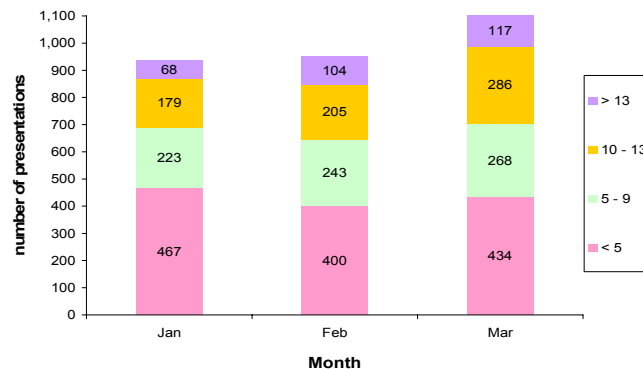


## School Based Injuries

### Childhood Injury Presentations: January to March 2007

- There were 11,028 presentations to Princess Margaret Hospital Emergency Department (PMH ED) from January to March 2007.
- Injury presentations accounted for 27% (n=2,994) of the total number of PMH ED presentations.
- The leading cause of injury presentations to PMH ED from January to March was Falls (38.1%).
- The pre-school age group, (under 5 years of age), remained the predominant group representing 43.5% (n=1,301) of total injury presentations to PMH for January to March 2007 (See Graph below).

### Age Distribution of Injury Presentations, January to March 2007



- Children of Aboriginal or Torres Strait Island descent represented 4.4% of children attending the emergency department during the first quarter of 2007.
- Children with a Perth metropolitan residential postcode represented the majority (94%) of the injured children seen by the emergency department, while rural postcodes accounted for 5%.
- During this quarter, more than 50% of rural children were admitted after presentation to PMH compared to 17% for those from the metropolitan area.

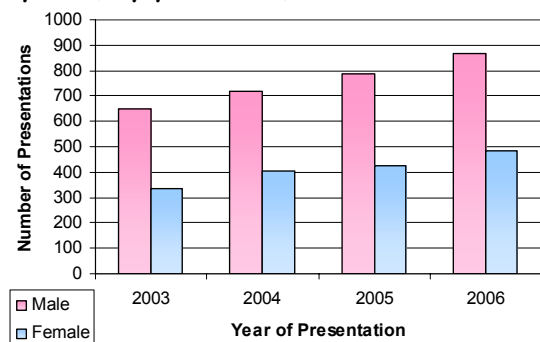
### Introduction - School Based Injuries



Children playing tunnel ball at school to learn how the spine works, Bentley Primary School 2005 SISW Launch

- Between 2003 to 2006 there were a total of 4,671 presentations to Princess Margaret Hospital Emergency Department (PMH ED) for injuries that occurred at school (See Graph below).
- This equates to an average of 1,167 school injury presentations per year.
- The majority of school injury presentations were Falls (n=2,344).
- Injuries occurring at school or day care represented 11% of the PMH ED Injury presentations during 2003 to 2006.
- The proportion of school injury presentations increases steadily with age, peaking at age 13 for boys and 11 for girls.
- Nearly 60% of presentations were primary school aged children.

### Number of Injury Presentations occurring at school & day care, by year & sex, 2003 to 2006



## Results

Schools and Day Care Centres are the second most common location for injuries to occur after the home, representing 1 in 10 of the total injury presentations at PMH in 2003-06, and where children spend a significant part of their lives.

Between 2003 to 2006 there were a total of 4,671 presentations to Princess Margaret Hospital Emergency Department (PMH ED) for injuries that occurred in school/day care settings.



The proportion of school injury presentations increases steadily with age, peaking at age 13 for boys and 11 for girls.

Males (n=3,016) were more likely to be injured in school/day care settings than Females (n=1,655), consistent with other injuries. Overall boys presented at nearly twice the rate of girls, with a peak for 13 year olds at 3:1.

The majority of injuries occurred between noon and 1pm, corresponding to the lunch/play time period.

It was noted that very few injury presentations from school settings (2%) were considered life threatening.

Limb injuries (fractures or sprains) were the most common within each age grouping, with older children more likely to be playing a sport.

Of the school related injury presentations to Princess Margaret Hospital, 80.9% (n=3,778) were treated and sent home, 16.9% (n=789) were admitted, 0.9% (n=43) Did not wait, and 1.3% (n=61) were referred on.

The following summary of data is broken down by gender, age, aboriginality, location, and cause of injury. To enable a more detailed description on school injury presentations and stage of development the data will be summarised as:

- Preschool Children (0 to 4 years)
- Primary School Children (5 to 12 years)
- High School Children (13 to 16 years)

## Pre-school Aged Children

In 2003-06, 368 pre-school children (0 to 4 years of age) presented at PMH ED as a result of being injured at a school or day care location.

There has been a sharp increase in injuries to the pre-school age group from 2003 (n=30) to 2006 (n=129). This may be due to four year olds attending kindergarten at schools or an increased number of children attending child care during the early years.

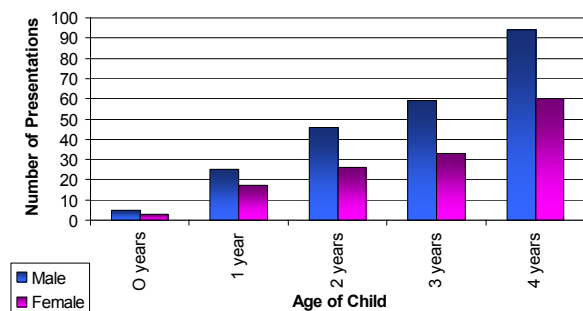
The majority of injuries to children in this age group presented as a result of Falls (n=229), Blunt Force (n=63), and Other Cause (n=43). Other injuries to this group of children included Burns/Scalds (n=6), Bicycle related (n=5), Insect Stings (n=5), Poisonings (n=2) and Cutting/Piercing (n=15).

More than 80.4% of children in this age group who presented as a result of injuries that occurred in a school setting were able to be treated and sent home, 16.3% were admitted, 2.7% were referred on to another PMH department or other area.

Males (62%) had the highest number of burn injuries compared to Females (38%). Only 1.9% (n=7) of pre-school children presenting at PMH ED were Aboriginal.

Children aged 4 represented the highest number of pre-school children injured in a school setting (See Figure 1).

Figure 1: Number of Injuries to Preschool children in school settings, by Age and Sex 2003-06.



Only 5 children from rural WA presented at PMH ED as a result school injuries, the remaining 363 pre-school children were from Metropolitan locations.

The top five types of injuries sustained by pre-school children in the school setting were Fractures (n=99), Open Wounds (n=84), Superficial (n=48), Intercranial (n=42) and Sprains/Strains (n=37).

Primary School Aged Children

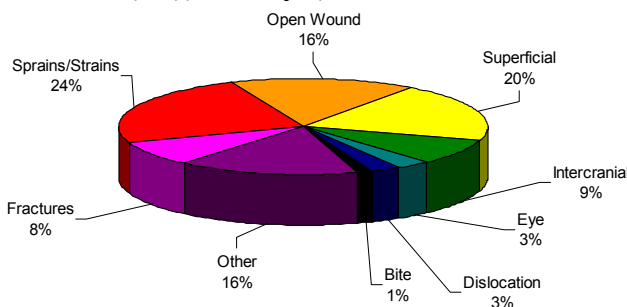
Primary School aged children accounted for the greatest proportion of school injury presentations to PMH ED between 2003 to 2006 (n=2,963). 2.2% of these injury presentations were Aboriginal children (n=66).

Once again, injuries to Primary School children at school have steadily increased from 2003 (n=660) to 2006 (n=844). The most common cause of injuries to this age group were Falls (n=1624), followed by Blunt Force (n=913) and Other Cause (n=277).

Of the Primary School children aged 5-12 years who presented at PMH ED as a result of injuries occurring at school, 38.6% were females, while 61.4% were males.

The majority (80.5%) of primary school aged children were able to be treated and sent home as a result of injuries that occurred at school. The remaining 17.7% were admitted, and a further 1.8% either Did not wait or were referred on to other locations.

**Figure 2: Number of Injuries to Primary School Children by Type of Injury**



Fractures, Sprains and Strains and Superficial Injuries were the most common type of injuries treated at PMH ED between 2003 to 2006 for Primary School Children (See figure 2).

Once again only 3.5% of School related injury presentations for Primary School Children to Princess Margaret Hospital were for children from rural locations, the remaining 96.4% were from Metropolitan locations.

Children aged 12 (n=519) represented the highest number of school related injury presentation at Princess Margaret Hospital in 2003-2006. Overall 290 children aged 5, 306 children aged 6, 296 children aged 7, 330 children aged 8, 376 children aged 9, 401 children aged 10, and 445 children aged 11 presented for injuries occurring at school.

High School Aged Children

School injuries to High School aged children accounted for a total of 1340 presentation to PMH ED between 2003 to 2006. 2.9% of these injury presentations were Aboriginal children (n=40).

A lower proportion of injuries to high school children aged 13 to 16 years required admission to hospital (15.4%) while 82.6% were treated and sent home.

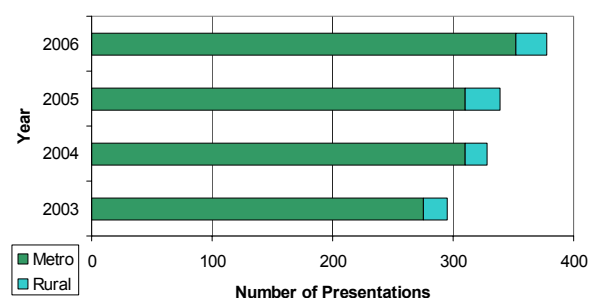
Children aged 13 years accounted for the highest proportion of school injury presentation for High School Children (n=529), followed by 14 year olds with 516, and 15 year olds at 278. Sixteen year old children only accounted for a total of 17 injury presentations, perhaps reflecting a transition to adult hospitals.

Males accounted for more than double the number of female school injury presentations for high school children aged 13 to 16 years (M=72% n=968; F=28% n=372), with a peak for 13 year olds at 3:1.

High School Children are the first age group where fall injuries were not the most common cause of school based injury presentation to PMH ED, with Blunt Force injuries (n=546) surpassing Fall injury(n=491) presentations.

Of the injury presentations for high school children, 89% were unintentional, with a further 4% of undetermined intent. Alleged Assault accounted for 4%, and Intentional Self Harm 3% of school injuries, and represents the highest percentage for all age groups. The majority of Intentional Self Harm injuries were linked to Poisoning (44%) and Cutting/Piercing Injuries (34%).

**Figure 3: Number of School Injury Presentations for High School Children by year & Residential Location, 2003-06.**



Fractures (n=488) and Sprains/Strains (n=253) remained the most common cause of Injury Presentation to PMH ED for High School aged children.

## Discussion

Presentations to PMH ED for injuries occurring in the school setting have steadily increased from 2003 to 2006. The greatest increase has been to children in the under 5 age group where there is a fourfold increase from 2003 (n=30) to 2006 (n=129).

This could be an effect of four year olds in kindergarten being included in the school population or an effect of an increasing number of children in child care. Alternatively it could also be due to recent changes in coding for school based injuries to now include child care settings, rather than as a separate code.

The overall increase in presentations to PMH ED between 2003 to 2006 for school based injuries for all age groups was initially mystifying; however it could be due to several reasons:

- Overall Population Growth
- More schools/parents preferring to take their child to PMH for treatment than to GP's where appointments are either difficult to get or emergency services are not available
- Increased presentations from rural WA could be due to the unavailability of services in many regional areas and changes to what can/can't be treated in many regional hospitals.

In attempting to account for the effect of population growth as a factor in the increased injury ED presentations in the time period, an Age Specific Rate was calculated based on the Australian Bureau of Statistics population figures for Western Australian by age and sex for the years 2003, 2004 and 2005.



While the calculated rates may not be completely accurate the results displayed in the table below show an increase in the annual rate of injury presentations from 2003 to 2006:

	Number	Rate per 1,000
2003	923	2.32
2004	1054	2.63
2005	1133	2.83
2006	1266	unavailable

While these figures suggest an increase of 37% in school based injury presentations from 2003 to 2006, they don't necessarily indicate that schools and child care facilities are unsafe settings, but are simply indicators of locations where children are regularly involved in sporting and play activities. Play and sporting activities can result in injury if children are not adequately supervised or equipment is not properly maintained.

Many schools and child care settings have policies and procedures to provide guidelines on reducing the injury risk to children, however the effectiveness of these policies and procedures depends on the proactive nature of the schools, the staff and the parent body.

To find out more about injury prevention programs conducted by Kidsafe WA and other agencies or to get involved in Safety in Schools Week, held annually in the second week of June, visit the Kidsafe WA website:

[www.kidsafewa.com.au](http://www.kidsafewa.com.au) or download the current Safety in Schools Week resources from the School Safety section under Programs and Services.



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The WA Childhood Injury Surveillance Bulletins are developed by Kidsafe WA in consultation with the Princess Margaret Hospital Emergency Department Injury Surveillance Officer and Department of Health (Clinical Network Development Team - Injury).

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