

Intentional Injuries

Childhood Injury Presentations: July to September 2007

- There were 19,442 presentations to Princess Margaret Hospital Emergency Department (PMH ED) from July to September 2007.
- This was a 55.7% increase from the previous quarter and a 35% increase from the corresponding quarter in 2006.
- However, this increase was not due to an increase in injury presentations. The number of injury presentations remained consistent with previous figures (n= 2,667).
- As a result, the proportion of presentations due to injuries dropped from the long-term average of 25% to 14%.
- The leading cause of injury presentations to PMH ED during this quarter was again falls (39.1%).
- In comparison with the corresponding quarter in 2006, the number of drowning presentations doubled (n=6).

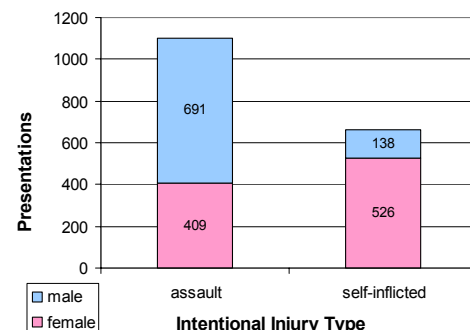


- The under 10 years of age category represented 61% of injury presentations, a figure that is lower than both the previous quarter and for the corresponding quarter the previous year.
- The number of Aboriginal children presenting following an assault or intentional harm injury declined from 17% in the previous quarter to 4%.
- The monthly presentations due to burns decreased from a winter average of 59 to 30.

Introduction - Intentional Injuries

- Intentional injuries include both injuries from assaults and those that are intentionally self-inflicted.
- Between July 2001 and June 2007 there were a total of 1,744 presentations to PMH ED for injuries that were deemed to be intentional or undetermined intent.
- This equates to an average of 290 per financial year.
- Of these, 63% (n=1,100) were classified as assault injuries.
- 664 were deemed to be intentionally self-inflicted by the child.
- The age of children presenting with self-inflicted injuries ranged from 6 to 16 years. The average age for girls was 14.2 years of age and 13.2 for boys.
- The highest rate of assault occurred in children aged 14 years (n=217, 20%).
- The number of girls presenting with intentional injuries (n=526) outnumbered that of boys (n=138) nearly four to one.
- Males were 1.7 times more likely to be assaulted than female children.

Presentations by intentional injury type and gender



- Intentional poisoning was the most common cause of self-harm (62%).
- The most common cause of assault injuries were from blunt force.

Results

Intentional injuries include both injuries intentionally inflicted by others and those self-inflicted. These two forms have enormous differences in terms of cause, consequence and opportunities for prevention. Despite these differences, they have both been included in this report as they are separate from the unintentional injuries focused upon by Kidsafe WA.

Intentional child injury contributes to approximately 4% of injury presentations to PMH ED each year. Kidsafe WA recognises that intentional injury to children is a serious issue, and has therefore chosen to focus upon these injuries in this bulletin.

Classifying an injury as intentional is difficult and needs to be done with a high degree of certainty. Once the injury has been deemed intentional, child protection and similar services become involved. Therefore, unless the intent of the injury is clear, it is placed under the category of undetermined intent or other.

Injuries intentionally inflicted upon a child by another person are categorised as assault. The majority of assaults on children are inflicted by adults; usually parents, guardians or other caregivers. The presentations examined under the assault category include both injuries that are clearly intentional and those of undetermined intent. The seven assault categories are: alleged assault, assault by partner, child abuse, other assault, sexual assault, undetermined intent, and other undetermined.

Intentional self-inflicted injuries include both attempted suicide and self-harming behaviours that may not be intended to lead to death. Prior studies indicate that the prevalence of self-harm injury to be more common in adolescent females, and rarely results in death¹. These acts of self-harm may simply be a way of expressing an inability to cope with a perceived stress within their young lives, rather than a serious attempt to end it¹.

Alternative reasons for inflicting self-harm include displacement, depression, and other mental health disorders¹.

This bulletin examines children triaged to the Princess Margaret Hospital Emergency Department after presenting with an intentional injury between July 2001 and June 2007. A total of 1,100 children presented to the emergency department during this six year period with what was deemed to be an intentional injury. This equates to an average of 290 presentations per financial year.

Of these presentations, 664 were due to self-inflicted injuries; an average of 111 per year. The results of this analysis mirrored findings of previous studies. Whilst self-inflicted intentional injury represented less than 1% of total injury presentations to the emergency department during this period, it rose to 3% for those presenting over the age of twelve, and to 6% for children over the age of fifteen.

Injuries due to assault accounted for 63% of intentional injury presentations (n=1,100). The majority of these occurred in children between 13 and 15 years of age (48%). Male children were 1.7 times at greater risk of being assaulted than female children, with the number of assaults to females only outnumbering those to males at the ages of two and three.

The most common form of assault injuries sustained were fractures and contusions. These occurred mainly to the children's torso, upper legs and arms. This is probably due to the ability to conceal these injuries from view. The home was the most common location for assaults to occur, accounting for over 34% of injuries.

Although both forms of intentional child injury have been included in this bulletin, they will be examined separately. This is due to their vast differences and their separate classification and coding by Princess Margaret Hospital.

Intentionally Self-inflicted injuries

Age

The triage data from the PMH ED is consistent with current evidence that self-harm is most common in children over the age of 11 and increases in frequency with age¹.

The youngest child to present with injuries deemed to be intentionally self-inflicted was a six year old male. Children under the age of eleven represented only 6.17% of all presentations. There was an increasing trend from the age of eleven, reaching a peak of 214 at the age of fifteen. When broken down to annual figures this approximates to 36 presentations per year.

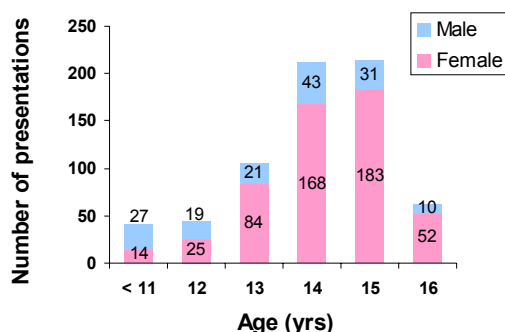
At the age of sixteen the number of presentations falls dramatically to 62. This does not necessarily mean there was a reduction in intentional injuries at this age, but may reflect the fact that adolescence begin to utilise non-child specific medical services. If data was available from all Western Australian hospitals, the escalation in presentations for self-harm injuries between the ages of eleven and fifteen may in fact be more pronounced.

Gender

Self-harm is believed to be more common amongst young females than young males¹. In children over the age of thirteen, studies indicate that females are approximately three times more likely to harm themselves than males¹. (See Figure 1)

Again, the PMH data is consistent with this evidence. Between July 2001 and June 2007, 526 female children presented to the Emergency Department with intentionally self-inflicted injuries. This is more than four times greater than the presentation rate of male children with the same form of injuries, which stood at 138 for the same period. Males dominated presentations only in the under 11 years of age category, with the youngest being just six years of age.

Figure 1: Self inflicted injury by age and gender

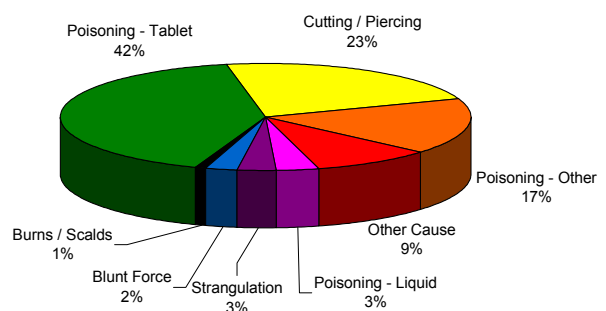


Cause

The causes of self-inflicted intentional injury have been split into eight categories for the purpose of this bulletin. This represents the seven most common forms triaged during the study period, while the remaining 9.4% have been combined into "other cause".

The majority of intentional self-harm injuries were the result of poisoning (62%), with three out of every five presentations the result of ingesting medication in tablet form. By the age of 15 this method reached nearly one in every two cases that presented to PMH. Paracetamol was the most common medication (22%) involved in single poisoning presentations. Alcohol or illicit drugs accounted for a further 10% of poisonings (See Figure 2).

Figure 2: Cause of Self inflicted injury - Total



The preferred method of self-harm differed substantially between the genders. Poisoning was the chosen method by females in 66% of cases, compared to 34% of male presentations. Male children were more likely to choose methods of a violent nature. They were 11 times more likely to self-harm via methods of strangulation and 9 times more likely to sustain an intentional blunt force injury. Cutting/piercing and burn/scalds injuries were similar amongst the genders (See Figure 3a & 3b).

Figure 3a: Self inflicted injuries by cause - Female

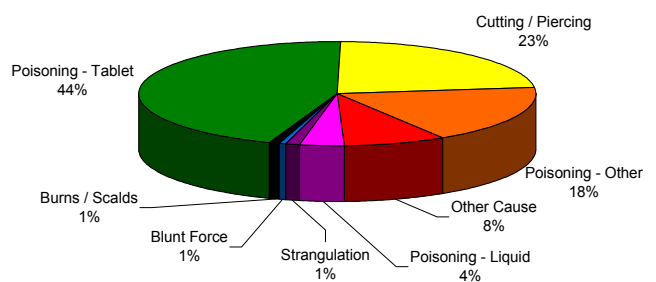
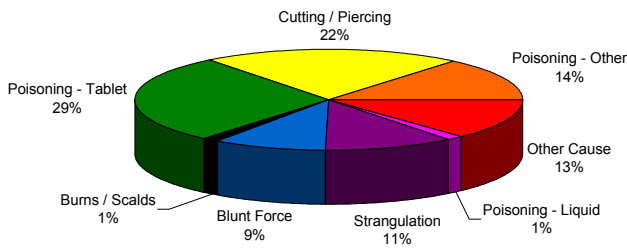


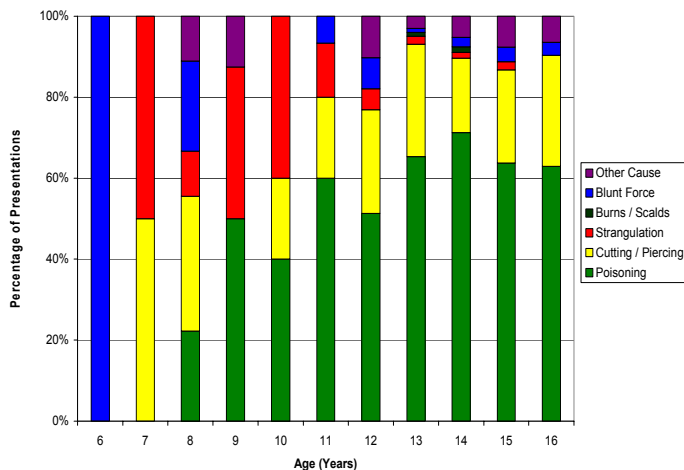
Figure 3b: Self inflicted injuries by cause - Male



The dominant cause of injury was also dependant on the child's age. The younger age groups sustained a higher proportion of injuries due to blunt force and strangulation. This is in part due to the higher proportion of males in the younger age groups, and the male tendency to favour these methods.

Poisoning was more prevalent amongst older children. This can again be partially explained by the gender composition, as there were more female children self-harming in the older age groups. Burns/scalds occurred only in children aged 13 and above, while the rates of cutting and piercing remained constant between the ages (See Figure 4).

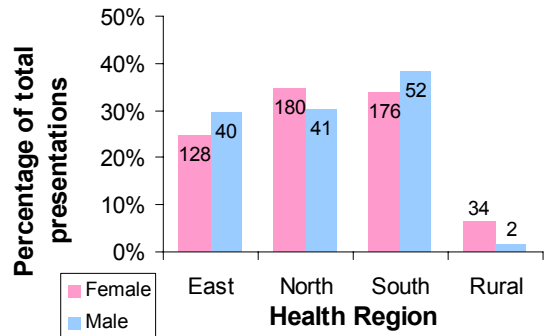
Figure 4: Cause of Self inflicted injury by age



Health Region

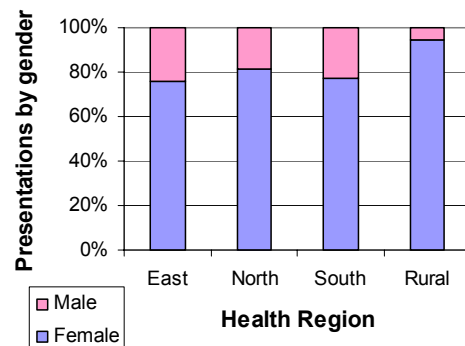
Over the study period there was little variation in presentation rates within each health region. The north (n=221) and south (n=228) metropolitan regions accounted for the greatest presentation rates of both genders. The east metropolitan region with 168 presentations accounted for approximately 25% fewer intentional injuries than either the north or south metropolitan regions (See Figure 5).

Figure 5: Self inflicted injury by health region



In each region female presentations outnumbered those by males. However, the gender ratios differed throughout the state. The east and south metropolitan regions were comparable, with female to male gender ratios of 3.2:1 and 3.4:1 respectively. The proportion of male presentations was lesser in the north metropolitan region, with a ratio of 4.4:1. The most significant variation however was in the presentations by rural children. Of the 36 presentations only two were male, giving a female to male ratio of 17:1 (See Figure 6).

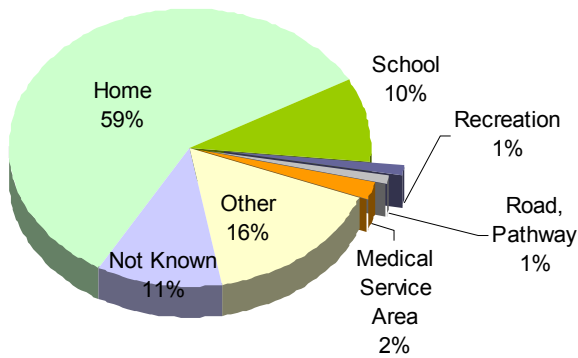
Figure 6: Gender comparisons of Self inflicted injury between health regions



Location

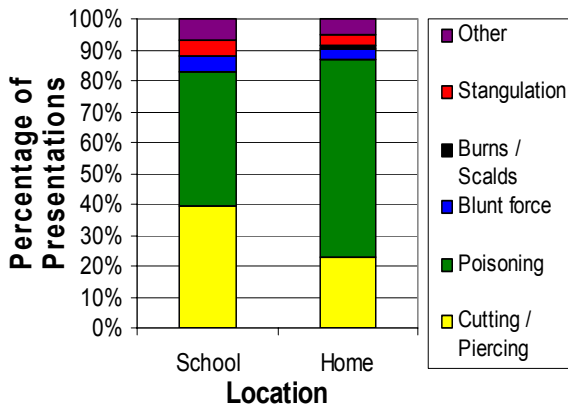
Approximately three out of five intentional injuries occurred in the home environment. Nearly 4 in every 5 self-harm injuries occurring in the home were committed by females, this figure reaching 90% for children aged over 14 years. The school was the location of one in ten self-harm injuries. In total, nearly 70% of injury presentations deemed to be intentionally self-inflicted occurred in either the home or school environments. This reflects the large proportion of time children spend in these locations. (See Figure 7)

Figure 7: Location of Self inflicted injury



A difference in injury cause can be clearly seen between the two predominant locations of injury occurrence (See Figure 8). In both locations, poisoning accounted for the largest proportion of injuries, followed by cutting / piercing. However, the home environment displayed a much larger proportion of poisonings, with 64% of all injuries occurring in the home being due to a poisonous substance. Cutting / piercing within the home only accounted for 23% of presentations. Self-harm injuries that occurred within schools were nearly evenly split between poisoning and cutting / piercing, with 43 and 40% respectively.

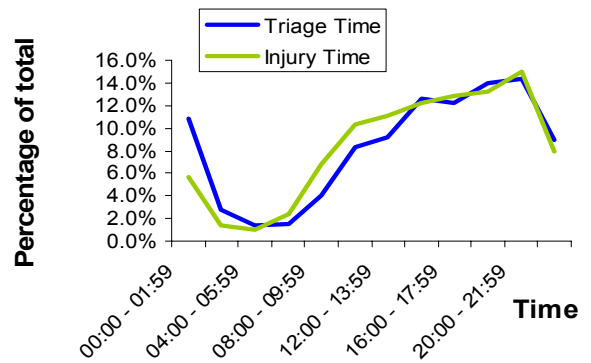
Figure 8: Cause of Self inflicted injury by location



Time

The majority of intentionally self-inflicted injuries occurred after noon, with a third occurring between 4.30 and 6.30pm. This time correlates with the after school period, which is similar across all causes of child injury. The difference between injury and triage time is shorter than what is usually seen for unintentional injuries (See Figure 9).

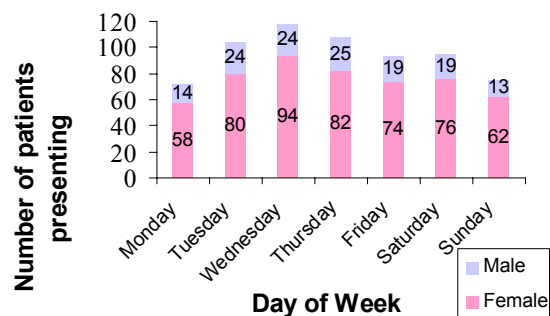
Figure 9: Triage time versus injury time



Day

The presentation pattern displays a midweek peak for intentional self-harm, with a trough on Sunday. This is the reverse to the general presentation pattern for injuries to the PMH Emergency Department (See Figure 10). The pattern for intentionally self-inflicted injury presentations does not appear to differ between genders.

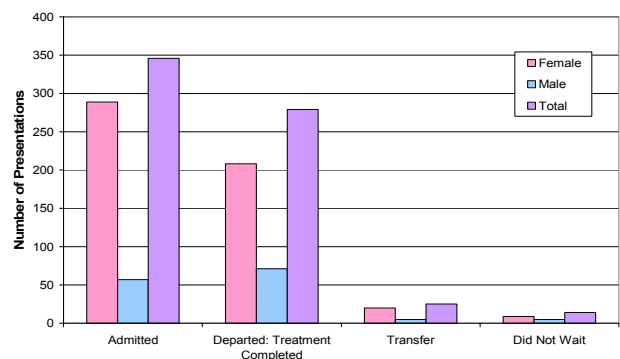
Figure 10: Day of self inflicted injury



Outcome

Nearly all (98%) of children presenting to Princess Margaret Hospital with an intentional self-harm injury received treatment within the Emergency Department. Significantly, over half of the children will then be admitted to PMH or transferred to another hospital. This admission rate is 2.5 times greater than that for all other injuries combined (See Figure 11).

Figure 11: Outcome of self inflicted injury

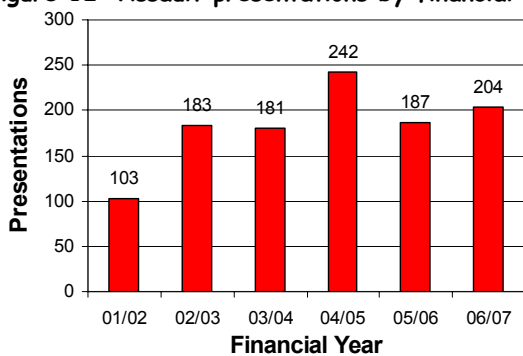


Assault Injuries

Time Trend

The last six financial years has seen presentation rates from assault injuries fluctuate between 103 in 2001/02 and 242 in 2004/05. During the most recent financial year of July 2006/June 2007, there were 204 presentations to the PMH ED with injuries classified as assaults or of undetermined intent. While this is not the highest figure observed within the study period, it is 9% increase on the previous year and more than 50% greater than at the start of the six year term. (See Figure 12).

Figure 12: Assault presentations by financial year

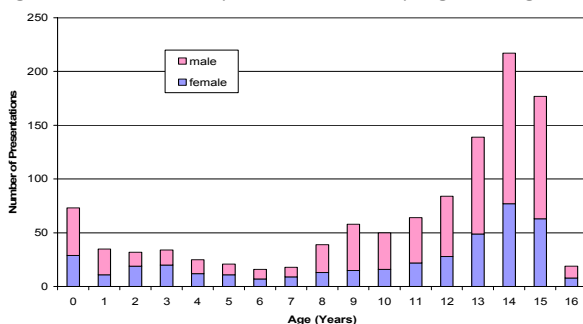


Age

The age distribution of assault / injuries of undetermined intent is parabolic. Presentation rates fall between the ages zero and seven, before beginning a steep incline that peaks at the age of fourteen. Children aged between thirteen and fifteen accounted for 48% of assault presentations to the PMH ED between July 2001 and June 2007 (See Figure 13).

The decrease in presentations between the ages of fourteen and sixteen may again be due to adolescents seeking medical attention at non-child specific hospitals. Therefore, the drop in assaults displayed in children over the age of fourteen may not reflect the reality.

Figure 13: Assault presentations by age and gender

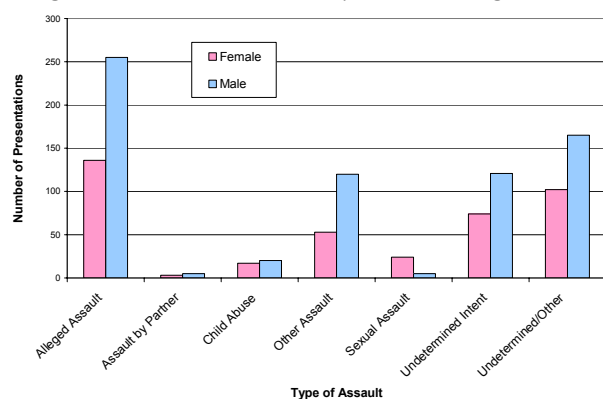


Gender

Males were 1.7 times more likely to be the victims of assault than female children. This extends to 1.9 between the ages of 8 and 15, and reduces to 0.9 between the ages two and seven.

The most notable difference between the genders relates to the type of assault. Female children are nearly five times more likely to be the victim of sexual assault, with 24 female presentations during the study period due to sexual assault compared to male presentations (See Figure 14).

Figure 14: Presentations by intent and gender



Aboriginality

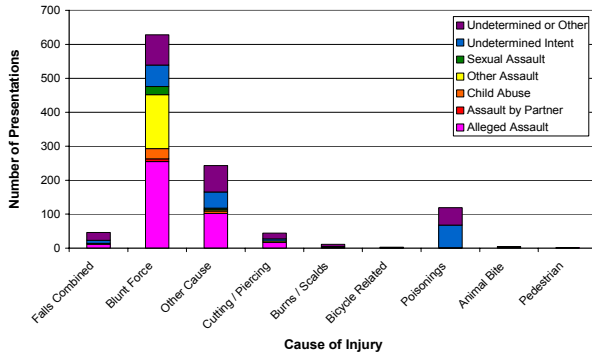
On average, children of aboriginal background comprise 5% of total presentations to the PMH Emergency Department each year. For injuries classified as assault or of undetermined intent, this proportion rises to 18.6%. This indicates that Aboriginal children are at a greater risk of injury due to intentional harm inflicted by another person, than by other causes of injury.

Given the proportion of Aboriginal children in Western Australia, this data also indicates the Aboriginal children are at greater risk of assault than children of other ethnicities.

Cause

The majority of assault injuries were the result of blunt force. Blunt force injuries include those resulting from being kicked, punched, or hit with an object. Poisonings were the cause of 119 assault presentations, all of which were classified as being of undetermined intent, or other. Falls, cutting, piercing, burns and scalds were other common causes of assault injury (See Figure 15).

Figure 15: Presentations by cause and intent



Outcome

The percentage of children admitted to PMH after presenting with an assault injury was 25%; 6% greater than the average admittance rate. This may be due to the seriousness of the injury, as well as the surrounding circumstances and the need to hospitalise the children to ensure their safety.

Discussion

Children and young people have the right to be safe. The protection of children and young people is the responsibility of both families and the wider community. Tragically, intentional child injury is more common than many people think because it is often hidden. Both assault and self-harm is committed by people who do not wish others to know of their actions. Those inflicting assault know that their actions are against the law, while children who are the victims of assault or are self-harming are often ashamed and scared.

Victims of assault are often made to feel as if they are at fault or that something bad will happen if they tell someone of their injuries. Abuse is most commonly committed by a family member meaning that the child must also deal with the emotional issues of speaking up against a relative². Younger children, toddlers and babies, as well as some children with some disabilities are at greater risk of assault, as they can't protect themselves from abuse². They lack the physical ability to escape, and the verbal ability to tell someone what is happening.

It is difficult to know the extent of child injuries due to assault, as many assaults are

committed by the child's parent or guardian, who is responsible for seeking medical attention.

Therefore, some young victims of assault may never reach the PMH ED even if their injuries warrant emergency attention. Of those who do present to PMH, the intent of the injury may not be revealed or obvious, resulting in the injury being classified as of undetermined intent.



While this analysis provides insight into how children are injured through acts of self harm, it does not explain why they occur. This is beyond the capabilities of the raw data and requires in depth knowledge of the patient, their family circumstance and their mental state at the time of injury.

The reasons behind why people self-harm is complicated². It is believed that in most instances self harm is not carried out as an attempt to commit suicide². It is often carried out when people feel disconnected or isolated, and wish to cause themselves physical pain in order to alter their mood state². They may be experiencing anxiety, depression, or bullying, they may be being abused or in the middle of a family breakdown³. Alternatively, they may be experiencing the stresses of everyday life and are simply unable to cope³. Whatever the reason, it is a complex situation in which the individual self harming requires prompt help.

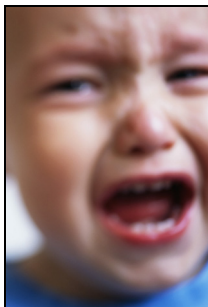
Children who self harm do so for the same reasons as adults who intentionally injure themselves. They perceive that they have no other way of coping with the problems that they are experiencing³.

Acts of self harm are physically damaging, and may lead to death even if not intended. In addition to this, it does not allow the underlying emotional issues to be addressed³.

Although there has been limited research into the issue it is clear that self harm is a symptom of an underlying issue rather than the core problem itself³.

A limitation of this analysis is the magnitude of cases that are not included within this data. This includes the cases that are treated in medical facilities other than Princess Margaret Hospital, and the cases that go undetected. It is impossible to say how many children self harm as many do so in secret¹. This means that unless the injury is severe, it is often not brought to the attention of carers, and therefore does not receive medical attention.

Of those that are detected and receive medical attention, many are not classified as being acts of self harm. Children wishing to hide their actions may not admit to having intentionally harmed themselves. This denial means that a number of intentionally self-inflicted injuries may be classified as unintentional unless their intention is obvious.



Despite their lack of accuracy, the figures available from both PMH and previous studies are consistent. Females dominate the rates of intentional self-inflicted injuries, while males are at greater risk of all forms of assault other than sexual assaults. Both forms of intentional injuries occur at higher rates in adolescent children. Poisoning by medication is the most common cause of intentional self injury for both male and female children, while blunt force is the most common cause of assault injuries.

There is currently an array of programs running within Australia that address issues relating to intentional child self harm. These programs suggest that the most effective means to educate children and to reduce the rate of intentionally self-inflicted injury is through school based programs². There are also numerous measures in place to protect children from assault. These include child protection services as well as parental education programs.

Injuries of this nature place significant burden upon the individual, their family, friends, the health system and society as a whole. Future interventions need to take into account the underlying reasons. They need to address those most at risk and focus upon the common causes of self harm and assault. Devising evidence-based interventions to educate children and parents on alternate options for dealing with their problems could reduce the number of intentional injuries to children. A reduction in numbers presenting would be beneficial to all of society.

References

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3. Mental Health Foundation. Truth Hurts - Report of the National Inquiry into self harm amongst young people [online]. 2007 [cited 2007 Nov 27]. Available from: URL: <http://www.selfharmuk.org/docs/self%20harm%20report%20lowres.pdf>

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The WA Childhood Injury Surveillance Bulletins are developed by Kidsafe WA in consultation with the Princess Margaret Hospital Emergency Department Injury Surveillance Officer and Department of Health (Clinical Network Development Team - Injury).

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