Child Accident Prevention Foundation of Australia
Western Australia

Kidsafe WA Childhood Injury Bulletin Annual Report: 2020 - 2021

Partner:

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

CONTENTS

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References:

[1] Wilson, M, Daly, M. Competitiveness, risk taking, and violence: the young male syndrome. Ethology and Sociobiology [internet]. 1985. 6(1): 59-73. https://doi.org/10.1016/0162-3095(85)90041-X.
[2] Peden, M, et al. World Report on Child Injury Prevention. Geneva: World Health Organisation. 2008.

INJURIES AT A GLANCE

22,115

Children were seen in the Perth Children's Hospital Emergency Department (PCH ED) due to injury during the 2020-21 financial year.

61
Children per day were seen in PCH ED for an injury.

56%
Of the children injured were male.

34%
Of injuries occurred in children under 5 years of age.

35%
Of injuries were due to a fall.

26%
Of injuries were due to a blunt force.

26%
Of Injuries were sport-related.

12%
Of children had injuries serious enough to warrant admission to hospital.

94%
Of injury presentations reside in the Metropolitan area.

INTRODUCTION

Kidsafe WA

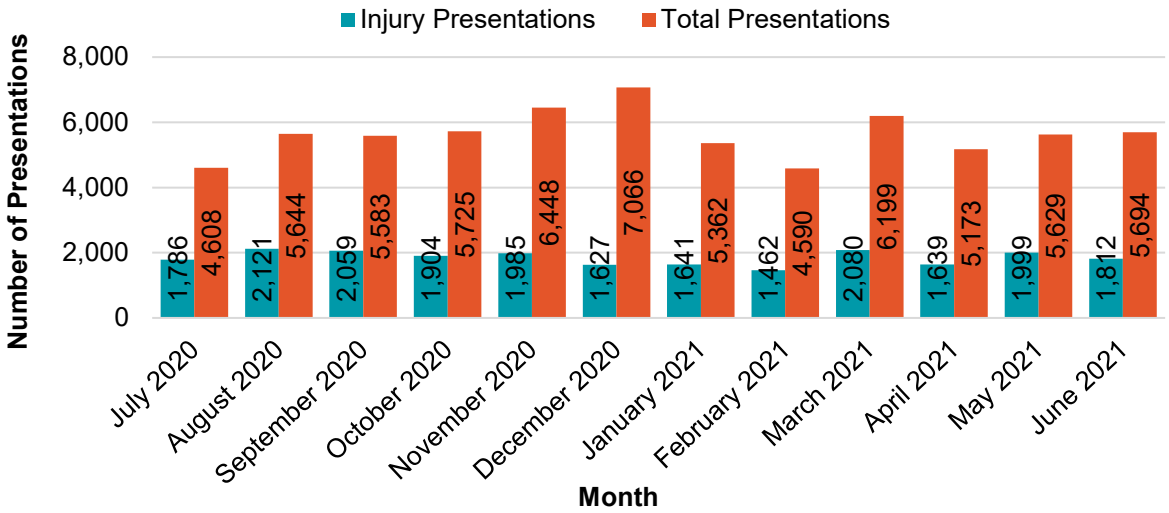
Kidsafe WA is the leading independent not-for-profit organisation dedicated to promoting safety and preventing childhood injuries and accidents in Western Australia. Injuries are the leading cause of death in Australian children aged one to fourteen, accounting for nearly half of all deaths in this age group. More children die of injury than die of cancer, asthma and infectious diseases combined. However, many of these deaths and injuries can be prevented. Kidsafe WA works in the community to educate and inform parents and children on staying safe at home, at play and on the road.

Perth Children's Hospital Injury Surveillance System

Perth Children's Hospital (PCH) is the sole tertiary paediatric hospital in Western Australia. PCH is the key referral source for childhood injury and disease within the state. The PCH Injury Surveillance System is an electronic database that involves the systematic collection of all Emergency Department (ED) injury data. Injury data is initially collected by triage nurses and later coded and validated by an Injury Surveillance Officer. This annual report summarises all the Injury Surveillance System data collected at PCH ED between July 2020 and June 2021. While this data does not capture all Emergency Department presentations in Western Australia, it offers a representative snapshot of injury patterns.

During the 2020-2021 financial year, a total of 67,721 children attended PCH ED. Of these presentations 32.7% (n=22,115) were due to injury (Figure 1).

Figure 1: Total Presentations and Injury Presentations to the PCH ED by Month; July 2020 - June 2021



Over the last five years, PCH ED attendance numbers have fluctuated between 60,000 and 70,000 children. This financial year saw a slight increase in PCH ED injury prevalence (Table 1).

Table 1: Total Presentations and Injury Presentations to the PCH ED by Financial Year; July 2016 - June 2021

Year	Total Presentations	Total Injuries	Injury as a % of Presentations
2020-2021	67,721	22,115	32.7%
2019-2020	61,984	18,912	30.5%
2018-2019	67,022	18,708	27.9%
2017-2018	61,748	17,720	28.7%
2016-2017	60,716	17,939	29.5%

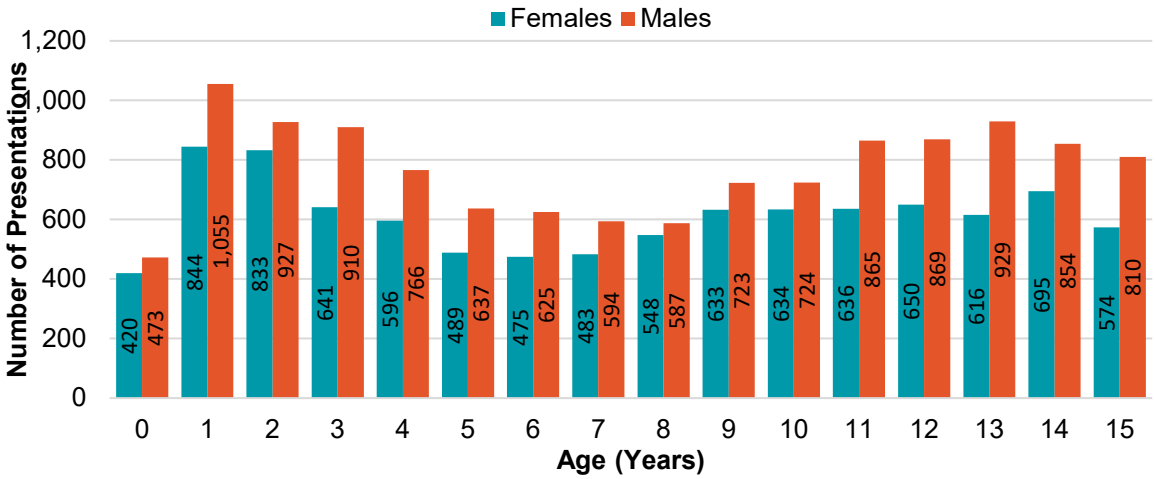
DEMOGRAPHICS

AGE AND GENDER

Children aged between zero and five years of age are at greater risk of injury compared to other age groups accounting for 33.8% (n=7,465) of all injury presentations, with toddlers aged one and two years accounting for 8.6% (n=1,899) and 8.0 % (n=1,760) of all injuries respectively (Figure 2). Children at these young ages are rapidly developing new skills; however, they do not always have the coordination or developmental ability to protect themselves from hazards or accurately assess risks. Teens and pre-teens aged between 10 and 14 years are at greater risk of injury accounting for 33.8% (n=7,472). Young adolescents are often developing a sense of independence, and it can be difficult for parents and carers to find the right balance between allowing children to make their own choices and enforcing rules to protect them from serious injury.

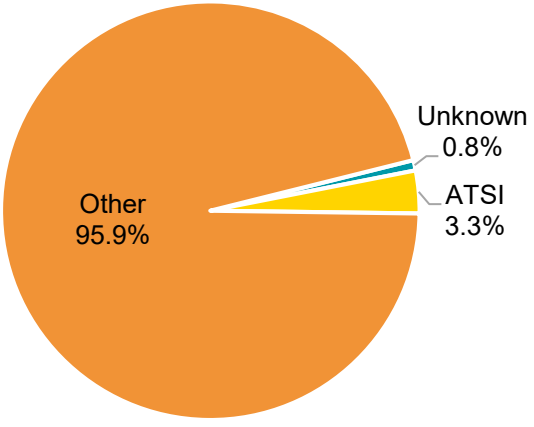
In keeping with previous reports, males are injured more than females across all age brackets. They represent 55.8% (n=12,348) of all injury presentations to the PCH ED, with females accounting for the remainder (44.2%, n=9,767). The most significant sex difference in injury prevalence emerges as children learn to walk and peaks in the 1-4 year age bracket (29.7%) and early adolescents aged 10-14 years (33.8%).

Figure 2: Injury Presentations to the PCH ED by Age and Gender; July 2020 - June 2021



Aboriginal and Torres Strait Islander (ATSI) children account for 3.3% (n=735) of injury presentations to PCH ED (Figure 3).

Figure 3: Injury Presentations to PCH ED by Ethnicity; July 2020 - June 2021



AREA OF RESIDENCE

Children residing in the Perth Metropolitan Area account for 93.5% (n=20,685) of injury presentations to PCH ED (Figure 4). Children living in rural Western Australia account for 4.4% (n=984), with the remainder consisting of children residing either interstate, overseas or had their place of residence listed as unknown (2.0%, n=446). Of Aboriginal children presenting to PCH ED with an injury, 73.3% (n=721) reside in a rural or remote location in Western Australia, a significantly higher proportion than non-Aboriginal populations (26.7%, n=263).

Figure 4: Injury Presentations to PCH ED by Area of Residence; July 2020 - June 2021

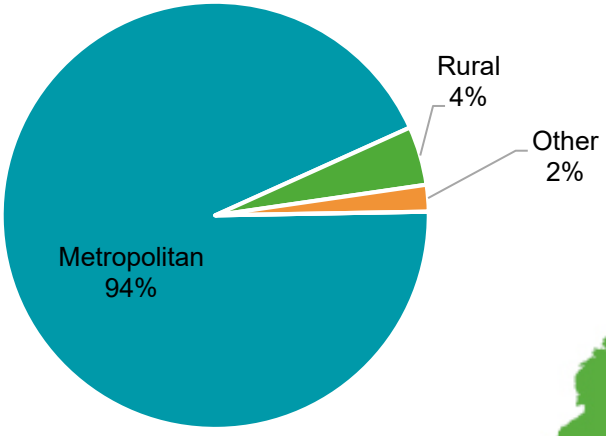


Figure 5: Injury Presentations to PCH ED by Area of Residence; July 2019 - June 2020

Within regional Western Australia, the South West had the highest number of injury presentations to PCH ED (29.0%, n=285) (Figure 5). This was followed by the Wheatbelt and the Pilbara regions, accounting for 27.5% (n=271) and 13.0% (n=128) respectively.

There are many factors that may influence the number of injury presentations to PCH ED from rural or remote areas. This can include the distance and accessibility to Perth, population size and the availability of local medical facilities.

INJURY

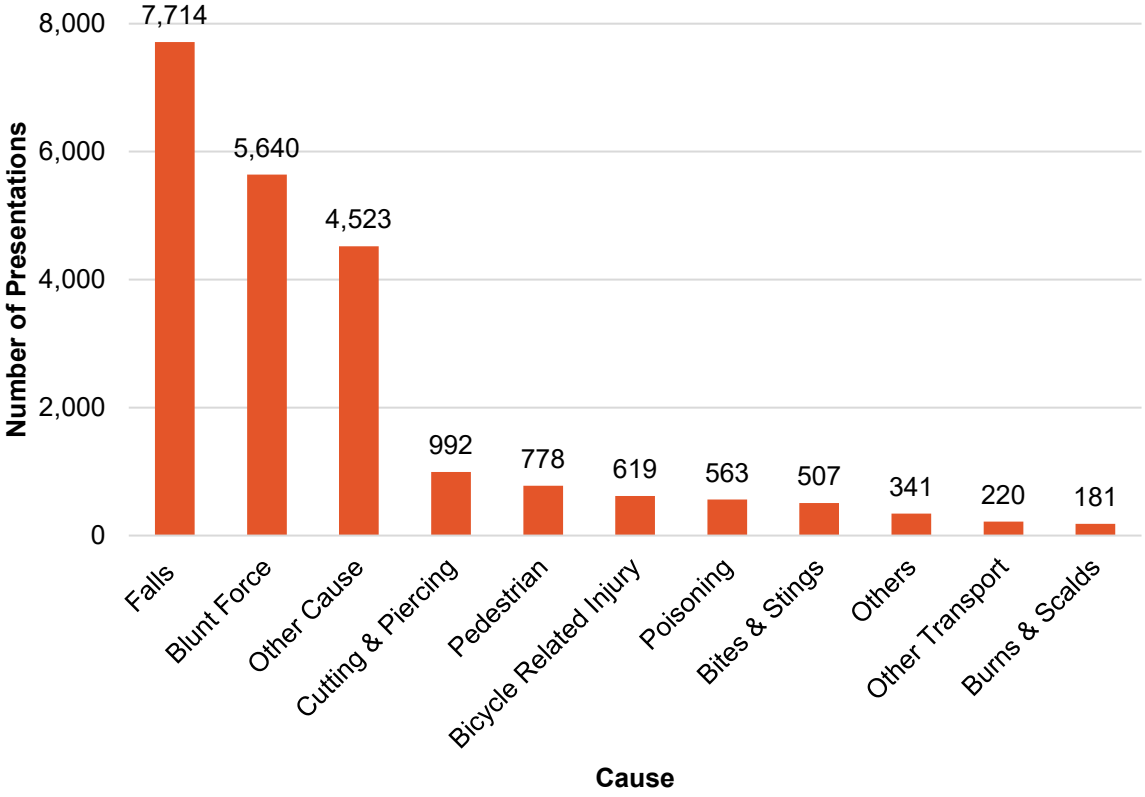
INTENT

The majority of injury presentations to PCH ED are due to unintentional circumstances (96.6%, n=21,365). Intentional self-harm (2.6%, n=575), alleged assault (0.5%, n=121), and unknown intent (0.2%, n=54) represented considerably fewer presentations.

CAUSE

Falls are the leading cause of injury presentations to PCH ED, accounting for 34.9% (n=7,714) of presentations (Figure 6). Secondary to falls is blunt force (25.5%, n=5,640), referring to collision-based injuries. Where an injury cause is unspecified or does not fit into an existing category, it is classified as other cause. Other cause accounts for 20.4% (n=4,523) of injury presentations.

Figure 6: Injury Presentations to PCH ED by Cause; July 2020 - June 2021



INJURY FACTOR

Just over a quarter of all injuries had an associated injury factor (37.0%, n=8,192). The most common injury factors are sports and recreational equipment (18.9%, n=1,550) and wheeled equipment, such as bicycles (17.7%, n=1,447).

LOCATION

The majority of injury presentations occurred in an unknown location (80.7%, n=17,841). Of the known locations (n=4,274), the School and Home locations accounted for 45.6% (n=1,947) and 20.6% (n=882) of injuries respectively (Figure 7a). Within the home, a large proportion of injuries occurred in an unspecified location (52.9%, n=467). Of the known home injury locations (n=415), the most common is the outdoors (34.9%, n=145) and living and dining areas (20.0%, n=83) (Figure 7b).

Figure 7a: Injury Presetations to PCH ED by Location; July 2020 - June 2021

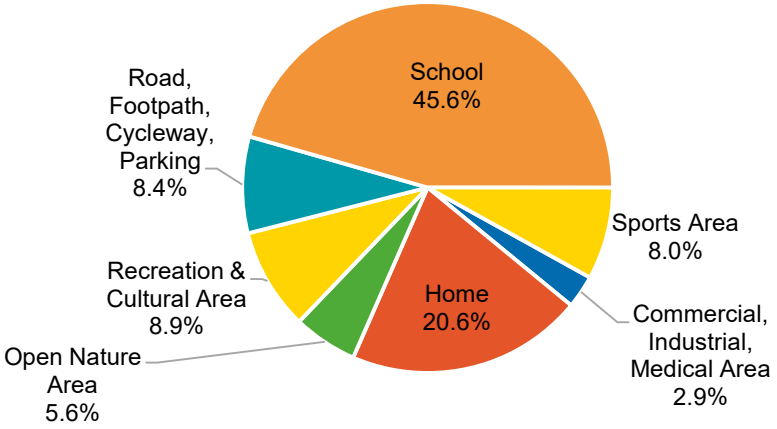
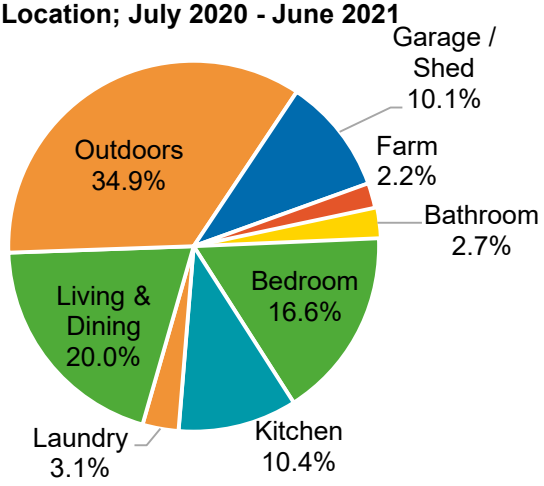


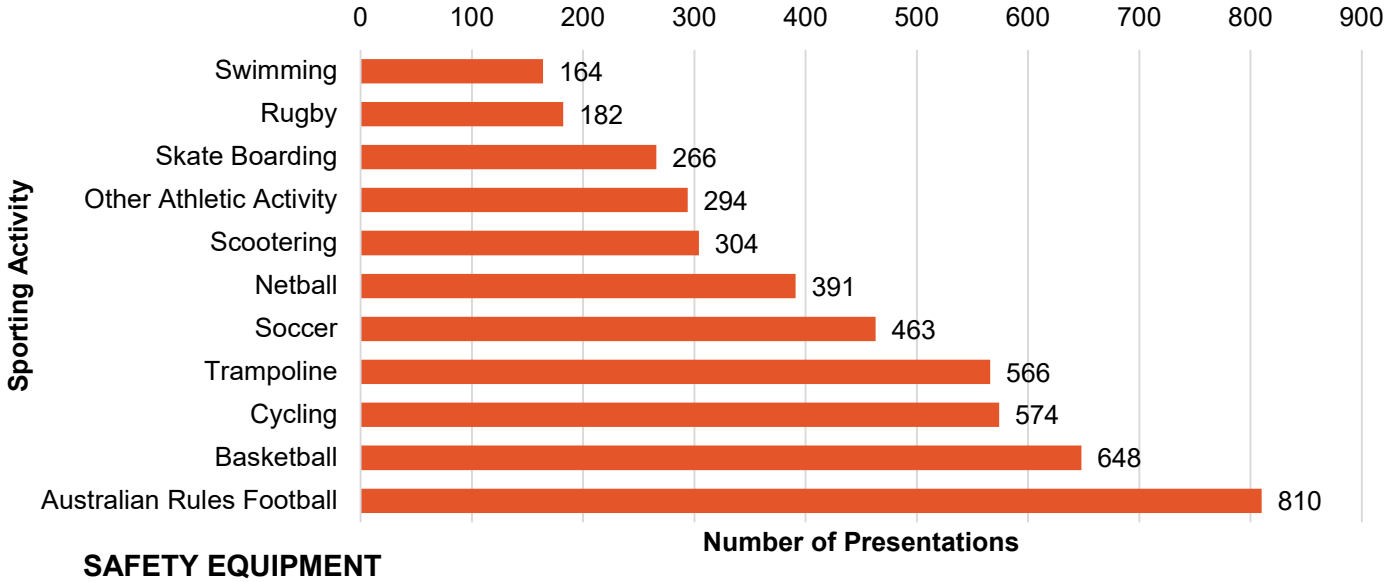
Figure 7b: Injury Presentations to PCH ED by Home Location; July 2020 - June 2021



SPORTING ACTIVITY

Sporting activities were related to just under a quarter of injury presentations to PCH ED (25.8%, n=5,703). The most common sporting activity associated with injury was Australian Rules Football, accounting for 14.2% (n=810) of sports injuries. This was followed by basketball (11.4%, n=648), cycling (10.1%, n=574), trampoline (9.9%, n=566), and soccer (8.1%, n=463) (Figure 8).

Figure 8: Injury Presentations to the PCH ED by Sporting Activity; July 2020 - June 2021



SAFETY EQUIPMENT

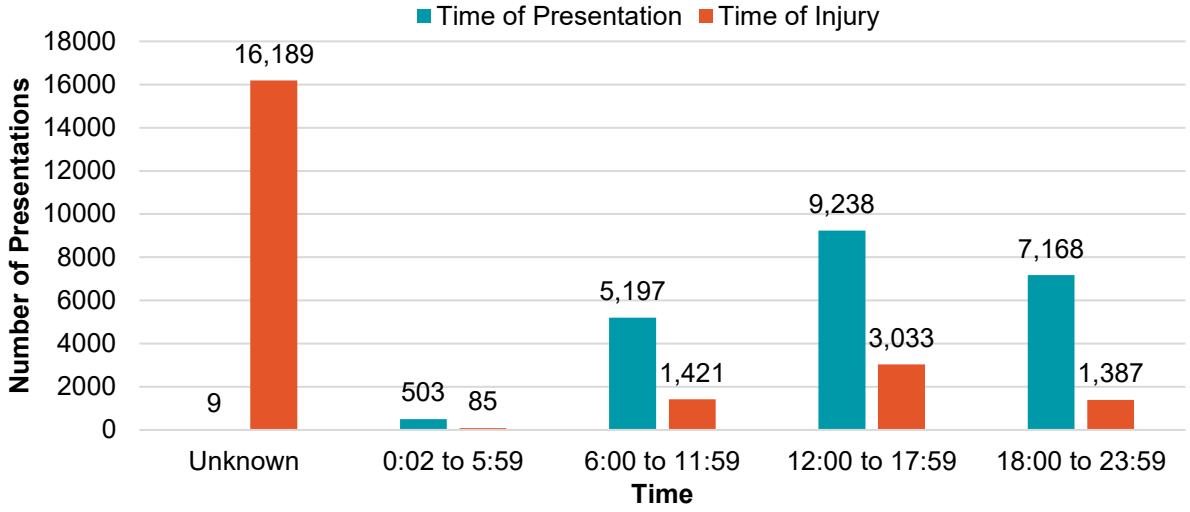
Most injury presentations were coded with safety equipment use as not applicable (73.5%, n=16,262). A further 25.4% (n=5,613) were recorded as no safety equipment was used or an inadequate description. Of the injuries where safety equipment use is applicable (n=5,853), only a small proportion of presentations were recorded as having used safety equipment (4.1%, n=240). Safety equipment includes items such as helmets, seatbelts and approved child car restraints. For certain injury types, safety equipment is more frequently recorded. For example, 35.2% (n=45) of motor vehicle accidents (n=48) were recorded with the safety equipment of an approved child car restraint or seatbelt. Similarly, helmet use in cycling injuries (n=574) is 15.7 % (n=90).

TREATMENT

TIME OF DAY

The time of a child's injury occurring and the time they presented to PCH ED are recorded during triage. Time of injury was unknown for over two-thirds of all injuries (73.2%, n=16,189) (Figure 9). Where time of injury is known (26.8%, n=5,926), 12:00 and 17:59 (13.7%, n=3,033) and 6:00 and 11:59 (6.4%, n=1,421) are the most common. Time of presentation to PCH ED peaked between 12:00 and 17:59 (41.8.0%, n=9,238) and 18:00 and 23:59 (32.4%, n=7,168).

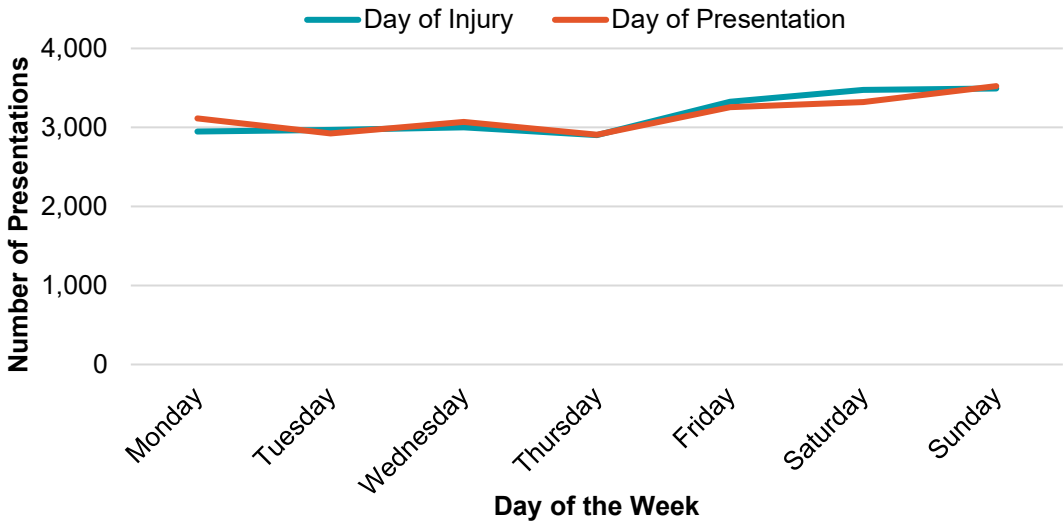
Figure 9: Injury Presentations to PCH ED by Time of Injury and Time of Presentation; July 2020 - June 2021



DAY OF THE WEEK

The day of injury and day of presentation is also recorded at triage. Saturday and Sunday have the highest number of injury occurrences accounting for (15.0%, n=3,322) and (15.9%, n=3,523) of injuries, respectively and showed a similar pattern for injury presentations (Figure 10). Conversely, Tuesday, Wednesday and Thursday recorded the lowest number of injury occurrences and presentations.

Figure 10: Injury Presentations to PCH ED by Day of Injury and Day of Presentation; July 2020 - June 2021



TRIAGE CATEGORY

Every child that presents to PCH ED with an injury is allocated a triage category that reflects the level of medical urgency required (Table 2). The majority of injury presentations were semi-urgent (78.1%, n=17,282) followed by urgent (17.0%, n=3,757) and emergency (4.0%, n=874). Very few presentations were triaged as resus or non-urgent.

Table 2: PCH ED Triage Category

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

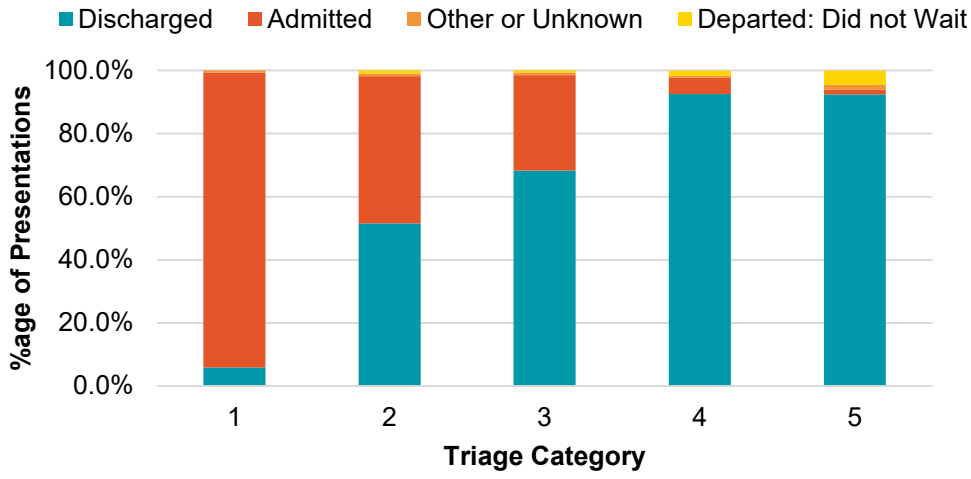
REFERRAL SOURCE

Most children who present to PCH ED for an injury are referred by themselves or a relative (91.5%, n=20,240). The remaining presentations are either referred by another hospital (3.6%, n=797) or a general practitioner (3.7%, n=818). A small proportion of presentations are also recorded as other or were unknown.

OUTCOME OF ATTENDANCE

The majority of children who present to PCH ED with an injury are discharged from the ED with their treatment complete (86.3%, n=19,080). A further 11.6% (n=2,569) require hospital admission, and the small remainder either did not wait for treatment or the outcome of their attendance is unknown or other. The vast majority of children triaged as category 1 (Resus) are admitted (93.4%, n=127), for triage category 2 (Emergency) 46.7 % (n=408) are admitted, followed by 30.2 % (n=1,135) for triage category 3 (Urgent), for triage category 4 (Semi-Urgent) 5.2% (n=898) and one admission for triage category 5 injury presentations to PCH ED (Figure 11).

Figure 11: Injury Presentation to the PCH ED by Triage Category and Outcome of Attendance; July 2020 - June 2021



DISCUSSION

The collection of childhood injury data plays a vital role in developing interventions designed to prevent or minimise childhood injury. Effective injury prevention relies on an efficient and reliable injury surveillance system and collaboration between nursing, clerical and medical staff within hospitals. In addition, analysis of collected data can determine current injury trends and the need for injury prevention programs.

The Perth Children's Hospital is the leading paediatric hospital in Western Australia and saw over 67,000 children attend ED during this year. Although there are several other paediatric facilities within WA, for example, Fiona Stanley Hospital and Joondalup Health Campus, PCH remains the largest reference centre for paediatric illness and injury for the state. During the 2020-21 financial year, 22,115 children attended PCH ED due to an injury, accounting for 32.7 % of total presentations. While the total number of injuries has decreased only slightly from the previous year, the proportion of injuries has grown due to a decrease in total presentations. During this financial year, the coronavirus pandemic may have impacted the number and type of ED presentations. Further analysis in a separate report will be conducted to determine the full impact.

There continues to be a disparity between genders within injury data, with males over-represented across all ages of childhood. The most significant variation occurs within toddlers and adolescents, where males account for almost 55.8 % of total injuries. Data from developed countries worldwide indicates that male children are injured at higher rates than female children from birth onwards. There are several theories to explain this, including that on average, males engage in more risky behaviour and are given more independence compared to females.[1, 2]

Almost a quarter of injuries are related to a sporting activity, with Australian Rules Football, basketball and cycling most commonly associated with injury. Older children, who are more likely to participate in competitive sports, are more susceptible to injury, with adolescents over ten years of age accounting for over 70 % of sports-related injuries.

Similarly to previous years, the injury data has missing or generic data fields where injuries are coded as other or unspecified. Missing data is particularly evident in the location field, where 80.7% of injuries are coded as other place, in comparison to 77% during last financial year and 57.4% five years ago. This highlights the importance of ongoing triage nurse education. Kidsafe WA and PCH continue to provide educational seminars to advocate and support staff in collecting data.

RECOMMENDATIONS

- Continue to investigate childhood injury surveillance data collection opportunities at additional metropolitan and regional medical facilities in WA.
- Ongoing injury prevention initiatives for all children and their parents and carers, specifically focusing on children under five years of age and teenagers.
- Continue to promote injury prevention initiatives that identify ways to reduce the risk of sporting injuries amongst adolescents.
- Investigate the impacts of coronavirus on injury in children.
- Staff development sessions between Kidsafe WA and PCH triage nurses to raise awareness of the importance of child injury data collection and its role in injury prevention.
- Ongoing and regular production and dissemination of Kidsafe WA Childhood Injury Bulletins to support policy and interventions for child injury prevention.

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www.kidsafewa.com.au