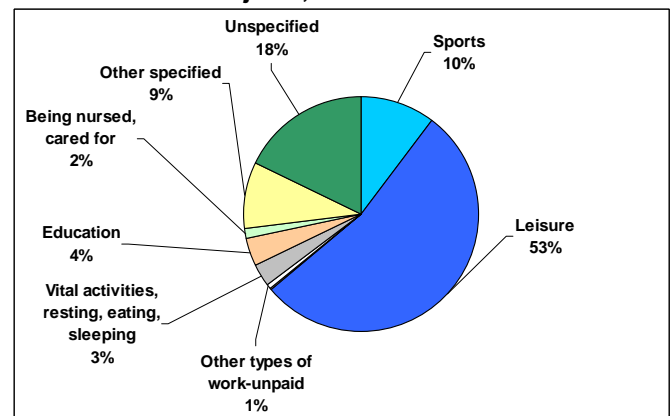
## Activity when injured

- The activity engaged in at the time of injury was unspecified for more than half of all child injury admissions (57%) and recorded as 'other specified' for a further 16% of injuries.
- Sport was the only activity recorded for a significant number of child admissions (18%).
- Leisure was recorded as the activity engaged in at the time of injury for 53% of child ED presentations, followed by sports (10%) and education (4%).

**Figure 29: Child hospital admissions by activity when injured, Victoria 2006**



**Figure 30: Child ED presentations by activity when injured, Victoria 2006**



**Table 7 Ranking of causes for hospital admissions and ED presentations, children aged 0-14 years, 2006**

AGE GROUP	RANK	ADMISSIONS			PRESENTATIONS		
		CAUSE	FREQ	%	CAUSE	FREQ	%
0-4 years	1	fall	1,731	39.8	fall	9,155	40.2
	2	hit/struck/crush	657	15.1	hit/struck/crush	4,186	18.4
	3	poisoning	403	9.3	other specified unintentional	2,373	10.4
	4	foreign body- natural orifice	287	6.6	unspecified factor	1,705	7.5
	5	unspecified factor	269	6.2	cutting/piercing	1,635	7.2
	6	cutting/piercing	219	5.0	foreign body- natural orifice	1,281	5.6
	7	transport	212	4.9	fires/burns/scalds	904	4.0
	8	natural/environmental/animals	184	4.2	natural/environmental/animals	591	2.6
	9	fires/burns/scalds	179	4.1	poisoning	552	2.4
	10	choking/suffocate	104	2.4	transport	303	1.3
	11	other specified unintentional	53	1.2	choking/suffocation	84	<1
	12	near drowning	27	<1	machinery	13	<1
	13	overexertion & strenuous movements	13	<1	near drowning	11	<1
	14	machinery	10	<1	explosions/firearms	0	0.0
	15	explosions/firearms	0	0.0	overexertion & strenuous movements	N/A	N/A
		ALL	4,348	100.0		22,793	100.0
5-9 years	1	fall	2,436	58.8	fall	8,584	45.9
	2	transport	469	11.3	hit/struck/crush	3,981	21.3
	3	hit/struck/crush	465	11.2	cutting/piercing	1,473	7.9
	4	cutting/piercing	229	5.5	other specified unintentional	1,408	7.5
	5	foreign body- natural orifice	134	3.2	unspecified factor	1,108	5.9
	6	unspecified factor	115	2.8	transport	809	4.3
	7	natural/environmental/animals	108	2.6	foreign body- natural orifice	518	2.8
	8	poisoning	52	1.3	natural/environmental/animals	468	2.5
	9	other specified unintentional	38	<1	fires/burns/scalds	258	1.4
	10	fires/burns/scalds	31	<1	poisoning	64	<1
	11	overexertion & strenuous movements	28	<1	choking/suffocation	27	<1
	12	choking/suffocate	21	<1	machinery	13	<1
	13	machinery	13	<1	near drowning	4	<1
	14	near drowning	3	<1	explosions/firearms	1	<1
	15	explosions/firearms	2	<1	overexertion & strenuous movements	N/A	N/A
		ALL	4,144	100.0		18,716	100.0
10-14 years	1	fall	2,034	44.8	fall	9,821	40.0
	2	transport	940	20.7	hit/struck/crush	6,612	26.9
	3	hit/struck/crush	756	16.6	other specified unintentional	2,241	9.1
	4	cutting/piercing	221	4.9	transport	1,612	6.6
	5	unspecified factor	142	3.1	unspecified factor	1,568	6.4
	6	overexertion & strenuous movements	113	2.5	cutting/piercing	1,518	6.2
	7	natural/environmental/animals	108	2.4	natural/environmental/animals	596	2.4
	8	other specified unintentional	60	1.3	fires/burns/scalds	263	1.1
	9	foreign body- natural orifice	54	1.2	foreign body- natural orifice	226	<1
	10	poisoning	45	1.0	poisoning	51	<1
	11	fires/burns/scalds	31	<1	machinery	17	<1
	12	choking/suffocate	19	<1	choking/suffocation	11	<1
	13	near drowning	7	<1	near drowning	8	<1
	14	machinery	7	<1	explosions/firearms	3	<1
	15	explosions/firearms	7	<1	overexertion & strenuous movements	N/A	N/A
		ALL	4,544	100.0		24,547	100.0



# Adolescents and young adults (15-24 years)

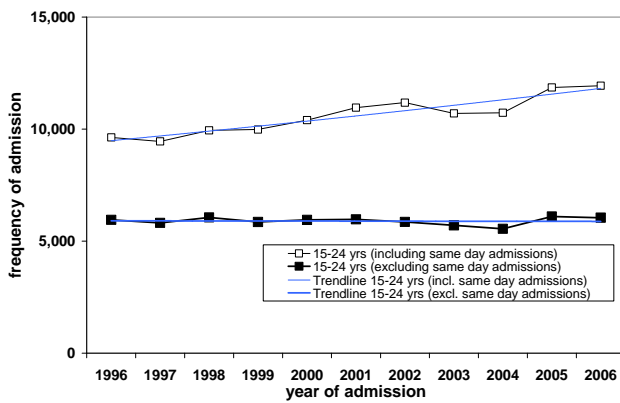
## Trend

### FREQUENCY

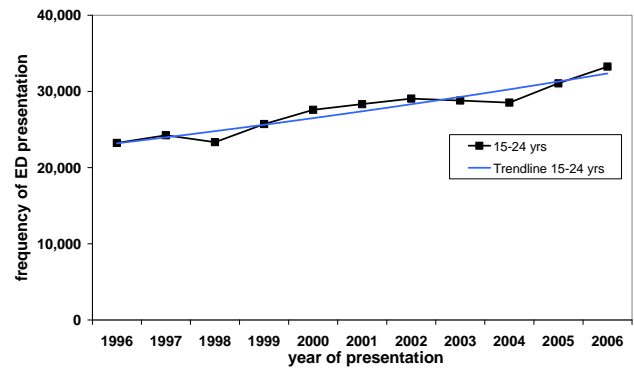
Frequency and rate data for 2006 reported here differ slightly from those reported elsewhere in this report because stricter inclusion criteria based on primary injury diagnosis (for admissions) and hospital site (for ED presentations) are used for the trend calculations.

- The frequency of ADOLESCENT AND YOUNG ADULT unintentional injury and poisoning admissions (INCLUDING same-day admissions) increased significantly over the 11-year period from 9,633 in 1996 to 11,936 in 2006, representing an estimated annual change of 2.2% (95% confidence interval 1.6% to 2.9%) and an overall increase of 28% (18% to 36%) based on the trend line.
- The frequency of ADOLESCENT AND YOUNG ADULT unintentional injury and poisoning admissions (EXCLUDING same-day admissions) was stable over the 11-year period. In 1996 the frequency was 5,950 and in 2006 it was 6,046. This represented an estimated annual change of 0.04% (-0.7% to 0.6%) and an overall decrease of 0.4% (-7.1% to 6.7%) based on the trend line. The change was not statistically significant.
- The frequency of ADOLESCENT AND YOUNG ADULT unintentional injury and poisoning ED presentations increased significantly over the 11-year period from 23,224 in 1996 to 33,249 in 2006, representing an estimated annual change of 3.4% (2.6% to 4.1%) and an overall increase of 44% (32% to 56%) based on the trend line.

**Figure 31: Trend in the frequency of hospital admissions, Victoria 1996-2006**



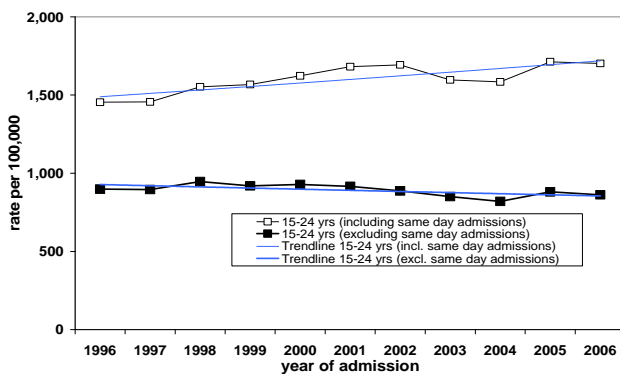
**Figure 32: Trend in the frequency of injury ED presentations, Victoria 1996-2006**



### RATE

- The ADOLESCENT AND YOUNG ADULT unintentional injury and poisoning admission rate (INCLUDING same-day admissions) increased significantly over the 11-year period from 1,454/100,000 in 1996 to 1,702/100,000 in 2006, representing an estimated annual change of 1.4% (0.6% to 2.2%) and an overall increase of 17% (7% to 27%) based on the trend line.
- The ADOLESCENT AND YOUNG ADULT unintentional injury and poisoning admission rate (EXCLUDING same-day admissions) decreased significantly over the 11-year period from 898/100,000 in 1996 to 862/100,000 in 2006, representing an estimated annual reduction of 0.8% (-1.5% to -0.1%) and an overall decrease of 8.5% (-16% to -1.0%) based on the trend line.
- The trend in ED presentation rate cannot be determined because numerator data are not complete.

**Figure 33: Trend in hospital admission rates per 100,000 population, Victoria 1996-2006**

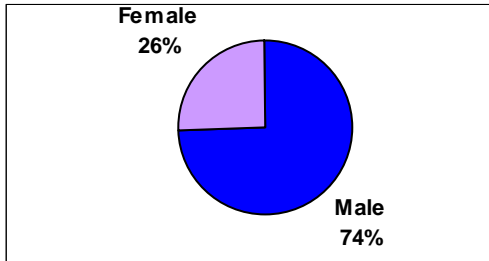


Rates cannot be calculated for ED presentations because numerator data are not complete for the 11-year period.

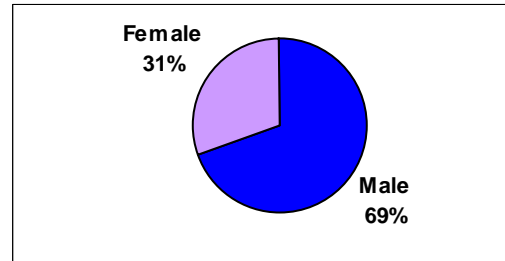
## Gender

- Males are overrepresented in hospital-treated injury cases among adolescents and young adults, accounting for 74% of hospital admissions (n=9,073) and 69% of ED presentations (n=32,895) in Victoria in 2006.

**Figure 34: Adolescent and young adult hospital injury admissions by gender, Victoria 2006**



**Figure 35: Adolescent and young adult ED injury presentations by gender, Victoria 2006**



- Hospital admissions and ED presentation rates are also higher for males than females (2,536 & 9,195/100,000 vs. 913 & 4,255/100,000). (Table 8)

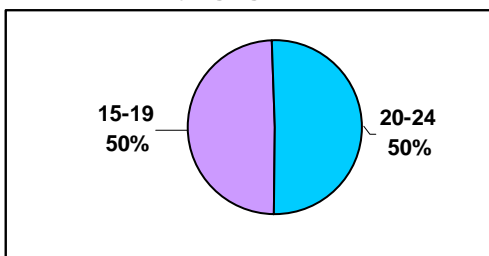
**Table 8. Frequency and rate of hospital admission and ED presentation, adolescent and young adults, Victoria 2006.**

	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
Male	9,073	2,536.1	32,895	9,194.7
Female	3,135	913.0	14,612	4,255.3
All	12,208	1,741.2	47,507	6,775.7

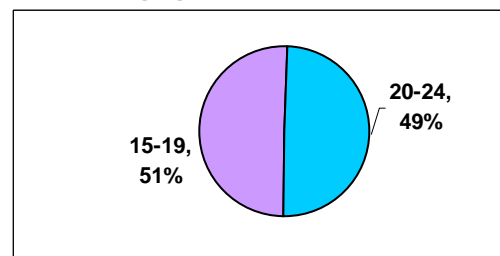
## Age

- Adolescent and young adult injury hospital admissions and ED presentations are very evenly distributed across the two 5-year age groups.
- Adolescents aged 15 to 19 years account for 49% of admissions and 51% of ED presentations.
- Young adults aged 20 to 24 years account for 51% of admissions and 49% of ED presentations.

**Figure 36: Adolescent and young adult hospital admissions by age group, Victoria 2006**



**Figure 37: Adolescent and young adult ED presentations by age group, Victoria 2006**



- Hospital admission and ED presentation rates are slightly higher in 15-19 year olds than 20-24 year olds. (Table 9)

**Table 9. Frequency and rate of hospital admission and ED presentation in adolescent and young adults, Victoria 2006.**

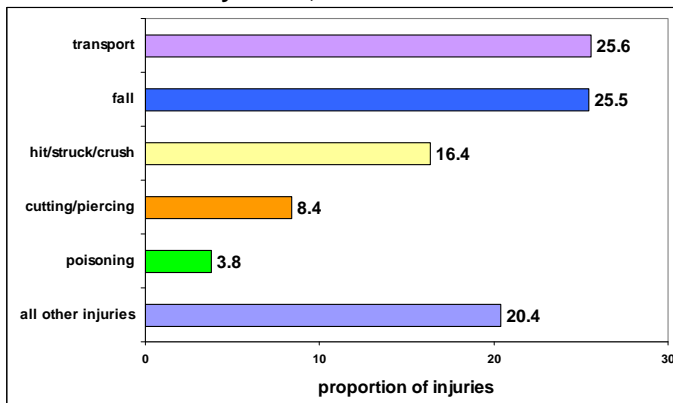
	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
15-19 years	6,064	1,783.8	24,124	7,096.3
20-24 years	6,144	1,701.0	23,383	6,473.9
All	12,208	1,741.2	47,507	6,775.7



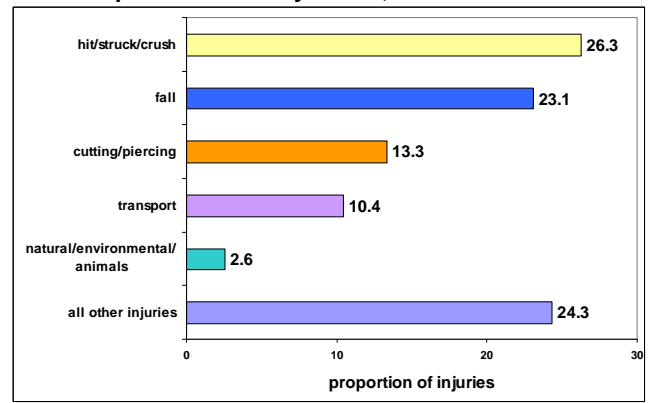
## Leading causes of injury

- Four of the five leading causes of adolescent and young adult hospital admissions and ED presentations are the same although the ranking on frequency of cases is different. (Figures 38 & 39)
- While transport is the leading cause of adolescent and young adult hospital admissions (26%, n=3,121), this cause only accounts for 10% of ED presentations (n=4,957).
- Falls is the second most common cause of both hospital admissions and ED presentations in this age group accounting for 26% of admissions (n=3,111) and 23% of ED presentations (n=10,984).
- Hit/struck/crush accounted for 16% of hospital admissions (n=1,997) and was the leading cause of ED presentations (26%, n=12,472).
- Cutting and piercing injuries account for 8% of admissions (n=1,023) and 13% of ED presentations (n=6,329).
- The fifth ranking cause of adolescent and young adult hospital admissions is poisoning (4%, n=466) whereas for ED presentations it is natural/environmental/animals (3%, n=1,221).

**Figure 38: Adolescent and young adult hospital admissions by cause, Victoria 2006**



**Figure 39: Adolescent and young adult ED presentations by cause, Victoria 2006**



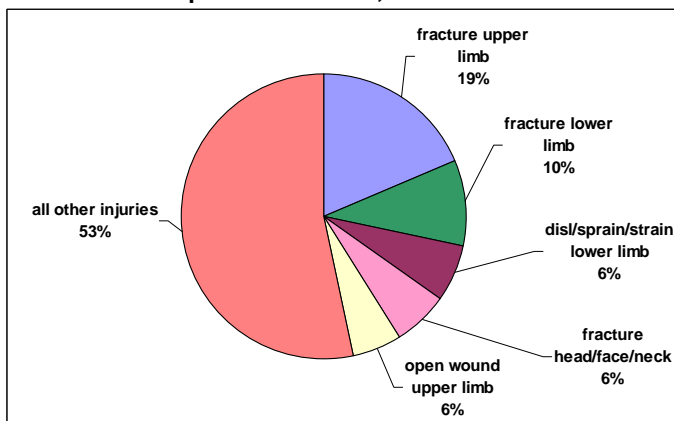
*Note: 'Other specified' and 'unspecified' cases were included in the 'all other injuries' category regardless of their ranking*

## Major injury type (body site and nature of injury)

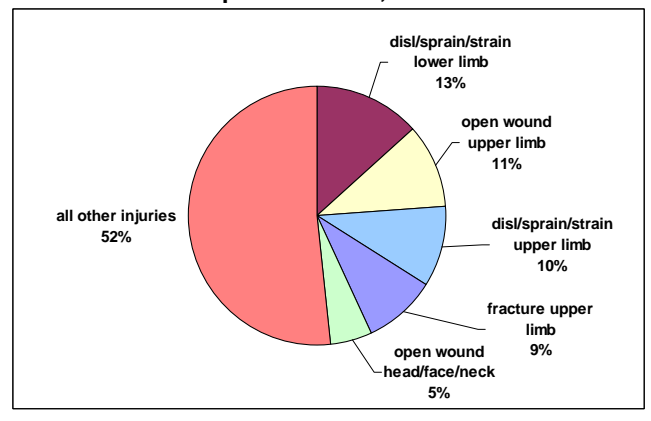
Figures 40 & 41 show the five major specific injury types for adolescent and young adult hospital admissions and ED presentations.

- Fracture to the upper limb accounts for 19% of hospital injury admissions and 9% of ED presentations.
- Fracture to the lower limb is the second most common type of injury requiring hospital admission (10%).
- Dislocations/sprains and strains to the lower limb (13%) and open wounds to the upper limb (11%) are common among ED presentations.

**Figure 40: Major injury type, adolescent and young adult hospital admissions, Victoria 2006**



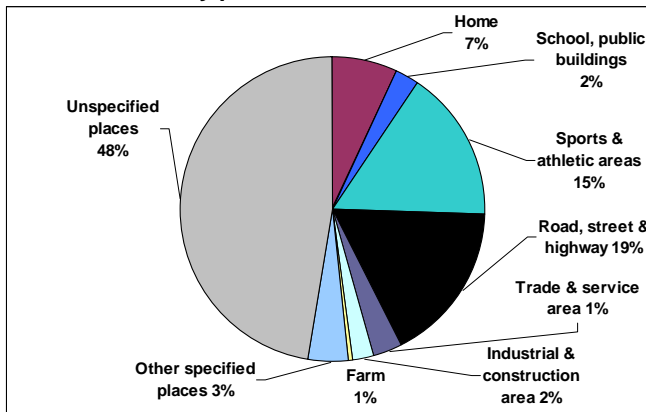
**Figure 41: Major injury type, adolescent and young adult ED presentations, Victoria 2006**



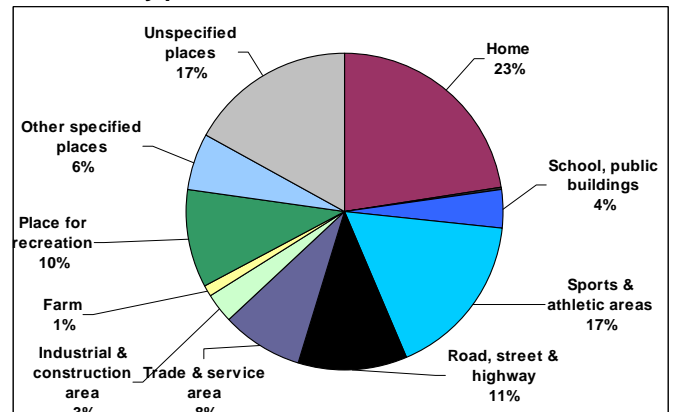
## Place of injury occurrence

- The road, street and highway is the most common place of occurrence of adolescent and young adult injuries resulting in hospital admission (19%) whereas the home is the leading place of occurrence for injuries resulting in ED presentation (23%).
- Other locations where injuries to adolescents and young adults commonly occurred were:
  - sports and athletics areas (15% of admissions and 17% of ED presentations)
  - place for recreation (10% of ED presentations) and
  - trades and service areas (1% of admissions and 8% of ED presentations).

**Figure 42: Adolescent and young adult hospital admissions by place of occurrence, Victoria 2006**



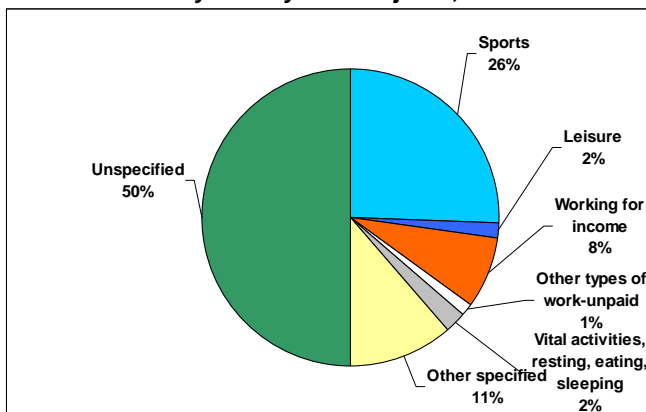
**Figure 43: Adolescent and young adult ED presentations by place of occurrence, Victoria 2006**



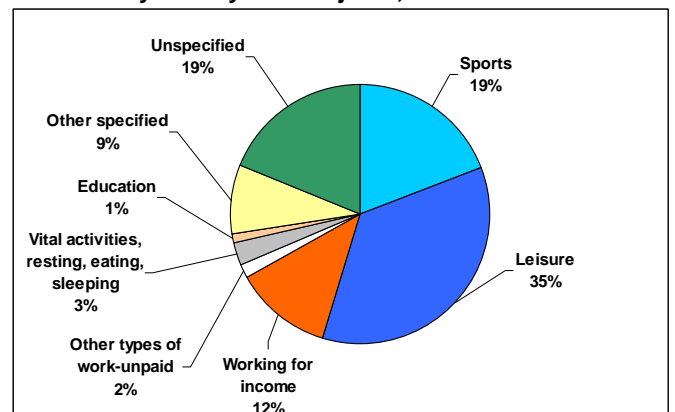
## Activity when injured

- The activity engaged in at the time of injury was unspecified for half of adolescent and young adult injury admissions and recorded as 'other specified' for a further 11% of injuries.
- Sports (26%) and working for income (8%) were the only activities recorded for a significant number of adolescent and young adult admissions.
- Leisure was recorded as the activity engaged in at the time of injury for 35% of adolescent and young adult ED presentations, followed by sports (19%) and working for income (12%).

**Figure 44: Adolescent and young adult hospital admissions by activity when injured, Victoria 2006**



**Figure 45: Adolescent and young adult ED presentations by activity when injured, Victoria 2006**



**Table 10 Ranking of causes for hospital admissions and ED presentations, persons aged 15 to 24 years, 2006**

AGE GROUP	RANK	ADMISSIONS			PRESENTATIONS		
		CAUSE	FREQ	%	CAUSE	FREQ	%
<b>15-19 years</b>	1	fall	1,591	26.2	hit/struck/crush	6,689	27.7
	2	transport	1,570	25.9	fall	6,052	25.1
	3	hit/struck/crush	1,084	17.9	cutting/piercing	2,845	11.8
	4	cutting/piercing	461	7.6	transport	2,506	10.4
	5	unspecified factor	444	7.3	other specified unintentional	2,368	9.8
	6	overexertion & strenuous movements	221	3.6	unspecified factor	1,806	7.5
	7	poisoning	206	3.4	fires/burns/scalds	538	2.2
	8	other specified unintentional	119	2.0	natural/environmental/animals	535	2.2
	9	machinery	106	1.7	foreign body- natural orifice	376	1.6
	10	fires/burns/scalds	89	1.5	poisoning	224	<1
	11	natural/environmental/animals	89	1.5	machinery	157	<1
	12	foreign body- natural orifice	48	<1	choking/suffocation	18	<1
	13	choking/suffocate	21	<1	near drowning	8	<1
	14	explosions/firearms	14	<1	explosions/firearms	2	<1
	15	near drowning	1	<1	overexertion & strenuous movements	N/A	N/A
		ALL	6,064	100.0		24,124	100.0
<b>20-24 years</b>	1	transport	1,551	25.2	hit/struck/crush	5,783	24.7
	2	fall	1,520	24.7	fall	4,932	21.1
	3	hit/struck/crush	913	14.9	cutting/piercing	3,484	14.9
	4	cutting/piercing	562	9.1	transport	2,451	10.5
	5	unspecified factor	535	8.7	other specified unintentional	2,302	9.8
	6	poisoning	260	4.2	unspecified factor	1,916	8.2
	7	overexertion & strenuous movements	233	3.8	natural/environmental/animals	686	2.9
	8	machinery	161	2.6	fires/burns/scalds	659	2.8
	9	other specified unintentional	130	2.1	foreign body- natural orifice	554	2.4
	10	natural/environmental/animals	116	1.9	machinery	299	1.3
	11	fires/burns/scalds	82	1.3	poisoning	280	1.2
	12	foreign body- natural orifice	52	<1	choking/suffocation	27	<1
	13	choking/suffocate	21	<1	near drowning	7	<1
	14	explosions/firearms	7	<1	explosions/firearms	3	<1
	15	near drowning	1	<1	overexertion & strenuous movements	N/A	N/A
		ALL	6,144	100.0		23,383	100.0



# Adults (25-64 years)

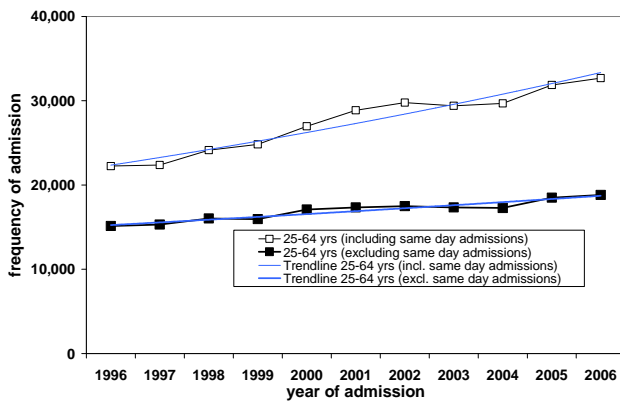
## Trend

### FREQUENCY

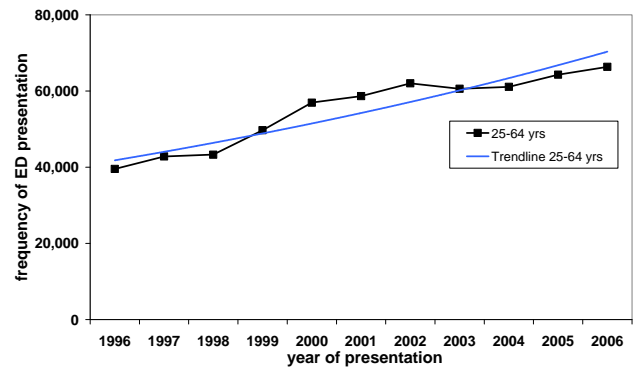
Frequency and rate data for 2006 reported here differ slightly from those reported elsewhere in this report because stricter inclusion criteria based on primary injury diagnosis (for admissions) and hospital site (for ED presentations) are used for the trend calculations.

- The frequency of ADULT unintentional injury and poisoning admissions (INCLUDING same-day admissions) increased significantly over the 11-year period from 22,242 in 1996 to 32,687 in 2006, representing an estimated annual change of 4% (95% confidence interval 3.2% to 4.7%) and an overall increase of 54% (42% to 65%) based on the trend line.
- The frequency of ADULT unintentional injury and poisoning admissions (EXCLUDING same-day admissions) increased significantly over the 11-year period from 15,133 in 1996 to 18,823 in 2006, representing an estimated annual change of 2.1% (1.6% to 2.5%) and an overall increase of 25% (19% to 32%) based on the trend line.
- The frequency of ADULT unintentional injury and poisoning ED presentations increased significantly over the 11-year period from 39,543 in 1996 to 66,321 in 2006, representing an estimated annual change of 5.1% (3.6% to 6.4%) and an overall increase of 73% (47% to 98%) based on the trend line.

**Figure 46: Trend in the frequency of hospital admissions, Victoria 1996-2006**



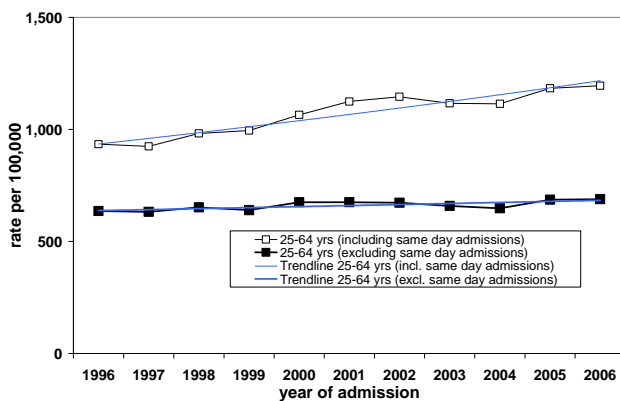
**Figure 47: Trend in the frequency of injury ED presentations, Victoria 1996-2006**



### RATE

- The ADULT unintentional injury and poisoning admission rate (INCLUDING same-day admissions) increased significantly over the 11-year period from 934/100,000 in 1996 to 1,195/100,000 in 2006, representing an estimated annual change of 2.6% (1.9% to 3.3%) and an overall increase of 33% (23% to 43%) based on the trend line.
- The ADULT unintentional injury and poisoning admission rate (EXCLUDING same-day admissions) increased significantly over the 11-year period from 636/100,000 in 1996 to 688/100,000 in 2006, representing an estimated annual change of 0.7% (0.2% to 1.1%) and an overall increase of 8% (3% to 13%) based on the trend line.
- The trend in ED presentation rate cannot be determined because numerator data are not complete.

**Figure 48: Trend in hospital admission rates per 100,000 population, Victoria 1996-2006**

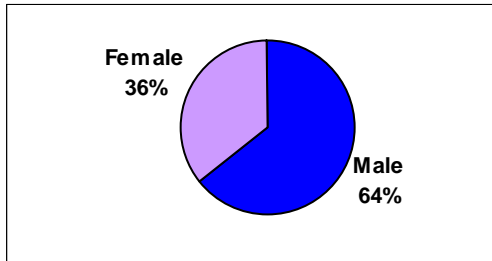


Rates cannot be calculated for ED presentations because numerator data are not complete for the 11-year period.

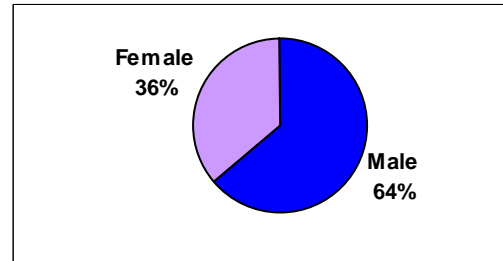
## Gender

- Males are overrepresented in hospital injury data for adults aged 25 to 64 years, accounting for 64% of hospital admissions (n=21,901) and 64% of ED presentations (n=60,315) in Victoria in 2006.

**Figure 49: Adult hospital injury admissions by gender, Victoria 2006**



**Figure 50: Adult ED injury presentations by gender, Victoria 2006**



- Hospital admission and ED presentation rates are higher for males compared with females (1,616 & 4,452/100,000 vs. 883 & 2,506/100,000). (Table 11)

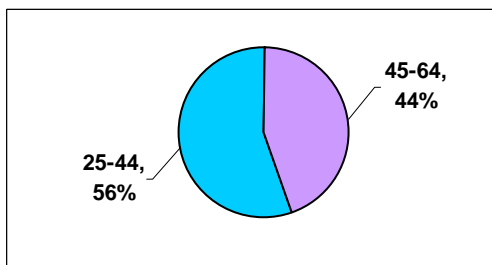
**Table 11. Frequency and rate of adult hospital admission and ED presentation, Victoria 2006.**

	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
Male	21,901	1,616.4	60,315	4,451.6
Female	12,185	883.3	34,570	2,506.1
All	34,086	1,246.6	94,885	3,470.2

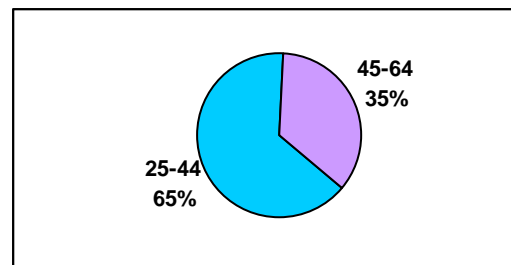
## Age

- Persons aged 25 to 44 years account for most adult hospital admissions and ED presentations (56% and 65%).

**Figure 51: Adult hospital admissions by age group, Victoria 2006**



**Figure 52: Adult ED presentations by age group, Victoria 2006**



- The higher adult hospital admission rates are in 25-29 year olds, 30-34 years olds and 60-64 year olds. The highest ED presentation rate is in 25-29 year olds, rates then decrease as age increases. (Table 12)

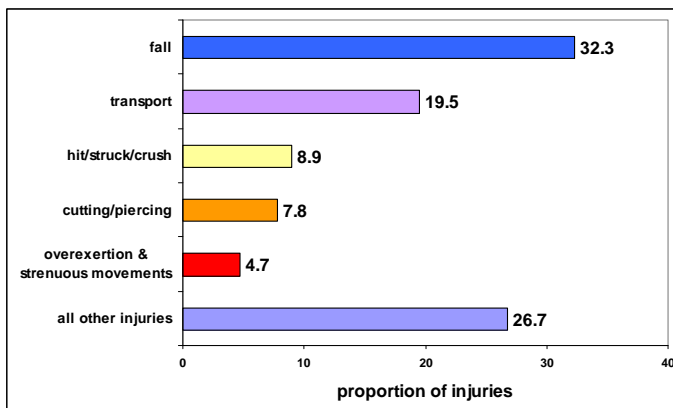
**Table 12. Frequency and rate of hospital admission and ED presentation in adults, Victoria 2006.**

	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
25-29 years	5,092	1,446.6	17,987	5,109.9
30-34 years	4,980	1,338.8	16,067	4,319.3
35-39 years	4,590	1,191.6	14,766	3,833.3
40-44 years	4,360	1,158.0	12,623	3,352.6
45-49 years	4,051	1,108.7	10,835	2,965.3
50-54 years	3,829	1,158.8	8,925	2,701.1
55-59 years	3,861	1,235.2	7,829	2,504.7
60-64 years	3,323	1,383.4	5,853	2,436.6
All	34,086	1,246.6	94,885	3,470.2

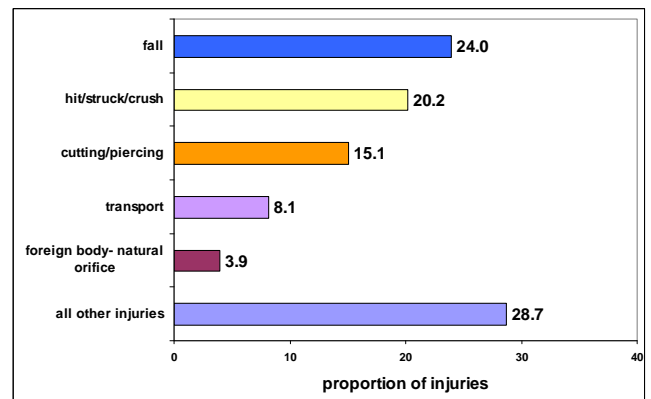
## Leading causes of injury

- Four of the five leading causes of adult hospital admissions and ED presentations are the same although the ranking on frequency of cases is different.
- The leading cause of adult hospital admissions and ED presentations is falls accounting for 32% (n=10,996) of hospital admissions and 24% (n=22,750) of ED presentations.
- Transport accounts for 20% of admissions (n=6,662) but only 8% of presentations (n=7,713).
- Hit/struck/crush injuries account for just 9% of admissions (n=3,046) but 20% of ED presentations (n=19,165).
- Cutting and piercing injuries account for 8% of admissions (n=2,655) and 15% of ED presentations (n=14,285).
- The fifth ranking cause of hospital admissions is overexertion and strenuous movements (5%, n=1,615) whereas for ED presentations it is injuries caused by a foreign body in a natural orifice e.g. ear, nose, eye (4%, n=3,743).

**Figure 53: Adult hospital admissions by cause, Victoria 2006**



**Figure 54: Adult ED presentations by cause, Victoria 2006**



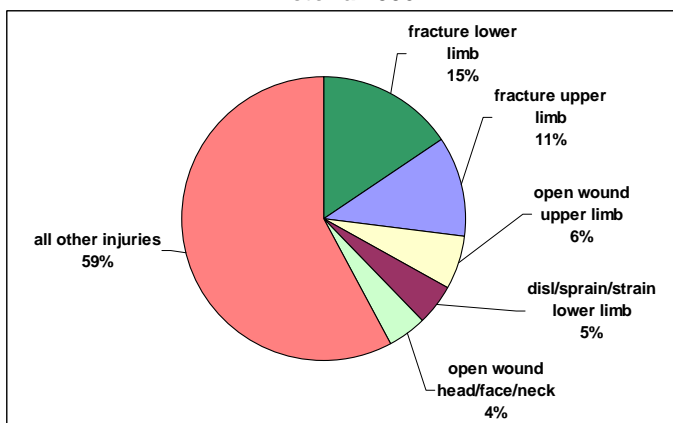
Note: 'Other specified' and 'unspecified' cases were included in the 'all other injuries' category regardless of their ranking

## Major injury type (body site and nature of injury)

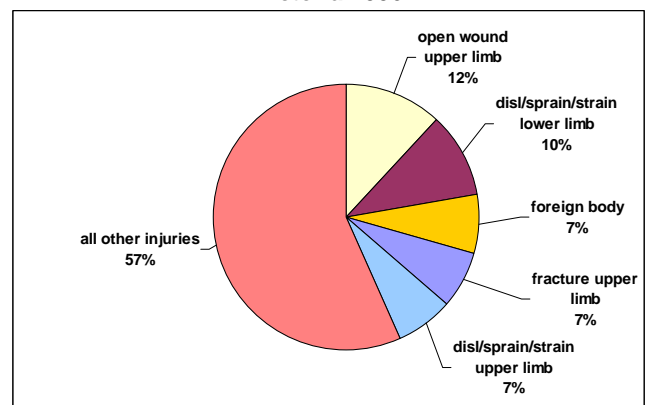
Figures 55 & 56 show the five major specific injury types for adult hospital admissions and ED presentations.

- Fracture to the upper limb accounted for 11% of adult hospital injury admissions and 7% of ED presentations.
- Fracture to the lower limb is the most common type of adult injury requiring hospital admission (15%).
- Open wounds to the upper limb (12%) and dislocations/sprains and strains to the lower limb (10%) are common among ED presentations.

**Figure 55: Major injury type, adult hospital admissions, Victoria 2006**



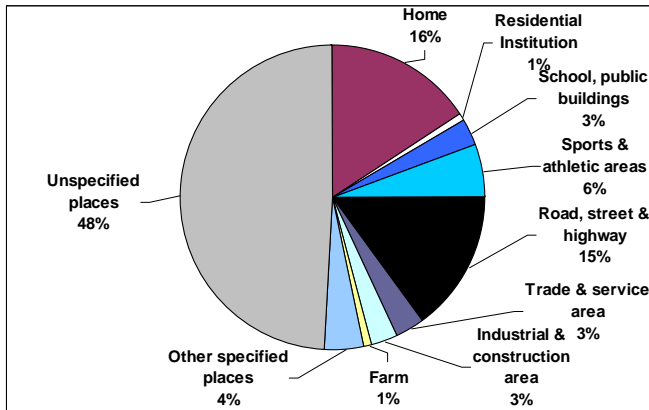
**Figure 56: Major injury type, adult ED presentations, Victoria 2006**



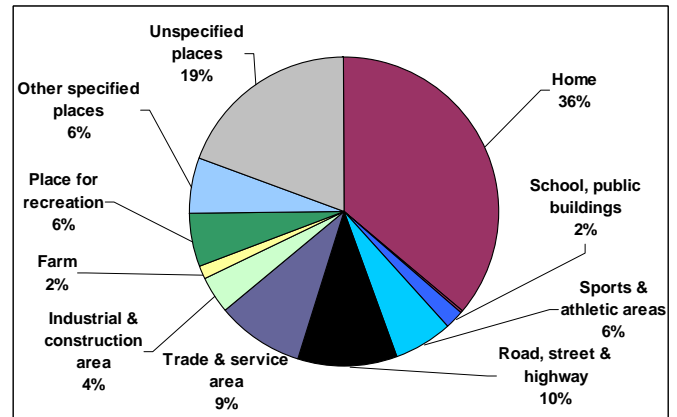
## Place of injury occurrence

- Sixteen percent of adult injuries requiring hospital admission and 36% of injuries resulting in ED presentation occurred in the home.
- Other locations where injuries to adults commonly occurred were:
  - roads, streets and highways (15% of admissions and 10% of ED presentations)
  - trade and service areas (3% of admissions and 9% of ED presentations) and
  - sports and athletics areas (6% of admissions and 6% of ED presentations).

**Figure 57: Adult hospital admissions by place of occurrence, Victoria 2006**



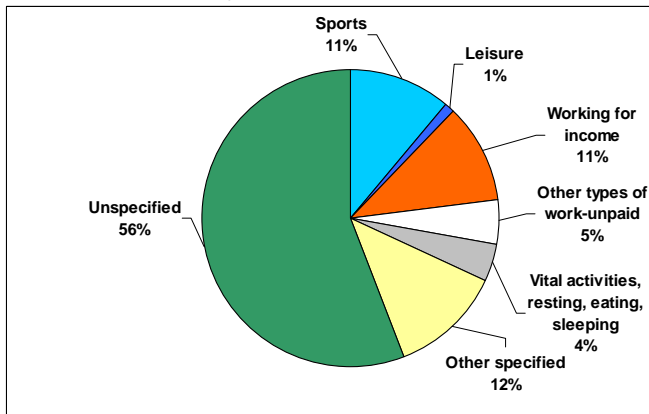
**Figure 58: Adult ED presentations by place of occurrence, Victoria 2006**



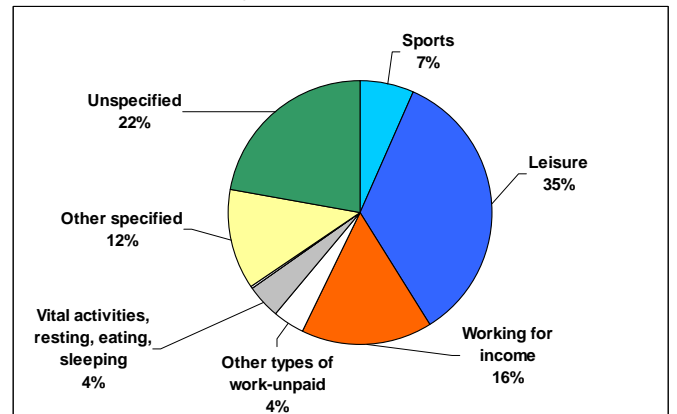
## Activity when injured

- The activity engaged in at the time of injury was unspecified for more than half of adult injury admissions (56%) and recorded as 'other specified' for a further 12% of injuries.
- Working for income (11%) and sports (11%) were the only activities recorded for a significant number of older adult admissions.
- Leisure was recorded as the activity engaged in at the time of injury for 35% of adult ED presentations, followed by working for income (16%) and sports (7%).

**Figure 59: Adult hospital admissions by activity when injured, Victoria 2006**



**Figure 60: Adult ED presentations by activity when injured, Victoria 2006**





**Table 13 Ranking of causes for hospital admissions and ED presentations, persons aged 25 to 64 years, 2006**

AGE GROUP	RANK	ADMISSIONS			PRESENTATIONS		
		CAUSE	FREQ	%	CAUSE	FREQ	%
<b>25-44 years</b>	1	fall	4,826	25.4	hit/struck/crush	13,603	22.1
	2	transport	4,372	23.0	fall	13,088	21.3
	3	hit/struck/crush	2,115	11.1	cutting/piercing	9,282	15.1
	4	unspecified factor	1,955	10.3	other specified unintentional	6,724	10.9
	5	cutting/piercing	1,670	8.8	transport	5,542	9.0
	6	overexertion & strenuous movements	972	5.1	unspecified factor	5,309	8.6
	7	poisoning	778	4.1	foreign body- natural orifice	2,279	3.7
	8	machinery	625	3.3	natural/environmental/animals	2,060	3.4
	9	natural/environmental/animals	593	3.1	fires/burns/scalds	1,746	2.8
	10	other specified unintentional	451	2.4	machinery	1,125	1.8
	11	fires/burns/scalds	266	1.4	poisoning	577	<1
	12	foreign body- natural orifice	249	1.3	choking/suffocation	79	<1
	13	choking/suffocate	94	<1	near drowning	20	<1
	14	explosions/firearms	41	<1	explosions/firearms	10	<1
	15	near drowning	15	<1	overexertion & strenuous movements	N/A	N/A
		ALL	19,022	100.0		61,444	100.0
<b>45-64 years</b>	1	fall	6,170	41.0	fall	9,662	28.9
	2	transport	2,290	15.2	hit/struck/crush	5,562	16.6
	3	unspecified factor	1,433	9.5	cutting/piercing	5,003	15.0
	4	cutting/piercing	985	6.5	other specified unintentional	3,608	10.8
	5	hit/struck/crush	931	6.2	unspecified factor	2,922	8.7
	6	overexertion & strenuous movements	643	4.3	transport	2,171	6.5
	7	natural/environmental/animals	594	3.9	foreign body- natural orifice	1,464	4.4
	8	machinery	535	3.6	natural/environmental/animals	1,275	3.8
	9	poisoning	430	2.9	fires/burns/scalds	836	2.5
	10	foreign body- natural orifice	322	2.1	machinery	623	1.9
	11	other specified unintentional	299	2.0	poisoning	255	<1
	12	choking/suffocate	204	1.4	choking/suffocation	45	<1
	13	fires/burns/scalds	197	1.3	near drowning	13	<1
	14	explosions/firearms	25	<1	explosions/firearms	3	<1
	15	near drowning	6	<1	overexertion & strenuous movements	N/A	N/A
		ALL	15,064	100.0		33,442	100.0



# Older adults (65 years and older)

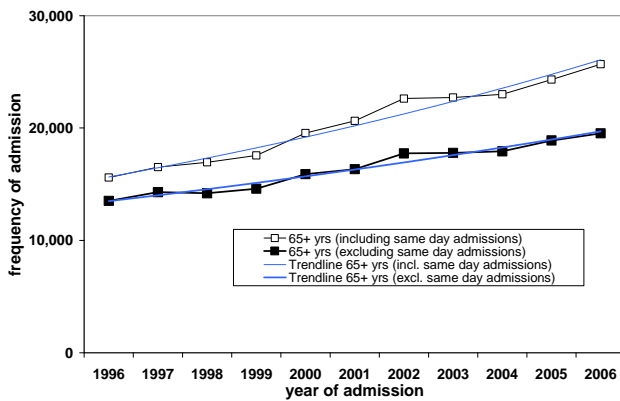
## Trend

### FREQUENCY

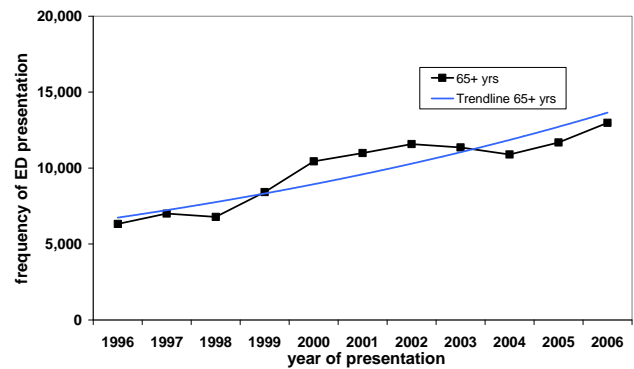
Frequency and rate data for 2006 reported here differ slightly from those reported elsewhere in this report because stricter inclusion criteria based on primary injury diagnosis (for admissions) and hospital site (for ED presentations) are used for the trend calculations.

- The frequency of OLDER ADULT unintentional injury and poisoning admissions (INCLUDING same-day admissions) increased significantly over the 11-year period from 15,588 in 1996 to 25,679 in 2006, representing an estimated annual change of 5.2% (95% confidence interval 4.4% to 5.7%) and an overall increase of 74% (60% to 84%) based on the trend line.
- The frequency of OLDER ADULT unintentional injury and poisoning admissions (EXCLUDING same-day admissions) increased significantly over the 11-year period from 13,511 in 1996 to 19,533 in 2006, representing an estimated annual change of 3.8% (3.3% to 4.3%) and an overall increase of 51% (42% to 59%) based on the trend line.
- The frequency of OLDER ADULT unintentional injury and poisoning ED presentations increased significantly over the 11-year period from 6,326 in 1996 to 12,984 in 2006, representing an estimated annual change of 6.9% (4.4% to 8.9%) and an overall increase of 108% (61% to 155%) based on the trend line.

**Figure 61: Trend in the frequency of hospital admissions, Victoria 1996-2006**



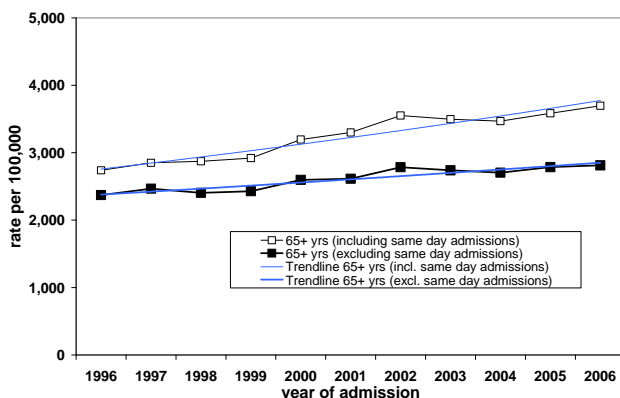
**Figure 62: Trend in the frequency of injury ED presentations, Victoria 1996-2006**



### RATE

- The OLDER ADULT unintentional injury and poisoning admission rate (INCLUDING same-day admissions) increased significantly over the 11-year period from 2,737/100,000 in 1996 to 3,696/100,000 in 2006, representing an estimated annual change of 3.2% (2.4% to 3.8%) and an overall increase of 41% (30% to 50%) based on the trend line.
- The OLDER ADULT unintentional injury and poisoning admission rate (EXCLUDING same-day admissions) increased significantly over the 11-year period from 2,373/100,000 in 1996 to 2,811/100,000 in 2006, representing an estimated annual change of 1.8% (1.3% to 2.3%) and an overall increase of 22% (15% to 29%) based on the trend line.
- The trend in ED presentation rate cannot be determined because numerator data are not complete.

**Figure 63: Trend in hospital admission rates per 100,000 population, Victoria 1996-2006**

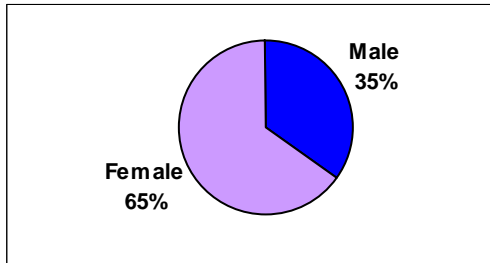


Rates cannot be calculated for ED presentations because numerator data are not complete for the 11-year period.

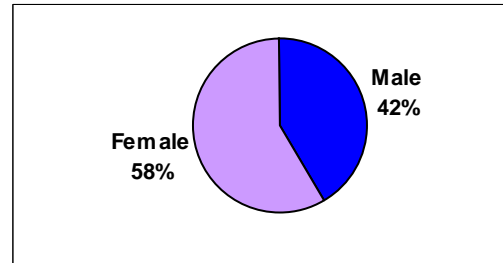
## Gender

- Females are overrepresented in hospital injury data for persons aged 65 years and older. They accounted for 65% of hospital admissions (n=18,459) and 58% of ED presentations (n=10,887) in Victoria in 2006.

**Figure 64: Older adult hospital injury admissions by gender, Victoria 2006**



**Figure 65: Older adult ED injury presentations by gender, Victoria 2006**



- The rate of hospital admission and ED presentation is also higher for females than males (4,790 & 2,825/100,000 vs. 3,190 & 2,506/100,000). (Table 14)

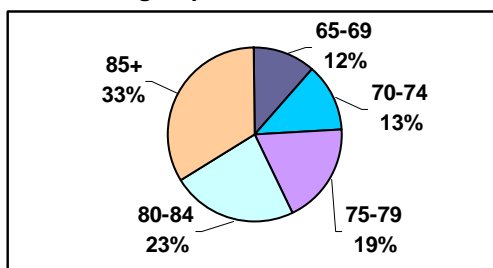
**Table 14. Frequency and rate of older adult hospital admission and ED presentation, Victoria 2006.**

	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
Male	9,870	3,189.6	7,755	2,506.1
Female	18,459	4,790.1	10,887	2,825.2
All	28,329	4,077.3	18,642	2,683.1

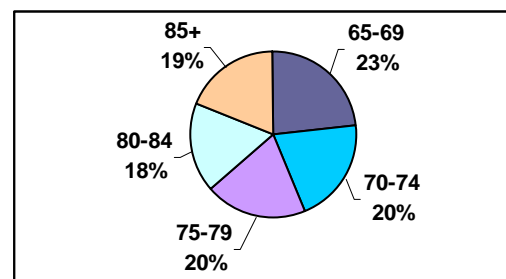
## Age

- Persons aged 85 years and older account for one third of injury hospital admissions among older adults and persons aged 80-84 years account for a further 23%.
- Older adult ED presentations are fairly evenly distributed across the five age groups.

**Figure 66: Older adult hospital admissions by age group, Victoria 2006**



**Figure 67: Older adult ED presentations by age group, Victoria 2006**



- In persons aged 65 years and older both admission and ED presentation rates increase as age increases and the highest rates are in persons aged 85 years and older. (Table 15)

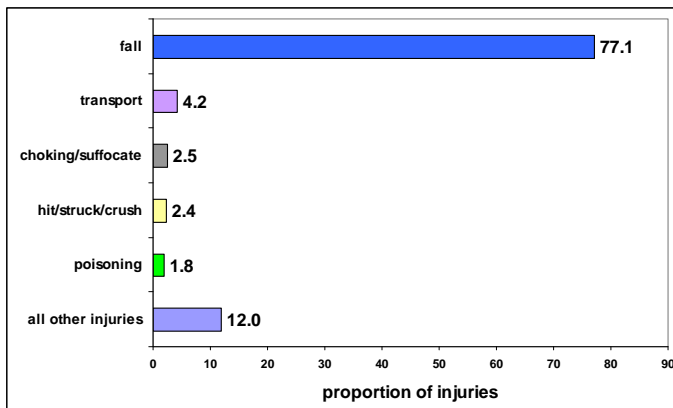
**Table 15. Frequency and rate of hospital admission and ED presentation in older adults, Victoria 2006.**

	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
65-69 years	3,296	1,678.9	4,417	2,249.9
70-74 years	3,542	2,200.0	3,731	2,317.3
75-79 years	5,266	3,668.2	3,648	2,541.1
80-84 years	6,524	6,121.7	3,267	3,065.6
85+ years	9,701	11,105.6	3,579	4,097.2
All	34,086	4,077.3	18,642	2,683.1

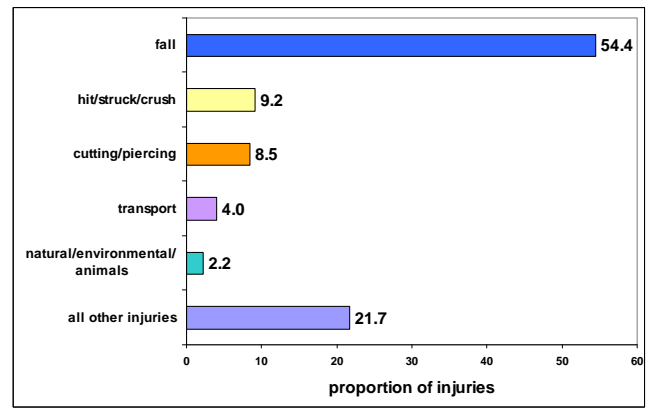
## Leading causes of injury

- The leading cause of hospital admissions and ED presentations for older adults is falls. Falls account for more than three-quarters of hospital admissions (77%, n=21,840) and more than half of ED presentations (54%, n=10,145) in this age group.
- Transport is the second most common cause of hospital admission (4%, n=1,199) and the cause of 4% of presentations (n=740).
- The third leading cause of admissions is choking and suffocation (3%, n=709) whereas for ED presentations it is cutting and piercing (9%, n=1,578).
- Hit/struck/crush injuries account for 2% of admissions (n=668) and 9% of Ed presentations (n=1,713).
- The fifth ranking cause of hospital admissions is poisoning (2%, n=520) whereas for ED presentations it is natural/environmental/animals, mostly dog, horse and insect related (2%, n=412).

**Figure 68: Older adult hospital admissions by cause, Victoria 2006**



**Figure 69: Older adult ED presentations by cause, Victoria 2006**



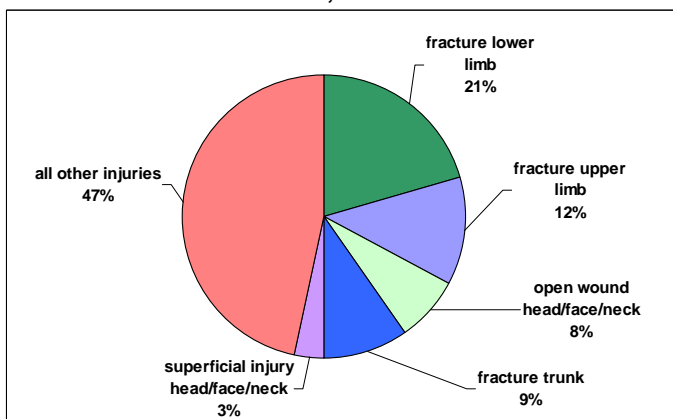
Note: 'Other specified' and 'unspecified' cases were included in the 'all other injuries' category regardless of their ranking

## Major injury type (body site and nature of injury)

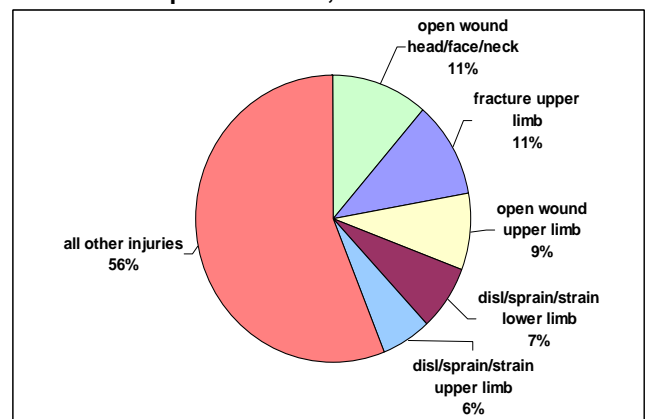
Figures 70 & 71 show the five major specific injury types for older adult hospital admissions and ED presentations.

- Fracture to the lower limb accounts for 21% of hospital injury admissions.
- Fracture to the upper limb accounts for 12% of hospital admissions and 11% of ED presentations.
- Open wounds to the head/face/neck (11%) are the second most common injury among ED presentations and account for 8% of hospital admissions.

**Figure 70: Major injury type, older adult hospital admissions, Victoria 2006**



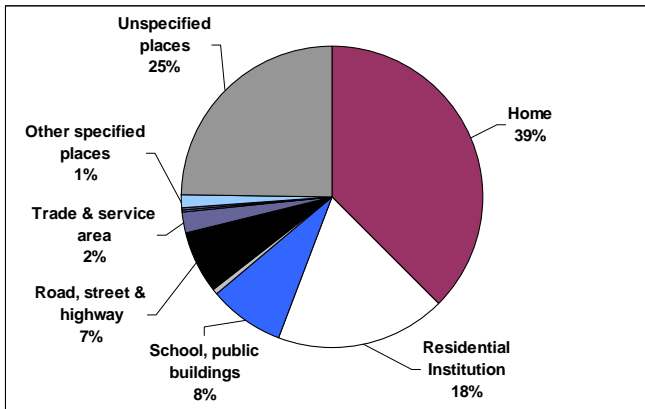
**Figure 71: Major injury type, older adult ED presentations, Victoria 2006**



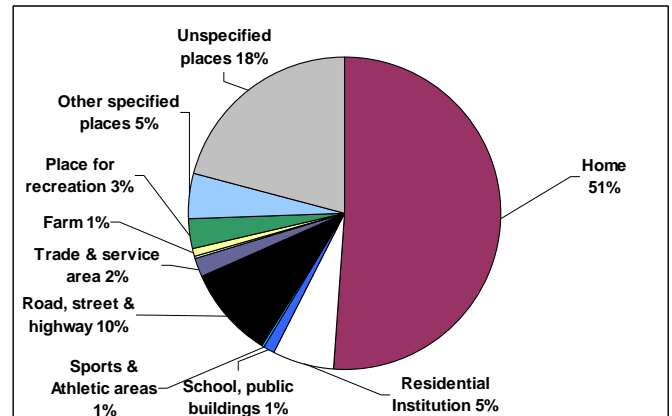
## Place of injury occurrence

- Almost 40% of older adult injuries requiring hospital admission and more than half of injuries resulting in ED presentations occurred in the home (39% and 51%).
- Other locations where injuries to older adults commonly occurred were:
  - residential institutions (18% of admissions and 5% of ED presentations)
  - roads, streets and highways (7% of admissions and 10% of ED presentations) and
  - schools and other public buildings (8% of admissions and 1% of ED presentations).

**Figure 72: Older adult hospital admissions by place of occurrence, Victoria 2006**



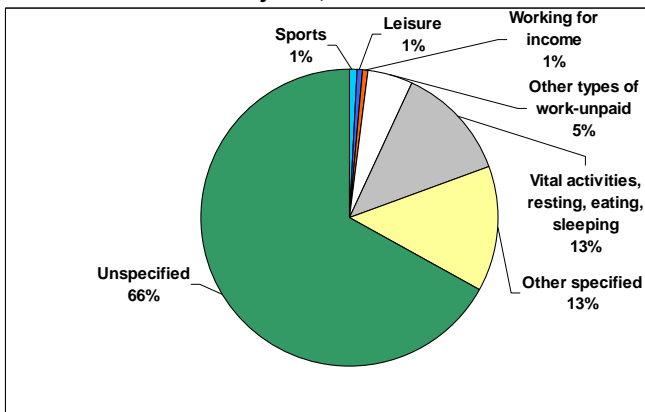
**Figure 73: Older adult ED presentations by place of occurrence, Victoria 2006**



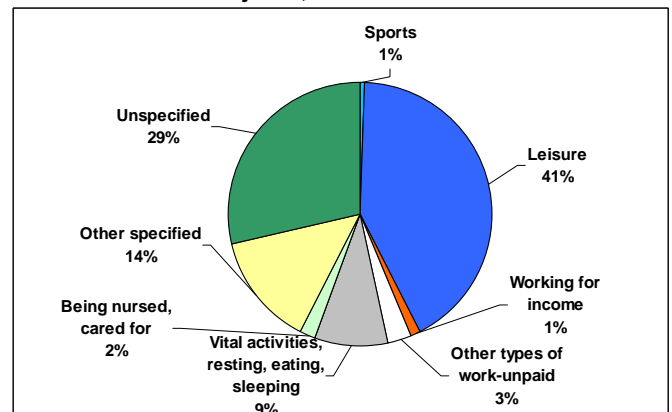
## Activity when injured

- The activity engaged in at the time of injury was unspecified for two thirds of older adult injury admissions and recorded as 'other specified' for a further 13% of injuries.
- Vital activities such as resting, eating and sleeping were the only activities recorded for a significant number of older adult admissions (13%).
- Leisure was recorded as the activity engaged in at the time of injury for 41% of older adult ED presentations, followed by vital activities such as resting, eating and sleeping (9%).

**Figure 74: Older adult hospital admissions by activity when injured, Victoria 2006**



**Figure 75: Older adult ED presentations by activity when injured, Victoria 2006**



**Table 16 Ranking of causes for hospital admissions and ED presentations, persons aged 65 years and older, 2006**

AGE GROUP	RANK	ADMISSIONS			PRESENTATIONS		
		CAUSE	FREQ	%	CAUSE	FREQ	%
<b>65-74 years</b>	1	fall	4,317	63.1	fall	3,486	42.8
	2	transport	496	7.3	cutting/piercing	928	11.4
	3	unspecified factor	445	6.5	hit/struck/crush	921	11.3
	4	hit/struck/crush	233	3.4	unspecified factor	827	10.2
	5	cutting/piercing	203	3.0	other specified unintentional	756	9.3
	6	overexertion & strenuous movements	203	3.0	transport	417	5.1
	7	poisoning	176	2.6	natural/environmental/animals	260	3.2
	8	natural/environmental/animals	171	2.5	foreign body- natural orifice	246	3.0
	9	choking/suffocate	162	2.4	fires/burns/scalds	136	1.7
	10	foreign body- natural orifice	154	2.3	machinery	108	1.3
	11	other specified unintentional	104	1.5	poisoning	49	<1
	12	machinery	99	1.4	choking/suffocation	9	<1
	13	fires/burns/scalds	68	1.0	explosions/firearms	2	<1
	14	explosions/firearms	4	<1	near drowning	0	0.0
	15	near drowning	3	<1	overexertion & strenuous movements	N/A	N/A
		ALL	6,838	100.0	ALL	8,145	100.0
<b>75-84 years</b>	1	fall	9,203	78.1	fall	4,077	59.0
	2	transport	525	4.5	unspecified factor	614	8.9
	3	unspecified factor	464	3.9	hit/struck/crush	580	8.4
	4	choking/suffocate	323	2.7	cutting/piercing	503	7.3
	5	hit/struck/crush	242	2.1	other specified unintentional	499	7.2
	6	poisoning	224	1.9	transport	251	3.6
	7	overexertion & strenuous movements	200	1.7	foreign body- natural orifice	127	1.8
	8	natural/environmental/animals	185	1.6	natural/environmental/animals	118	1.7
	9	foreign body- natural orifice	110	<1	poisoning	62	<1
	10	cutting/piercing	100	<1	fires/burns/scalds	45	<1
	11	other specified unintentional	87	<1	machinery	22	<1
	12	fires/burns/scalds	77	<1	choking/suffocation	15	<1
	13	machinery	46	<1	near drowning	0	0.0
	14	explosions/firearms	4	<1	explosions/firearms	0	0.0
	15	near drowning	0	0.0	overexertion & strenuous movements	N/A	N/A
		ALL	11,790	100.0	ALL	6,913	100.0
<b>85+ years</b>	1	fall	8,320	85.8	fall	2,582	72.0
	2	unspecified factor	291	3.0	unspecified factor	289	8.1
	3	choking/suffocate	224	2.3	hit/struck/crush	212	5.9
	4	hit/struck/crush	193	2.0	other specified unintentional	181	5.1
	5	transport	178	1.8	cutting/piercing	147	4.1
	6	poisoning	120	1.2	transport	72	2.0
	7	natural/environmental/animals	112	1.2	natural/environmental/animals	34	<1
	8	overexertion & strenuous movements	105	1.1	foreign body- natural orifice	24	<1
	9	foreign body- natural orifice	52	<1	poisoning	15	<1
	10	fires/burns/scalds	40	<1	fires/burns/scalds	13	<1
	11	other specified unintentional	38	<1	choking/suffocation	11	<1
	12	cutting/piercing	21	<1	machinery	3	<1
	13	machinery	7	<1	near drowning	1	<1
	14	near drowning	0	0.0	explosions/firearms	0	0.0
	15	explosions/firearms	0	0.0	overexertion & strenuous movements	N/A	N/A
		ALL	9,701	100.0	ALL	3,584	100.0





## Appendix 1 VISU DEFINITIONS, DATA SOURCES AND CASE SELECTION

### DEFINITIONS

**'Injury':** Injury is commonly defined as: 'any unintentional or intentional damage to the body ... caused by acute exposure to physical agents such as mechanical energy, heat, electricity, chemicals, and ionizing radiation interacting with the body in amounts or at rates that exceed the threshold of human tolerance'.

**'Unintentional injury':** Injuries that are unintended, often described as 'accidents'. We try to avoid using the term 'accidents' as it implies that injuries are random events due to chance.

**'Intentional injury':** Injuries that are the result of intended acts by people i.e., harm of one person by another (assault, homicide, neglect) or self-harm.

An injury **'death'** is defined as an injury or poisoning by an external cause (transport crash, fall, suicide, drowning etc.) that results in a person dying either in or out of hospital. In Victoria (and in other Australian States and Territories) all deaths by external causes must be reported to the State Coroner.

An injury **'hospital admission'** is defined as an injury or poisoning that results in the person being admitted to an inpatient bed (a ward, short stay observation unit, emergency medical unit, medical assessment and planning unit, intensive care bed, mental health bed or coronary care unit) and subsequently discharged alive either on the same day (after at least 4 hours from the time patient management commences) or after one or more nights stay in a hospital bed.

An injury **'emergency department (ED) presentation'** is defined as an injury or poisoning that results in a person presenting to a hospital emergency department for treatment who is triaged (assessed for urgency), including those patients who leave before treatment commences. A **'non-admission'** is a person who is discharged from the ED within four hours of the time patient management commenced.

A **'child'** is usually defined as a person aged 0-14 years. An **'adult'** is usually defined as a person aged 15 years and older. These definitions apply because age data are usually grouped in 5-year age groups (0-4, 5-9, 10-14, 15-19 etc.).

### VISU DATA SOURCES AND CASE SELECTION

#### 1. Hospital admissions Source: Victorian Admitted Episodes Dataset (VAED)

Hospital admissions for injury and poisoning that contain an external cause code are extracted from the VAED (formerly the VIMD) by the Victorian Department of Human Services (DHS) and supplied in unit record format to VISU every six months. The file is cleaned, checked and loaded onto the VISU-held VAED dataset.

From July 1998 cases recorded on the VAED are coded to **ICD-10-AM**, the WHO International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification. ICD-10-AM has been developed by the National Centre for Classification in Health in Queensland with assistance from clinicians and clinical coders to ensure that the classification is current and appropriate for Australian clinical practice. The Australian Modifications of ICD-10 are updated every two years. Up to June 30 1998, cases were coded to **ICD-9-CM**. The external causes chapters of ICD-9-CM and ICD-10-AM describe the causes of injury, poisoning and adverse events (complications of medical and surgical care). Adverse events and sequelae (late effects) of external causes of morbidity and mortality are usually not included in VISU reports.

The VAED data items held by VISU include:

#### Demographic/administrative items

- **Age, sex, postcode, suburb and local government area of residence**
- **Country of birth**
- **Date of admission, date of separation (discharge) and length of hospital stay (in days)**
- **Separation type (patient destination on discharge from hospital):** separation and transfer to acute hospital /extended care, death, separation to private residence,/accommodation, separation and transfer to aged care residential facility, separation and transfer to mental health residential facility etc.

#### Injury surveillance items

Up to 40 ICD-10-AM codes from any or all of the chapters of the ICD-10-AM manual can currently be assigned to each record. These codes are then used to derive the following injury surveillance variables that are added to the VISU-VAED dataset.

- **Cause of injury** – transport, fall, poisoning etc. [Coded to ICD-10-AM Chapter XX: External Causes of Morbidity and Mortality (V01-Y34)]
- **Place of occurrence** i.e. location of injury - home, road, street or highway etc. [Coded to ICD-10-AM Chapter XX: External Causes of Morbidity and Mortality (Y92.0-Y92.9)]
- **Activity when injured** - sports, leisure, work etc. [Coded to ICD-10-AM Chapter XX: External Causes of Morbidity and Mortality (U50-U73)]
- **Human intent** – unintentional; intentional-assault, neglect, self harm; undetermined intent. Intent information is derived from the external cause of injury code.
- **Injury diagnosis** i.e. exact injury code – superficial injury of scalp, fracture of neck of femur etc. (Coded to ICD-10-AM Chapter 19 Injury, Poisoning and Consequences of External Cause S00-T98)
- **Body region injured** – head, thorax, shoulder, upper arm etc. Body region information is derived from the injury diagnosis variables.
- **Nature of main injury** - open wound, fracture, dislocation/sprain/strain etc. Nature of main injury is derived from the injury diagnosis variables.
- **Comorbidities** – co-occurrence of injury with other diseases and conditions that can happen by chance or because there is some association between them (for example, suicide and mental disorders, drowning or hot water scalds and epilepsy). Co-morbidities are derived from the diagnosis variables (Coded to ICD-10-AM Chapters 1-17).

#### Case selection (for this report):

- Victorian hospital admissions recorded on the VAED occurring 1 January 2006 to 31 December 2006, coded according to the 4<sup>th</sup> and 5<sup>th</sup> editions of ICD-10-AM (NCCH, July 2004 and July 2006)
- Cases with an external cause of morbidity in ICD-10-AM range V01-X59 (i.e. unintentional section of Chapter XX *External causes of morbidity and mortality*).
- Mode of admission has any value except those indicating that transfer from another hospital has occurred or that the record is a 'statistical separation'- a change of care type within a hospital. The aim of these omissions is to reduce over-counting of cases and to provide an estimated incidence of admission.
- Mode of separation has any value except that the person died while in hospital.
- For the trends section only cases with a Primary Diagnosis in the ICD-10-AM range S00-T98 using Chapter XIX *Injury, poisoning and certain other consequences of external causes* codes were included. Cases were selected for this section if the admission occurred between 1 January 1996 and 31 December 2006.

## 2. Emergency Department Presentations

### Source: Victorian Emergency Minimum Dataset (VEMD)

The Victorian Injury Surveillance System began in the Royal Children's Hospital in 1989. It expanded to adult hospitals over time with a large boost in 1995 when the Department of Human Services absorbed the injury surveillance minimum dataset into the Victorian Emergency Minimum Dataset (VEMD) that collects demographic, administrative and clinical data from public hospitals. From January 2004, VEMD data are collected by all 38 Victorian public hospitals that provide a 24-hour ED service.

Emergency Department presentations for injury and poisoning are extracted from the VEMD by the Victorian Department of Human Services (DHS) and supplied quarterly in unit record format to VISU (prior to 2004 VISU collected injury surveillance data directly from hospital EDs). Data are currently coded to the Victorian Emergency Minimum Dataset (VEMD) User Manual 10<sup>th</sup> Edition, July 2005 published by the Department of Human Services.

The VEMD contains cases that are treated and discharged from the ED within 4 hours from the time patient management commences (i.e. 'non-admissions') and cases that are defined as 'admissions' because they are treated for 4 hours or more in the ED or a short stay ward attached to the ED or depart from the ED to an inpatient bed or are transferred to another hospital campus. Admissions recorded on the VEMD are not usually included in injury surveillance reports if admissions are also being selected from the VAED because cases would then be over counted.

When the data file is received by VISU, it is cleaned, checked and loaded onto the VISU-VEMD injury surveillance dataset. VISU is able to run data searches on any of the data items contained in the dataset to provide a customised report containing a set of tables and short written summary.

The VEMD data items held by VISU include:

#### Demographic/administrative items

- **Age, sex, postcode** and **suburb** of residence
- **Country of birth, preferred language spoken at home**
- **Time** and **date of presentation to ED**
- **Departure status** (patient destination on discharge from ED i.e. admitted to ward, died within ED, discharged home, discharged to residential care etc.)
- **Referred to on departure** (outpatients, local medical officer i.e. GP, home nursing service, scheduled review in ED etc.)

#### Injury surveillance items

- **Human intent** (unintentional, assault, self harm etc.)
- **Cause of injury** (fall, poisoning etc.)
- **Place where injury occurred** i.e. location of injury (home, road, street or highway etc.)
- **Activity when injured** (sports, leisure, work etc.)
- **Nature of main injury**
- **Body region injured**
- **Description of injury event** ('narrative')

#### Case selection (for this report)

- Victorian hospital ED presentations recorded on the VEMD occurring 1 January 2006 to 31 December 2006 coded according to the Victorian Emergency Minimum Dataset (VEMD) User Manual 10<sup>th</sup> Edition, July 2005.
- Data were selected if the injury was unintentional (VEMD human intent=1)
- ED presentations that resulted in death or admission have been excluded from the ED presentations dataset to avoid double counting with the hospital admissions data provided in this edition.
- Only hospitals that contributed data to VEMD over the whole 11-year period were included in the trend analysis of ED presentations frequency data (24 of the current 38 hospitals contributing to the surveillance system).