Kidsafe WA
Childhood Injury Bulletin

Child Accident Prevention Foundation of Australia
Western Australia

July 2022

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 and young people aged zero to seventeen, and 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
Perth Children's Hospital (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 64,000 children present to the PCH Emergency Department (ED). The PCH ED Injury Surveillance System is designed to capture data related to all children who present with an injury. This bulletin provides a summary of severe injury presentations to PCH ED for children aged zero to15 years between July 2016 and June 2021.

Severe Injuries to Children

A snapshot of severe injuries

- A total of **19,997** children presented to PCH ED with a severe injury.
- **Males** accounted for 57.5 percent (n=11,495) of presentations.
- Children aged **15 years old** accounted for the highest number of severe injuries (9.1%, n=1,813), followed by children aged **14 years** (8.6%, n=1,719).
- Of the known locations, the **home/farm** was the most common location for severe injuries to occur (30.4%, n=1,696).
- A large number of severe injury presentations are due to **unintentional** circumstances (89.2%, n=17,842).
- The most common cause of severe injuries was **falls** (28.9%, n=5,787).
- **Category 3 - Urgent** (80.4%, n=16,079) was the most commonly allocated triage category for severe injuries.
- A large portion of children presenting with severe injuries to PCH ED were **admitted** to hospital for treatment (38.6%, n=7,704).

Partner:

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

Introduction

Severe injuries only account for a small portion of injuries to children, however the risk of morbidity and mortality is high and these injuries generally require urgent medical treatment. As these injuries may result in death, they may not be captured in hospital data[1]. In Australia between 2015 and 2017, 563 children between zero and 14 years old died as a result of an injury, this is approximately 4.1 deaths per 100,000 children. While between 2016 and 2017 a further 66,500 children were hospitalised, which is rate of 1,445 per 100,000 children[2]. These deaths and hospitalisations are likely due to more severe injuries. These injuries can be prevented, however it is important to understand the causes of injury so that action can be taken to prevent severe injuries.

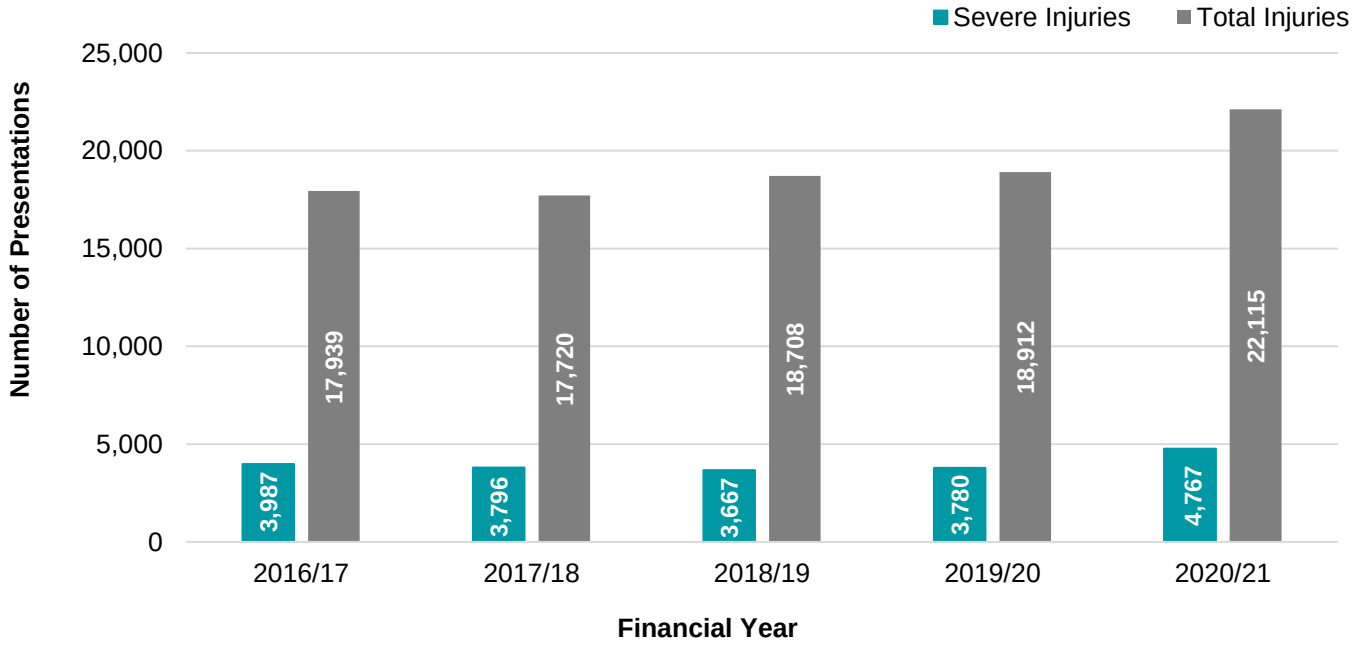
Each child that attends PCH ED is allocated a triage category between one and five based on the urgency of medical attention required, one being the most urgent and five being least urgent (Table 1). For the purpose of this bulletin we have classified severe injuries as those with a triage category 1, 2 or 3.

Table 1: Triage Categories

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

Between July 2016 and June 2021, 19,997 children aged between zero and 15 years presented with a severe injury to PCH ED. This accounts for 21.0 percent of all injury presentations during the five year period. There is a peak observed in the number of severe injury presentations in 2020/21, however when looking at these injuries as a proportion of total injury presentations, the proportion remains fairly constant across the years. In 2016/17 severe injuries accounted for 22.2 percent of total injury presentations and 21.6 percent in 2020/21 (Figure 1).

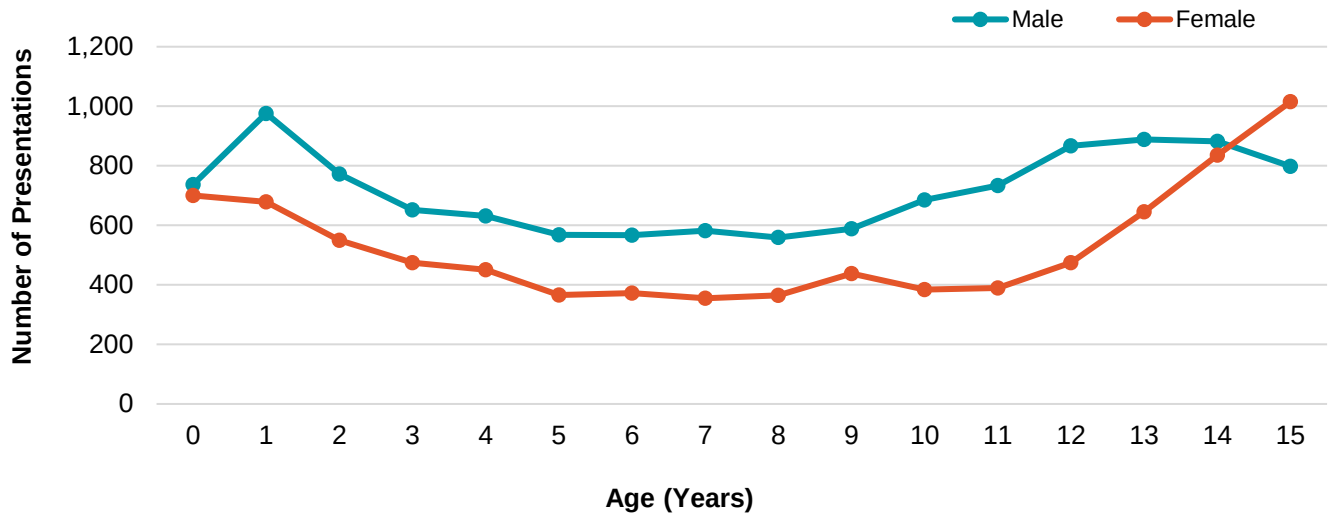
Figure 1: Severe Injuries by Year



Demographics

Males present more with severe injuries compared to females, accounting for 57.5 percent (n=11,495) and 42.5 percent (n=8,501) respectively. Overall males present more with severe injuries than females, however 15 year old females (56.0%, n=1,015) had a higher number of presentations to PCH ED than males (44.0%, n=798) (Figure 2).

Figure 2: Severe Injuries by Age and Sex



The severe injury 'flip' in the 14 to 15 year old age brackets may be due to the increased number of presentations of self-harm injuries in females. Females accounted for 83.4 percent (n=628) of the intentional injuries in this age group, while males accounted for the remaining 16.6 percent (n=125).

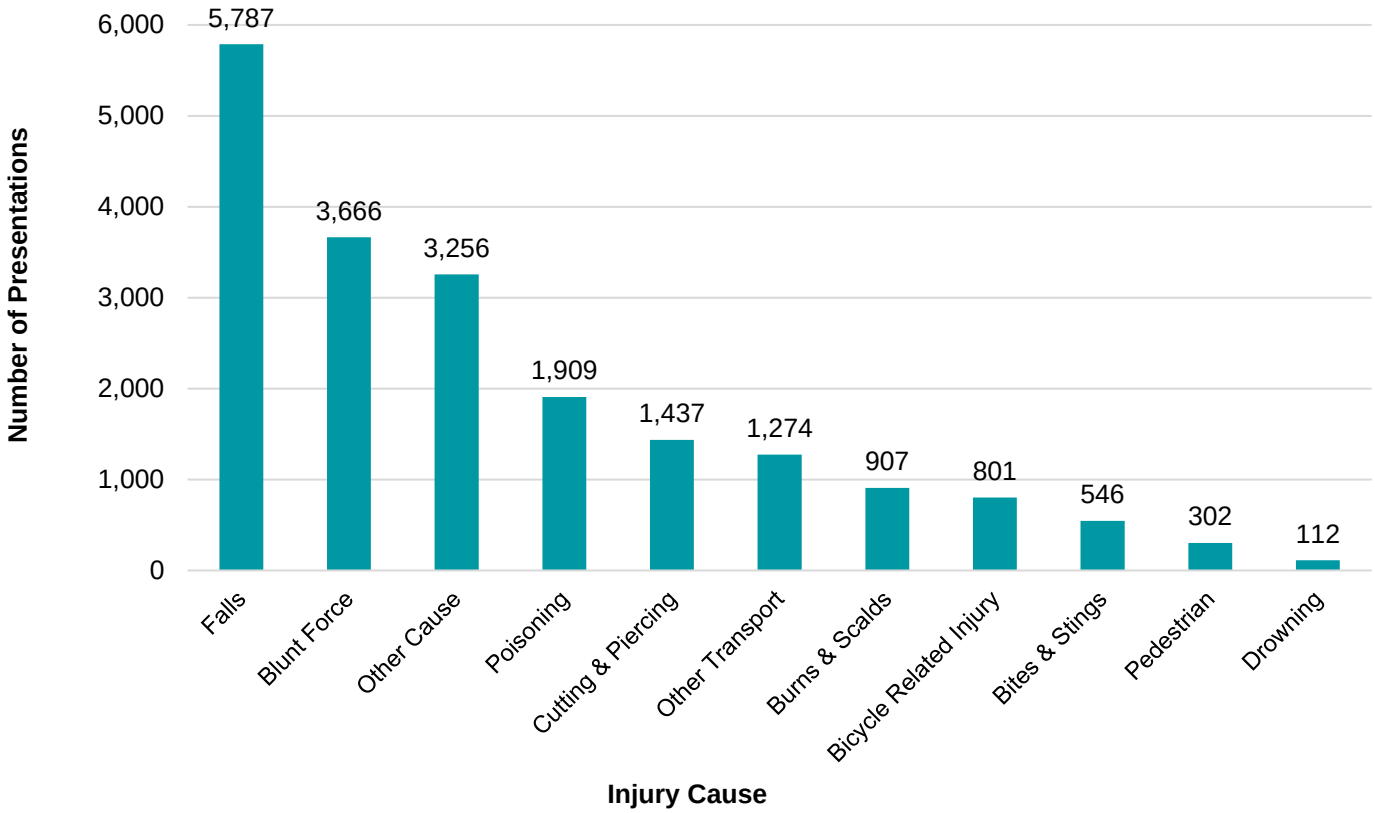
Aboriginal and Torres Strait Islander children account for 5.7 percent (n=1,147) of the severe injury presentations to PCH ED. Most children who presented with a severe injury resided within the Perth Metropolitan Area (90.3%, n=18,066), while 7.6 percent (n=1,522) resided in regional Western Australia. The proportion of children presenting with severe injuries from regional Western Australia is almost double the rate compared to all other injuries. This could be due to regional hospitals not having the facilities to treat the injury adequately, as over half of the presentations (52.9%, n=805) of the children from regional areas were referred by other hospitals to PCH.

Injury

The most commonly allocated triage category for severe injuries was 3 – Urgent, accounting for 80.4 percent (n=16,079) of the presentations to PCH ED. This was followed by category 2 – Emergency (17.1%, n=3,414) and category 1 – Resuscitation (2.5%, n=504). A large number of the severe injury presentations are due to unintentional circumstances (89.2%, n=17,842), with the remaining due to intentional self-harm (9.2%, n=1,832), alleged assault (1.0%, n=202) and undetermined or other (0.6%, n=121).

Over one quarter of the severe injury presentations to PCH ED were as a result of a fall, accounting for 28.9 percent of the severe injury presentations (n=5,787). Of the falls that resulted in a severe injury, falls from the same level i.e. tripping or slipping, were most common accounting for 42.9 percent (n=2,480) of the falls that occurred, followed by falls from a height of less than one metre (32.2%, n=1,866) and falls from a height greater than one metre (24.9%, n=1,441). Although falls from a height greater than one metre are the least common of all fall types, they have more severe outcomes where treatment is required more urgently and the child is more likely to be admitted to hospital for further treatment (46.5%, n=670). The second most common cause of severe injuries to children was a blunt force injury (18.3%, n=3,666). This type of injury occurs when a child collides with an object i.e. the child runs into a wall or the child is hit by a ball etc. See Figure 3 for causes of severe injuries to children.

Figure 3: Severe Injuries by Cause

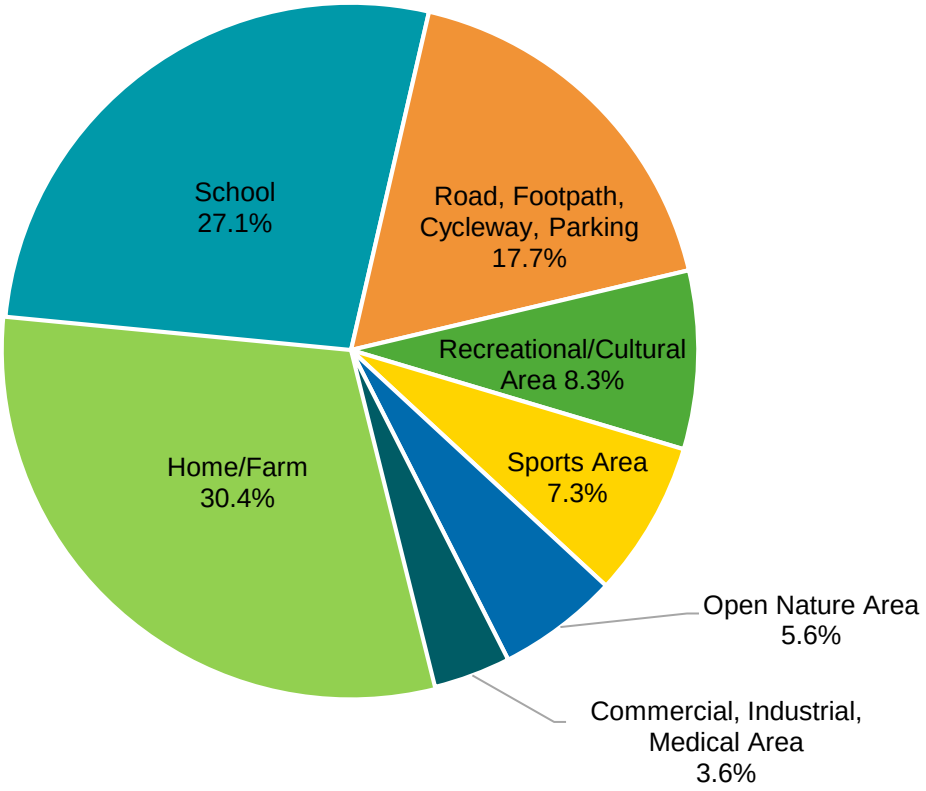


Of the most severe injuries with a triage code 1 – Resuscitation (2.5%, n=504), the most common cause was other transport accounting for 28.4 percent (n=143) of the presentations. This includes transport such as motor vehicles and motorcycles. The next two most common causes of severe injuries within this triage category was falls (14.7%, n=74) and pedestrian injuries (12.3%, n=62).

For many of the presentations the use of safety equipment was not required (75.9%, n=15,177), this was followed by presentations where it was unknown if safety equipment was used (20.0%, n=4,001). While for the remaining presentations it was noted that the child used a helmet (1.8%, n=350), no safety equipment (1.2%, n=238), seatbelt (0.7%, n=139), approved child car restraint (0.3%, n=59) and other safety equipment (0.2%, n=33).

The location of injury for most of the severe injury presentations was unknown (72.1%, n=14,421). Of the known locations (27.9%, n=5,576), the home was the most common location for injuries to occur accounting for 30.4 percent (n=1,696) of the presentations. This was followed by schools (27.1%, n=1,510), road/footpath/cycleway/parking areas (17.7%, n=987), recreational/cultural areas (8.3%, n=463), sports areas (7.3%, n=405), open nature area (5.6%, n=315) and commercial/industrial/medical areas (3.6%, n=200) (Figure 4). Of the known areas within the home setting (n=711), the outdoors is the most common location for severe injuries to occur (36.7%, n=261), followed by the living and dining area (21.7%, n=154).

Figure 4: Severe Injuries by Location



A large number of severe injuries occurred on Saturday and Sunday (32.9%, n=6,579). Where the injury time was known (40.7%, n=8,142), the most common time of day for severe injuries to occur was between 12pm and 6pm (48.6%, n=3,956).

Most children attended the emergency department based on concerns for themselves or a relative (81.5%, n=16,302). This was followed by referrals by other hospitals (12.3%, n=2,468) and general practitioners (3.5%, n=703).

Over half of the severe injury presentations to PCH ED were discharged from hospital with treatment complete (60.3%, n=12,032). A further 38.6 percent (n=7,704) were admitted to hospital for additional treatment. When analysing each triage category, of the triage category 1 presentations 93.5 percent (n=471) required admission to hospital for further treatment. While for triage categories 2 and 3, 51.7 percent (n=1,781) and 34.0 percent (n=5,452) respectively required further treatment in hospital. Looking at the sex of each child, hospital admissions for severe injuries were more common in males accounting for over half of the children who were admitted to hospital for further treatment (60.9%, n=4,688).

Prevention

The following preventative measures can assist in reducing the risk of severe injuries to children:

At Home

- Avoid leaving young children on raised surfaces and use the harnesses available on products.
- Protect against sharp corners on benches, coffee tables and other furniture.
- Ensure furniture such as televisions, bookshelves and chest of drawers are secured to walls to avoid these toppling onto children.
- Ensure there are no trip hazards by making sure floor coverings are in good condition and placing grips under rugs.
- Ensure glass doors are protected by safety film or made of safety glass. You can also place stickers on the glass to make it more visible and reduce the risk of children walking into it.
- Be aware of where different poisonous products such as medications, cleaning chemicals and button batteries are stored in your home. Keep these out of reach of young children.
- Store all medicines, cleaning products and other chemicals in their original containers and keep these separate from food or drinks.

On the Road

- When travelling in the car ensure children use a correctly fitted child car restraint for their age and size. For older children, ensure they use a seatbelt at all times when travelling in the car.
- As a driver make sure you do not drive tired or under the influence of drugs/alcohol, and always drive within the speed limits.
- Ensure your child always uses safety equipment such as helmets when using bicycles or other wheeled devices.
- Teach children how to cross the road safely and be aware of cars entering or exiting driveways when walking along a footpath.

At Play

- Ensure children use playground equipment suitable for their age and size. In addition, teach children the rules and skills to use the equipment properly.
- Ensure playground equipment in your backyard is adequately spaced away from hard objects such as fences, trees and other play equipment.
- Ensure trampolines and other playground equipment meet Australian Standards, and are in good condition. Make sure you also follow the safety recommendations when using these equipment.
- For older children, make sure you actively supervise when they are participating in more risky activities with a height of fall.
- When participating in sports ensure children wear appropriate protective equipment. This may include mouthguards, eyewear, helmets, protective padding, footwear and gloves.
- Familiarise children with water from a young age and ensure you supervise children within arm's reach. For more information on water safety visit https://royallifesavingwa.com.au.

References:

1. AIHW: Pointer SC 2021. Hospitalised injury in children and young people, 2017–18. Injury research and statistics series no. 135. Cat. no. INJCAT 217. Canberra: AIHW.
2. Australian Institute of Health and Welfare 2020. Australia's children. Cat. no. CWS 69. Canberra: AIHW.

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