Child Accident Prevention Foundation of Australia
Western Australia

Kidsafe WA Childhood Injury Bulletin Annual Report: 2022 - 2023

Partner:

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

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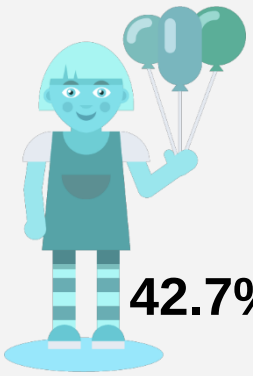
LANGUAGE AND TERMINOLOGY

Term	Meaning
Perth Children's Hospital (PCH)	PCH is a paediatric hospital in Western Australia and is the referral centre for paediatric illness and injury within the state.
Emergency Department (ED) Presentations	Children between zero and <16 years old that present to the triage desk at PCH ED.
Category 'other'	In each of the PCH ED injury surveillance fields there is often an 'other' category. This is used when presentations are missing information or do not fit in the categories outlined.
Blunt force injury	An injury caused by contact with an object i.e. child ran into wall or the child hit by ball.
Injury factor	This can be a product or a structure that contributed to the cause of the injury.

INJURIES AT A GLANCE

19,464
Children attended PCH ED due to injury during the 2022-23 financial year

GIRLS



42.7%

BOYS

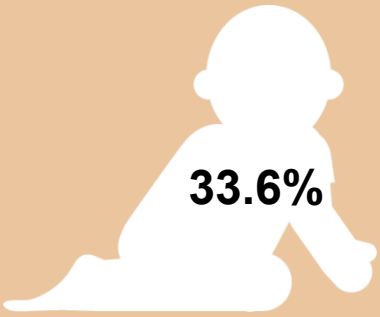
57.3%

36.7%
Of injuries were due to a fall

27.1%
Of injuries were due to a blunt force

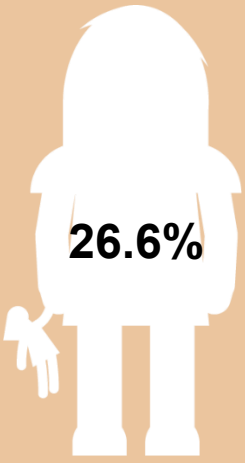
12.2%
Of children were admitted to hospital for further treatment

28.4%
Of Injuries were related to a sporting activity



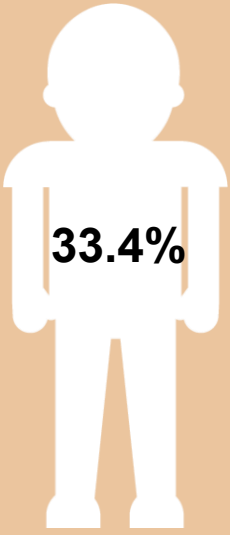
33.6%

0 - 4 years



26.6%

5 - 9 years



33.4%

10 - 14 years

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 among Australian children aged zero to fourteen, accounting for nearly half of all deaths in this age group. More children die of injury than of cancer, asthma and infectious diseases combined. However, many of these deaths and injuries can be prevented. Kidsafe WA works 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
PCH is the only paediatric hospital in Western Australia and is the referral centre for paediatric illness and injury within the state. Each year approximately 67,500 children present to the PCH ED. The PCH ED Injury Surveillance System is designed to capture data related to all children who present with an injury. This report provides a summary of all Injury Surveillance System data collected at PCH ED between July 2022 and June 2023. While this data does not take into account all Emergency Department presentations in Western Australia, it offers a useful snapshot of injury occurrences and patterns of presentation.

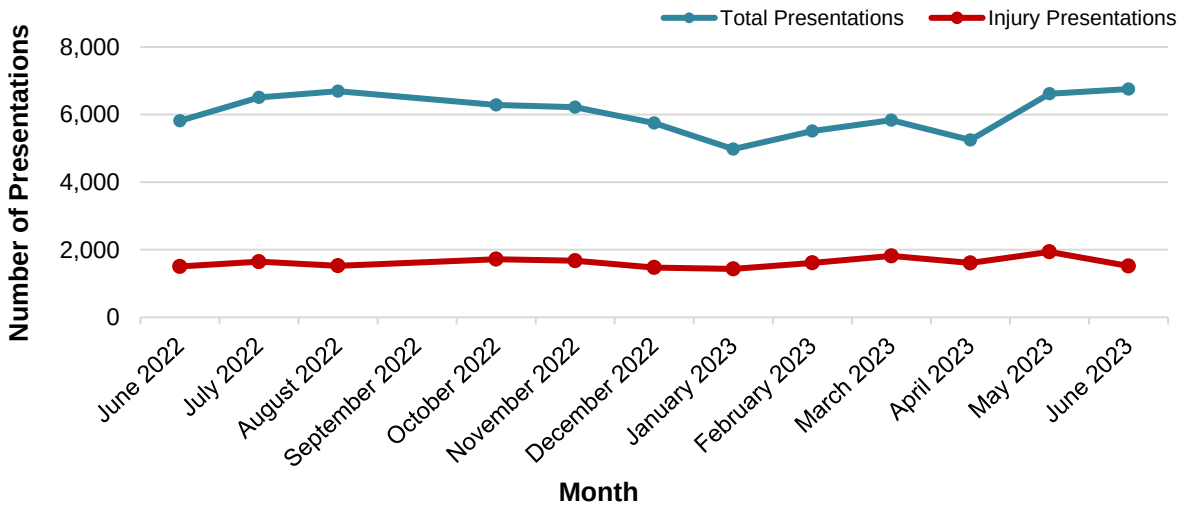
During the last five years, the total number of children presenting to the PCH ED has fluctuated between 61,000 and 73,000. On average, injury presentations account for around 30 percent of presentations with a slight peak seen in 2020-2021 (Table 1).

Table 1: Total Presentations and Injury Presentations to the PCH ED by Financial Year; July 2018 - June 2023

Year	Total Presentations	Total Injuries	Injury as a % of Presentations
2022-2023	72,201	19,464	27.0%
2021-2022	69,124	20,241	29.3%
2020-2021	67,721	22,115	32.7%
2019-2020	61,984	18,912	30.5%
2018-2019	67,022	18,708	27.9%

During the 2022-2023 financial year, 72,201 children attended the PCH ED. Of these presentations 27 percent (n=19,464) were due to injury (Figure 1).

Figure 1: Total Presentations and Injury Presentations to PCH ED by Month; July 2022 - June 2023



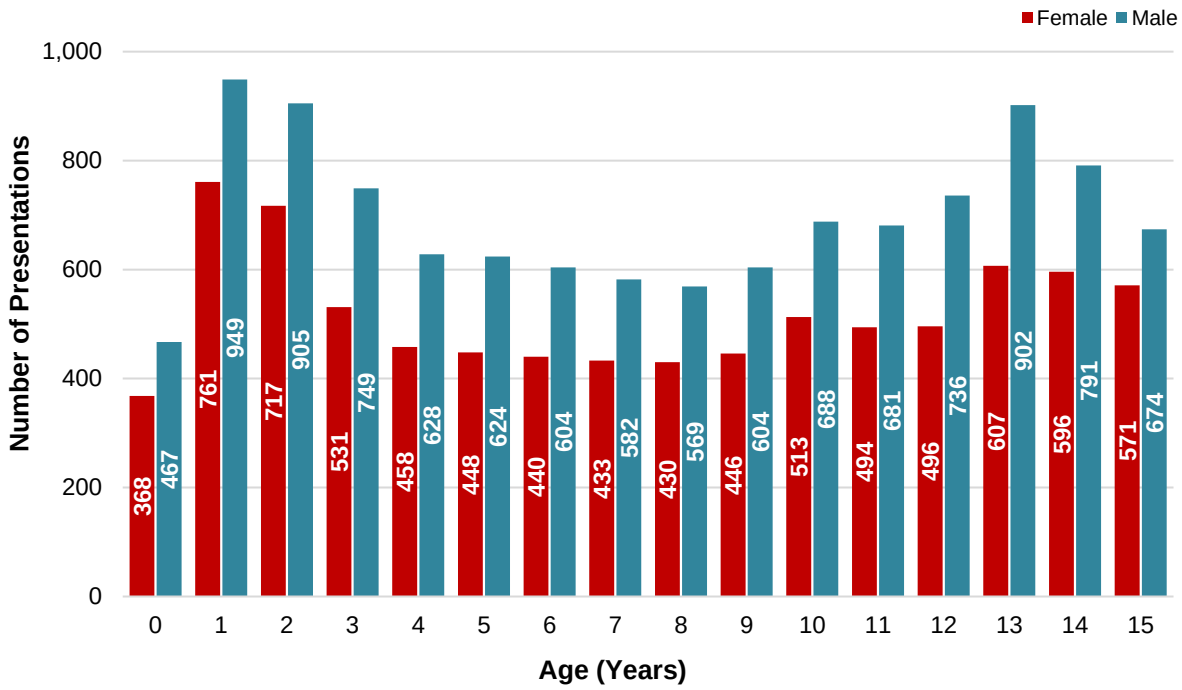
DEMOGRAPHICS

AGE AND GENDER

Children under five years old account for the greatest number of injury presentations to PCH ED (33.6%, n=6,534). Of these children, one and two year olds present most accounting for 8.8 percent (n=1,710) and 8.3 percent (n=1,622) of injuries respectively (Figure 2). Children of this age are becoming mobile and starting to explore their surroundings, however they may lack the necessary skills to navigate their environment safely. This is likely due to their physical and cognitive abilities not aligning as they are still developing. Following this age group, young people between 10 and 14 years old account for a large number of injury presentations (33.4%, n=6,504). As children mature, they begin to develop independence and the activities they participate in change substantially with age which can bring about a new range of injury risks.

Consistent with previous reporting males present more frequently than females, accounting for 57.3 percent (n=11,153) and 42.7 percent (n=8,309) of injuries respectively. This continues to be the trend for children of all ages, with the greatest variation between males and females seen in children 12 and 13 years of age.

Figure 2: Injury Presentations to PCH ED by Age and Sex; July 2022 - June 2023



**Note: one case has not been included in this data due to missing information.*

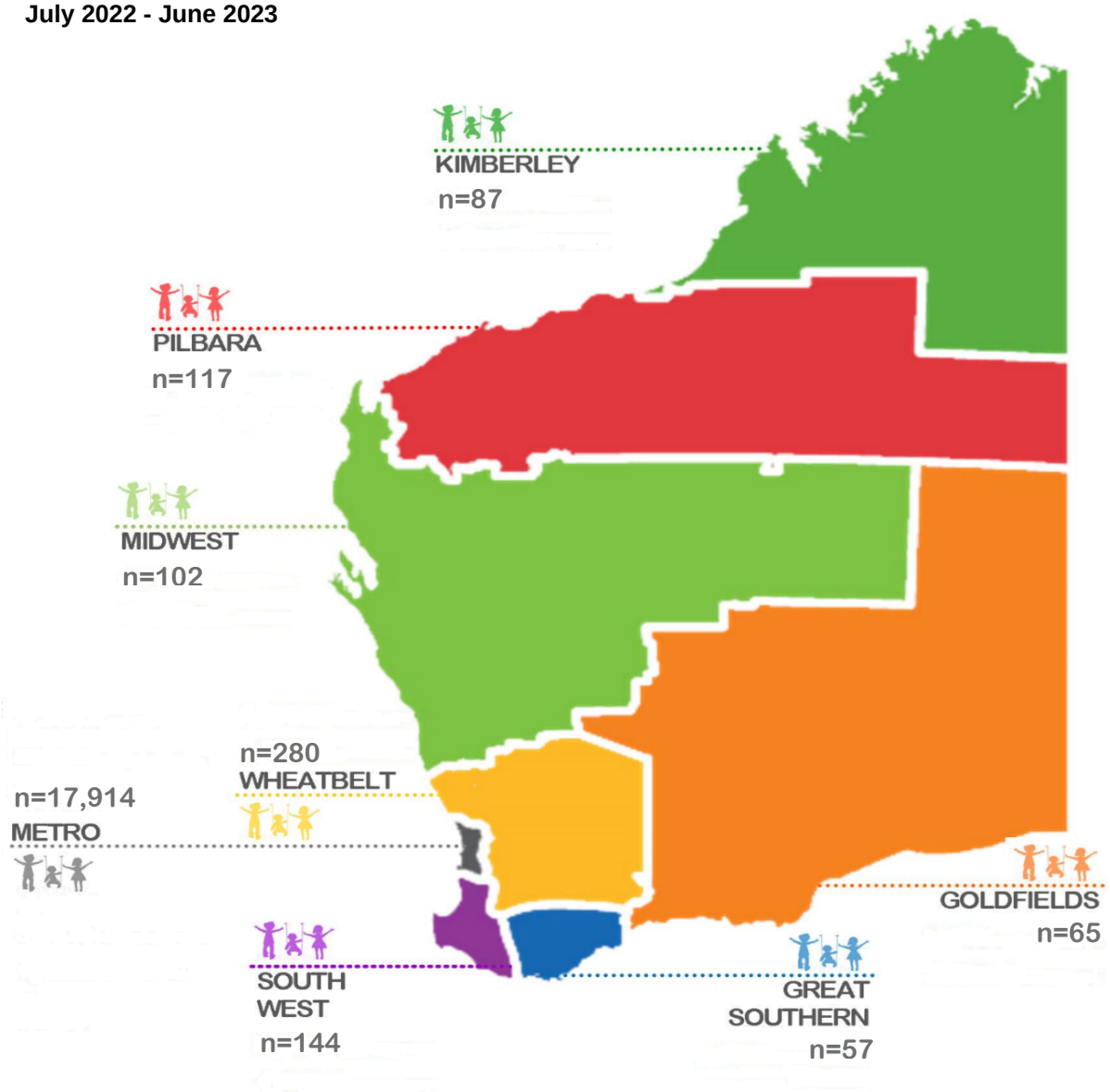
Approximately four percent (n=776) of the injury presentations to PCH ED identified as Aboriginal and / or Torres Strait Islander. This is similar to the figure reported in the 2021 Census data, where 5.6 percent of Western Australian children aged between zero and 14 years identify as Aboriginal and / or Torres Strait Islander descent[1,2].

AREA OF RESIDENCE

Most of the children presenting to PCH ED reside within the Perth Metropolitan Area (92.0%, n=17,914) (Figure 3). The remaining children live in regional Western Australia (4.4%, n=852), interstate / overseas (2.3%, n=441) or was unknown (1.3%, n=257). Of the presentations where children identified as Aboriginal and / or Torres Strait Islander, 26.5 percent (n=206) reside in regional Western Australia.

Within regional Western Australia, the Wheatbelt had the highest number of injury presentations to PCH ED accounting for 32.9 percent (n=280). The number of children presenting from regional Western Australia can be influenced by many factors. This includes, however is not limited to the proximity to Perth, the health facilities available within the region and population size.

Figure 3: Injury Presentations to PCH ED by Area of Residence; July 2022 - June 2023



INJURY

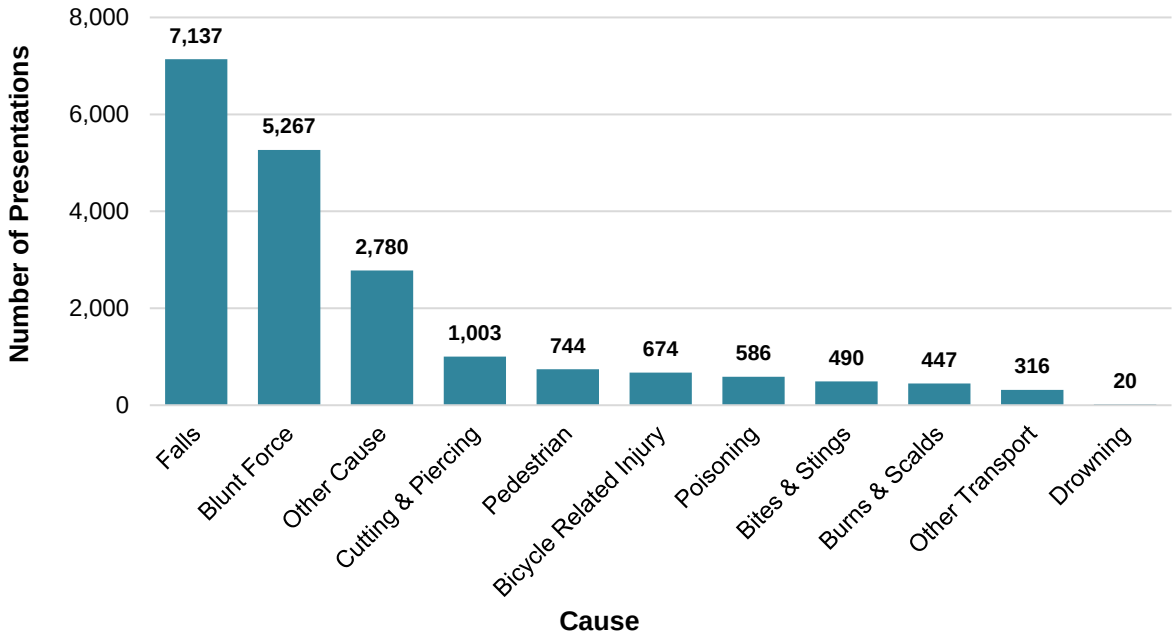
INTENT

Majority of the injury presentations to PCH ED are due to unintentional circumstances (95.3%, n=18,547). The remaining presentations are due to intentional self-harm (3.9%, n=752), alleged assault (0.7%, n=128) and undetermined / other causes (0.2%, n=37). Of note, intentional self-harm injuries have risen gradually over the past four years from a proportion of 1.8 percent of the total injuries in 2019/20 to 3.9 percent in 2022/23.

CAUSE

As in previous years, falls continue to be the leading cause of injury to PCH ED (36.7%, n=7,137). This is followed by blunt force (27.1%, n=5,267) and other causes (14.3%, n=2,780) (Figure 4).

Figure 4: Injury Presentations to PCH ED by Cause; July 2022 - June 2023



INJURY FACTOR

Almost half of the injuries had an associated injury factor (49.0%, n=9,532). Similar to previous years the most common was building components (10.3%, n=2,006) such as walls, doors and windows. This was followed by wheeled equipment (7.5%, n=1,469), furniture (7.1%, n=1,391), sports equipment (6.8%, n=1,321) and playground equipment (6.0%, n=1,168).

SAFETY EQUIPMENT

In relation to sports injuries and various motor vehicle accidents, safety equipment includes items such as helmets, seatbelts and approved child car restraints. For presentations to PCH ED safety equipment is commonly recorded as not applicable (70.4%, n=13,708). Of the cases where the use of safety equipment is applicable (29.6%, n=5,756), its use is mostly unknown or inadequately described (86.0%, n=4,952). Where safety equipment was required, a small proportion of cases was recorded as having used safety equipment (10.5%, n=603).

Safety equipment is more frequently recorded for certain injury types. For example, half of the motor vehicle occupants were recorded as using safety equipment (53.0%, n=98) such as an approved child car restraint or seatbelt. Similarly, helmet use was recorded in all of the bicycle injuries and 20.3 percent (n=126) of wheeled pedestrian injuries such as scooters and skateboards. Helmets were also recorded as being used in 57.0 percent (n=57) of motorcycling injuries and no helmets used for all equestrian injuries presenting to PCH ED.

LOCATION

The location for the majority of injury presentations was unknown (67.9%, n=13,207). Of the known locations (32.1%, n=6,257), the school was the most common location for injuries to occur (35.4%, n=2,216). This was followed by injuries around the home (29.1%, n=1,820) (Figure 5a). Injury presentations around the home can be broken down further by the different areas of the home. Many of the home injuries occurred in an unspecified location accounting for 34.8 percent (n=633). This was followed by the outdoors (19.8%, n=361) and the living / dining area (13.9%, n=253) (Figure 5b).

Figure 5a: Injury Presentations to PCH ED by Known Location; July 2022 - June 2023

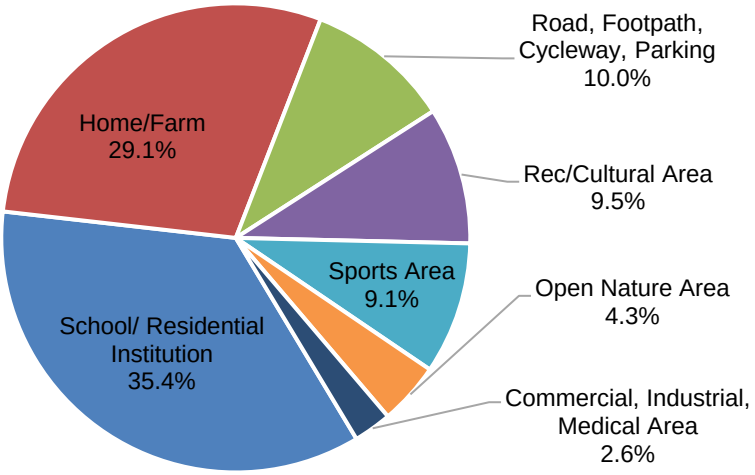
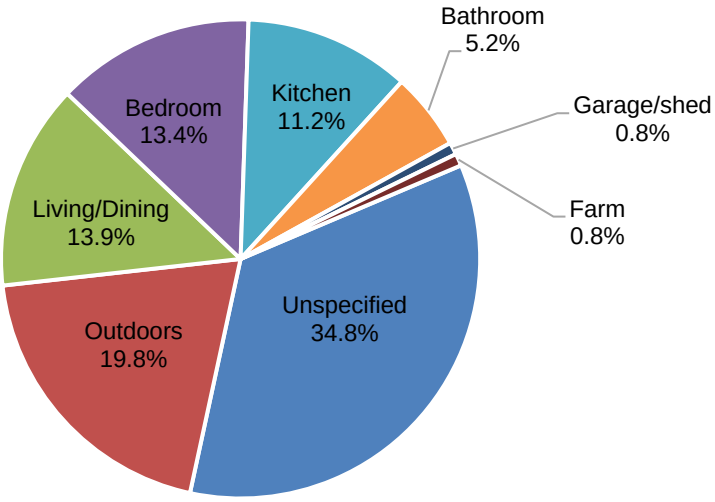


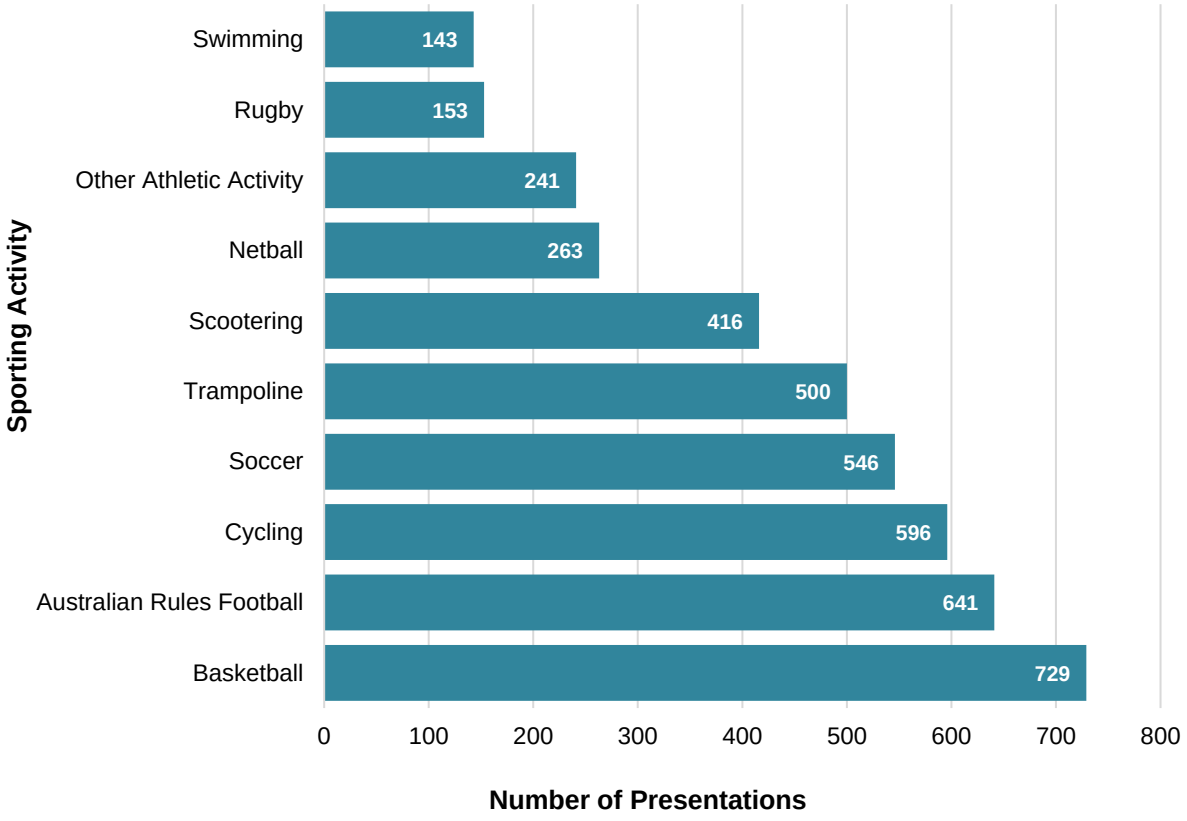
Figure 5b: Injury Presentations to PCH ED by Home Location; July 2022 - June 2023



SPORTING ACTIVITY

Sporting activities accounted for over a quarter of injury presentations to PCH ED (28.4%, n=5,532), with the most common sporting activity being basketball (13.2%, n=729). This was followed by Australian Rules Football (11.6%, n=641), cycling (10.8%, n=596), soccer (9.9%, n=546) and trampoline (9.0%, n=500) (Figure 6).

Figure 6: Injury Presentations to the PCH ED by Sporting Activity; July 2022 - June 2023

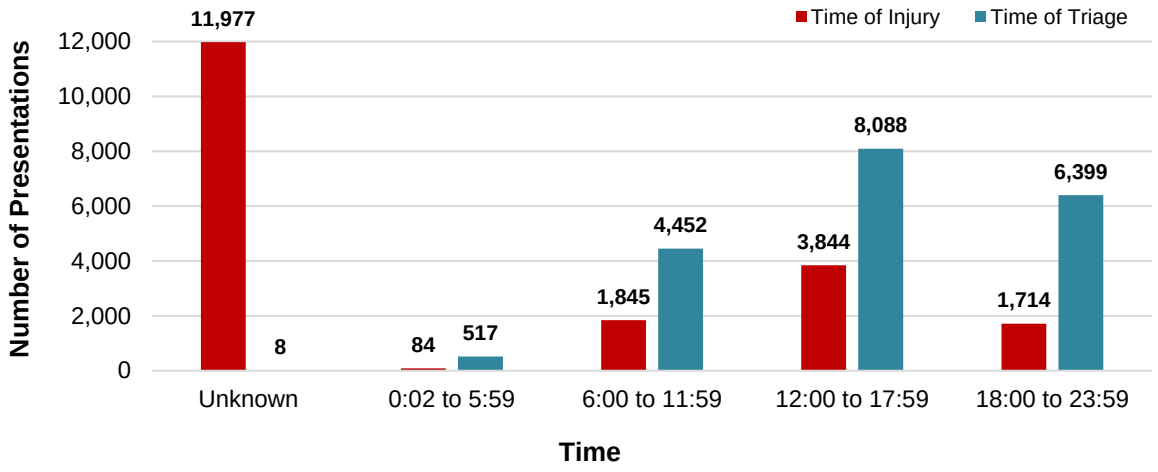


TREATMENT

TIME OF DAY

During the triage process, the time of injury and the time the child presents to PCH ED are recorded. Time of injury was unknown for almost two-thirds of the injuries (61.5%, n=11,977) (Figure 7). Where time of injury is known (38.5%, n=7,487), the most common time for injuries to occur is between 12:00 and 17:59 (51.3%, n=3,844). This is followed by injuries occurring between 6:00 and 11:59, accounting for 24.6 percent (n=1,845). A similar pattern is seen for the time of triage with between 12:00 and 17:59 (41.6%, n=8,088) being the most common time, followed by the time between 18:00 and 23:59 (32.9%, n=6,399).

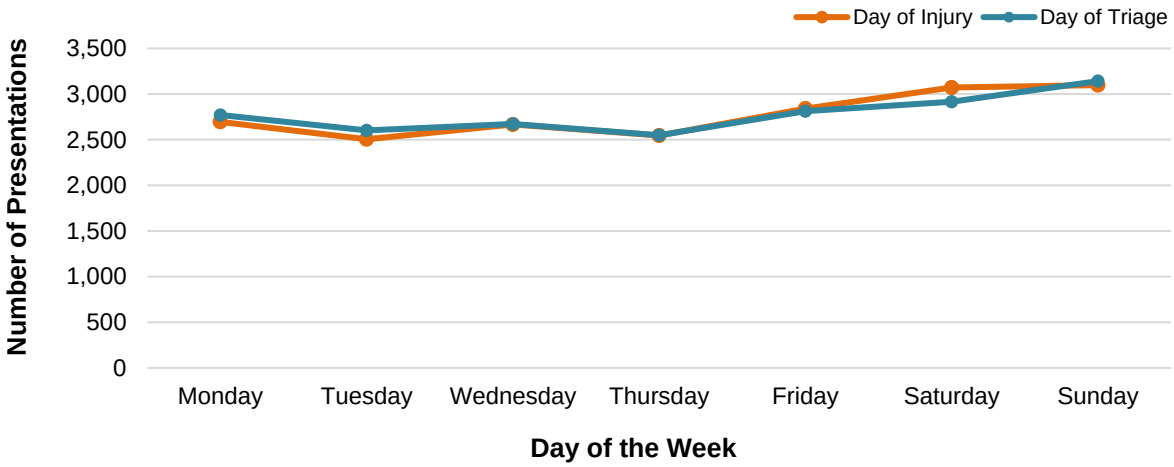
Figure 7: Injury Presentations to PCH ED by Time of Injury and Time of Triage; July 2022 - June 2023



DAY OF THE WEEK

During the triage process the day of injury and day of presentation is also recorded. Day of injury was unknown for a small portion of the injuries presenting to PCH ED (0.2%, n=39). Of the presentations where the day of injury is recorded, the weekends see the greatest number of injuries with Saturday and Sunday accounting for 15.8 percent (n=3,072) and 15.9 percent (n=3,098) respectively. This is similar to the pattern seen for the day of triage (Figure 8).

Figure 8: Injury Presentations to PCH ED by Day of Injury and Day of Triage; July 2022 - June 2023



TRIAGE CATEGORY

A triage category reflects the level of medical urgency required. Every child that presents to PCH ED with an injury is allocated a triage category (Table 2). The majority of injury presentations to PCH ED were semi-urgent (69.7%, n=13,566). This was followed by injuries that were deemed as urgent (22.3%, n=4,336) and an emergency (6.8%, n=1,324). Very few presentations were triaged as resus or non-urgent (1.2%, n=238).

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

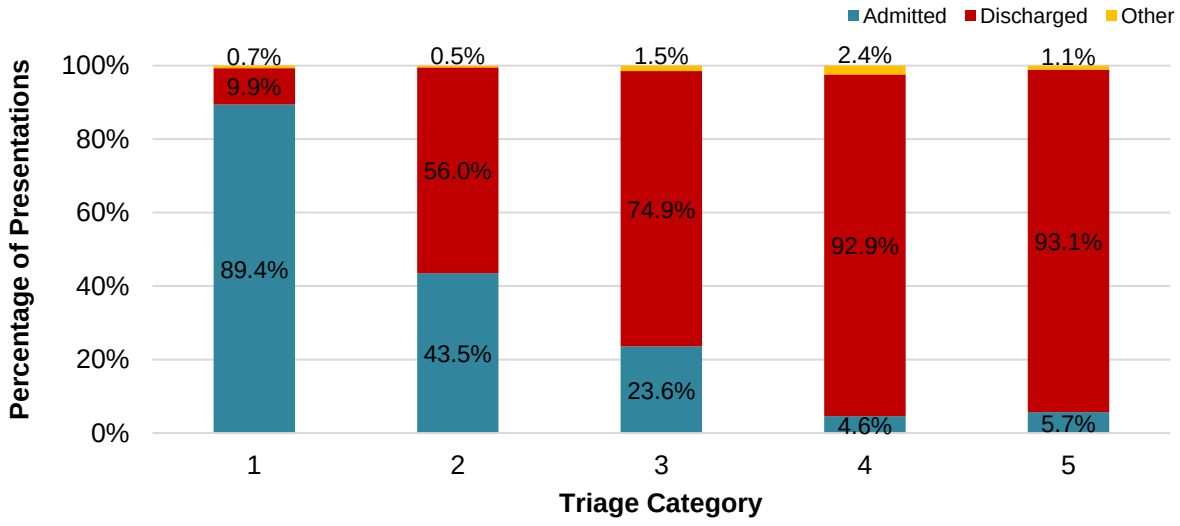
REFERRAL SOURCE

The majority of the children presenting to PCH ED for an injury are referred by themselves or a relative (92.8%, n=18,055). The remaining presentations are either referred by a general practitioner (3.4%, n=666) or another hospital (2.6%, n=514). While a small proportion of presentations are recorded as unknown or other.

OUTCOME OF ATTENDANCE

Many of the children who present to PCH ED with an injury are discharged from the ED with their treatment complete (85.7%, n=16,689). Hospital admission is required for a further 12.2 percent (n=2,369), and the remainder either did not wait for treatment, were transferred to another hospital or the outcome of their attendance is unknown or recorded as other. The more urgent the triage category, the more likely it is that a child will be admitted to hospital for further treatment (Figure 9).

Figure 9: Injury Presentations to the PCH ED by Triage Category and Outcome of Attendance; July 2022 - June 2023



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. This requires 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 72,000 children attend ED during this year. There are several other paediatric facilities within WA such as Fiona Stanley Hospital and Joondalup Health Campus, however PCH remains the largest reference centre for paediatric illness and injury for the state. Between July 2022 and June 2023, 19,464 children attended PCH ED due to an injury. This accounts for 27 percent of the total presentations to PCH ED, which is slightly less than the previous year. Injury presentations to PCH ED may have been impacted by Covid-19 over the past few years, however further analysis is required. This will be done in a separate report in the future to determine the full impact of Covid-19. Like previous years, demographic information remains largely the same. Children under the age of five and adolescents continue to account for high proportions of childhood injury and males are again over-represented from birth throughout childhood.

The type and cause of injury seen during this financial year is similar to previous reports, however the use of safety equipment has shifted. This years data shows that there has been a slight improvement in the use of safety equipment when compared to the previous year, particularly when looking at specific injury types.

Basketball and Australian Rules Football (AFL) account for almost half of the injuries associated with sports. In the previous two years AFL was the leading sport most commonly associated with injuries, however basketball has peaked this financial year. Of note, this does not take into account the participation rates of each sport, however this data does offer a snapshot of injury risks. Majority of the sporting related injuries to PCH ED are young adolescents from the age of ten, accounting for 70 percent.

Self-harm injuries account for a small portion of the total injuries to PCH ED, however they are generally more severe and require hospital admission for further treatment. On average 28.3 percent of self-harm injuries are admitted to hospital for further treatment[3]. There are a number of ways to reduce the risk of self-harm injuries, for more information see the *Kidsafe WA Childhood Injury Report: Self-harm Injuries, 2016-2021*.

Similar to previous years, information associated with the injury presentation is sometimes missed and therefore some of the data fields are coded as other or unspecified. This is particularly evident in the location field where 67.9 percent of injuries are coded as other place. Reporting on location has improved this year, as the previous year reported that 78.6 of the injury locations were recorded as other place. To improve the collection of triage data Kidsafe WA and PCH provide educational seminars to advocate and support staff with this process. Due to Covid-19 restrictions, triage nurse education was put on hold for a couple of years however recommenced again last year.

RECOMMENDATIONS

- Continue to provide injury prevention initiatives for all children and their parents / carers, with a focus on children under five years of age and teenagers.
- Promote injury prevention initiatives that identify ways to reduce the risk of sporting injuries amongst adolescents.
- Investigate the impacts of Covid-19 on injury to children.
- Continue to provide and analyse self-harm injury data to key stakeholders.
- Raise awareness of the importance of child injury data collection and its role in injury prevention by providing ongoing staff development sessions between Kidsafe WA and PCH triage nurses.
- Continue to produce and disseminate Kidsafe WA Childhood Injury Bulletins and Reports to support policy and interventions for child injury prevention.

REFERENCES

1. Australian Bureau of Statistics. Census Aboriginal and Torres Strait Islander people Quick Stats, 2021 [Internet]. [cited 2023 Nov 13]; Available from https://www.abs.gov.au/census/find-census-data/quickstats/2021/IQS5

2. Australian Bureau of Statistics. Census All persons Quick Stats, 2021 [Internet]. [cited 2023 Nov 13]; Available from https://www.abs.gov.au/census/find-census-data/quickstats/2021/5

3. Tsvetkov A, Skarin D. Kidsafe WA Childhood Injury Report: Self-harm Injuries. Perth (WA): Kidsafe WA (AU); 2022 August.

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