



Kidsafe WA Childhood Injury Report: Injuries within the Home

Partner:



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

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INJURIES WITHIN THE HOME AT A GLANCE



43,666

Children were seen in the Perth Children's Hospital Emergency Department (PCH ED) for an injury within the home from July 2008 to June 2018.



63%

Of injuries within the home occurred in children under 5 years.



55%

Of the children injured within the home were male.

Location



Outdoors
21%



Living & Dining Area
14%



Bedroom
11%



Kitchen
5%



Bathroom
4%

Cause



Falls
49%



Blunt Force
22%



Burns & Scalds
5%



Cutting & Piercing
4%



Poisoning
3%

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. 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 Emergency Department

The Perth Children's Hospital (PCH), previously Princess Margaret Hospital for Children (PMH), is the only paediatric hospital in Western Australia and is the reference centre for paediatric illness and injury for the state. Every year approximately 60,000 children present to the Emergency Department (ED). The PCH Injury Surveillance System is designed to capture data related to all children presenting with an injury. This research report provides a summary of the Injury Surveillance System data collected at PMH and PCH between July 2008 and June 2018 relating to injuries occurring within the home. While this data does not take into account all Emergency Department presentations in Western Australia, it offers a snapshot of injury occurrences.

Injuries within the Home

Injury is the leading cause of death of children aged between 0 and 14 in Australia, as well as a major cause of hospitalisation.¹ In Western Australia, over 27 children die each year from preventable injuries, whilst a further 7,000 are hospitalised.²

In Australia the home is the most commonly specified location for childhood injury to occur accounting for 18.4% of all injuries.³ Young children under the age of five are particularly vulnerable to injury within the home.⁴ The home is the place where children grow and learn, achieving developmental milestones by interacting with their physical surroundings.⁵ Often mobility in children develops sooner than their cognitive understanding of the hazards around them, putting them at an increased risk of injury.³ Young children also tend to spend a larger portion of their time at home in comparison to older children who are more likely to attend school and participate in sport and recreational activities.⁵

Common injury risks for children within the home include drowning, burns and scalds, falls and poisoning.

Drowning

In 2018, 27 children between 0 and 14 years of age fatally drowned in Australia, two thirds of these were children under the age of five.⁷ The most common location for drowning to occur is in the swimming pool.⁷ This is often caused by an accidental fall into the water and in the majority of cases occurs within the child's own home.^{7,8} Bathtubs and fishponds are also common locations for drowning to occur, with children under 1 most likely to drown in the bathtub.⁸

Burns and Scalds

Children under the age of five have the highest rate of hospitalisation due to burns and scalds, with older children less susceptible.⁹ Nearly two thirds of admissions are due to scalding from hot food and drink, fats and cooking oil and hot tap water, with majority of these injuries occurring within the home environment.⁹ Across all age groups, males consistently present with higher rates of burn and scald injuries.⁹

Falls

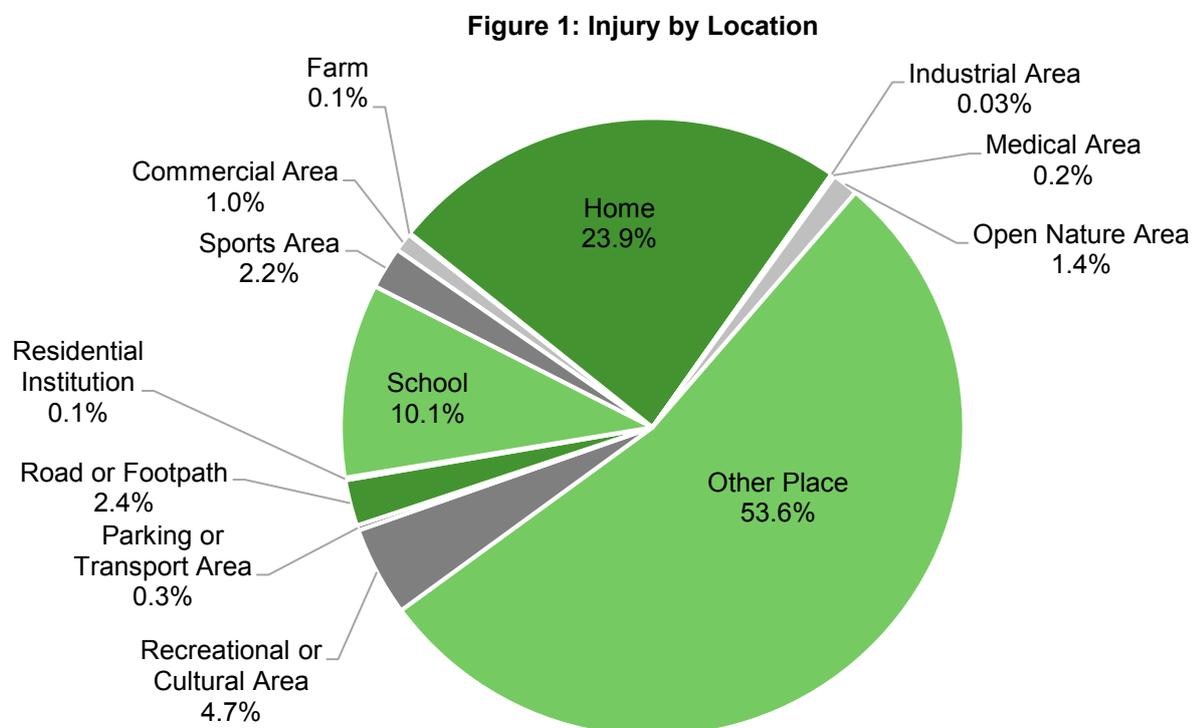
Falls are the most common cause of childhood injury hospitalisation.¹ While prevalent across all ages of childhood the nature of a fall differs based on a child's developmental stage.³ Infants are most likely to fall while being supported by another person or from bedding and other furniture, often when learning to roll.³ As children's mobility increases, they become more likely to fall from playground equipment, particularly trampolines and monkey bars.³ As children reach adolescence, falls become more common in males.³ Falls involving pedestrian conveyances are most frequent, particularly skateboarding.³

Poisoning

Children under the age of five have the highest rate of hospitalisation due to poisoning, with toddlers aged two years most at risk.¹⁰ Poisoning in children is most commonly from pharmaceutical substances especially paracetamol.¹⁰ Tranquilisers, antidepressant medication and vitamin poisoning also account for a significant portion of presentations.¹⁰ Poisoning from non-pharmaceutical substances include bites and stings, pesticides, petroleum based solvents and cleaning products.¹⁰ The home is the most common location for childhood poisoning to occur.¹⁰

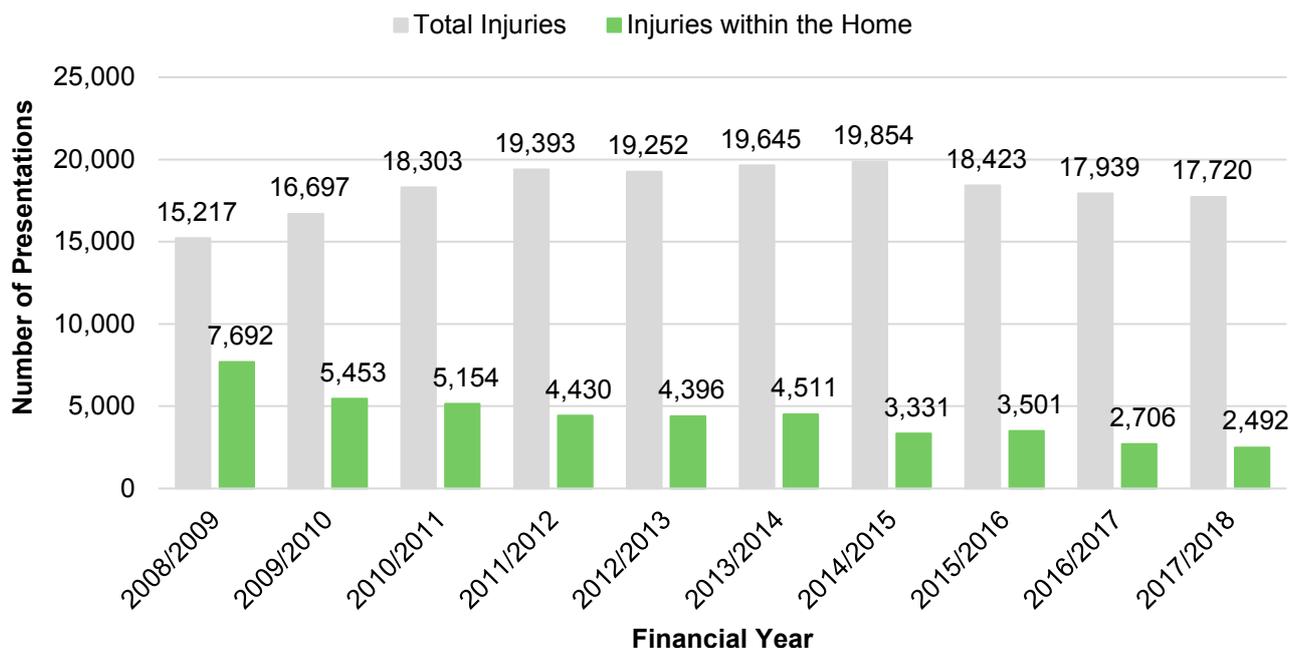
EMERGENCY DEPARTMENT INJURY WITHIN THE HOME PRESENTATIONS

Over the ten year period from July 2008 to June 2018 just under a quarter (23.9%, n=43,666) of injury presentations to the PCH ED occurred within the Home (Figure 1). The Home is the most common specified location for childhood injury to occur. Other Place accounts for 53.6% (n=97,857) of presentations and refers to an unspecified location or one that does not fit into an existing category.



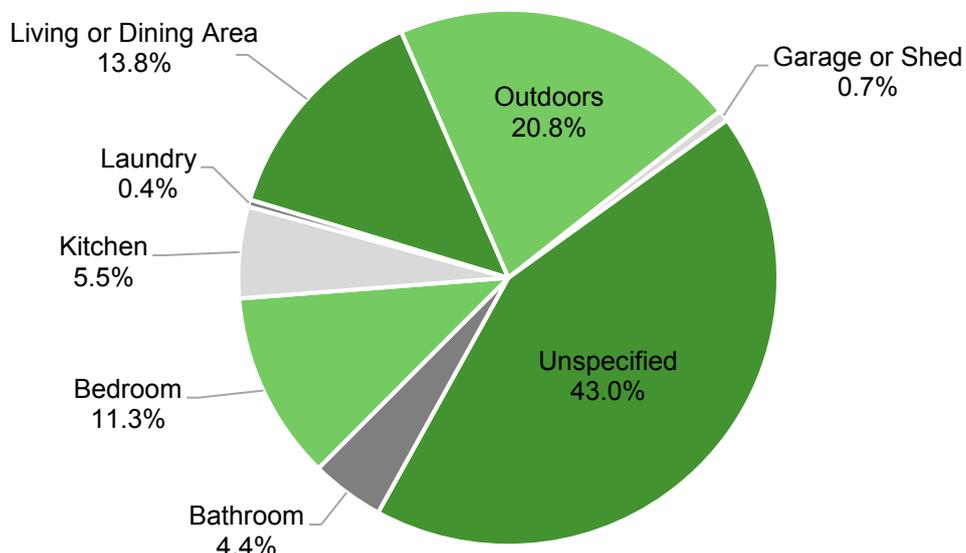
The proportion of injuries within the home in relation to total injury presentations to the PCH ED has decreased from 50.5% (n=7,692) in 2008/09 to 14.1% (n=2,492) in 2017/18 (Figure 2). While the proportion of injuries within the home has decreased, injuries coded as Other Place (Unknown location) have significantly increased from 20.9% (n=3,174) in 2008/09 to 65.4% (n=11,596) in 2017/18.

Figure 2: Injuries within the Home by Financial Year



Within the home, the Outdoors (20.8%, n=9,092) was the most common location for injury to occur followed by the Living or Dining Area (13.8%, n=6,024) and the Bedroom (11.3%, n=4,956). The Kitchen and Bathroom, although commonly associated with injury, accounted for only 5.5% (n=2,412) and 4.4% (n=1,923) of injuries respectively. A large proportion of injuries within the home (43.0%, n=18,781) did not specify the area within which they occurred (Figure 3).

Figure 3: Injuries within the Home by Room

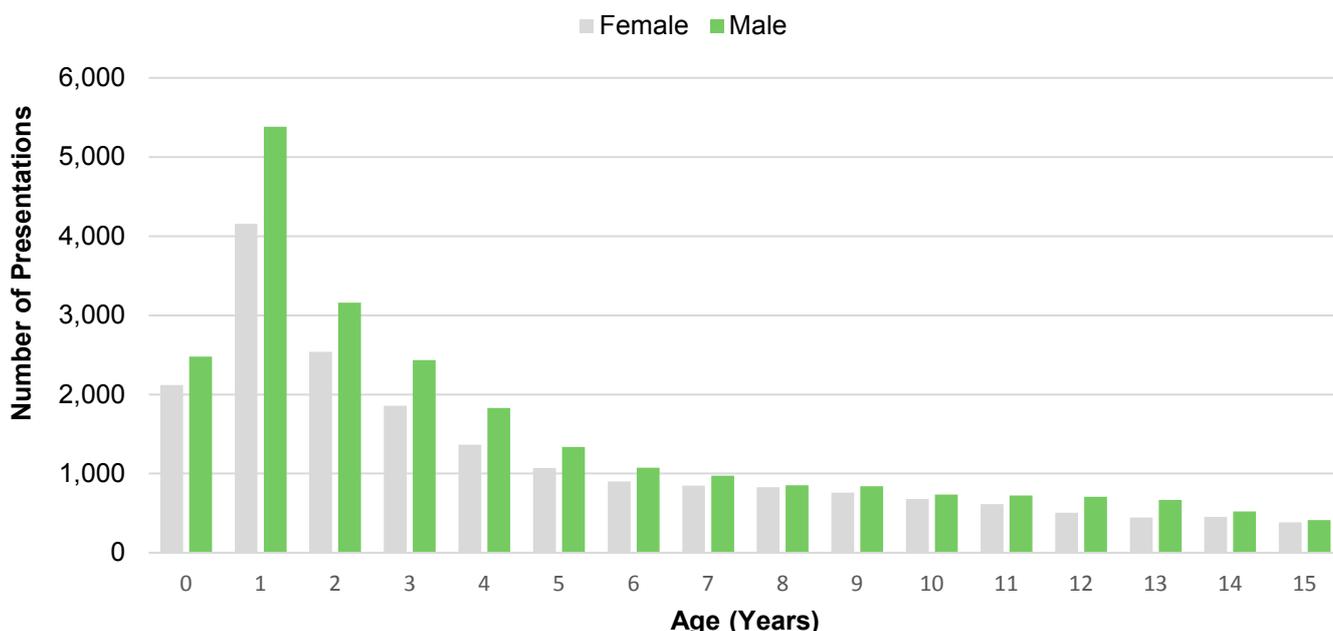


DEMOGRAPHIC DATA

Age and Gender

Children under five years of age accounted for the majority of injuries within the home (62.6%, n=27,324). One year old children are at particular risk of injury within the home, showing a spike in presentations and accounting for 21.8% (n=9,540) of injuries (Figure 4). Children under five years of age often spend a large amount of their time at home and are unable to determine potential hazards for themselves relying on adult supervision to keep them safe. As children get older, their risk of injury within the home decreases.

Figure 4: Injuries within the Home by Age and Gender



Males are more commonly injured within the home accounting for 55.3% (n=21,141) of injuries, with females accounting for the remaining 44.7% (n=19,524). Males accounted for a greater number of injuries within the home across all ages (Figure 4).

Area of Residence and Ethnicity

Most children presenting to PCH ED for injuries that occurred within the home reside within the Perth Metropolitan Area (95.1%, n=41,510). The remainder reside either within regional Western Australia (3.5%, n=1,509), were interstate (0.6%, n=242) or unknown (0.9%, n=405). The Wheatbelt and Southwest had the highest number of presentations of regional WA accounting for 1.3% (n=563) and 0.6% (n=262) of injuries respectively. Several factors can influence the number of injury presentations from regional locations. This include proximity to the Metropolitan area and PCH and access to suitable local medical facilities. Often more severe injuries are transferred from rural hospitals to PCH for treatment.

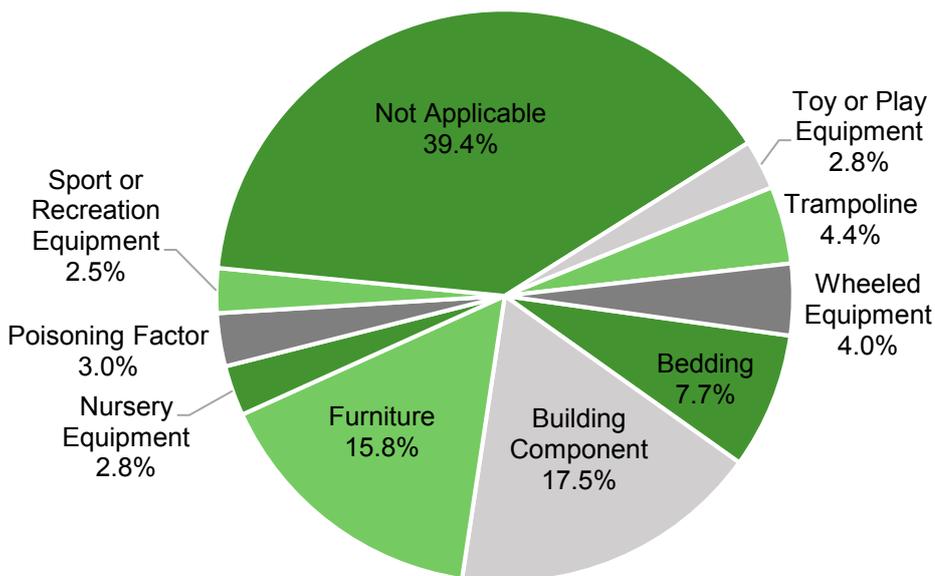
Children of Aboriginal and Torres Strait Islander descent accounted for 4.2% (n=1,836) of injuries within the home. This proportion is similar to that of total injury presentations where Aboriginal and Torres Strait Islander children account for 4.1% (n=7,510).

INJURY DATA

Injury Factor

More than half (60.6%, n=26,440) of the injuries that occur within the home are associated with an injury factor. Building Components such as walls, doors, windows and flooring accounted for 17.5% (n=7,633) of injuries and furniture such as chairs, sofas, tables and cupboards for a further 15.8% (n=6,911) (Figure 5).

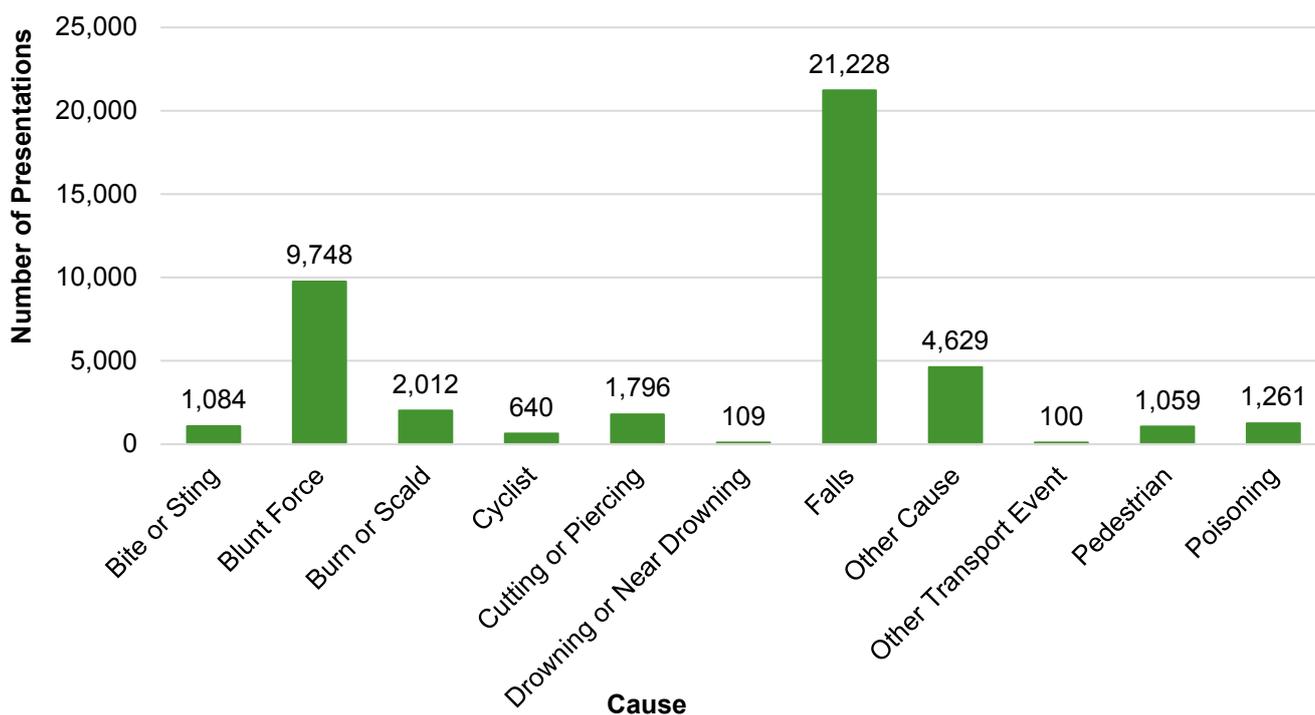
Figure 5: Injuries within the Home by Injury Factor



Cause

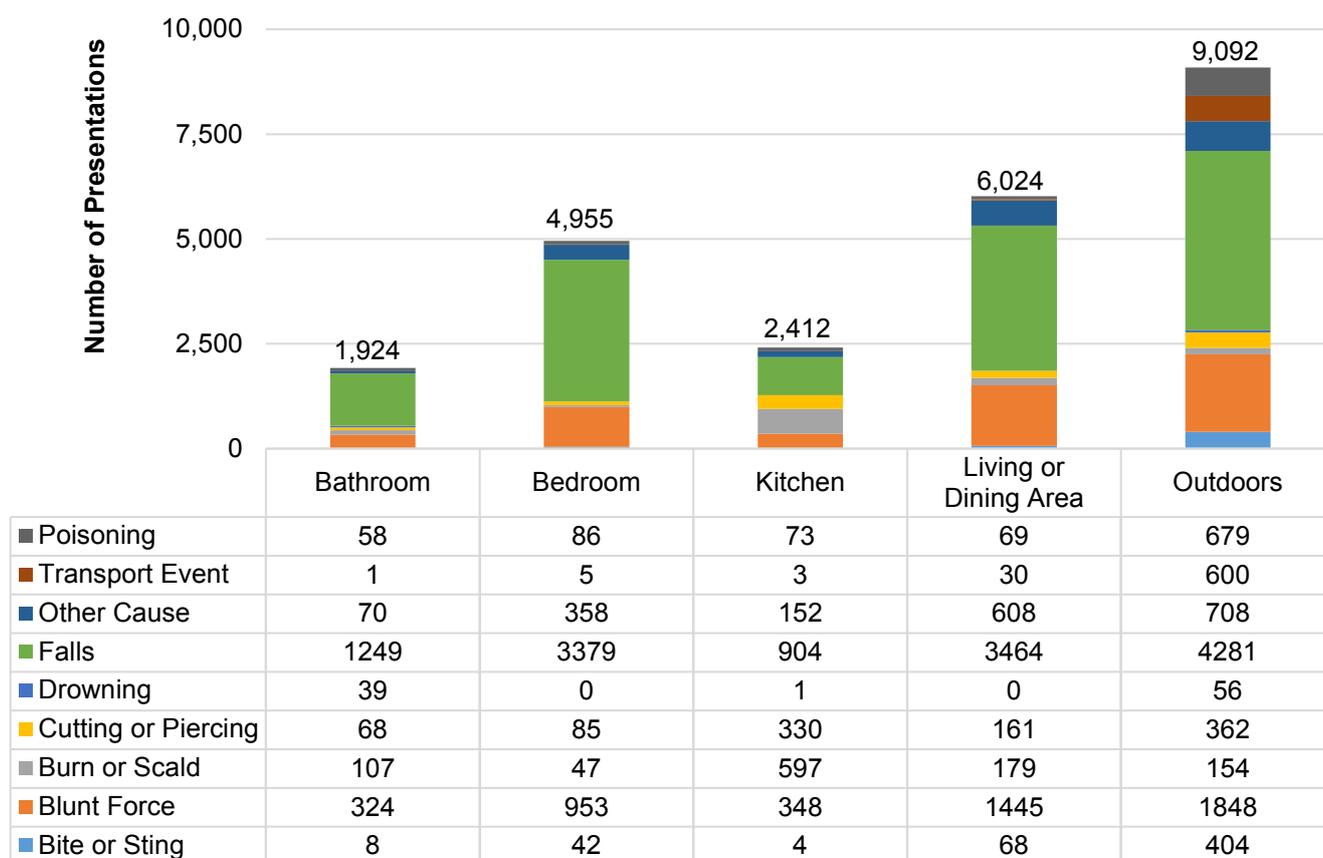
Falls are the leading cause of injury within the home accounting for just under half of all injuries (48.6%, n=21,228). Secondary to falls is blunt force (22.3%, n=9,748) referring to an injury caused by a collision with a person or object (Figure 6).

Figure 6: Injuries within the Home by Cause



While both falls and blunt force were consistently common across all rooms within the home, some injury causes were seen at higher rates within specific rooms. Almost a third (29.7%, n=597) of all Burn or Scald injuries occurred in the Kitchen, as did 18.4% (n=330) of Cutting and Piercing injuries. A large proportion of Bite or Sting injuries occurred outdoors, (37.3%, n=404) as did Poisonings (53.8%, n=679) and Transport Events (33.4%, n=600) which includes injuries to pedestrians and cyclists (Figure 7).

Figure 7: Injuries within the Home by Room and Cause



Room within the Home

Intent

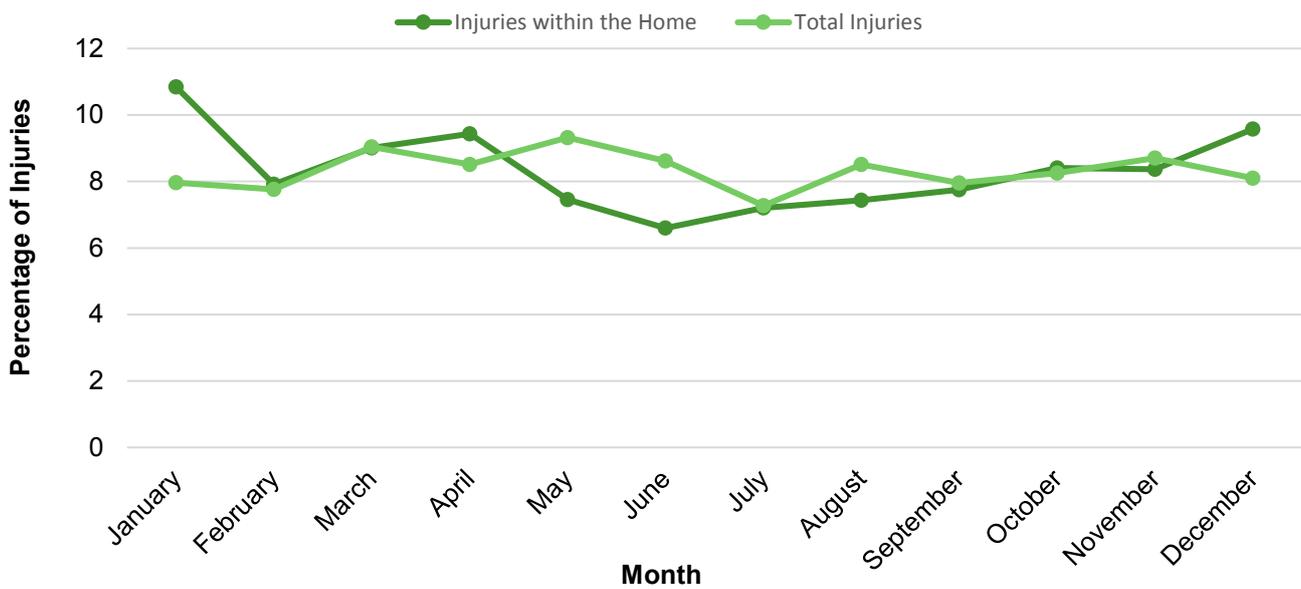
The majority of injuries that occurred within the home were due to unintentional circumstances (98.0%, n=42793). The remaining were due to either alleged assault (0.5%, n=199), intentional self-harm (0.8%, n=370) or were undetermined (0.7%, n=304).

TREATMENT DATA

Month, Day and Time of Injury

There is a seasonal pattern to injuries within the home, with peaks seen in January (10.8%, n=4,735), December (9.6%, n=4,180) and April (9.4%, n=4,120). These times of year correlate with warmer weather and holiday periods including Christmas and Easter. Troughs are seen in the cooler wetter months with June (6.6%, n=2,881) and July (7.2%, n=3,145) recording the lowest number of injuries (Figure 8).

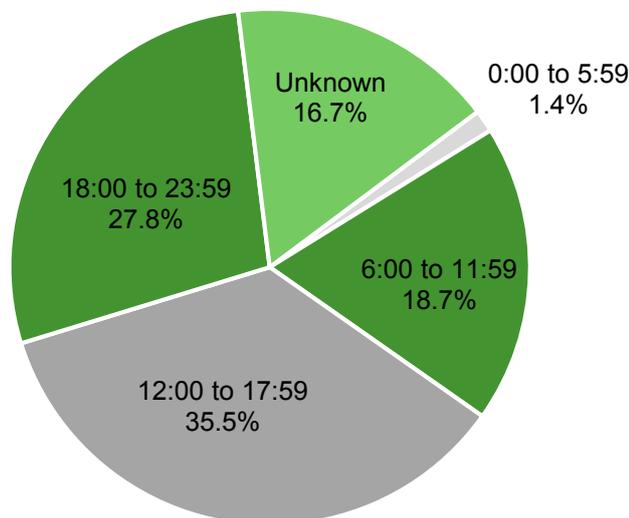
Figure 8: Injureis within the Home by Month



A higher number of injuries within the home occur on the weekend with Saturday and Sunday accounting for 17.7% (n=7,747) and 17.8% (n=7,757) of injuries respectively. The least number of injuries occurred on Wednesday (12.2%, n=5,310) and Thursday (12.3%, n=5,385).

A large number of injuries occurred in the afternoon with 35.5% (n=15,481) between 12:00 and 17:59 and 27.8% (n=12,145) between 18:00 and 23:59 (Figure 9).

Figure 9: Injuries within the Home by Time of Day



Triage Category

Every child that attends PCH ED is allocated a triage category based on the urgency of medical attention required (Table 1). The majority of injuries that occur within the home were triaged as semi-urgent (80.2%, n=35,001) or urgent (17.1%, n=7,472). The remainder were triaged as either Emergency (2.4%, n=1,030), Resuscitation (0.3%, n=132) or were Non-urgent (0.1%, n=31).

Table 1: Triage Category

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

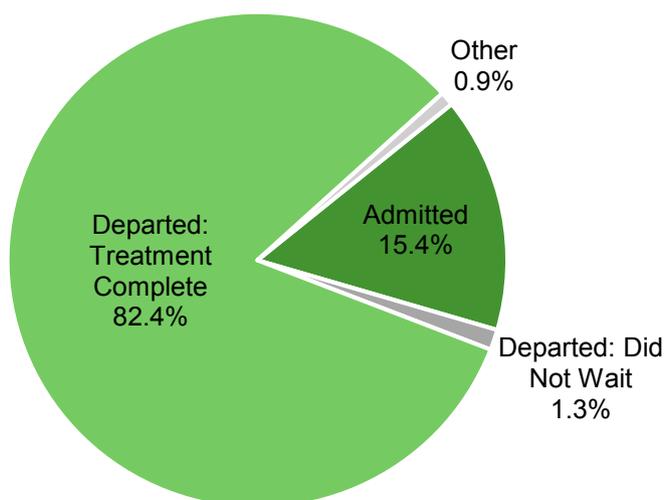
Referral Source

Most children who attended PCH ED for an injury that occurred within the home did so based on a referral from themselves or a relative (86.9%, n=37,936). The majority of the remaining children were referred by another hospital (5.8%, n=2,517) or a general practitioner (5.5%, n=2,413).

Outcome of Attendance

The majority of children were able to depart the ED with treatment complete (82.4% n=35,974). A further 15.4% (n=6,712) were admitted to hospital for further treatment (Figure 10). The remaining were either transferred to another PCH department or hospital, did not wait for treatment or other.

Figure 10: Injuries within the Home by Outcome of Attendance



DISCUSSION

The home is the most commonly specified location for childhood injuries to occur. Between July 2008 and June 2018, 43,666 children presented to PCH ED with an injury that occurred within the home environment. This accounts for just under a quarter of all injury presentations to PCH ED. While this report shows a decrease in the proportion of injuries occurring within the home in relation to total injuries, it is unclear if this is an actual reduction in injuries or miscoding at the point of triage.

The Outdoors, Living and Dining room and Bedroom were the most common areas within the home for injury to occur. The Kitchen and Bathroom, although commonly associated with injury, accounted for noticeably fewer injuries. These findings support previous research that shows supervision to vary within the home depending on what room a child is in. Children are more commonly left alone in the living room and bedroom in comparison to the Kitchen or Bathroom.⁶ Similarly parents are seen to safeguard against hazards within the kitchen and bathroom more frequently than other rooms, with the perception of parents and carers that the greatest risk of injury to children is within these rooms.⁴

Young children under the age of five account for the majority of injuries within the home. Toddlers in particular are at an increased risk as they are beginning to develop the physical ability move around and access their surroundings; however they are unable to distinguish potential hazards for themselves. They heavily rely on their caregivers to keep them safe. Young children also spend most of their time at home in comparison to older children, putting them at greater risk of injury within the home.

Similarly to total injury presentations, males are at an increased risk of injury within the home across all age groups. As children get older the gap between male and female injury rates increases.³

While falls and blunt force were consistently the most common cause of injury across all rooms within the home, some injury causes were seen at higher rates within specific rooms. Burns and scalds frequently occurred in the kitchen, as did cutting and piercing injuries. The kitchen is an area where hot objects and liquids are regularly available and likewise knives and other sharp objects. Bites, stings and poisoning were most common outside, as was transport events such as those to pedestrians and cyclists. Availability of bicycles, skateboards and insects in an outdoor environment contributes to this. Drowning occurred almost exclusively outdoors and in the bathroom where children have access to swimming pools and bathtubs. Most injuries within the home were deemed to be unintentional or accidental.

There is a slight seasonal pattern to when injuries within the home are more likely to occur, with increases during months of warmer weather as well as school holiday periods. Similarly injuries within the home are more likely to occur on the weekend and during afterschool hours, correlating to times when more children are likely to be at home rather than at school.

The severity of injuries within the home is similar to that of total injuries with the majority triaged as semi-urgent, requiring treatment within 60 minutes of arrival to PCH ED. Most children attend the ED based on the concerns of either themselves or a relative and are then able to depart with their treatment complete.

PREVENTION

Parental and caregiver behaviour plays a vital role in the prevention of injuries to young children within the home. This is through the provision of supervision, controlling access to hazards and educating children about safety as developmentally appropriate.^{4 5} Inadequate supervision is considered to be a key contributing factor to childhood injuries.⁴ Kidsafe WA recommend a combination of behavioural and environmental factors in protecting children from injury within the home. Specifically supervising children closely and removing or protecting against hazards to separate them from children. To minimise the risk of injuries occurring within the home, the following preventative measures can be followed:

Drowning

- Always supervise children around water within arm's reach.
- Ensure swimming pools or spas are fully enclosed by a safety barrier with a self-closing, self-latching gate.
- Familiarise children with water and teach them to swim.
- Never leave children alone in the bath.

Burns and Scalds

- Have a licenced plumber install a hot water tempering valve to control the delivery temperature of your tap water to a maximum of 50°C.
- Ensure you have working smoke alarms and test them regularly. Batteries should be replaced on the 1st of April every year.
- Never hold a child while preparing or consuming hot food and drink.
- Use non-slip place mats instead of table cloths and ensure hot food and drinks are out of reach.
- Install guards around fires, heaters and ovens and always closely supervise children.

Falls and Blunt Force

- Do not leave your baby unattended on nursery equipment or other raised surfaces.
- Always use the harness in high chairs and prams to keep your baby from falling out.
- Use safety gates at the top and bottom of stairs to restrict access.
- Place non-slip mats or stickers on the bottom of baths and showers to give extra grip.
- Secure all top-heavy and unstable furniture to the walls including bookcases, chests of draws and televisions.
- Use play equipment that is suitable for your child's age and stage of development.
- Separate play areas from the driveway.

Poisoning

- Ensure poisons are kept in a high lockable cupboard or cabinet.
- Store all poisons in their original containers and in a different area to where food and drink are kept.
- Use products with child resistant containers, however remember child resistant is not child proof.
- Dispose of unwanted and out of date medicines. Contact your local pharmacy for advice.
- Always keep the Poisons Information Centre phone number 13 11 26 near your phone.

Kidsafe WA has a range of Home Safety resources outlining methods of prevention. For more information on how to reduce the risk of injuries within the home visit:

<http://www.kidsafewa.com.au/resources-at-home>.

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