



MONASH University
Accident Research Centre



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

2008

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Unintentional (accidental) hospital-treated injury in Victoria 2008

Summary results

This is the sixth of a series of regular E-bulletins that provide an overview of the injury profile for Victoria. This edition provides an overview of unintentional ('accidental') hospital-treated injury in 2008 utilising two injury surveillance datasets that separately record hospital admissions and Emergency Department (ED) presentations for injury. Overall there were 376,280 hospital-treated injury cases in Victoria in 2008 (excluding complications of surgical and medical care, adverse effects of drugs in therapeutic use and late effects of injury), 86% of which were unintentional (n=322,694).

All ages

- More than 320,000 Victorians (more than 6 in every 100) were treated in hospital for unintentional injury during 2008 (95,643 admissions and 227,051 ED presentations).
- Hospital admissions (frequency and rate) and ED presentations (frequency) have increased significantly over the 13-year period 1996 to 2008. The frequency of admissions increased by 61% and the admission rate by 36% if same day admissions are included in the analysis, reducing to 36% and 15% if same day admissions are excluded (the latter method produces a more stable indicator of trend). The frequency of ED presentations increased by 72%.
- Males were overrepresented accounting for 60% of all hospital-treated injury cases (56% of admissions and 61% 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 (35%), followed by hit/struck/crush (17%), cutting and piercing (9%) and transport (8%).
- 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 (11% of admissions and 8% of ED presentations), sports and athletics areas (5% of admissions and 8% of ED presentations) and schools and public buildings (6% of admissions and 5% of ED presentations).
- Coding of hospital admissions for activity is poor with most cases coded to unspecified activity (59%). 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 (39%) and sports and working for income each account for a further 10% of injury cases.

Children (0-14 years)

- 78,907 Victorian children (approximately 8 in every 100) were treated in hospital for unintentional injury during 2008 (13,166 admissions and 65,741 ED presentations).
- The frequency of child ED presentations increased by 79% over the 13-year period 1996 to 2008. The frequency of admissions increased by 16% and the admission rate by 11% if same day admissions are included in the analysis. However if same-day admissions are excluded the frequency of admissions decreased by 17% and the admission rate by 20%.
- Males were overrepresented accounting for 60% of all hospital-treated injury cases (62% of admissions and 59% of ED presentations).
- Falls were the leading cause of hospital-treated injury (42%) followed by hit/struck/crush (20%).

- Nineteen percent of hospital admissions and almost half of ED presentations (47%) were for injuries that occurred in the home. Children were also commonly injured in schools and other public buildings (14% of admissions and 14% 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 13% of admissions. Sport was the most common specified activity for hospital admissions (17%). Leisure was recorded as the activity engaged in at the time of injury for 51% of child ED presentations, followed by sports (10%) and education (4%).

Adolescents and young adults (15-24 years)

- More than 60,000 Victorian adolescents and young adults (8 in every 100) were treated in hospital for unintentional injury during 2008 (13,166 admissions and 47,580 ED presentations).
- The frequency of adolescent and young adult ED presentations increased by 50% over the 13-year period 1996 to 2008. The frequency of admissions increased by 42% and the admission rate by 19% if same day admissions are included in the analysis. However if same-day admissions are excluded the frequency of admissions increased by just 11% and the admission rate decreased by 7%.
- Males were overrepresented accounting for 70% of all hospital-treated injury cases (74% of admissions and 69% of ED presentations).
- Falls account for 18% of admissions and 24% of ED presentations. Hit/struck/crush is the leading cause of ED presentations (26%) and accounts for 15% of hospital admissions. Transport accounts for more than a quarter of admissions (26%) but only 10% of ED presentations.
- The road, street and highway is the most common place of occurrence of adolescent and young adult injuries resulting in hospital admission (17%) whereas the home is the leading place of occurrence for injuries resulting in ED presentation (21%).
- The activity engaged in at the time of injury was unspecified for more than half of adolescent and young adult injury admissions (53%) and recorded as 'other specified' for a further 10% of injuries. Sports (25%) and working for income (7%) were the activities recorded for a substantial proportion of admissions. Leisure was recorded as the activity engaged in at the time of injury for 33% of ED presentations, followed by sports (20%) and working for income (12%).

Adults (25-64 years)

- More than 130,000 Victorian adults (almost 5 in every 100) were treated in hospital for unintentional injury during 2008 (37,226 admissions and 94,665 ED presentations).
- Adult hospital admissions (frequency and rate) and ED presentations (frequency) have increased significantly over the 13-year period 1996 to 2008. The frequency of admissions increased by 69% and the admission rate by 40% if same day admissions are included in the analysis, reducing to 41% and 16% if same day admissions are excluded. The frequency of ED presentations increased by 72%.
- Males were overrepresented accounting for 63% of all hospital-treated injury cases (64% of admissions and 63% of ED presentations).
- The leading cause of adult hospital injury admissions and ED presentations is falls: 28% of hospital admissions and 24% of ED presentations. Other major causes are transport (19% 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 14% of ED presentations).
- Sixteen percent of hospital admissions and 35% 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).

presentations); trade and service areas (3% of admissions and 9% of ED presentations) and sports and athletics areas (5% of admissions and 6% of ED presentations).

- The activity engaged in at the time of injury was unspecified for almost 60% of adult injury hospital admissions (58%) and recorded as 'other specified' for a further 11% 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 one-third of adult ED presentations, followed by working for income (17%) and sports (7%).

Older adults (65+ years)

- More than 50,000 Victorian older adults (7 in every 100) were treated in hospital for unintentional injury during 2008 (31,855 admissions and 19,065 ED presentations).
- Older adult hospital admissions (frequency and rate) and ED presentations (frequency) have increased significantly over the 13-year period 1996 to 2008. The frequency of admissions increased by 103% and the admission rate by 53% if same day admissions are included in the analysis, reducing to 71% and 34% if same day admissions are excluded. The frequency of ED presentations increased by 112%.
- Females were overrepresented accounting for 62% of all hospital-treated injury cases (64% of admissions and 58% of ED presentations).
- Falls account for almost three-quarters of hospital admissions (73%) and more than half of ED presentations (53%) in this age group.
- Almost 40% of hospital admissions and half of ED presentations were for injuries that occurred in the home (37% and 50%).
- 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 2008. Overall there were 376,280 hospital-treated injury cases in Victoria in 2008 (excluding complications of surgical and medical care, adverse effects of drugs in therapeutic use and late effects of injury), 86% of which were unintentional (n=322,694). The remaining injury cases were either intentional i.e. self harm or assault (6%, n=23,112) or of undetermined intent (8%, n=30,474).

Method

Hospital admissions data was 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 2008 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 2008 for ED presentations data (VEMD). ED presentation rates were also calculated for 2005 to 2007 in previous E-bulletins but not calculated for other years covered in the trend analysis as all public 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 2008 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 13-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 unintentional hospital-treated injury in Victoria during 2008. Overall, there were more than 320,000 hospital treated injuries recorded in this period (95,643 admissions and 227,051 ED presentations) giving a rate of 6,057 hospital-treated injury cases per 100,000 Victorians.

- The hospital admission rate is highest in older adults (4,434 per 100,000 persons) and lowest in adults (1,303 per 100,000 persons)
- The ED presentation rate is highest in children (6,608/100,000) and lowest in older adults (2,653/100,000).
- Adolescents and young adults have the highest overall hospital-treated injury rate (admissions and presentations combined, 8,056/100,000), followed by children (7,931/100,000) and older adults (7,086/100,000). Adults aged 25-64 years have the lowest hospital-treated injury rate (4,617/100,000).

Table 1 Hospital treated injury frequency and rates by broad age group, Victoria 2008

	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
Admissions	13,166	1323.4	13,396	1769.9	37,226	1303.1	31,855	4433.5	95,643	1795.4
ED presentations	65,741	6608.1	47,580	6286.4	94,665	3313.7	19,065	2653.4	227,051	4262.3
Hospital-treated	78,907	7931.6	60,976	8056.3	131,891	4616.8	50,920	7086.9	322,694	6057.7

Figure 1 shows hospital admission injury rates by age and gender for Victoria in 2008. In 2009, 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 70 years.

Figure 1 Hospital admissions injury rates by age group and gender, Victoria 2008

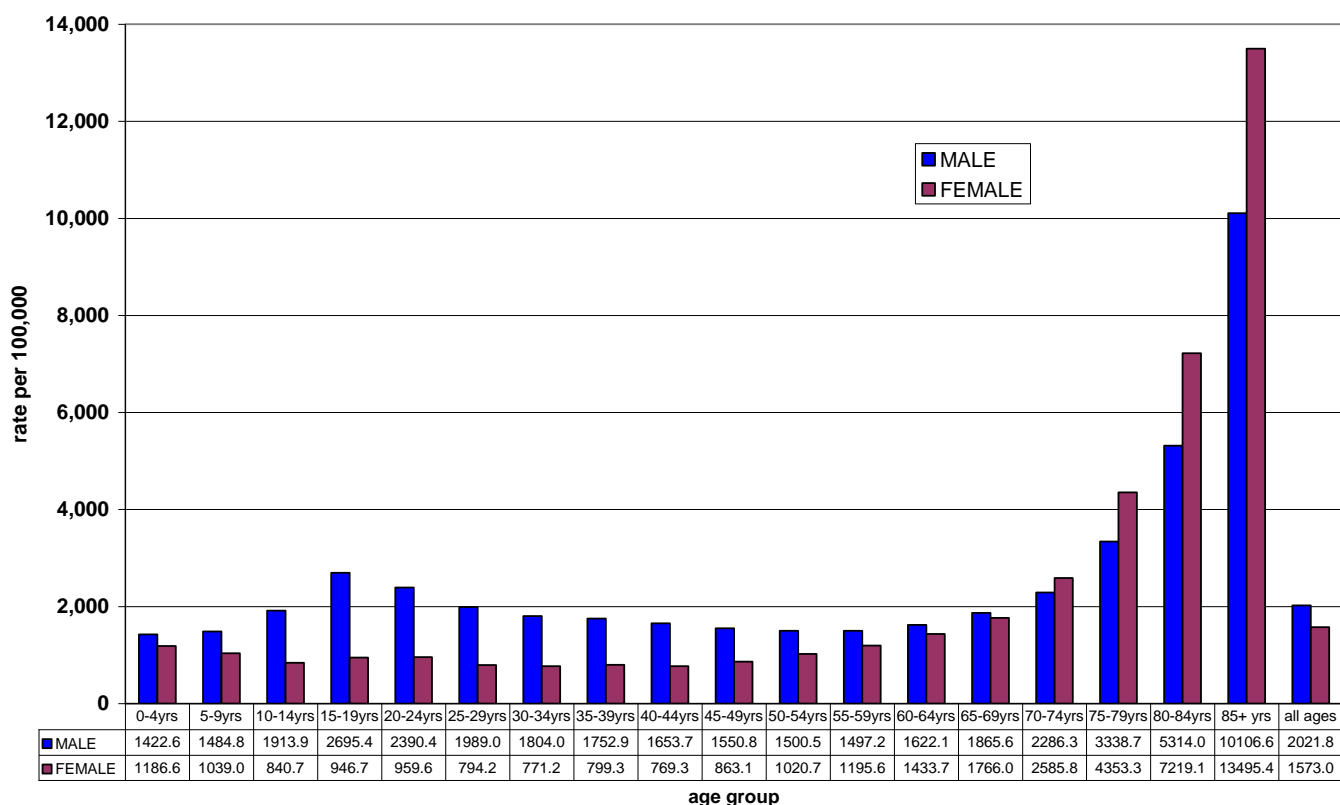
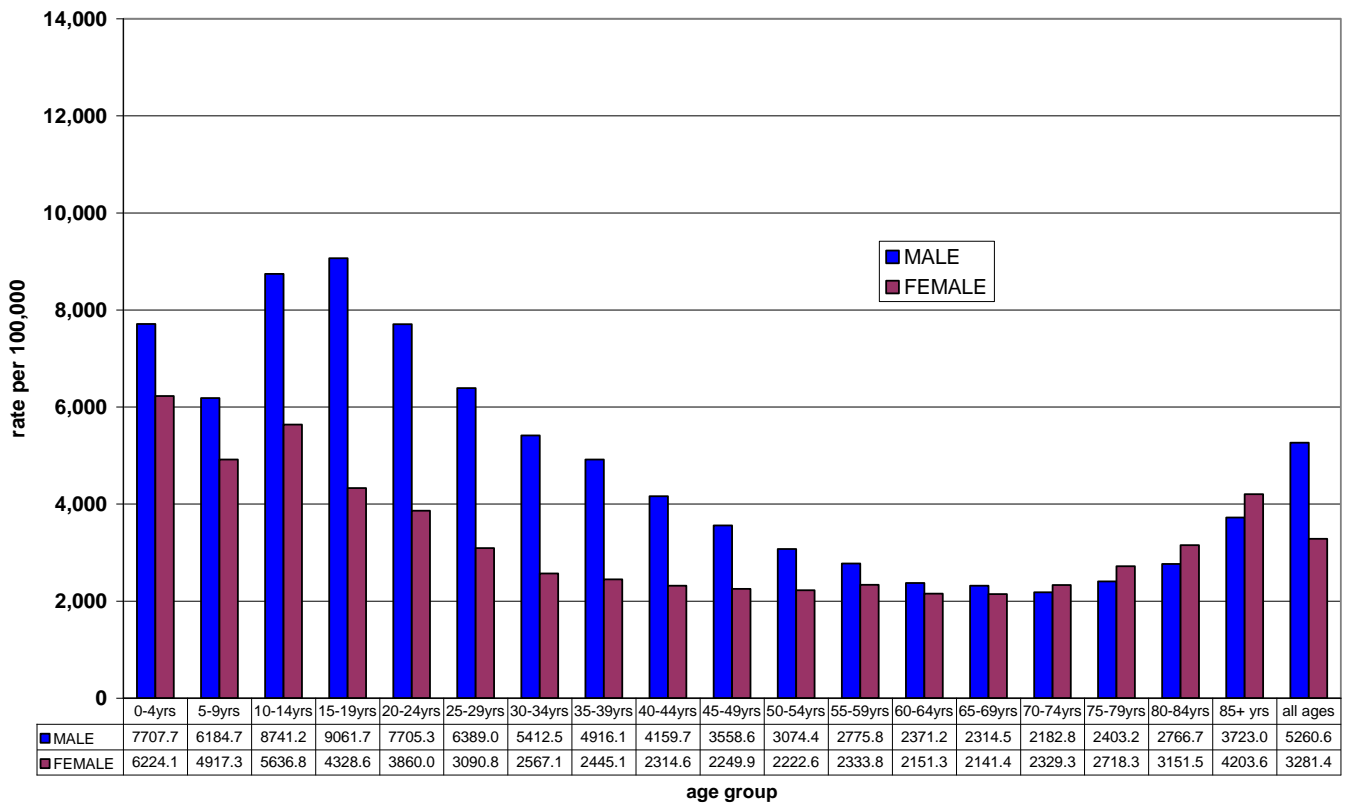


Figure 2 shows ED presentation rates by age and gender for Victoria in 2008. In 2008, age-specific injury ED presentation rates were high in children (0-9 years), highest in older children (10-14 years), adolescents and young adults, and then decreased throughout the adult age groups until age 75 when 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 2008



Trend

FREQUENCY

Frequency and rate data for 2008 reported here differ slightly from those reported elsewhere in this report because a stricter inclusion criterion 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 13-year period from 58,625 in 1996 to 90,135 in 2008, representing an estimated annual change of 3.7% (95% confidence interval 3.3% to 4.0%) and an overall increase of 61% (53% to 67%) based on the trend line.
- The frequency of ALL AGES unintentional injury and poisoning admissions (EXCLUDING same-day admissions) increased significantly over the 13-year period from 41,872 in 1996 to 55,986 in 2008, representing an estimated annual change of 2.4% (2.0% to 2.7%) and an overall increase of 36% (30% to 42%) based on the trend line.
- The frequency of ALL AGES unintentional injury and poisoning ED presentations increased significantly over the 13-year period from 97,468 in 1996 to 158,026 in 2008, representing an estimated annual change of 4.2% (3.1% to 5.2%) and an overall increase of 72% (48% to 94%) based on the trend line.

Figure 3 Trend in the frequency of injury hospital admissions, Victoria 1996-2008

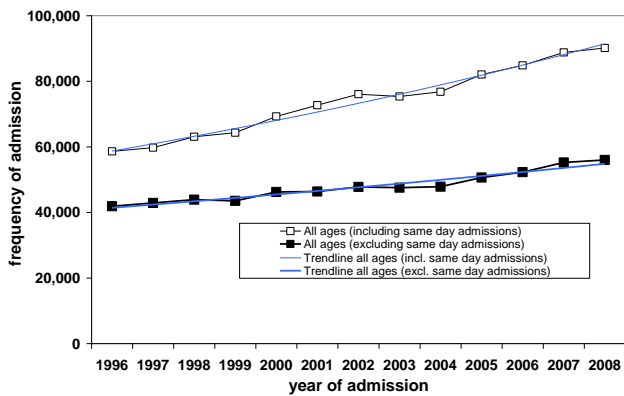
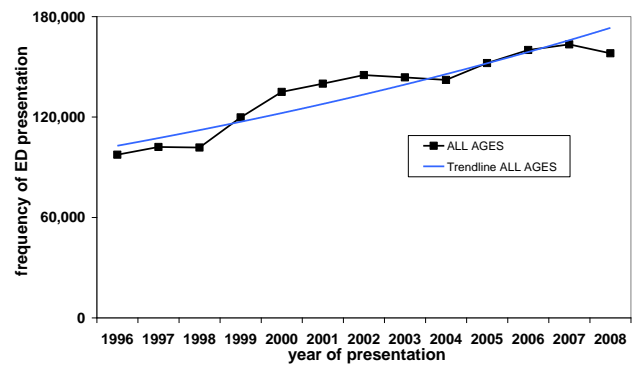


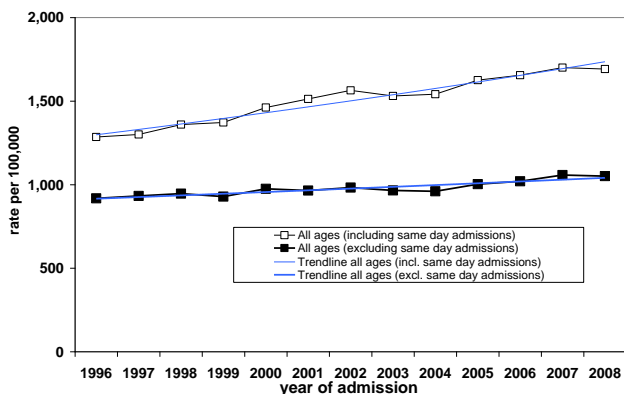
Figure 4 Trend in the frequency of injury ED presentations, Victoria 1996-2008



RATE

- The ALL AGES unintentional injury and poisoning admission rate (INCLUDING same-day admissions) increased significantly over the 13-year period from 1,286/100,000 in 1996 to 1,692/100,000 in 2008, representing an estimated annual change of 2.4% (2.0% to 2.7%) and an overall increase of 36% (30% to 42%) based on the trend line.
- The ALL AGES unintentional injury and poisoning admission rate (EXCLUDING same-day admissions) increased significantly over the 13-year period from 918/100,000 in 1996 to 1,051/100,000 in 2008, representing an estimated annual change of 1.1% (0.8% to 1.4%) and an overall increase of 15% (10% to 19%) 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 1996-2008



Rates cannot be calculated for ED presentations because numerator data are not complete for the 13-year period.

Gender

- Males are overrepresented accounting for 56% of hospital admissions (n=53,376) and 61% of ED presentations (n=138,882) in Victoria in 2008. (Figures 6 & 7)

Figure 6 Hospital injury admissions by gender, Victoria 2008

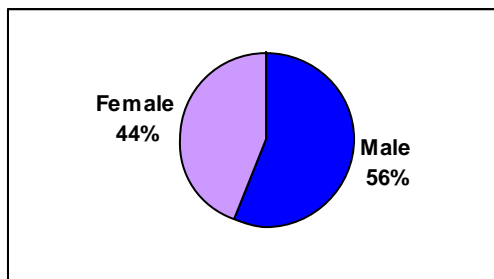
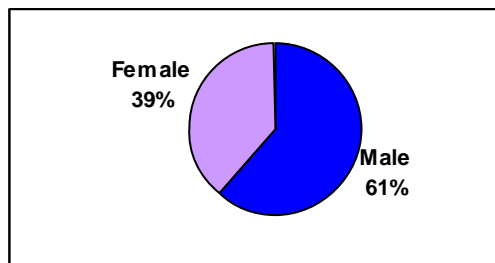


Figure 7 ED injury presentations by gender, Victoria 2008



- The rate of hospital admission and ED presentation is also higher for males than females (2,022 & 5,261/100,000 vs. 1,573 & 3,281/100,000). (Table 2)

Table 2 Frequency and rate of hospital admission and ED presentation, Victoria 2008

	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
Male	53,376	2,021.8	138,882	5,260.6
Female	42,267	1,573.0	88,169	3,281.4
All	95,643	1,795.4	227,051	4,262.3

Age

- Persons aged 65 years and older have the highest rate of hospital admissions (4,433.5/100,000) and adults aged 25-64 have the lowest (1,323.4/100,000).
- Young persons aged 0-14 and 15-24 have the highest ED presentation (non-admission) rates, 6,608.1 and 6,286.4/100,000 respectively.

Table 3 Frequency and rate of hospital admission and ED presentation, Victoria 2008

	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
0-14 years	13,166	1,323.4	65,741	6,608.1
15-24 years	13,396	1,769.9	47,580	6,286.4
25-64 years	37,226	1,303.1	94,665	3,313.7
65+ years	31,855	4,433.5	19,065	2,653.4
ALL	95,643	1,795.4	227,051	4,262.3

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 44% (n=41,960) of hospital admissions and 32% (n=71,759) of ED presentations.
- Transport accounts for 14% of admissions (n=13,575) but just 7% of presentations (n=15,555) which indicates that transport injuries are more severe than injuries from other causes.
- Hit/struck/crush injuries account for 8% of admissions (n=7,833) but a higher proportion (20%) of ED presentations (n=46,399).
- Cutting and piercing injuries account for 5% of admissions (n=5,020) and 11% of ED presentations (n=24,888).
- The fifth ranking cause of hospital admissions is overexertion and strenuous movements (3%, n=2,858) whereas for ED presentations it is injuries caused by a foreign body in a natural orifice e.g. ear, nose, eye (3%, n=7,083).

Figure 8 Hospital admissions by cause, Victoria 2008

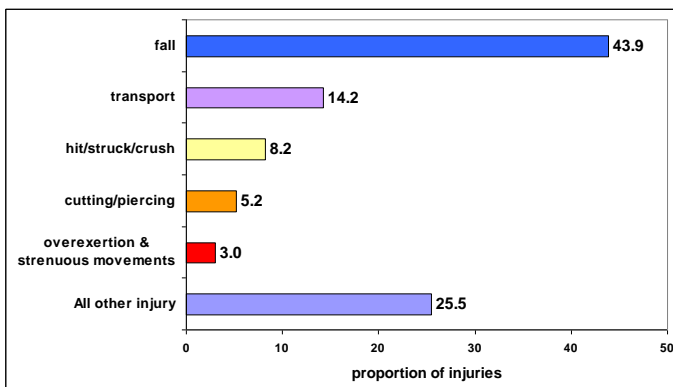
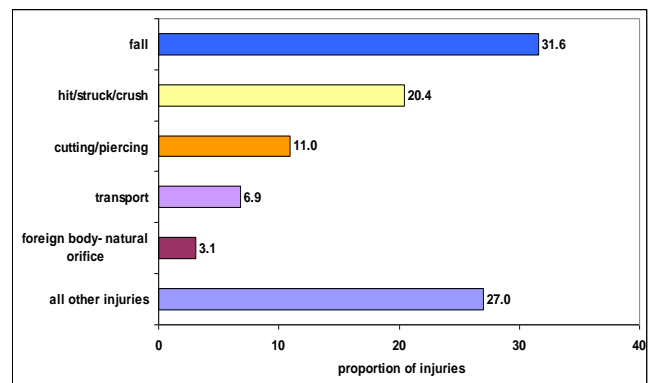


Figure 9 ED presentations by cause, Victoria 2008



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 (9%) and upper limb (8%) are common among ED presentations.
- Open wounds to the head/face/neck account for 6% of hospital injury admissions and 8% of ED presentations.
- Open wounds to the upper limb account for 5% of hospital injury admissions and 9% of ED presentations.

Figure 10 Major injury type, hospital admissions, Victoria 2008

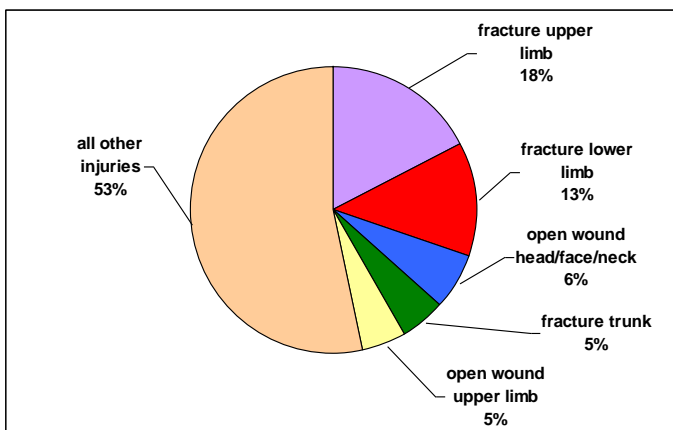
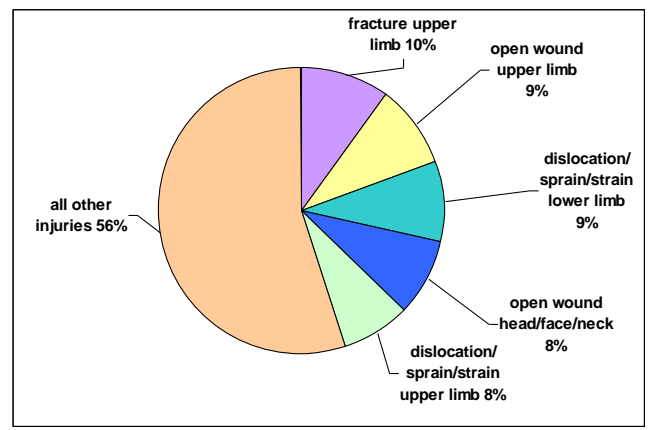


Figure 11 Major injury type, ED presentations, Victoria 2008



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 (11% of admissions and 8% of ED presentations), sports and athletics areas (5% of admissions and 8% of ED presentations) and schools and public buildings (6% of admissions and 5% of ED presentations).

Figure 12 Hospital admissions by place of occurrence, Victoria 2008

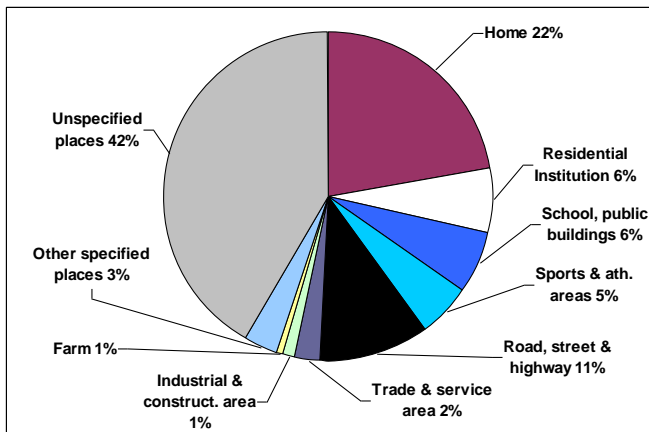
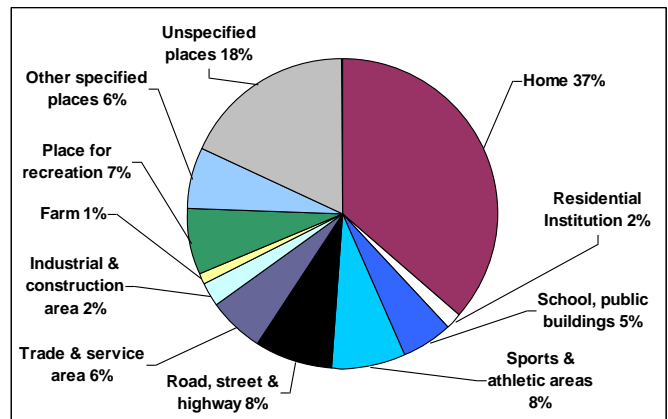


Figure 13 ED presentations by place of occurrence, Victoria 2008



Activity when injured

- Hospital admissions are mostly coded to unspecified activity (59%). 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 (39%) and sports and working for income each account for a further 10% of injuries.

Figure 14 Hospital admissions by activity when injured, Victoria 2008

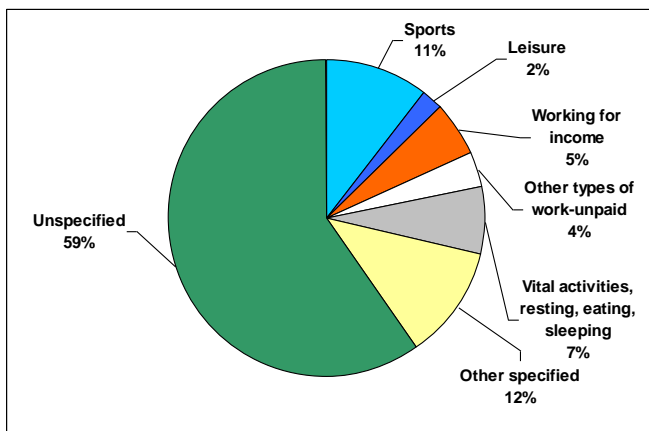


Figure 15 ED presentations by activity when injured, Victoria 2008

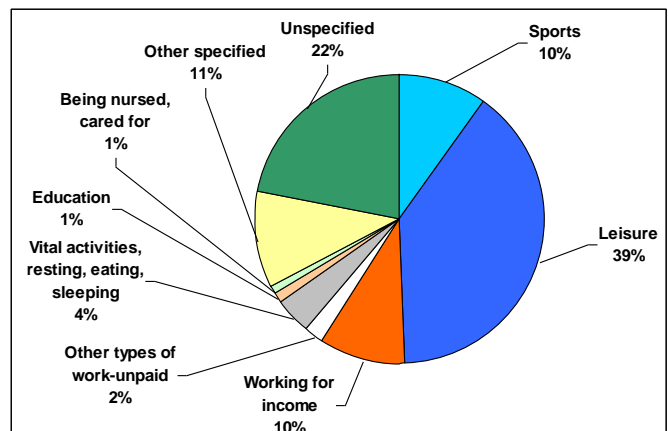


Table 4 Ranking of causes for hospital admissions and ED presentations, all ages, 2008

AGE GROUP	RANK	ADMISSIONS			PRESENTATIONS		
		CAUSE	FREQ	%	CAUSE	FREQ	%
0-14 years	1	fall	5,728	43.5	fall	27,569	41.9
	2	hit/struck/crush	1,804	13.7	hit/struck/crush	13,804	21.0
	3	transport	1,588	12.1	other specified unintentional	6,583	10.0
	4	unspecified factor	1,292	9.8	unspecified factor	5,458	8.3
	5	cutting/piercing	571	4.3	cutting/piercing	3,958	6.0
	6	foreign body - natural orifice	486	3.7	transport	2,527	3.8
	7	poisoning	429	3.3	foreign body- natural orifice	2,099	3.2
	8	natural/environmental/animals	386	2.9	natural/environmental/animals	1,583	2.4
	9	fires/burns/scalds	320	2.4	fires/burns/scalds	1,392	2.1
	10	other specified unintentional	234	1.8	poisoning	544	<1
	11	overexertion & strenuous movements	154	1.2	choking/suffocation	150	<1
	12	choking/suffocate	105	<1	machinery	54	<1
	13	machinery	28	<1	drowning/near drowning	16	<1
	14	drowning/near drowning	26	<1	explosions/firearms	4	<1
	15	explosions/firearms	15	<1	overexertion & strenuous movements	N/A	N/A
		ALL	13,166	100.0	ALL	65,741	100.0
15-24 years	1	transport	3,462	25.8	hit/struck/crush	12,146	25.5
	2	fall	2,371	17.7	fall	11,305	23.8
	3	unspecified factor	2,238	16.7	cutting/piercing	6,077	12.8
	4	hit/struck/crush	2,000	14.9	transport	4,733	9.9
	5	cutting/piercing	1,121	8.4	other specified unintentional	4,729	9.9
	6	overexertion & strenuous movements	496	3.7	unspecified factor	4,419	9.3
	7	poisoning	461	3.4	natural/environmental/animals	1,162	2.4
	8	other specified unintentional	378	2.8	fires/burns/scalds	1,098	2.3
	9	natural/environmental/animals	252	1.9	foreign body- natural orifice	914	1.9
	10	machinery	240	1.8	poisoning	488	1.0
	11	fires/burns/scalds	175	1.3	machinery	451	<1
	12	foreign body - natural orifice	133	1.0	choking/suffocation	41	<1
	13	explosions/firearms	33	<1	drowning/near drowning	11	<1
	14	choking/suffocate	27	<1	explosions/firearms	6	<1
	15	drowning/near drowning	9	<1	overexertion & strenuous movements	N/A	N/A
		ALL	13,396	100.0	ALL	47,580	100.0
25-64 years	1	fall	10,467	28.1	fall	22,707	24.0
	2	transport	7,145	19.2	hit/struck/crush	18,707	19.8
	3	unspecified factor	5,563	14.9	cutting/piercing	13,405	14.2
	4	hit/struck/crush	3,222	8.7	other specified unintentional	10,754	11.4
	5	cutting/piercing	2,936	7.9	unspecified factor	9,557	10.1
	6	overexertion & strenuous movements	1,635	4.4	transport	7,611	8.0
	7	natural/environmental/animals	1,310	3.5	foreign body- natural orifice	3,631	3.8
	8	machinery	1,143	3.1	natural/environmental/animals	3,242	3.4
	9	poisoning	1,140	3.1	fires/burns/scalds	2,255	2.4
	10	other specified unintentional	981	2.6	machinery	1,777	1.9
	11	foreign body - natural orifice	711	1.9	poisoning	832	<1
	12	fires/burns/scalds	560	1.5	choking/suffocation	146	<1
	13	choking/suffocate	320	<1	drowning/near drowning	26	<1
	14	explosions/firearms	84	<1	explosions/firearms	15	<1
	15	drowning/near drowning	9	<1	overexertion & strenuous movements	N/A	N/A
		ALL	37,226	100.0	ALL	94,665	100.0
65+ years	1	fall	23,394	73.4	fall	10,178	53.4
	2	unspecified factor	2,402	7.5	unspecified factor	1,877	9.8
	3	transport	1,380	4.3	other specified unintentional	1,765	9.3
	4	choking/suffocate	840	2.6	hit/struck/crush	1,742	9.1
	5	hit/struck/crush	807	2.5	cutting/piercing	1,448	7.6
	6	overexertion & strenuous movements	573	1.8	transport	684	3.6
	7	poisoning	517	1.6	foreign body- natural orifice	439	2.3
	8	natural/environmental/animals	470	1.5	natural/environmental/animals	434	2.3
	9	cutting/piercing	392	1.2	fires/burns/scalds	191	1.0
	10	foreign body - natural orifice	374	1.2	poisoning	130	<1
	11	other specified unintentional	331	1.0	machinery	125	<1
	12	machinery	203	<1	choking/suffocation	46	<1
	13	fires/burns/scalds	155	<1	drowning/near drowning	3	<1
	14	explosions/firearms	10	<1	explosions/firearms	3	<1
	15	drowning/near drowning	7	<1	overexertion & strenuous movements	N/A	N/A
		ALL	31,855	100.0	ALL	19,065	100.0

Children (0-14 years)

Trend

FREQUENCY

Frequency and rate data for 2008 reported here differ slightly from those reported elsewhere in this report because a stricter inclusion criterion 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 13-year period from 11,159 in 1996 to 12,896 in 2008, representing an estimated annual change of 1.1% (95% confidence interval 0.8% to 1.4%) and an overall increase of 16% (11% to 20%) based on the trend line.
- The frequency of CHILD unintentional injury and poisoning admissions (EXCLUDING same-day admissions) decreased significantly over the 13-year period from 7,276 in 1996 to 6,418 in 2008, representing an estimated annual decrease of 1.4% (-1.9% to -0.8%) and an overall reduction of 17% (-22% to -10%) based on the trend line.
- The frequency of CHILD unintentional injury and poisoning ED presentations increased significantly over the 13-year period from 28,375 in 1996 to 46,612 in 2008, representing an estimated annual change of 4.6% (3.1% to 5.8%) and an overall increase of 79% (49% to 109%) based on the trend line.

Figure 16 Trend in the frequency of hospital admissions, Victoria 1996-2008

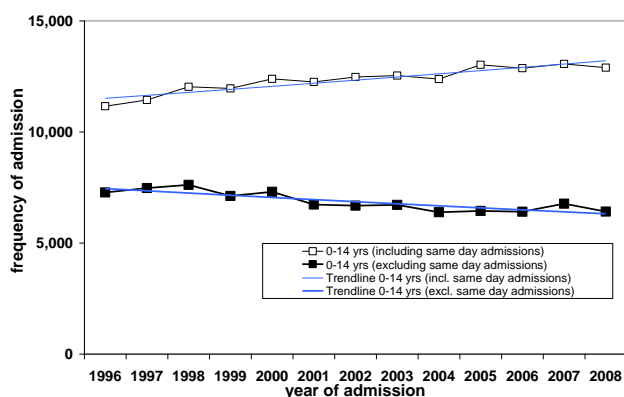
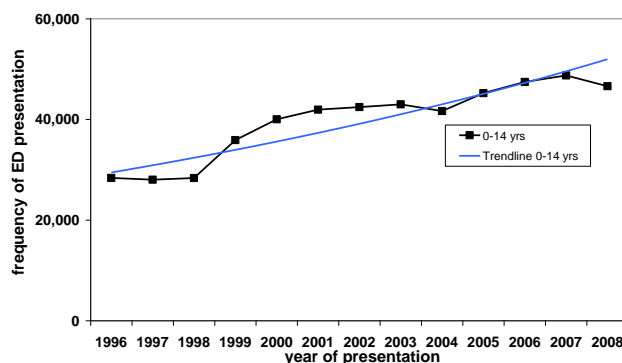


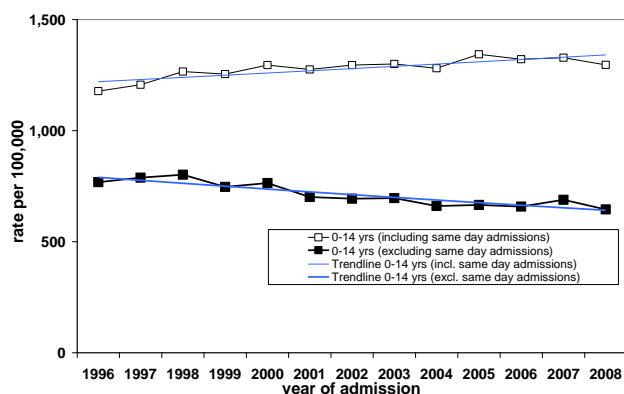
Figure 17 Trend in the frequency of injury ED presentations, Victoria 1996-2008



RATE

- The CHILD unintentional injury and poisoning admission rate (INCLUDING same-day admissions) increased significantly over the 13-year period from 1,178/100,000 in 1996 to 1,296/100,000 in 2008, representing an estimated annual change of 0.8% (0.4% to 1.1%) and an overall increase of 11% (6% to 16%) based on the trend line.
- The CHILD unintentional injury and poisoning admission rate (EXCLUDING same-day admissions) decreased significantly over the 13-year period from 768/100,000 in 1996 to 645/100,000 in 2008, representing an estimated annual decrease of 1.7% (-2.3% to -1.2%) and an overall reduction of 20% (-26% to -15%) 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 1996-2008



Rates cannot be calculated for ED presentations because numerator data are not complete for the 13-year period.

Gender

- Males are overrepresented in child hospital-treated injury cases, accounting for 62% of hospital admissions (n=8,218) and 59% of ED presentations (n=38,625) in Victoria in 2008.

Figure 19 Child hospital injury admissions by gender, Victoria 2008

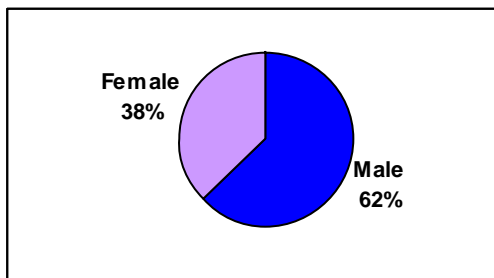
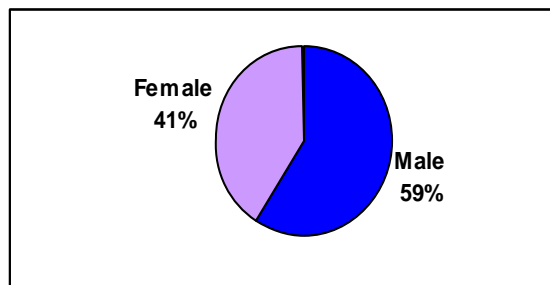


Figure 20 Child ED injury presentations by gender, Victoria 2008



- The child hospital admission and ED presentation rates are also higher for males than females (1,609 & 7,564/100,000 vs. 1,022 & 5,600/100,000). (Table 5)

Table 5 Frequency and rate of hospital admission and ED presentation in children, Victoria 2008

	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
Male	8,218	1,609.3	38,625	7,563.6
Female	4,948	1,021.9	27,166	5,600.4
All	13,166	1,323.4	65,741	6,608.1

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 36% of child ED presentations.
- Children aged 5-9 years account for 32% of child hospital admissions and 27% 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 2008

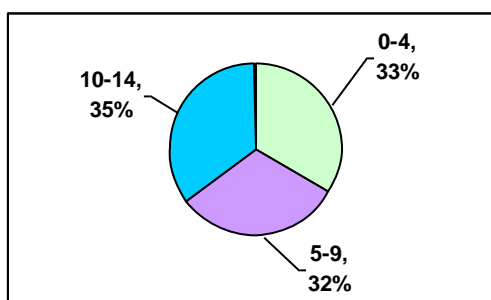
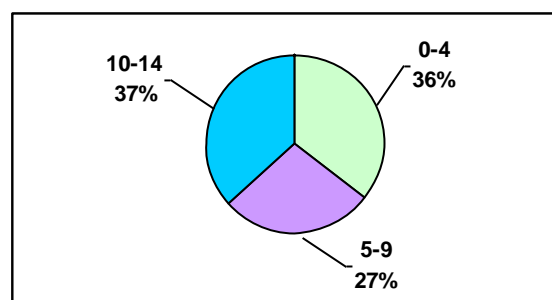


Figure 22 Child ED presentations by age group, Victoria 2008



- Hospital admission and ED presentation 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 2008

	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
0-4 years	4,382	1,307.7	23,407	6,985.0
5-9 years	4,100	1,267.4	18,008	5,566.7
10-14 years	4,684	1,393.0	24,326	7,234.5
All	13,166	1,323.4	65,741	6,608.1

Leading causes of injury

- 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 44% (n=5,728) of child hospital admissions and 42% (n=27,569) of ED presentations.
- Hit/struck/crush injuries are the next major cause of injury accounting for 14% of admissions (n=1,804) and 21% of ED presentations (n=13,804).
- Transport accounts for 12% of admissions (n=1,588) and only 4% of ED presentations (n=2,527).
- Cutting and piercing injuries account for 4% of admissions (n=571) and 6% of ED presentations (n=3,958).
- The fifth ranking cause is injuries caused by a foreign body in a natural orifice e.g. ear, nose, eye, accounting for 4% of admissions (n=486) and 3% of presentations (n=2,099).

Figure 23 Child hospital admissions by cause, Victoria 2008

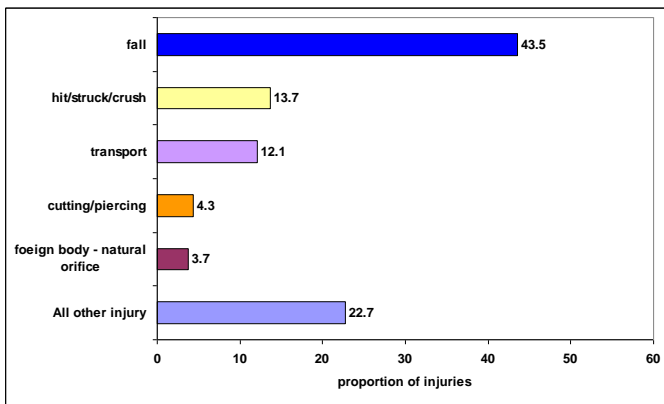
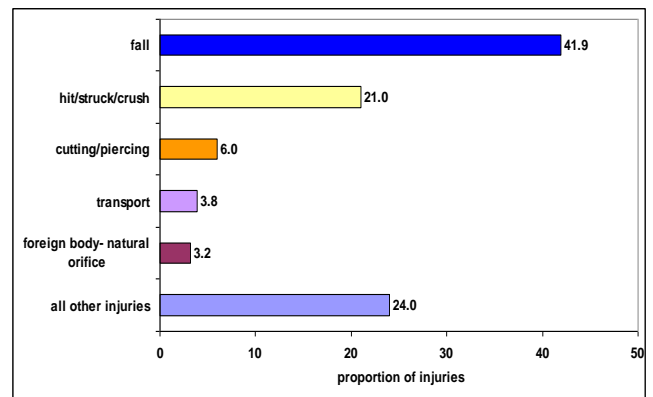


Figure 24 Child ED presentations by cause, Victoria 2008



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 one-third of child hospital injury admissions (33%) and 14% of ED presentations.
- Open wounds to the head/face/neck account for 12% of child hospital injury admissions and 13% of ED presentations.

Figure 25 Major injury type, child hospital admissions, Victoria 2008

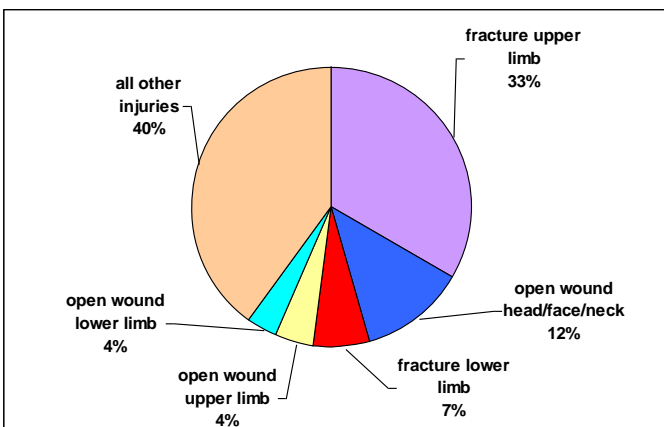
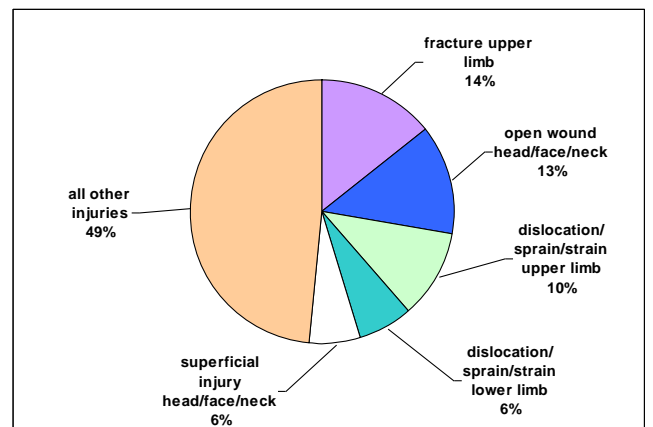


Figure 26 Major injury type, child ED presentations, Victoria 2008



Place of injury occurrence

- The major place of occurrence (location) of injury was the home (19% of hospital admissions and 47% of ED presentations).
- Children were also commonly injured in schools and other public buildings (14% of admissions and 14% 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 2008

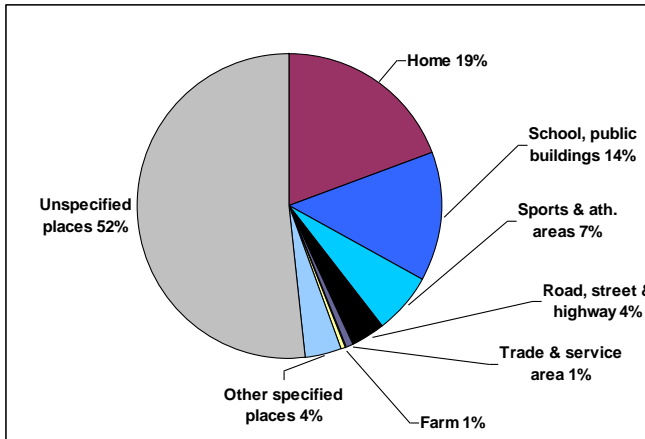
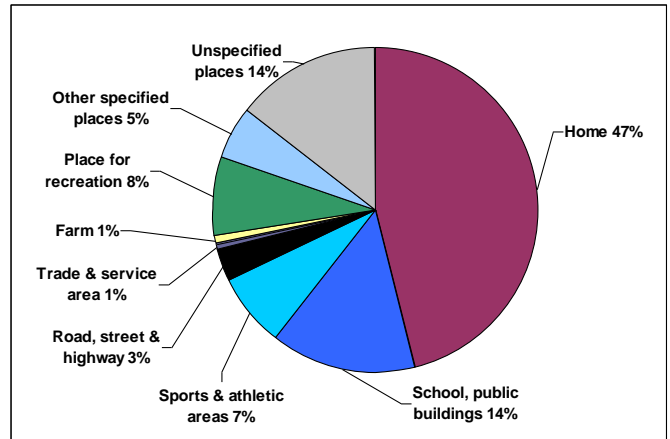


Figure 28 Child ED presentations by place of occurrence, Victoria 2008



Activity when injured

- The activity engaged in at the time of injury was unspecified for almost 60% of all child injury admissions (57%) and recorded as 'other specified' for a further 13% of injuries.
- Sport was the only activity recorded for a significant number of child admissions (17%).
- Leisure was recorded as the activity engaged in at the time of injury for 51% of child ED presentations, followed by sports (10%) and education (4%).

Figure 29 Child hospital admissions by activity when injured, Victoria 2008

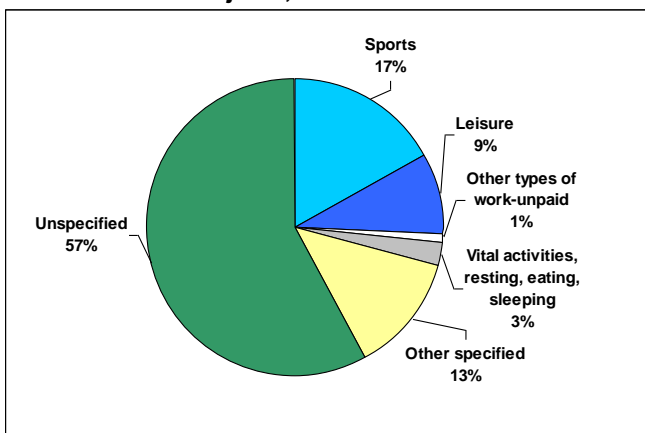


Figure 30 Child ED presentations by activity when injured, Victoria 2008

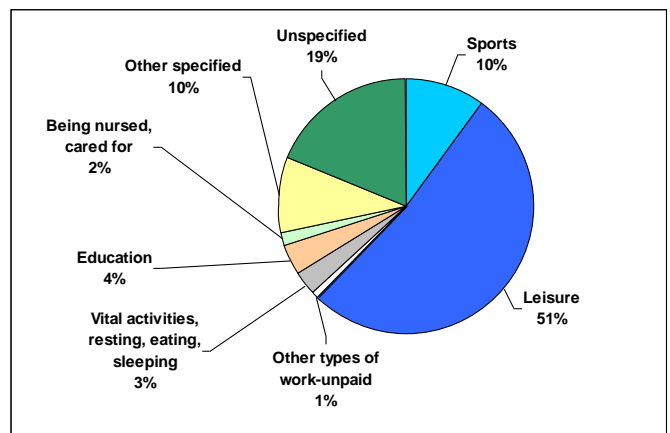


Table 7 Ranking of causes for hospital admissions and ED presentations, children aged 0-14 years, 2008

AGE GROUP	RANK	ADMISSIONS			PRESENTATIONS		
		CAUSE	FREQ	%	CAUSE	FREQ	%
0-4 years	1	fall	1,697	38.7	fall	9,397	40.1
	2	hit/struck/crush	671	15.3	hit/struck/crush	4,134	17.7
	3	unspecified factor	431	9.8	other specified unintentional	2,801	12.0
	4	poisoning	341	7.8	unspecified factor	2,112	9.0
	5	foreign body - natural orifice	289	6.6	foreign body- natural orifice	1,346	5.8
	6	fires/burns/scalds	230	5.2	cutting/piercing	1,296	5.5
	7	cutting/piercing	183	4.2	fires/burns/scalds	873	3.7
	8	transport	165	3.8	natural/environmental/animals	638	2.7
	9	natural/environmental/animals	150	3.4	poisoning	454	1.9
	10	other specified unintentional	82	1.9	transport	253	1.1
	11	choking/suffocate	76	1.7	choking/suffocation	81	<1
	12	overexertion & strenuous movements	33	<1	machinery	14	<1
	13	drowning/near drowning	22	<1	drowning/near drowning	6	<1
	14	machinery	10	<1	explosions/firearms	2	<1
	15	explosions/firearms	2	<1	overexertion & strenuous movements	N/A	N/A
		ALL	4,382	100.0	ALL	23,407	100.0
5-9 years	1	fall	2,238	54.6	fall	9,397	40.1
	2	hit/struck/crush	466	11.4	hit/struck/crush	4,134	17.7
	3	transport	415	10.1	other specified unintentional	2,801	12.0
	4	unspecified factor	308	7.5	unspecified factor	2,112	9.0
	5	cutting/piercing	194	4.7	foreign body- natural orifice	1,346	5.8
	6	foreign body - natural orifice	149	3.6	cutting/piercing	1,296	5.5
	7	natural/environmental/animals	115	2.8	fires/burns/scalds	873	3.7
	8	other specified unintentional	66	1.6	natural/environmental/animals	638	2.7
	9	poisoning	46	1.1	poisoning	454	1.9
	10	fires/burns/scalds	44	1.1	transport	253	1.1
	11	overexertion & strenuous movements	26	<1	choking/suffocation	81	<1
	12	choking/suffocate	18	<1	machinery	14	<1
	13	machinery	8	<1	drowning/near drowning	6	<1
	14	explosions/firearms	4	<1	explosions/firearms	2	<1
	15	drowning/near drowning	3	<1	overexertion & strenuous movements	N/A	N/A
		ALL	4,100	100.0	ALL	23,407	100.0
10-14 years	1	fall	1,793	38.3	fall	9,815	40.3
	2	transport	1,008	21.5	hit/struck/crush	6,103	25.1
	3	hit/struck/crush	667	14.2	other specified unintentional	2,322	9.5
	4	unspecified factor	553	11.8	unspecified factor	1,996	8.2
	5	cutting/piercing	194	4.1	transport	1,594	6.6
	6	natural/environmental/animals	121	2.6	cutting/piercing	1,417	5.8
	7	overexertion & strenuous movements	95	2.0	natural/environmental/animals	502	2.1
	8	other specified unintentional	86	1.8	fires/burns/scalds	242	1.0
	9	foreign body - natural orifice	48	1.0	foreign body- natural orifice	222	<1
	10	fires/burns/scalds	46	1.0	choking/suffocation	39	<1
	11	poisoning	42	<1	poisoning	38	<1
	12	choking/suffocate	11	<1	machinery	29	<1
	13	machinery	10	<1	drowning/near drowning	7	<1
	14	explosions/firearms	9	<1	explosions/firearms	0	<1
	15	drowning/near drowning	1	<1	overexertion & strenuous movements	N/A	N/A
		ALL	4,684	100.0	ALL	24,326	100.0

Adolescents and young adults (15-24 years)

Trend

FREQUENCY

Frequency and rate data for 2008 reported here differ slightly from those reported elsewhere in this report because a stricter inclusion criterion 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 13-year period from 9,633 in 1996 to 13,133 in 2008, representing an estimated annual change of 2.7% (95% confidence interval 2.2% to 3.2%) and an overall increase of 42% (33% to 50%) based on the trend line.
- The frequency of ADOLESCENT AND YOUNG ADULT unintentional injury and poisoning admissions (EXCLUDING same-day admissions) increased significantly over the 13-year period. In 1996 the frequency was 5,950 and in 2008 it was 6,685. This represented an estimated annual change of 0.8% (0.1% to 1.5%) and an overall increase of 11% (2% to 21%) based on the trend line.
- The frequency of ADOLESCENT AND YOUNG ADULT unintentional injury and poisoning ED presentations increased significantly over the 13-year period from 23,224 in 1996 to 32,680 in 2008, representing an estimated annual change of 3.2% (2.5% to 3.7%) and an overall increase of 50% (39% to 61%) based on the trend line.

Figure 31 Trend in the frequency of hospital admissions, Victoria 1996-2008

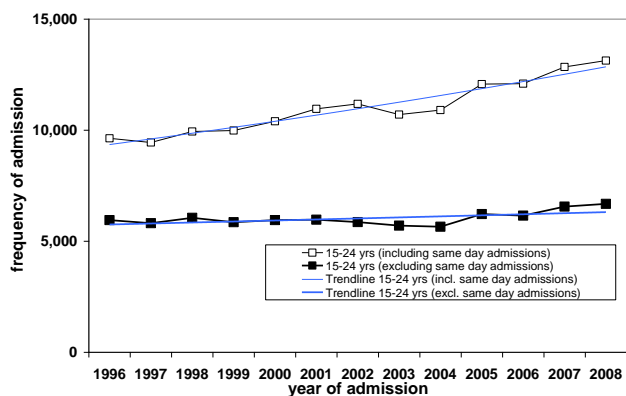
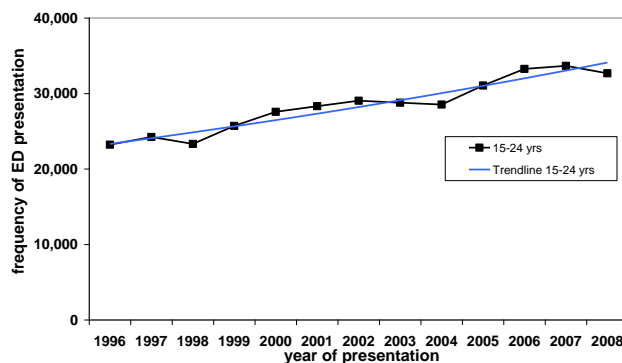


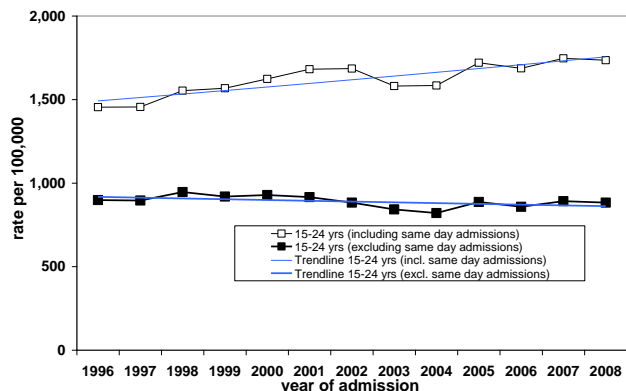
Figure 32 Trend in the frequency of injury ED presentations, Victoria 1996-2008



RATE

- The ADOLESCENT AND YOUNG ADULT unintentional injury and poisoning admission rate (INCLUDING same-day admissions) increased significantly over the 13-year period from 1,454/100,000 in 1996 to 1,735/100,000 in 2008, representing an estimated annual change of 1.3% (0.8% to 1.9%) and an overall increase of 19% (11% 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 13-year period from 898/100,000 in 1996 to 883/100,000 in 2008, representing an estimated annual reduction of 0.5% (-1.1% to 0.1%) and an overall decrease of 7% (-13% to 1%) 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 1996-2008



Rates cannot be calculated for ED presentations because numerator data are not complete for the 13-year period.

Gender

- Males are overrepresented in hospital-treated injury cases among adolescents and young adults, accounting for 74% of hospital admissions (n=9,903) and 69% of ED presentations (n=32,617) in Victoria in 2008.

Figure 34 Adolescent and young adult hospital injury admissions by gender, Victoria 2008

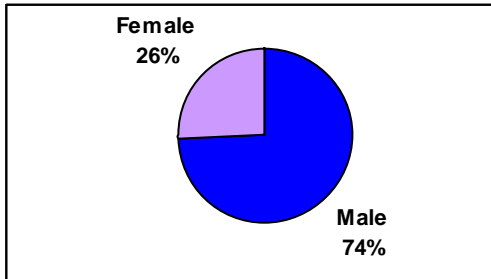
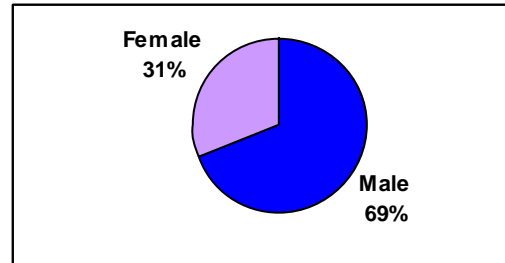


Figure 35 Adolescent and young adult ED injury presentations by gender, Victoria 2008



- Hospital admissions and ED presentation rates are also higher for males than females (2,536 & 8,352/100,000 vs. 953 & 4,084/100,000). (Table 8)

Table 8 Frequency and rate of hospital admission and ED presentation, adolescent and young adults, Victoria 2008

	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
Male	9,903	2,535.9	32,617	8,352.3
Female	3,493	953.4	14,963	4,084.3
All	13,396	1,769.9	47,580	6,286.4

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 50% of admissions and 51% of ED presentations.
- Young adults aged 20 to 24 years account for 50% of admissions and 49% of ED presentations.

Figure 36 Adolescent and young adult hospital admissions by age group, Victoria 2008

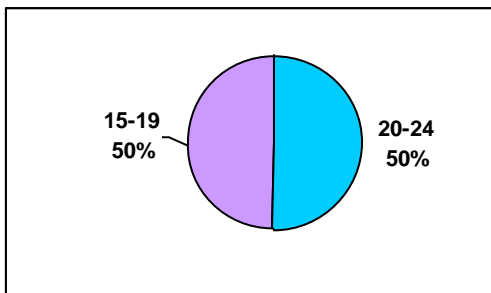
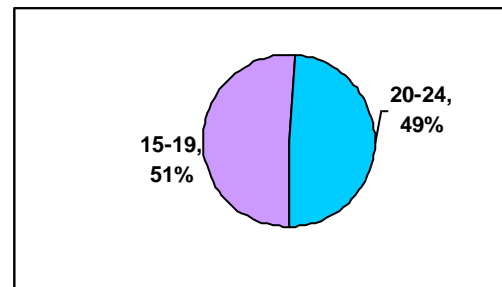


Figure 37 Adolescent and young adult ED presentations by age group, Victoria 2008



- Hospital admission rates are almost equal among 15-19 year olds and 20-24 year olds whereas ED presentation rates are highest in 15-19 year olds (6,767/100,000 vs. 5,847/100,000). (Table 9)

Table 9 Frequency and rate of hospital admission and ED presentation in adolescent and young adults, Victoria 2008

	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
15-19 years	6,251	1,728.6	24,470	6,766.7
20-24 years	6,644	1,681.0	23,110	5,847.0
All	13,396	1,769.9	47,580	6,286.4

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)
- Transport is the leading cause of adolescent and young adult hospital admissions (26%, n=3,462) but only accounts for 10% of ED presentations (n=4,733).
- Falls is the second most common cause of hospital admissions (18%, n=2,371), and ED presentations (24%, n=11,305) in this age group.
- Hit/struck/crush accounted for 15% of hospital admissions (n=2,000) and was the leading cause of ED presentations (26%, n=12,146).
- Cutting and piercing injuries account for 8% of admissions (n=1,121) and 13% of ED presentations (n=6,077).
- The fifth ranking cause of adolescent and young adult hospital admissions is overexertion and strenuous movements (4%, n=496) whereas for ED presentations it is natural/environmental/animals (2%, n=1,162).

Figure 38 Adolescent and young adult hospital admissions by cause, Victoria 2008

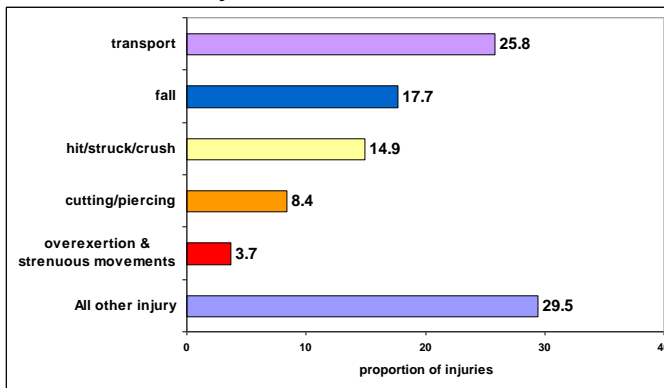
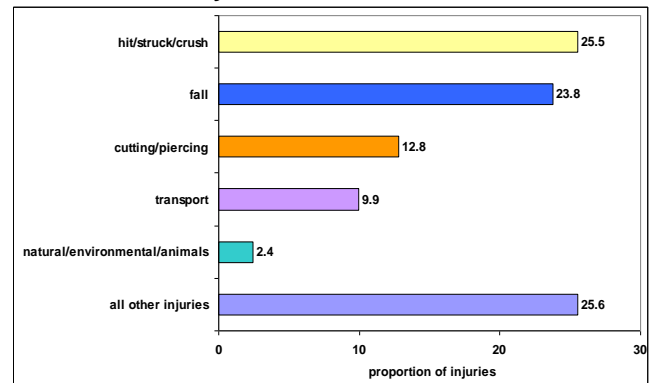


Figure 39 Adolescent and young adult ED presentations by cause, Victoria 2008



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 (9%).
- 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 2008

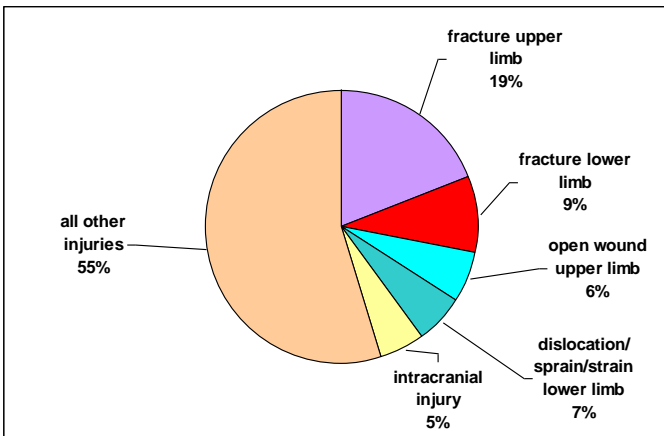
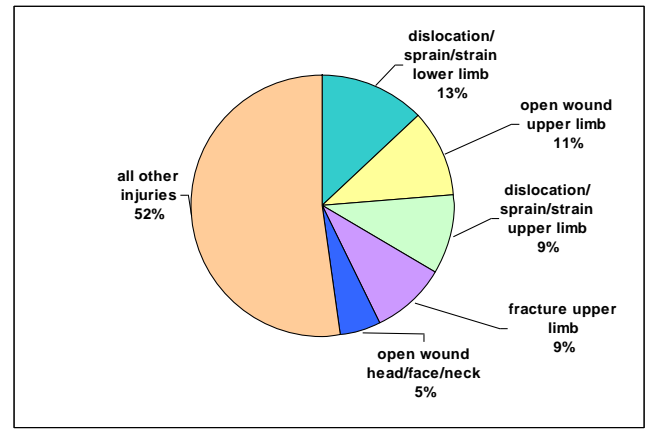


Figure 41 Major injury type, adolescent and young adult ED presentations, Victoria 2008



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 (17%) whereas the home is the leading place of occurrence for injuries resulting in ED presentation (21%).
- Other locations where injuries to adolescents and young adults commonly occurred were:
 - sports and athletics areas (14% of admissions and 17% of ED presentations)
 - place for recreation (11% of ED presentations) and
 - trades and service areas (3% of admissions and 8% of ED presentations).

Figure 42 Adolescent and young adult hospital admissions by place of occurrence, Victoria 2008

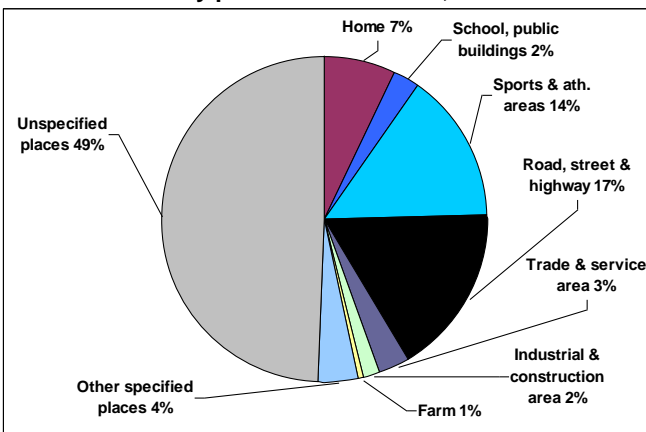
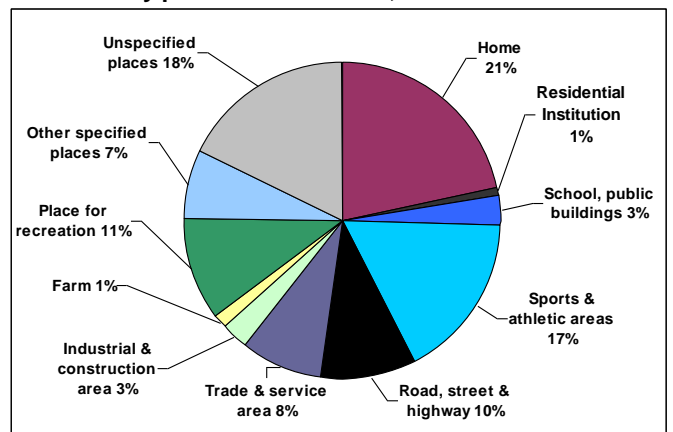


Figure 43 Adolescent and young adult ED presentations by place of occurrence, Victoria 2008



Activity when injured

- The activity engaged in at the time of injury was unspecified for more than half of adolescent and young adult injury admissions (53%) and recorded as 'other specified' for a further 10% of injuries.
- Sports (25%) and working for income (7%) 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 33% of adolescent and young adult ED presentations, followed by sports (20%) and working for income (12%).

Figure 44 Adolescent and young adult hospital admissions by activity when injured, Victoria 2008

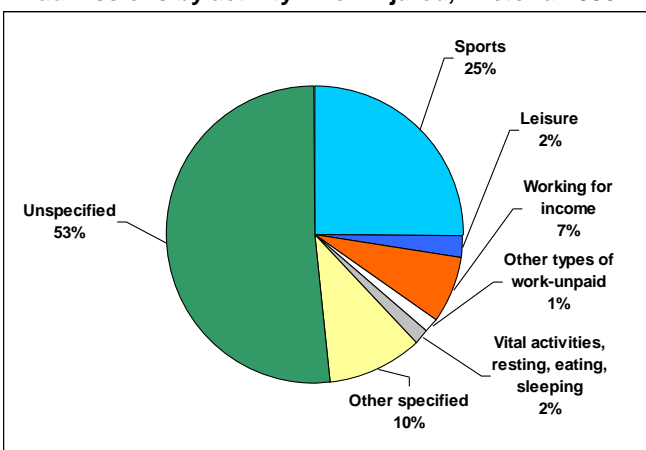


Figure 45 Adolescent and young adult ED presentations by activity when injured, Victoria 2008

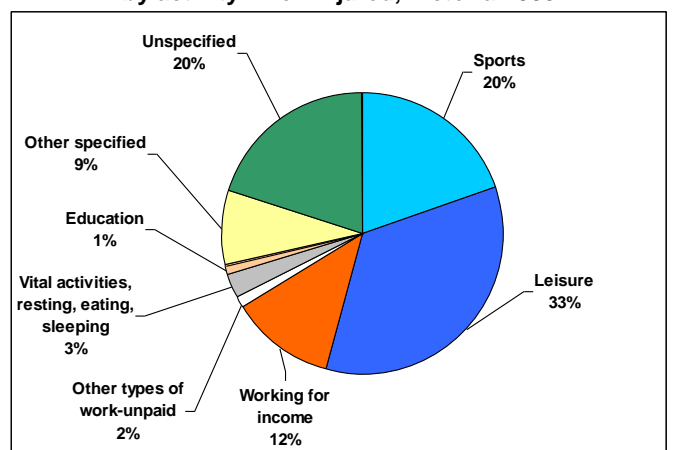


Table 10 Ranking of causes for hospital admissions and ED presentations, persons aged 15 to 24 years, 2008

AGE GROUP	RANK	ADMISSIONS			PRESENTATIONS		
		CAUSE	FREQ	%	CAUSE	FREQ	%
15-19 years	1	transport	1,695	25.4	hit/struck/crush	6,714	27.4
	2	fall	1,209	18.1	fall	6,221	25.4
	3	unspecified factor	1,143	17.1	cutting/piercing	2,709	11.1
	4	hit/struck/crush	1,103	16.5	other specified unintentional	2,445	10.0
	5	cutting/piercing	498	7.5	transport	2,430	9.9
	6	overexertion & strenuous movements	256	3.8	unspecified factor	2,178	8.9
	7	poisoning	196	2.9	natural/environmental/animals	527	2.2
	8	other specified unintentional	167	2.5	fires/burns/scalds	479	2.0
	9	natural/environmental/animals	135	2.0	foreign body- natural orifice	368	1.5
	10	machinery	94	1.4	poisoning	206	<1
	11	fires/burns/scalds	83	1.2	machinery	168	<1
	12	foreign body - natural orifice	69	1.0	choking/suffocation	15	<1
	13	explosions/firearms	19	<1	drowning/near drowning	6	<1
	14	choking/suffocate	12	<1	explosions/firearms	4	<1
	15	drowning/near drowning	2	<1	overexertion & strenuous movements	N/A	N/A
		ALL	6,681	100.0	ALL	24,470	100.0
20-24 years	1	transport	1,767	26.3	hit/struck/crush	5,432	23.5
	2	fall	1,162	17.3	fall	5,084	22.0
	3	unspecified factor	1,095	16.3	cutting/piercing	3,368	14.6
	4	hit/struck/crush	897	13.4	transport	2,303	10.0
	5	cutting/piercing	623	9.3	other specified unintentional	2,284	9.9
	6	poisoning	265	3.9	unspecified factor	2,241	9.7
	7	overexertion & strenuous movements	240	3.6	natural/environmental/animals	635	2.7
	8	other specified unintentional	211	3.1	fires/burns/scalds	619	2.7
	9	machinery	146	2.2	foreign body- natural orifice	546	2.4
	10	natural/environmental/animals	117	1.7	machinery	283	1.2
	11	fires/burns/scalds	92	1.4	poisoning	282	1.2
	12	foreign body - natural orifice	64	1.0	choking/suffocation	26	<1
	13	choking/suffocate	15	<1	drowning/near drowning	5	<1
	14	explosions/firearms	14	<1	explosions/firearms	2	<1
	15	drowning/near drowning	7	<1	overexertion & strenuous movements	N/A	N/A
		ALL	6,715	100.0	ALL	23,110	100.0

Adults (25-64 years)

Trend

FREQUENCY

Frequency and rate data for 2008 reported here differ slightly from those reported elsewhere in this report because a stricter inclusion criterion 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 13-year period from 22,242 in 1996 to 35,631 in 2008, representing an estimated annual change of 4.1% (95% confidence interval 3.6% to 4.5%) and an overall increase of 69% (58% to 77%) based on the trend line.
- The frequency of ADULT unintentional injury and poisoning admissions (EXCLUDING same-day admissions) increased significantly over the 13-year period from 15,133 in 1996 to 21,012 in 2008, representing an estimated annual change of 2.7% (2.2% to 3.1%) and an overall increase of 41% (33% to 48%) based on the trend line.
- The frequency of ADULT unintentional injury and poisoning ED presentations increased significantly over the 13-year period from 39,543 in 1996 to 65,671 in 2008, representing an estimated annual change of 4.2% (3.0% to 5.3%) and an overall increase of 72% (47% to 96%) based on the trend line.

Figure 46 Trend in the frequency of hospital admissions, Victoria 1996-2008

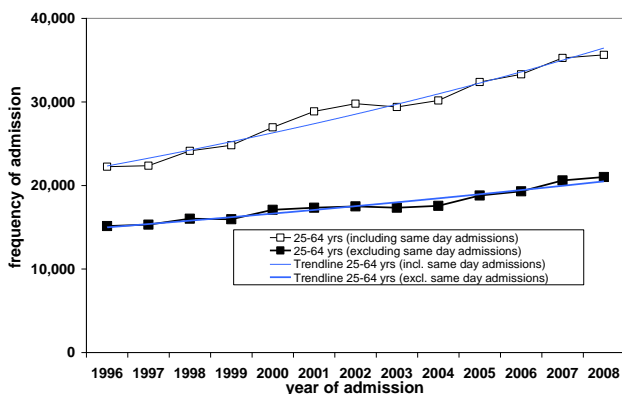
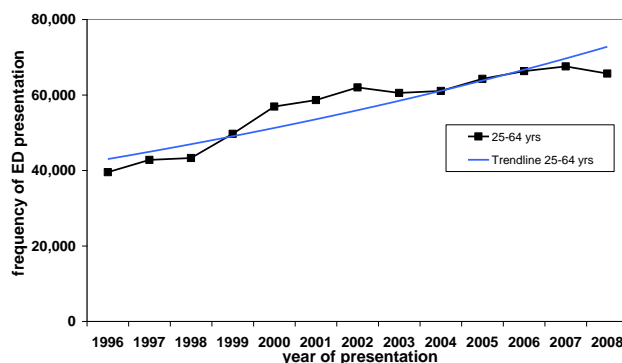


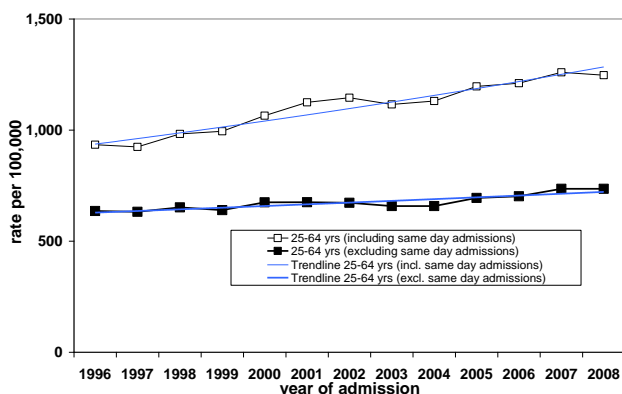
Figure 47 Trend in the frequency of injury ED presentations, Victoria 1996-2008



RATE

- The ADULT unintentional injury and poisoning admission rate (INCLUDING same-day admissions) increased significantly over the 13-year period from 934/100,000 in 1996 to 1,247/100,000 in 2008, representing an estimated annual change of 2.6% (2.1% to 3.1%) and an overall increase of 40% (32% to 48%) based on the trend line.
- The ADULT unintentional injury and poisoning admission rate (EXCLUDING same-day admissions) increased significantly over the 13-year period from 636/100,000 in 1996 to 735/100,000 in 2008, representing an estimated annual change of 1.2% (0.8% to 1.6%) and an overall increase of 16% (10% to 22%) 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 1996-2008



Rates cannot be calculated for ED presentations because numerator data are not complete for the 13-year period.

Gender

- Males are overrepresented in hospital injury data for adults aged 25 to 64 years, accounting for 64% of hospital admissions (n=23,807) and 63% of ED presentations (n=59,566) in Victoria in 2008.

Figure 49 Adult hospital injury admissions by gender, Victoria 2008

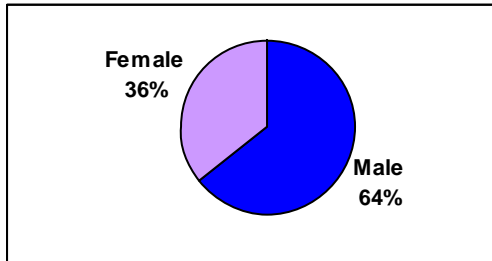
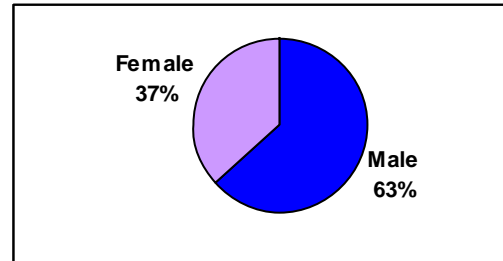


Figure 50 Adult ED injury presentations by gender, Victoria 2008



- Hospital admission and ED presentation rates are higher for males compared with females (1,682 & 4,207/100,000 vs. 931 & 2,435/100,000). (Table 11)

Table 11 Frequency and rate of adult hospital admission and ED presentation, Victoria 2008

	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
Male	23,807	1,681.6	59,567	4,207.6
Female	13,419	931.2	35,098	2,435.6
All	37,226	1,303.1	94,665	3,313.7

Age

- Persons aged 25 to 44 years account for most adult hospital admissions and ED presentations (56% and 64%).

Figure 51 Adult hospital admissions by age group, Victoria 2008

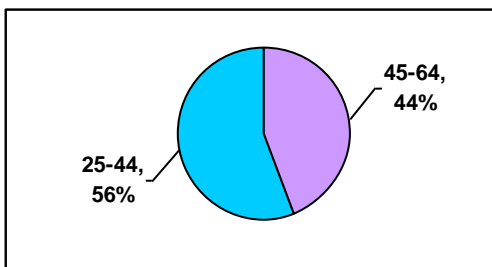
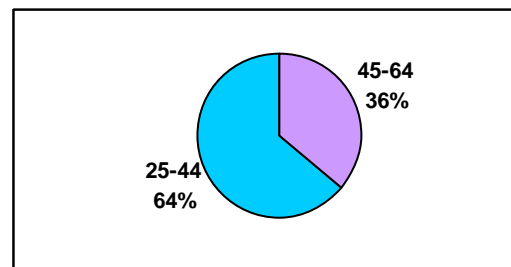


Figure 52 Adult ED presentations by age group, Victoria 2008



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

Table 12 Frequency and rate of hospital admission and ED presentation in adults, Victoria 2008

	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
25-29 years	5,391	1,397.4	18,348	4,755.9
30-34 years	4,824	1,286.7	14,949	3,987.5
35-39 years	5,142	1,269.3	14,839	3,663.1
40-44 years	4,574	1,206.2	12,234	3,226.2
45-49 years	4,578	1,202.7	11,024	2,896.2
50-54 years	4,334	1,257.7	9,109	2,643.3
55-59 years	4,193	1,343.7	7,960	2,550.8
60-64 years	4,190	1,526.7	6,206	2,259.8
All	37,226	1,303.1	94,665	3,313.7

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 (figures 53 and 54).
- The leading cause of adult hospital admissions and ED presentations is falls accounting for 28% (n=10,467) of hospital admissions and 24% (n=22,707) of ED presentations.
- Transport accounts for 19% of admissions (n=7,145) but only 8% of presentations (n=7,611).
- Hit/struck/crush injuries account for just 9% of admissions (n=3,222) but 20% of ED presentations (n=18,707).
- Cutting and piercing injuries account for 8% of admissions (n=2,936) and 14% of ED presentations (n=13,405).
- The fifth ranking cause of hospital admissions is overexertion and strenuous movements (4%, n=1,635) whereas for ED presentations it is injuries caused by a foreign body in a natural orifice e.g. ear, nose, eye (4%, n=3,631).

Figure 53 Adult hospital admissions by cause, Victoria 2008

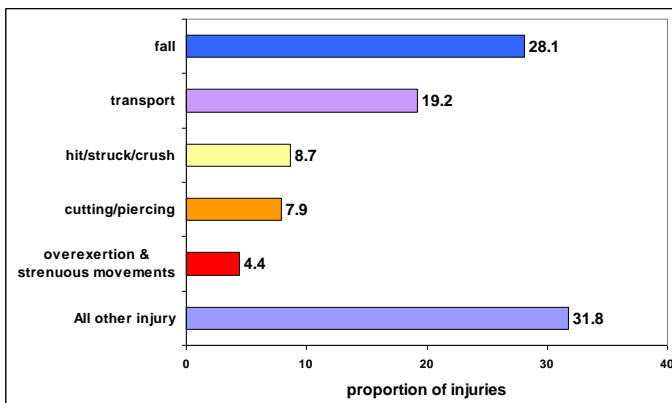
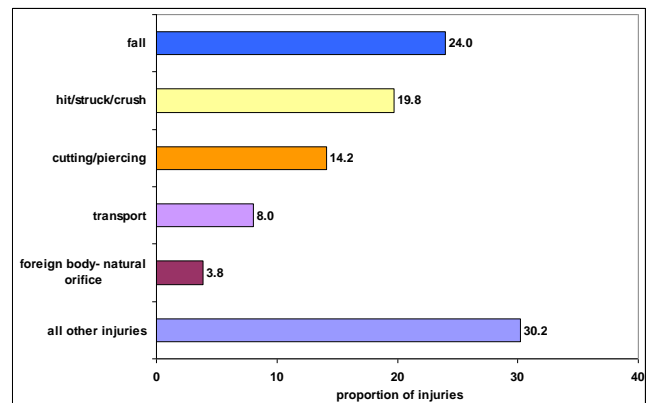


Figure 54 Adult ED presentations by cause, Victoria 2008



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 15% of adult hospital injury admissions and 7% of ED presentations.
- Fracture to the lower limb is the second most common type of adult injury requiring hospital admission (10%).
- 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 2008

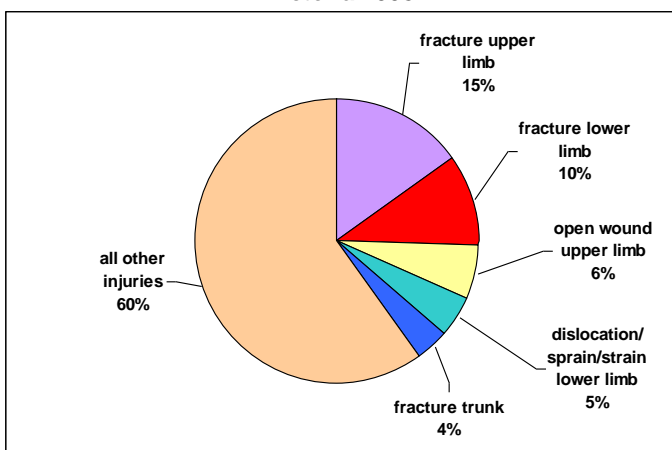
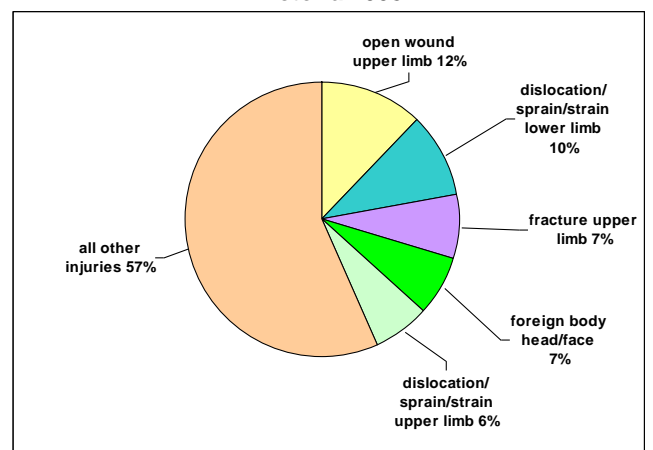


Figure 56 Major injury type, adult ED presentations, Victoria 2008



Place of injury occurrence

- Sixteen percent of adult injuries requiring hospital admission and 35% 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 (5% of admissions and 6% of ED presentations).

Figure 57 Adult hospital admissions by place of occurrence, Victoria 2008

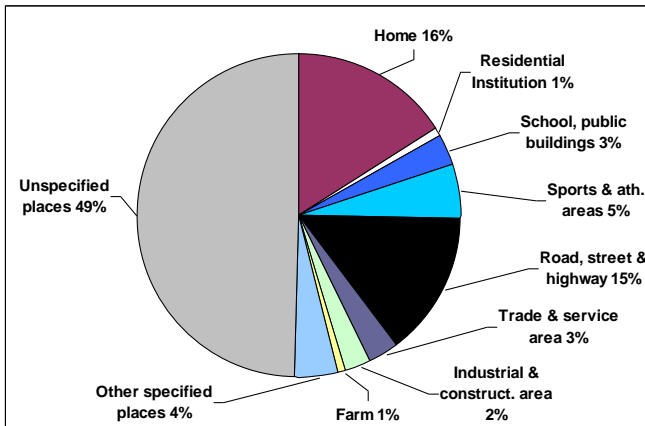
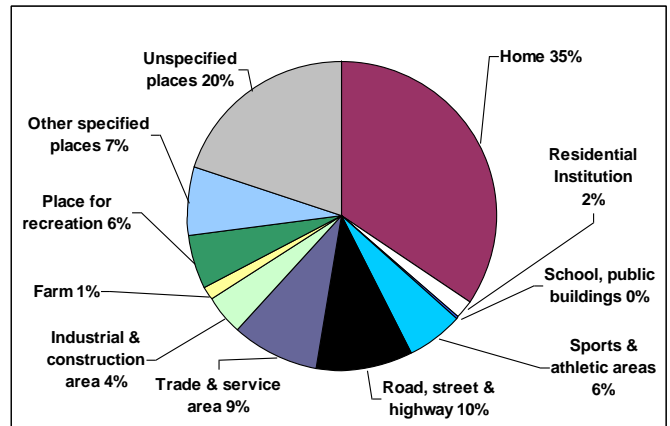


Figure 58 Adult ED presentations by place of occurrence, Victoria 2008



Activity when injured

- The activity engaged in at the time of injury was unspecified for almost 60% of adult injury admissions (58%) and recorded as 'other specified' for a further 11% of injuries.
- Working for income (11%) and sports (11%) were the only activities recorded for a significant number of adult admissions.
- Leisure was recorded as the activity engaged in at the time of injury for one-third of adult ED presentations, followed by working for income (17%) and sports (7%).

Figure 59 Adult hospital admissions by activity when injured, Victoria 2008

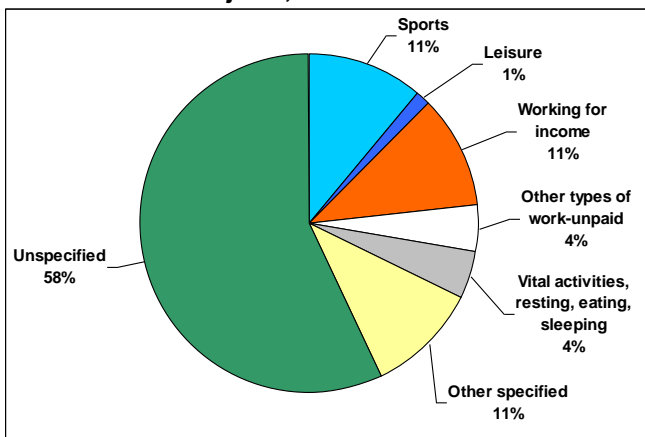


Figure 60 Adult ED presentations by activity when injured, Victoria 2008

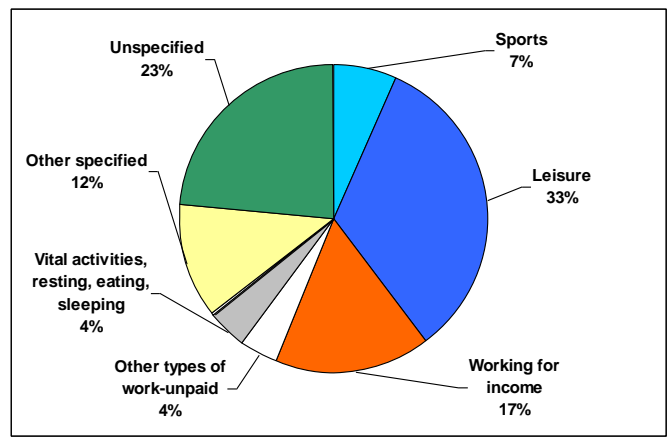


Table 13 Ranking of causes for hospital admissions and ED presentations, persons aged 25 to 64 years, 2008

AGE GROUP	RANK	ADMISSIONS			PRESENTATIONS		
		CAUSE	FREQ	%	CAUSE	FREQ	%
25-44 years	1	transport	4,482	22.5	hit/struck/crush	13,144	21.8
	2	fall	4,037	20.3	fall	12,910	21.4
	3	unspecified factor	3,132	15.7	cutting/piercing	8,755	14.5
	4	hit/struck/crush	2,186	11.0	other specified unintentional	6,804	11.3
	5	cutting/piercing	1,810	9.1	unspecified factor	6,019	10.0
	6	overexertion & strenuous movements	990	5.0	transport	5,305	8.8
	7	poisoning	676	3.4	foreign body- natural orifice	2,141	3.5
	8	natural/environmental/animals	618	3.1	natural/environmental/animals	2,006	3.3
	9	machinery	614	3.1	fires/burns/scalds	1,503	2.5
	10	other specified unintentional	610	3.1	machinery	1,100	1.8
	11	foreign body - natural orifice	318	1.6	poisoning	575	1.0
	12	fires/burns/scalds	314	1.6	choking/suffocation	88	>1
	13	choking/suffocate	88	>1	drowning/near drowning	13	>1
	14	explosions/firearms	50	>1	explosions/firearms	7	>1
	15	drowning/near drowning	6	>1	overexertion & strenuous movements	N/A	N/A
		ALL	19,931	100.0	ALL	60,370	100.0
45-64 years	1	fall	6,430	37.2	fall	9,797	28.6
	2	transport	2,663	15.4	hit/struck/crush	5,563	16.2
	3	unspecified factor	2,431	14.1	cutting/piercing	4,650	13.6
	4	cutting/piercing	1,126	6.5	other specified unintentional	3,950	11.5
	5	hit/struck/crush	1,036	6.0	unspecified factor	3,538	10.3
	6	natural/environmental/animals	692	4.0	transport	2,306	6.7
	7	overexertion & strenuous movements	645	3.7	foreign body- natural orifice	1,490	4.3
	8	machinery	529	3.1	natural/environmental/animals	1,236	3.6
	9	poisoning	464	2.7	fires/burns/scalds	752	2.2
	10	foreign body - natural orifice	393	2.3	machinery	677	2.0
	11	other specified unintentional	371	2.1	poisoning	257	>1
	12	fires/burns/scalds	246	1.4	choking/suffocation	58	>1
	13	choking/suffocate	232	1.3	drowning/near drowning	13	>1
	14	explosions/firearms	34	>1	explosions/firearms	8	>1
	15	drowning/near drowning	3	>1	overexertion & strenuous movements	N/A	N/A
		ALL	17,295	100.0	ALL	34,295	100.0

Older adults (65 years and older)

Trend

FREQUENCY

Frequency and rate data for 2008 reported here differ slightly from those reported elsewhere in this report because a stricter inclusion criterion 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 13-year period from 15,588 in 1996 to 28,475 in 2008, representing an estimated annual change of 5.3% (95% confidence interval 4.7% to 5.6%) and an overall increase of 103% (83% to 117%) based on the trend line.
- The frequency of OLDER ADULT unintentional injury and poisoning admissions (EXCLUDING same-day admissions) increased significantly over the 13-year period from 13,511 in 1996 to 21,871 in 2008, representing an estimated annual change of 4.2% (3.8% to 4.5%) and an overall increase of 71% (63% to 77%) based on the trend line.
- The frequency of OLDER ADULT unintentional injury and poisoning ED presentations increased significantly over the 13-year period from 6,326 in 1996 to 13,063 in 2008, representing an estimated annual change of 6.0% (4.1% to 7.5%) and an overall increase of 112% (69% to 155%) based on the trend line.

Figure 61 Trend in the frequency of hospital admissions, Victoria 1996-2008

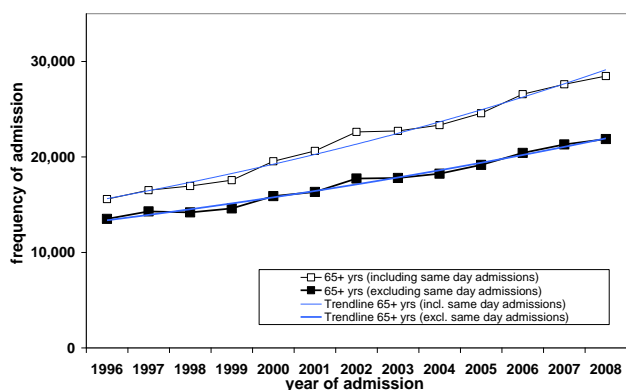
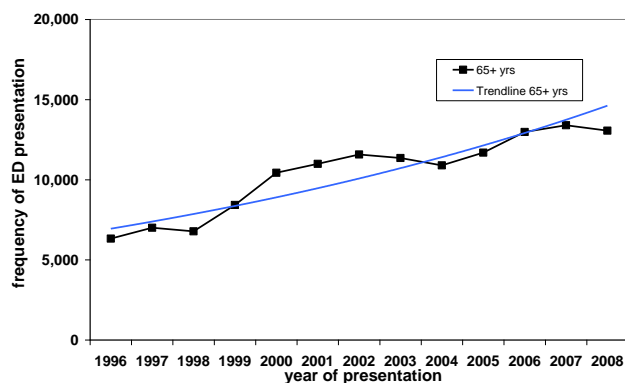


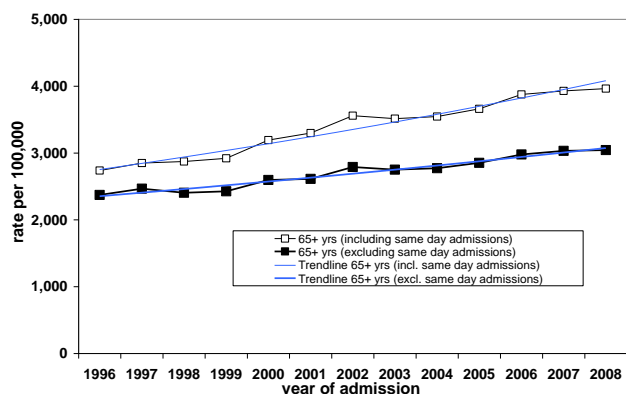
Figure 62 Trend in the frequency of injury ED presentations, Victoria 1996-2008



RATE

- The OLDER ADULT unintentional injury and poisoning admission rate (INCLUDING same-day admissions) increased significantly over the 13-year period from 2,737/100,000 in 1996 to 3,963/100,000 in 2008, representing an estimated annual change of 3.3% (2.8% to 3.7%) and an overall increase of 53% (43% to 60%) based on the trend line.
- The OLDER ADULT unintentional injury and poisoning admission rate (EXCLUDING same-day admissions) increased significantly over the 13-year period from 2,373/100,000 in 1996 to 3,043/100,000 in 2008, representing an estimated annual change of 2.3% (1.9% to 2.6%) and an overall increase of 34% (28% to 39%) 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 1996-2008



Rates cannot be calculated for ED presentations because numerator data are not complete for the 13-year period.

Gender

- Females are overrepresented in hospital injury data for persons aged 65 years and older. They accounted for 64% of hospital admissions (n=20,407) and 58% of ED presentations (n=10,992) in Victoria in 2008.

Figure 64 Older adult hospital injury admissions by gender, Victoria 2008

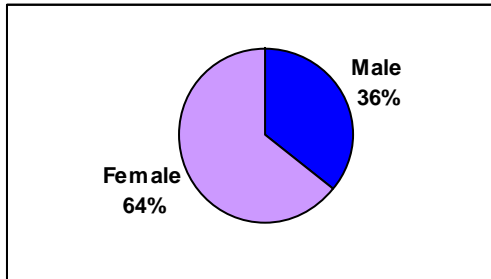
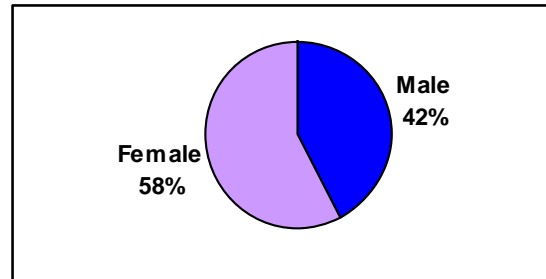


Figure 65 Older adult ED injury presentations by gender, Victoria 2008



- The rate of hospital admission and ED presentation is also higher for females than males (5,162 & 2,780/100,000 vs. 3,542 & 2,498/100,000). (Table 14)

Table 14 Frequency and rate of older adult hospital admission and ED presentation, Victoria 2008

	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
Male	11,448	3,542.7	8,073	2,498.3
Female	20,407	5,161.6	10,992	2,780.2
All	31,855	4,433.5	19,065	2,653.4

Age

- Persons aged 85 years and older account for 36% of injury hospital admissions among older adults and persons aged 80-84 years account for a further 22%.
- Older adult ED presentations are fairly evenly distributed across the five age groups.

Figure 66 Older adult hospital admissions by age group, Victoria 2008

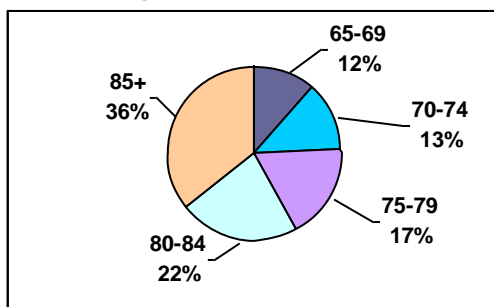
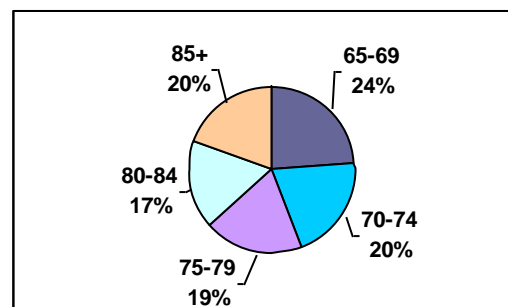


Figure 67 Older adult ED presentations by age group, Victoria 2008



- In persons aged 65 years and older both admission and ED presentation rates generally 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 2008

	Hospital admissions		ED presentations	
	Frequency	Rate	Frequency	Rate
65-69 years	3,736	1,815.0	4,583	2,226.4
70-74 years	4,111	2,443.1	3,802	2,259.5
75-79 years	5,517	3,888.5	3,652	2,574.0
80-84 years	7,081	6,423.3	3,297	2,990.8
85+ years	11,410	12,364.9	3,731	4,043.3
All	31,855	4,433.5	19,065	2,653.4

Leading causes of injury

- The leading cause of hospital admissions and ED presentations for older adults is falls. Falls account for almost three-quarters of hospital admissions (73%, n=23,394) and more than half of ED presentations (54%, n=10,178) in this age group.
- Transport is the second most common cause of hospital admission (4%, n=1,380) and the cause of 4% of presentations (n=684).
- The third leading cause of admissions is choking and suffocation (3%, n=840) whereas for ED presentations it is cutting and piercing (8%, n=1,582).
- Hit/struck/crush injuries account for 3% of admissions (n=807) and 9% of ED presentations (n=1,448).
- The fifth ranking cause of hospital admissions is overexertion and strenuous movements (2%, n=573) whereas for ED presentations it is foreign body in a natural orifice (2%, n=439).

Figure 68 Older adult hospital admissions by cause, Victoria 2008

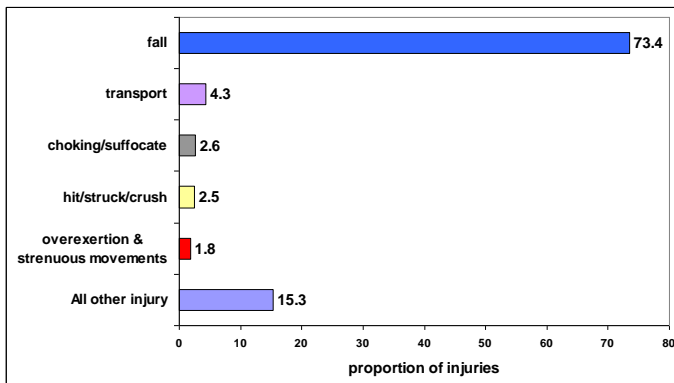
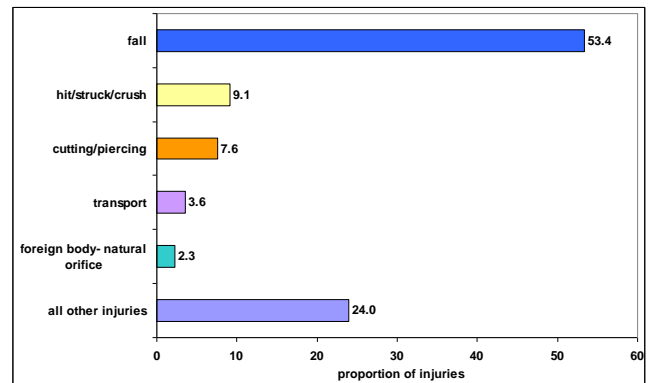


Figure 69 Older adult ED presentations by cause, Victoria 2008



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 19% of hospital injury admissions.
- Fracture to the upper limb accounts for 12% of hospital admissions and 10% of ED presentations.
- Open wounds to the head/face/neck account for 8% of hospital admissions and 10% of ED presentations.

Figure 70 Major injury type, older adult hospital admissions, Victoria 2008

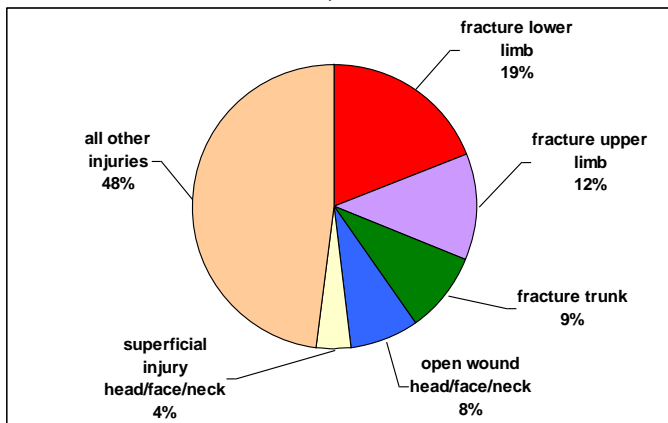
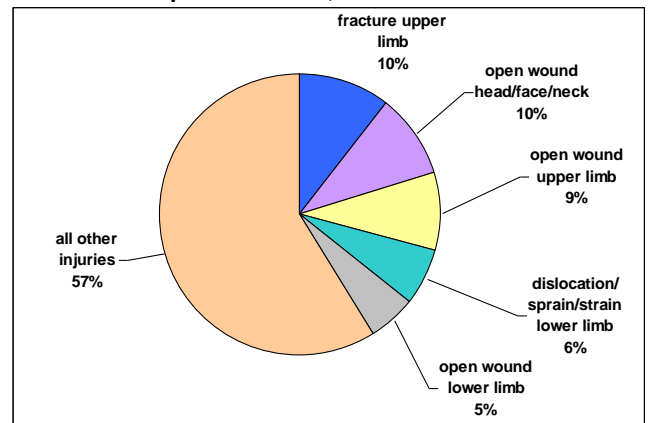


Figure 71 Major injury type, older adult ED presentations, Victoria 2008



Place of injury occurrence

- Thirty-seven percent of older adult injuries requiring hospital admission and half of injuries resulting in ED presentations (50%) occurred in the home.
- Other locations where injuries to older adults commonly occurred were:
 - residential institutions (19% of admissions and 8% of ED presentations)
 - roads, streets and highways (7% of admissions and 9% of ED presentations) and
 - schools and other public buildings (8% of admissions).

Figure 72 Older adult hospital admissions by place of occurrence, Victoria 2008

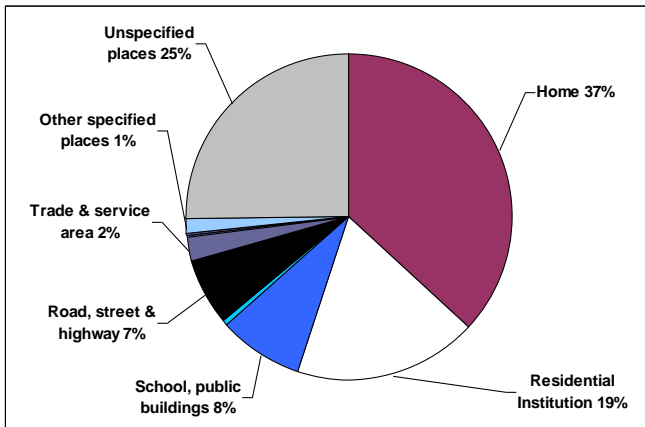
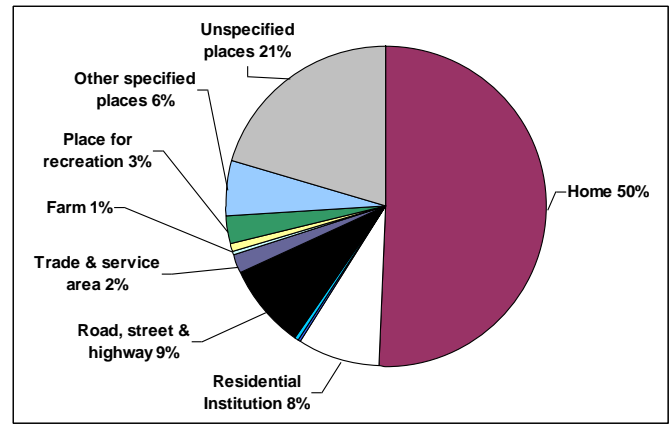


Figure 73 Older adult ED presentations by place of occurrence, Victoria 2008



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 42% 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 2008

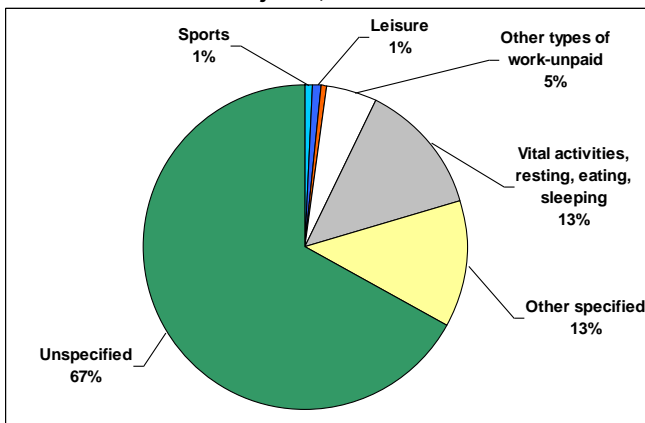


Figure 75 Older adult ED presentations by activity when injured, Victoria 2008

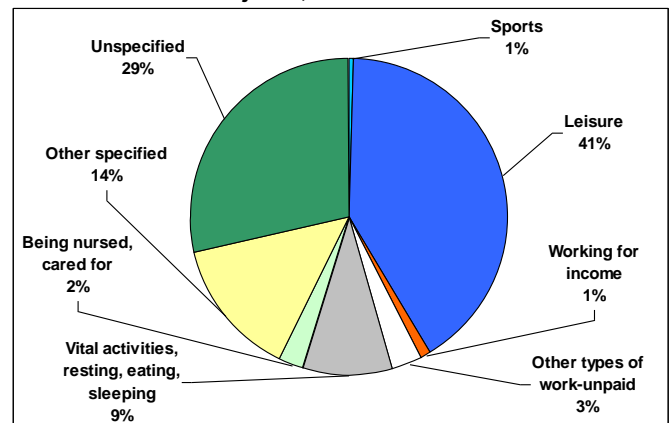


Table 16 Ranking of causes for hospital admissions and ED presentations, persons aged 65 years and older, 2008

AGE GROUP	RANK	ADMISSIONS			PRESENTATIONS		
		CAUSE	FREQ	%	CAUSE	FREQ	%
65-74 years	1	fall	4,574	58.3	fall	3,568	42.6
	2	unspecified factor	820	10.4	hit/struck/crush	948	11.3
	3	transport	627	8.0	other specified unintentional	916	10.9
	4	hit/struck/crush	263	3.4	unspecified factor	887	10.6
	5	cutting/piercing	249	3.2	cutting/piercing	849	10.1
	6	overexertion & strenuous movements	220	2.8	transport	371	4.4
	7	choking/suffocate	205	2.6	foreign body- natural orifice	290	3.5
	8	natural/environmental/animals	200	2.5	natural/environmental/animals	267	3.2
	9	foreign body - natural orifice	180	2.3	fires/burns/scalds	125	1.5
	10	poisoning	175	2.2	machinery	82	1.0
	11	other specified unintentional	144	1.8	poisoning	60	<1
	12	machinery	126	1.6	choking/suffocation	16	<1
	13	fires/burns/scalds	53	<1	drowning/near drowning	3	<1
	14	explosions/firearms	9	<1	explosions/firearms	3	<1
	15	drowning/near drowning	2	<1	overexertion & strenuous movements	N/A	N/A
		ALL	7,847	100.0	ALL	8,385	100.0
75-84 years	1	fall	9,385	74.5	fall	3,981	57.3
	2	unspecified factor	927	7.4	unspecified factor	694	10.0
	3	transport	528	4.2	other specified unintentional	616	8.9
	4	choking/suffocate	368	2.9	hit/struck/crush	546	7.9
	5	hit/struck/crush	307	2.4	cutting/piercing	461	6.6
	6	overexertion & strenuous movements	231	1.8	transport	242	3.5
	7	poisoning	212	1.7	natural/environmental/animals	133	1.9
	8	natural/environmental/animals	174	1.4	foreign body- natural orifice	121	1.7
	9	foreign body - natural orifice	129	1.0	fires/burns/scalds	49	<1
	10	other specified unintentional	112	<1	poisoning	48	<1
	11	cutting/piercing	104	<1	machinery	38	<1
	12	machinery	59	<1	choking/suffocation	20	<1
	13	fires/burns/scalds	57	<1	drowning/near drowning	0	<1
	14	drowning/near drowning	4	<1	explosions/firearms	0	<1
	15	explosions/firearms	1	<1	overexertion & strenuous movements	N/A	N/A
		ALL	12,598	100.0	ALL	6,949	100.0
85+ years	1	fall	9,435	82.7	fall	2,629	70.5
	2	unspecified factor	655	5.7	unspecified factor	296	7.9
	3	choking/suffocate	267	2.3	hit/struck/crush	248	6.6
	4	hit/struck/crush	237	2.1	other specified unintentional	233	6.2
	5	transport	225	2.0	cutting/piercing	138	3.7
	6	poisoning	130	1.1	transport	71	1.9
	7	overexertion & strenuous movements	122	1.1	natural/environmental/animals	34	<1
	8	natural/environmental/animals	96	<1	foreign body- natural orifice	28	<1
	9	other specified unintentional	75	<1	poisoning	22	<1
	10	foreign body - natural orifice	65	<1	fires/burns/scalds	17	<1
	11	fires/burns/scalds	45	<1	choking/suffocation	10	<1
	12	cutting/piercing	39	<1	machinery	5	<1
	13	machinery	18	<1	drowning/near drowning	0	<1
	14	drowning/near drowning	1	<1	explosions/firearms	0	<1
	15	explosions/firearms	0	<1	overexertion & strenuous movements	N/A	N/A
		ALL	11,410	100.0	ALL	3,731	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 Health (DH) 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 2008 to 31 December 2008, coded according to the 5th & 6th editions of ICD-10-AM (NCCH, July 2006 and July 2008)
- 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 2008.

Note: As of January 1st 2010 (2008 injury data) VISU no longer recodes X59 cases to falls as in previous E-Bulletins of hospital treated injury.

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 Health (DH) and supplied quarterly in unit record format to VISU (prior to 2004 VISU collected injury surveillance data directly from hospital EDs). Data for this edition of the E-bulletin were coded to the Victorian Emergency Minimum Dataset (VEMD) User Manual 12th and 13th editions, July 2007 & July 2008 published by the Department of Health.

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 2008 to 31 December 2008 coded according to the Victorian Emergency Minimum Dataset (VEMD) User Manuals 12th (July 2007) & 13th (July 2008) editions.
- 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 13-year period were included in the trend analysis of ED presentations frequency data (24 of the current 38 hospitals contributing to the surveillance system).