



INJURY
BULLETIN

Level 2, Mater Children's Hospital, South Brisbane 4101

Phone 07 38408569 Facsimile 07 38401684

Email mail@qisu.qld.gov.au URL <http://www.qisu.qld.gov.au>

Injuries in the Home - Adults

Richard Hockey, Data Analyst, QISU
Elizabeth Miles, Manager, QISU

Summary

- 38% of all unintentional adult injury presentations occurred in the home
- 30% of the injuries resulted from falls
- Falls were more common in older people particularly women
- Injuries sustained by adults in the home were most commonly open wounds and sprains or strains
- Almost half of the injuries involved younger adults 14-35 years
- Tools including grinders and other power tools were implicated in 6% of injuries.
- 10% of injuries involved animals including venomous bites and stings and injuries involving dogs

Introduction

In and around the home is by far the most common location for injuries to occur. Almost half of all presentations to emergency departments (ED's) for injury in Queensland are the result of an incident in the home. Many of these injuries are of a minor nature however the high number occurring in this one setting highlights the importance of home safety initiatives. For the purpose of this analysis, only unintentional and non-occupational injuries have been included in this the first of two bulletins examining injuries to adults and children occurring in or around the home.

Results

For the three years from January 1998 to December 2000 there were 28 002 adult (aged 14 years and older) presentations to participating ED's in Queensland* as a result of an unintentional, non-occupational injury in the home; comprising 38% of all unintentional adult injury presentations.

* QISU data is based on emergency department presentations to the following hospitals: Mater Children's Hospital, Mater Adult Hospital, Mater Private Emergency Care Centre, Queen Elizabeth II Jubilee Hospital, Redland Hospital, Logan Hospital, Royal Children's Hospital, Mt Isa Hospital, Mackay Base Hospital, Proserpine Hospital, Sarina Hospital, Clermont Hospital, Dysart Hospital and Moranbah Hospital



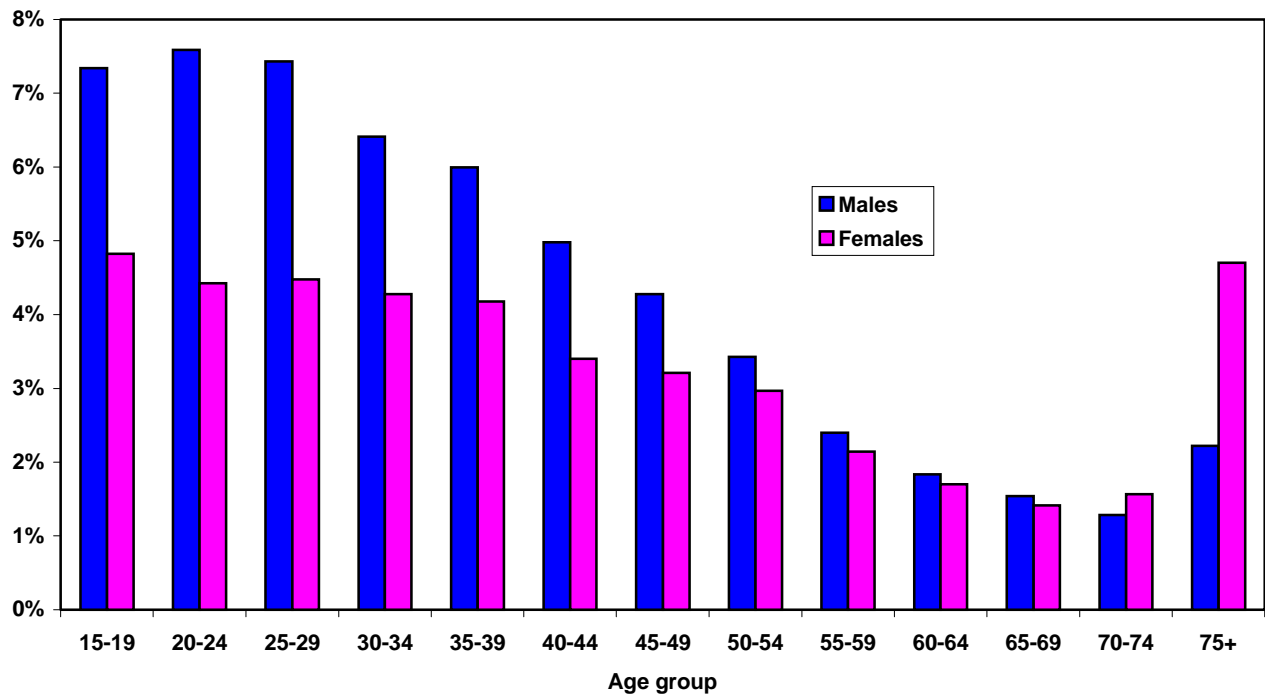


Figure 1 QISU Emergency Department presentations, unintentional injuries to adults in the home by age and gender, 1998-2000

Age and sex

The majority of adult home injuries involved younger adults with almost half aged less than 35 years. The number decreased steadily with age and rose again in the oldest age group (Figure 1). Up until age 45 years injuries to males outnumbered females 3:2 with this differential gradually reversing with females outnumbering males 2:1 in the over 75 years age group.

External cause

The external cause of a quarter of adult injuries in the home was falls equal to or less than 1 metre, followed by cutting or piercing object (17%) and struck by or collision with object (14%). Other significant external cause categories were animal related (excluding dog or horse) (7%), machinery (5%), falls greater than 1 metre (4%), struck by or collision with person (3%) and contact with hot objects or liquids (3%) (Figure 2).

Location

The five most common locations for injuries in the home accounting for 60% of the cases were garden (17%), kitchen (12%), garage (12%), living/family room (10%) and bedroom (9%).

Nature and body location of injury

More than a quarter of the injuries were open wounds followed by sprains and strains (18%), fractures (13%), superficial (8%), foreign body in the eye (5%), bites (5%) and burns (3%).

Major Injury Factor	N	%	Rank
Floor	1095	4%	1
Natural surface	1043	4%	2
Knife	1032	4%	3
Metal, sheet, part, piece	843	3%	4
Dog	735	3%	5
Glass, sheet, part, piece	704	3%	6
Spider	602	2%	7
Door	593	2%	8
Wood, Timber, board, splinter	545	2%	9
Grinder	515	2%	10
Brick, concrete, concrete block	498	2%	11
Hand tool	438	2%	12
Tree	382	1%	13
Other power tool	363	1%	14
Chair, stool	349	1%	15
Car	319	1%	16
Ladder	297	1%	17
Bed	278	1%	18
Drinking glass	271	1%	19
Bee, wasp	269	1%	20
Window	269	1%	21
Welding equipment	256	1%	22
Plant	247	1%	23
Vehicle part	228	1%	24
Bathtub, shower	223	1%	25

Table 1 QISU Emergency Department presentations, unintentional injuries to adults in the home by major injury factor, 1998-2000

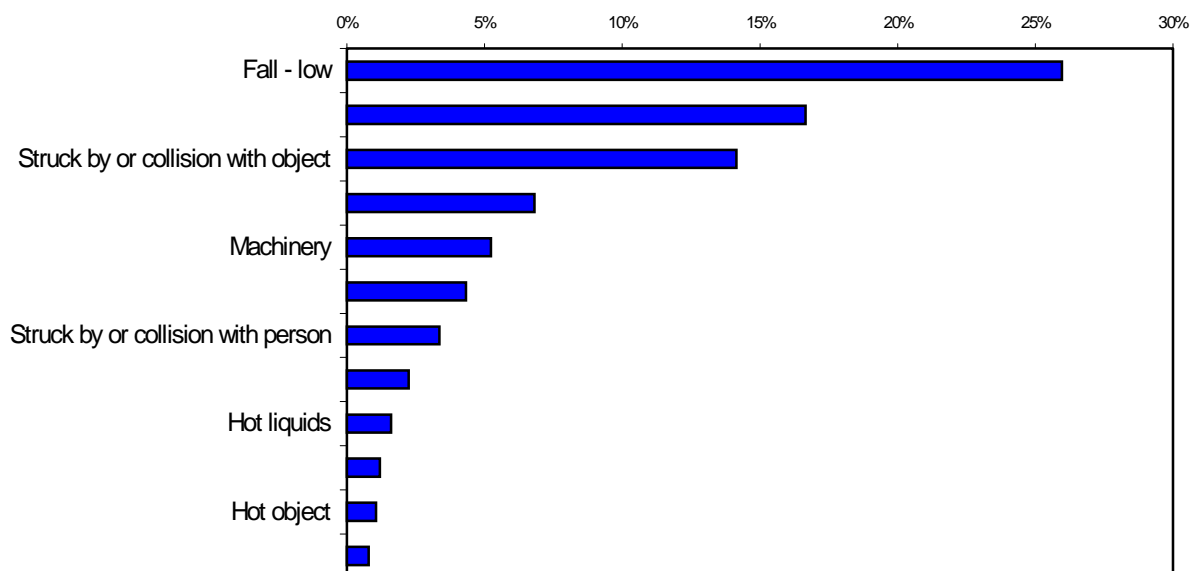


Figure 2 QISU Emergency Department presentations, unintentional injuries to adults in the home by external cause, 1998-2000

The most common body part injured was the hand comprising a fifth of all adult home injuries. Other common body parts injured were the foot (11%), eye (8%), ankle (6%), forearm (6%), head (6%) and knee (5%).

The majority of open wounds involved the hand (41%), foot (13%), face (10%) and forearm (9%), while for fractures the most frequent site was the hand (18%) followed by foot (17%), forearm (14%), ankle (7%), hip (7%) and wrist (7%). Sprains and strains most commonly involved the ankle (24%) and the lower back (14%), while for superficial injuries the hand (19%) and foot (14%) were most commonly involved.

Main injury factor

The twenty-five most reported injury factors are listed in Table 1. Almost 10% of injuries, mostly falls, involved floors or natural surfaces while the most common consumer items mentioned were knives (4%) and grinders (2%). The majority of grinder injuries involved the eye (64%) while a quarter were open wounds. A significant number of the injuries, particularly the more serious, were described as being the result of the blade disintegrating. There have also been at least two deaths in Queensland since 1997 as a result of angle grinder injuries.

Other items implicated in 'do it yourself' (DIY) home maintenance activities included ladders (ranked 17) welders (22) and lawn mowers (26). Injuries involving dogs (3%) and spiders (2%) both feature amongst the top 10 injury factors.

Mechanism

For the most common cause of injury, falls, the majority involved slipping or tripping on the same level (32%) followed by stumbling (19%) and falls on stairs (14%). The high number of stair related falls may be a reflection of the preponderance of high set homes in Queensland.

Severity

Just over 10% of cases resulted in admission to hospital and almost 30% were categorised as urgent or higher priority at triage. These more severe cases showed similar characteristics to all presentations.

Discussion

Grinders have been identified as a significant injury factor previously in QISU Bulletins on both workplace and DIY injuries and the high number of home injuries involving angle grinders in this analysis remain a concern considering their potential to cause serious injury or death^{1,2}. In a recent Victorian study angle grinders were identified as the single most common cause of ED presentation for a DIY injury as was the case in Queensland³. A 1998 ABS survey found that almost a quarter of Victorian households have an angle grinder⁴. The evidence in this and other recent reports indicate that this commonly used product poses a serious risk both at home and in the workplace and requires urgent attention⁵.

Injuries involving animals made up nearly 10% of all adult injuries in the home. The majority of these were insect/spider bites or stings as de-

tailed in a previous Injury Bulletin⁶. The remainder of the animal related injuries were almost exclusively dog related. Although dog bites are more likely to involve children (40%) adults still need to be aware of the potential for both known and strange dogs to inflict injury.

The most common adult injury in the home reported in this analysis was low falls. As would be expected a higher proportion of the injuries involved older persons, particularly women. Injuries resulting from falls in older persons is a major cause of morbidity and death in older people and has been reported on in more detail in a previous Injury Bulletin.⁷

What was not expected was the number of fall injuries involving younger women. Up to the 45 to 49 years age group approximately equal numbers of males and females were injured in falls with the proportion of women increasing steadily until age 85 and over where females outnumber males almost 5:1. For women aged 15 to 19 years there was almost as many fall injuries reported as in those aged 85 and over, although the type of injury generally suffered was less severe. At the younger ages the most common injury was ankle sprains while for older ages fractures, particularly of the hip, were more common.

It is expected that a percentage of the fall (and other) injuries suffered by women were the result of domestic violence but were reported as unintentional injuries. Injuries as a result of domestic violence are rarely detected by ED staff and thus the vast majority are not identified as such. A recent Brisbane study found that 24% of women presenting at an ED suffered a history of domestic violence⁸. There is a need for strategies to be implemented to enable ED staff to better identify and provide appropriate services in cases of domestic violence.

Although poisoning by drugs or medicine made up only 1% of adult injuries in the home they warrant attention as they mostly involve younger adults (45% were aged less than 30) and mostly

recreational drug use. The most common situation reported was an overdose but there were a significant number of cases involving medications particularly of younger women that were possibly self-harm. This again demonstrates the difficulty in identifying and recording intent.

Conclusion

The prevention of injuries in the home is often child focused however a high proportion of injuries to adults also occur in this setting. Important initiatives including smoke alarms and electrical safety switches have a greater impact on mortality rather than morbidity so have not been examined here. While the issue of falls in older people is being given a high priority, opportunities for further public health interventions to improve home safety for adults exist in the area of home design and maintenance and consumer product safety including DIY practices.

Prevention

Information is available from the following agencies:
Consumer safety – www.fairtrading.qld.gov.au
Electrical safety – www.energex.com.au
First Aid courses – www.ambulance.qld.gov.au
New home/renovations – www.smarthousing.qld.gov.au
Queensland Health – www.health.qld.gov.au or phone 07 3405 5252 for falls prevention information.
Information on the *Safety in Residential Dwellings Taskforce* can be found at www.qisu.qld.gov.au

References

1. Queensland Injury Surveillance Unit. Home maintenance injuries DIY – lawn mowers, tools and line trimmers. Injury Bulletin 1998; 50: 1-4.
2. Hockey R, Miles E. Workplace injury. Injury Bulletin 1999; 53: 1-4.
3. Ashby K. Injuries associated with do-it-yourself maintenance activities. Victorian Injury Surveillance and Applied Research Function. Monash University Accident Research Centre. Hazard Dec 1999; 41: 1-12.
4. Australian Bureau of Statistics. Safety in the Home Victoria: October 1998. Canberra: ABS, 1999.
5. Wongprasartuk S, Love RL, Cleland HJ. Angle grinder injuries: a cause of serious head and neck trauma. MJA 2000; 172: 275-277.
6. Hockey R, Miles E. Bites and stings. Injury Bulletin 2001; 64: 1-4.
7. Hockey R, Miles E. Falls in older people. Injury Bulletin 1999; 56: 1-6.
8. Abbott J et al. Domestic violence against women: incidence and prevalence in an emergency department population. JAMA 1995; 273(22): 1763-1767.

QISU Staff

Director – Dr Rob Pitt, Emergency Department
Director, Mater Children's Hospital
Manager – Elizabeth Miles
Data Analyst – Richard Hockey
Coding / Admin – Merle Lange
Coding Clerks – Linda Horth, Julie Dean

QISU Injury Bulletin

Injury Bulletin comment or feedback is welcomed and can be directed to: Elizabeth Miles
Phone 07 3840 8569 or email lizm@qisu.qld.gov.au

QISU Data

QISU collects and analyses data from emergency department injury presentations on behalf of Queensland Health. Participating hospitals (acknowledged on page 1) represent three distinct regions of Queensland. QISU publications and data are available on request for research, prevention and education activities.

QISU Web site

www.qisu.qld.gov.au

