

WA CHILDHOOD INJURY SURVEILLANCE BULLETIN:

ANNUAL REPORT, 2014 - 2015

Government of **Western Australia**
Department of **Health**

Kidsafe
Child Accident Prevention Foundation of Australia
Western Australia

CONTENTS

INJURIES AT A GLANCE

19,854

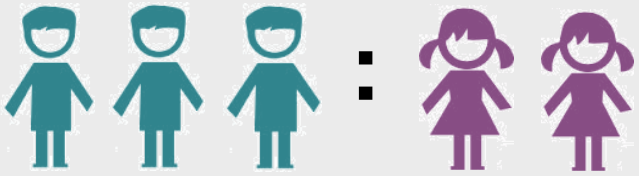
Children were seen in the Princess Margaret Hospital Emergency Department (PMH ED) due to injury during the 2014/15 financial year

54

Children per day were seen in the PMH ED for an injury

29%

Over a quarter of injury presentations to the PMH ED were due to injury



There is a gender ratio of approximately 3:2 seen across child injury presentations

38%

Children under 5 years of age are at greater risk of sustaining an injury

17%

Homes were the most common specified location for injury presentations to occur

Common Cause

Most common causes seen in the PMH ED for injury

Falls

7,300

Blunt Forces

5,088

94%

The majority of children presenting resided within the Perth metropolitan region

4,482

Children were injured during a sporting activity, which accounted for nearly a quarter of injury presentations

INTRODUCTION

Princess Margaret Hospital for Children is the only tertiary paediatric centre in Western Australia and is the reference centre for paediatric illness and injury for the state. Although the catchment zone may potentially be the entire state, the centre does not see all children requiring hospital treatment in any given year, with many children treated at other metropolitan or regional facilities. On average, approximately 70,000 children per year present to PMH ED seeking medical assistance.

The PMH Injury Surveillance System involves the systematic collection of data related to all children presenting to the Emergency Department with an injury. A modified version of the International Classification of External Causes of Injury (ICECI), version 1.1a is currently used to code injury presentations. The ICECI is a member of the World Health Organisation's (WHO) Family of International Classifications. This report provides a summary of all the injury surveillance data collected via PMH during the 2014/15 financial year.

The PMH ED uses the Emergency Department Information System (EDIS) version 9.46.1001, a computer-based database to record and collate all details of children presenting to the hospital's Emergency Department. It is a real time electronic database used to record and manage patient data. The system has been in operation since January 1998 and is subject to quality assurance checking to ensure data accuracy and integrity. The EDIS database is accessible via the hospital's network, at terminals within the Emergency Department.

METHODS OF DATA COLLECTION

A triage nurse initially assessed the children who presented to the PMH ED. All clinical information and basic demographic details were recorded, together with the child's triage code, an indication of the level of 'emergency' based upon their reason for presentation. Children who presented due to injury had additional injury surveillance data collected, based on the following fields: date, time and cause of injury, intent of injury, place of injury, activity when injured and any appropriate injury factor. One full-time Injury Surveillance Officer is employed at PMH to monitor and analyse the injury data.

DATA ACCURACY AND COMPLETENESS

PMH is committed to the provision of quality data for health professionals and other interested parties. Daily validation of injury data fields is undertaken by the Injury Surveillance Officer to ensure the accuracy of data. This involves checking for null or missing data fields and identifying any misclassification of data.

LIMITATIONS

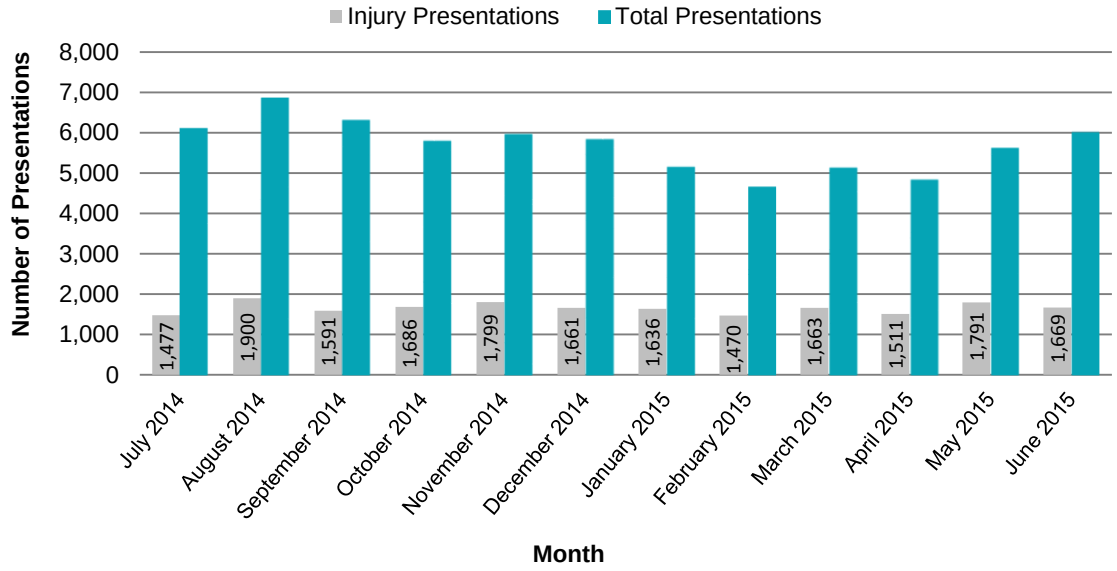
The data contained in this report only represents the paediatric population that presents to PMH and therefore comparisons made on a state or other basis must be done carefully due to the likelihood of sampling bias. Additionally, the data used for this report is heavily dependent on the accuracy of those entering data within EDIS and the effectiveness of quality validation by the Injury Surveillance Officer.

DEMOGRAPHIC DATA

EMERGENCY DEPARTMENT PRESENTATIONS

The 2014/15 financial year saw a total of 68,279 presentations to the PMH ED by children under the age of 16 years. Injury represented 29.1 percent (n=19,854) of presentations, which is slightly above the five-year average of 27.6 percent. There was no obvious monthly cycle, with injury presentations fairly evenly distributed across the year (Figure 1).

Figure 1: Total Presentations and Injury Presentations by Month

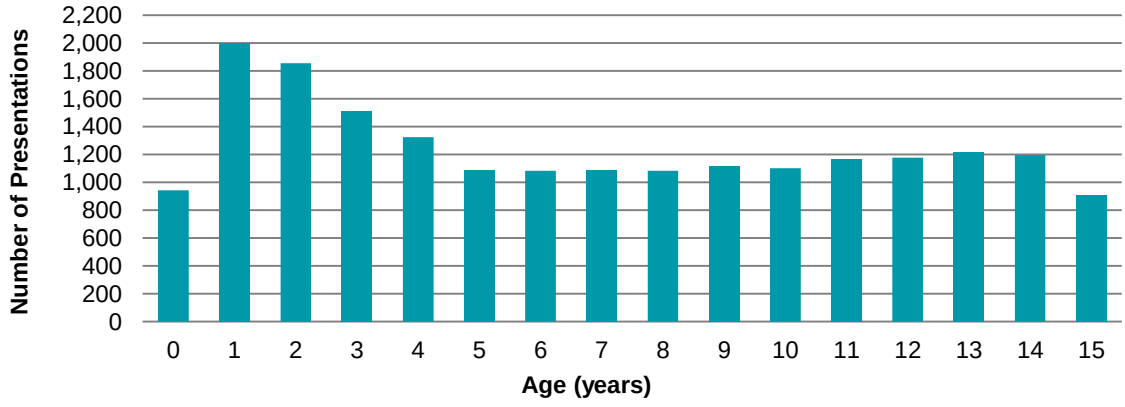


AGE AND GENDER DISTRIBUTION

Males represented 56.6 percent (n=11,238) of injury presentations, with females the remaining 43.4 percent (n=8,616). These percentages are consistent with the known gender ratio of 3:2 seen across child injury statistics.

Figure 2 demonstrates the breakdown of injuries within each age group. Children under the age of five are at greater risk of injury, representing 38.4 percent (n=7,630) of total injury presentations. Additionally, children aged 5 to 9 and 10 to 14 years accounted for 27.5 percent (n=5,459) and 29.5 percent (n=5,850) of presentations respectively. Children aged 15 years and over generally present at significantly lower rates (n=10.6%, n=2,111) due to a tendency for adolescents to present to non-paediatric facilities.

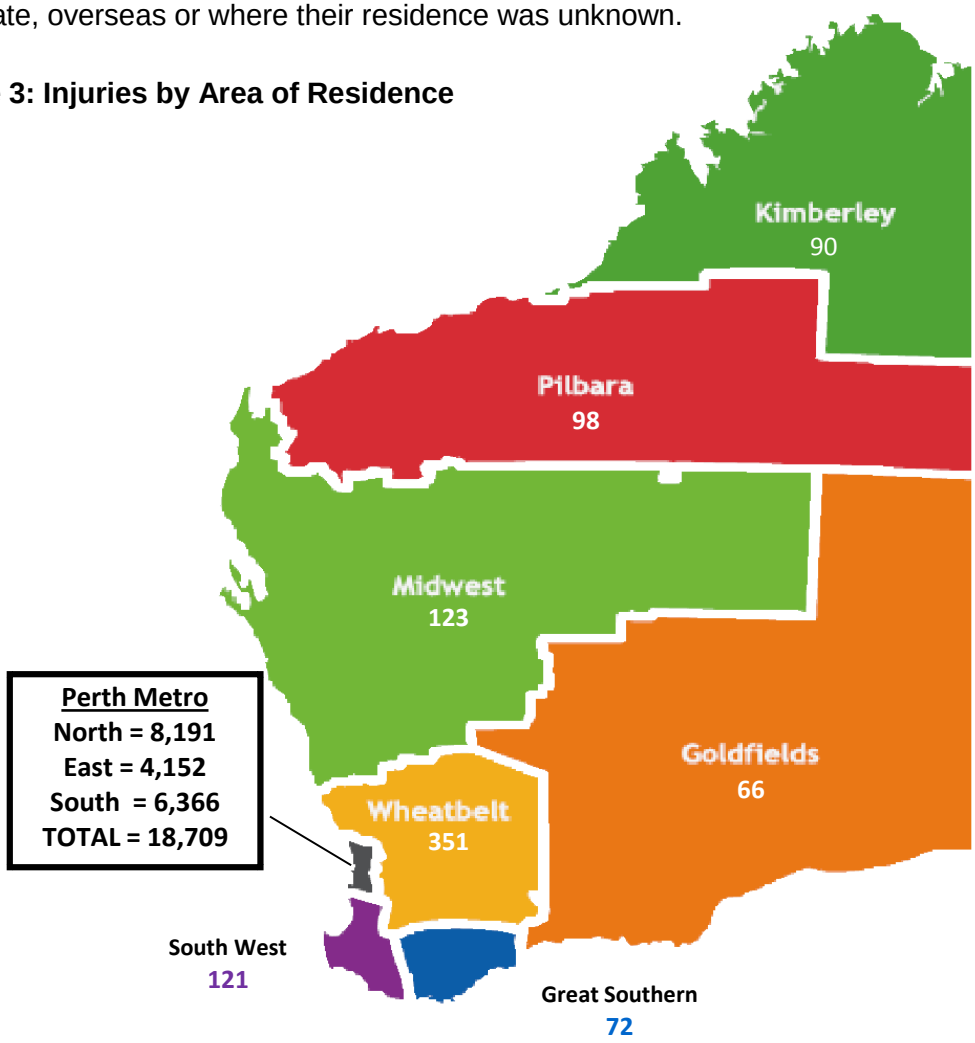
Figure 2: Injuries by Age



AREA OF RESIDENCE

Figure 3 demonstrates injury presentations by area of residence. Children residing within the Perth metropolitan area (94.2%, n=18,709) represented the majority of children presenting to the PMH ED with an injury. The remaining children were recorded as residing within either regional Western Australia (4.6%, n=921) or other (1.1%, n=224), referring to children based interstate, overseas or where their residence was unknown.

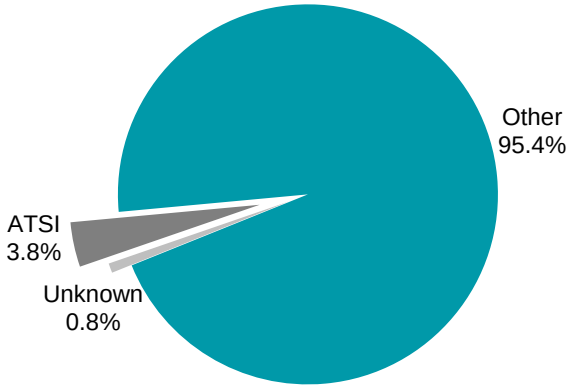
Figure 3: Injuries by Area of Residence



ETHNICITY

Children of Aboriginal and/or Torres Strait Islander descent represented 3.8 percent (n=756) of children who presented to the PMH ED during the 2014/15 financial year (Figure 4). Additionally, 20.3 percent of presentations from regional Western Australia, were children of Aboriginal and/or Torres Strait Islander descent.

Figure 4: Injuries by Ethnicity

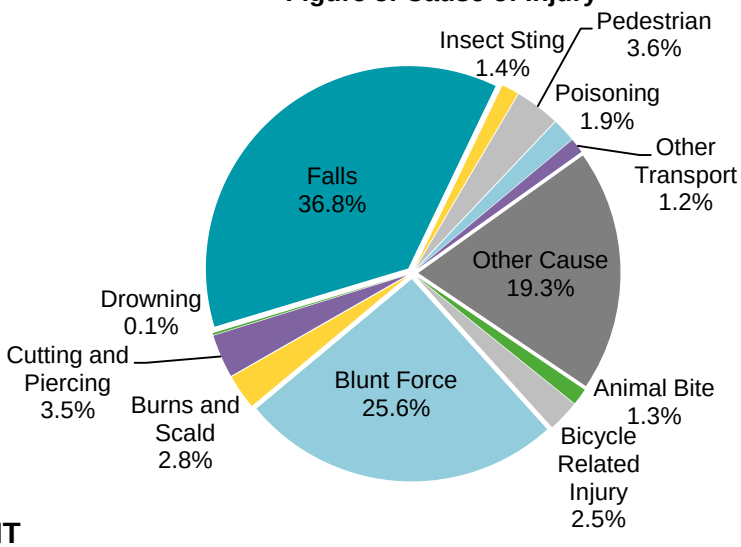


INJURY DATA

CAUSE OF INJURY

Falls are the leading cause of injury to the PMH ED, accounting for 36.8 percent (n=7,300) of recorded cases (Figure 5). Secondary to falls were Blunt Force injuries and Other Cause, representing 25.6 percent (n=5,088) and 19.3 percent (n=3,834) of presentations respectively. Other Cause refers to unspecified injuries or those that did not fit into an existing category

Figure 5: Cause of Injury



INJURY INTENT

The greatest proportion of presentations to the PMH ED continues to be a result of unintentional circumstances, accounting for 97.8 percent (n=19,416) of injuries. Intentional self-harm (1.4%, n=277), alleged assault (0.5%, n=96) and injuries recorded as undetermined or other (0.3%, n=65) represented significantly less presentations.

LOCATION OF INJURY

The primary location of injury presentations was recorded as Other Place (63.9%, n=12,680), referring to locations that were unspecified or did not fit into an existing category. The Home/Farm (16.8%, n=3,341) and School/Residential Institutions (9.9%, n=1,969) were the next most common locations (Figure 6a). Within the home, injury commonly occurred in the Outdoors (16.1%, n=539), Bedroom (10.5%, n=342) and the Living/Dining area (10.1%, n=336). A large proportion of injuries within the home were unspecified (54.3%, n=1,815) (Figure 6b).

Figure 6a: Location of Injury

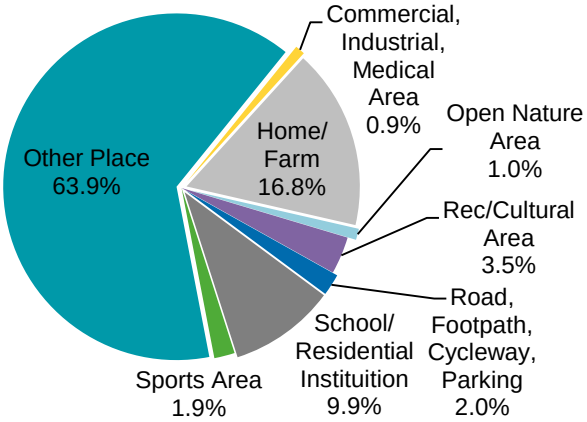
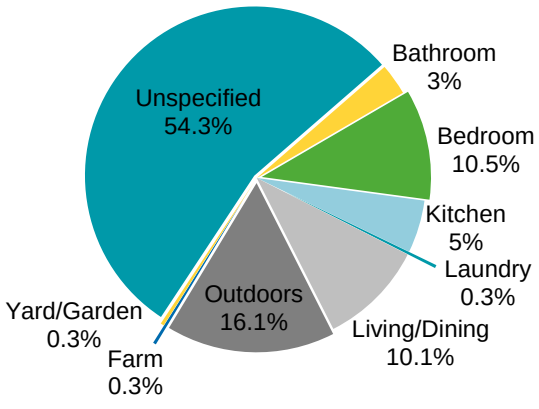


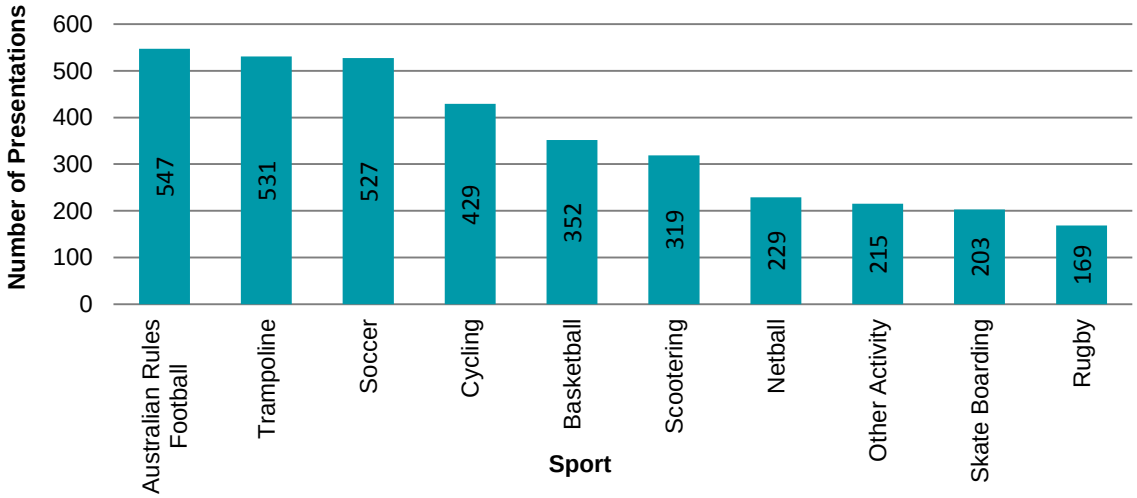
Figure 6b: Injury within the Home



SPORTING ACTIVITY

Just under a quarter of injury presentations to the PMH ED were recorded as occurring during a sporting activity (22.6%, n=4,482). Australian Rules Football remains the most common sporting activity resulting in an injury presentation, followed by Trampolining and Soccer (Figure 7).

Figure 7: Top Ten Sport Injuries



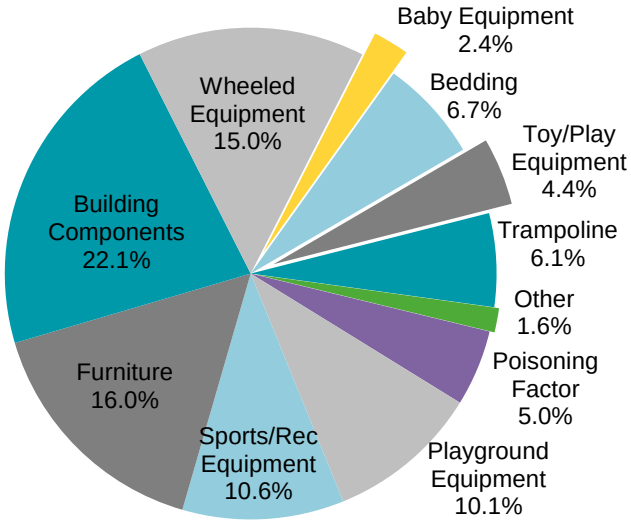
SAFETY EQUIPMENT

The use of safety equipment during activities can help reduce the risk and severity of an injury. Only 1.5 percent (n=301) of presentations were recorded as having used or not used relevant safety equipment. The remaining 98.4 percent (n=19,533) were recorded as Not Applicable, Unknown or Inadequate Description. Safety equipment included helmets, seatbelts, child restraints, life jackets, electrical safety switches, protective clothing, pool fencing and sport related guards.

INJURY FACTORS

During the 2014/15 financial year, 43.5 percent (n=8,639) of injuries presenting to the PMH ED were recorded as having an associated injury factor. Of those presentations, Building Components including doors, windows, floors, fittings, walls and other structures was the most commonly recorded, accounting for 22.1 percent (n=1,909). This was followed by Furniture (16.0%, n=1,379) and Wheeled Equipment (15.0%, n=1,292) (Figure 8).

Figure 8: Injury Factors

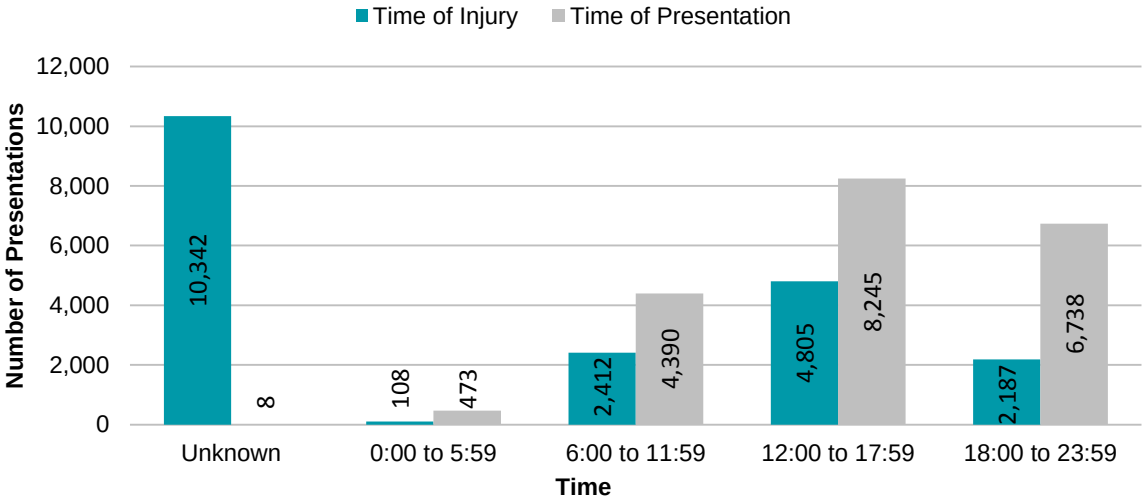


ASSESSMENT & TREATMENT DATA

TIME FACTORS

Time of injury and time of presentation were broken down into five categories; 0:00 to 5:59, 6:00 to 11:59, 12:00 to 17:59, 18:00 to 23:59 and unknown. Over half of injury presentations to the PMH ED were recorded with an unknown injury time (52.1%, n=10,342) (Figure 9). Where the injury time was known, 24.2 percent (n=4,805) presented between 12:00 to 17:59. Similarly a significant amount of children (41.5%, n=8,245) presented with their injury between 12:00 and 17:59.

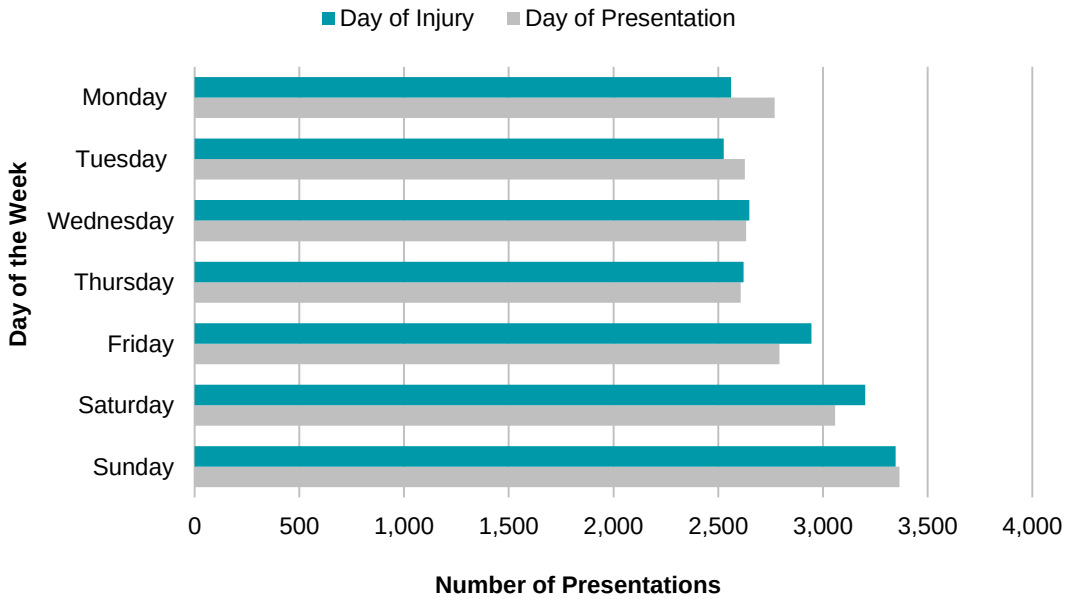
Figure 9: Time of Injury and Presentation



DAY OF ATTENDANCE

Saturday and Sunday had the highest number of injury occurrences throughout the year, accounting for 16.1 percent (n=3,203) and 16.9 percent (n=3,348) respectively. Likewise, Saturday and Sunday had the highest number of injury presentations to the PMH ED during the year. There was no obvious day that represented significantly lower amounts of injury occurrences or presentations, with figures fairly consistent during the start of the week (Figure 10).

Figure 10: Day of Injury and Presentation



TRIAGE CATEGORY

The triage category is a reflection on the urgency for medical intervention (Table 1). The majority of injuries presenting to the PMH ED during the 2014/15 financial year, were recorded as either Semi-Urgent (79.4%, n=15,768) or Urgent (17.5%, n=3,468). Fewer injury presentations were recorded as either an Emergency (2.2%, n=444), Non-Urgent (0.4%, n=88) or required Resuscitation (0.4%, n=86).

Table 1: Triage Category

Category	Seen within (mins)
(1) Resus	0
(2) Emergency	10
(3) Urgent	30
(4) Semi-Urgent	60
(5) Non-Urgent	120

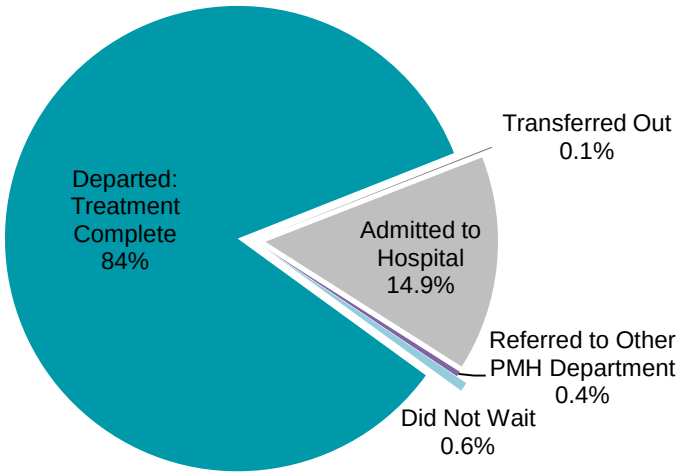
REFERRAL SOURCE

The majority of children presenting with an injury to the PMH ED, did so based on the concerns of themselves or a relative (85.3%, n=16,941). Additionally, 13.0 percent (n=2,578) were referred either by their General Practitioner or another hospital. Over a third of children residing within regional Western Australia (43.4%, n=400), presented to PMH after a medical review by their General Practitioner or local hospital.

OUTCOME OF ATTENDANCE

The majority of injury presentations (84%, n=16,676) departed the PMH ED with treatment complete, with an additional 14.9 percent (n=2,962) requiring admission to hospital for further treatment. A smaller percentage of presentations either did not wait, were referred to another PMH department or were transferred out (Figure 11).

Figure 11: Outcome of Attendance



DISCUSSION

The collection of injury data plays a vital role for the development of interventions designed to prevent or minimise childhood injury. It relies on an efficient and reliable computer system and effective collaboration between nursing, clerical and medical staff within the PMH Emergency Department. Analysis of this collected data can determine current injury trends and the effects of injury prevention programs.

The 2014/15 financial year saw a total of 68,279 presentations to the PMH ED, which decreased from the previous financial year that saw 70,283 presentations. However, despite the overall reduction, there was a slight increase of 1.1 percent in the number of injury presentations. Similarly, injury presentations remained above the five-year average, accounting for 29.1 percent of total presentations to the Emergency Department. Additionally, children under five years of age continued to have the greatest risk of sustaining an injury.

There continues to be an increasing trend for items being coded as either Other, Unknown or Not Applicable, possibly due to a large proportion of data not being coded at the time of presentation. This is particularly an issue for the location of the injury where more than half of presentations were coded as Other Place and cause of injury, which also saw an increase in injuries coded as Other Cause. There are multiple reasons as to why this might occur including, limited time by staff to complete data entry and thus the inability to recall information after the presentation, a large number of options to choose from in each category leading to an uncertainty of which code to select and limited knowledge on how the data is being used and the importance of each coding level. The solution to this limitation may include continuous education and support for the staff collecting and cleaning the data.

The increasing number of child injury presentations to the PMH ED requires further investigation to determine whether there has been a real increase in injury prevalence or other factors have been associated. Such factors may include an overall population increase within WA, a higher annual birth rate, a perceived decrease in local services and knowledge of services that provide assistance or the inability to get an urgent appointment to see a General Practitioner. Additionally, with the proportion of injury presentations remaining above the long term average and the slight increase of injury occurrence compared to the previous year, the importance for the continued presence of organisations such as Kidsafe WA and programs focusing on childhood injury prevention is emphasised.

Every day there is a new group of first time parents in WA who need information and education about child injury prevention. Adequate resources are required for the prevention of childhood injuries to reduce the burden placed on the health system now and in the future. Kidsafe WA continues to explore new approaches focusing on promoting the preventability of major child injuries in an attempt to engage new parents and cease the increasing number of children enduring unintentional injuries.

RECOMMENDATIONS

- A review of the current set of Injury Surveillance Data codes should be undertaken in an attempt to reduce the number of injuries coded as Other, Unknown or Not Applicable. The evaluation should consider how codes could be condensed to enable thorough reporting within short time frames.

- Although every care is taken to provide consistent data analysis, regular staff changes and individual interpretations may alter the way the data is coded and reported. Constant improvements to the EDIS system and education for the staff utilising the system will assist future staff changes to hopefully result in a more efficient transition.

- Since 2010, Kidsafe WA has been invited to present on the Injury Surveillance Data at Emergency Department staff development sessions. This provides a valuable opportunity to discuss with the nursing staff their thoughts regarding the data collection system, the injuries they see most regularly and whether they require more information on particular injury prevention issues.

- It is imperative for Kidsafe WA to continue to seek out opportunities to ensure PMH staff are aware of the way the data is being utilised and to acknowledge the importance of comprehensively coding the data.

- The WA Childhood Injury Surveillance Reports should continue to be disseminated to key child injury prevention stakeholders across Western Australia to support policy and interventions for child injury prevention. Additionally, this will ensure stakeholders are aware of the current statistics within Western Australia and are therefore able to develop initiatives to reduce the most prevalent injuries currently seen in the state.

ACKNOWLEDGEMENTS

Injury Surveillance Data is collected by the Emergency Department at Princess Margaret Hospital for children and provided to Kidsafe WA on a quarterly basis for the preparation of the WA Childhood Injury Surveillance Annual Report and Biannual Bulletins.

The following WA Childhood Injury Surveillance Bulletins were prepared by Kidsafe WA in conjunction with Princess Margaret Hospital for 2015. Copies are available on the Kidsafe WA website: www.kidsafewa.com.au

March 2015: Falls in Focus (Bulletin 31)

October 2015: Poisoning (Bulletin 32)

OUR THANKS GO TO:
The staff of Princess Margaret Hospital Emergency Department for their commitment to the collection of injury surveillance data.

Dr Meredith Borland, Director of PMH Emergency Department for her continuing support of this data collection.

Triage nurses who are responsible for entering the appropriate injury details into the Emergency Department Information System (EDIS).

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