



INJURY BULLETIN

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Home maintenance injuries DIY – lawn mowers tools line trimmers



Injuries resulting from the use of tools or garden maintenance equipment around the home, although mostly minor in nature can result in significant morbidity or long term disability and in some cases even death.

During 1997 and the first six months of 1998 the Queensland Injury Surveillance Unit collected information on 562 injuries associated with the use of tools in and around the home and 148 injuries relating to lawn mowers or line trimmers (whippersnippers).

A significant proportion of these injuries involved children usually in circumstances where the child has been allowed to be put

at risk by an adult using a tool or been given unsupervised access to potentially dangerous equipment.

An issue for the “Do It Yourself” is the transference of safe work practices which are actively promoted in the work place to the home environment. Associated with this is the tendency for the DIYer, often through necessity, not to use the appropriate tool for the task.

In this bulletin we examine home injuries associated with the use of tools (including hand tools, power tools, ladders etc), lawn mowers and line trimmers.

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* 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 and Mackay and district hospitals.



Nature	Tool		Mower		Line trimmer	
	Number	%	Number	%	Number	%
Superficial	29	5.2%	1	0.8%	0	0.0%
Open wound	262	46.6%	44	35.5%	6	25.0%
Fracture	36	6.4%	15	12.1%	2	8.3%
Sprain strain	35	6.2%	11	8.9%	1	4.2%
Burn	8	1.4%	14	11.3%	1	4.2%
Eye injury	47	8.4%	10	8.1%	6	25.0%
FB Eye	69	12.3%	5	4.0%	7	29.2%
FB Soft tissue	18	3.2%	3	2.4%	0	0.0%
Other	58	10.3%	21	16.9%	1	4.2%
Total	562	100.0%	124	100.0%	24	100.0%

Table 1 DIY home maintenance injuries, QISU data 1997-98, by nature of injury and device

Lawn mowers

The power lawn mower is an accepted part of everyday life in suburban backyards in Queensland. Unfortunately these devices have the potential to inflict injuries which can result in significant morbidity and long term disability.

In 1997 and the first half of 1998 QISU collected information on 124 lawn mower injuries 24% of which resulted in admission to hospital compared with only 12% for other tool related home injuries. The majority of the injuries sustained were open wounds (36%) followed by fractures (12%), eye injuries (12%) and surprisingly burns (11%) (Table 1). Not unexpectedly these injuries usually involved either the hands (37%), feet (15%) or eyes (12%).



While the problem of lawn mower injuries to children and their prevention has been well documented¹, children continue to be injured either through being near the mower while it is operating or being allowed to actually operate it. Amongst the mower injuries collected by QISU nearly a fifth were sustained by children with more than half of these to under fives (Fig 1). The pattern of injury for children was similar to that for adults except in the case of burns which were

almost wholly confined to under five year olds and usually involved the child touching hot engine parts.

Unlike in the workplace there is no compulsion or duty of care for the user of the domestic lawn mower to wear appropriate safety equipment such as boots and eye protection. In fact

it is not uncommon to observe people in suburban Brisbane mowing their lawns in bare feet or thongs!

The other area where there is room for improvement is in mower design. In 1982 the US Federal Government introduced a standard for walk-behind mowers which called for the rotary blade to stop within three seconds after the operator leaves the operating position at the rear of the mower. Compliance with this standard has resulted in Emergency Department treated walk-behind mower injuries in the US dropping from 41,900 in 1983 to 25,800 in 1989, a fall of 38%. We have seen no such commitment to introduce such an effective mower design standard in Australia to date².

Although ride-on mowers are becoming more popular in Queensland, particularly in semi-rural areas, only seven (6%) injuries associated with this type of mower were recorded and only one involved a child. In the US where the use of this type of mower is more widespread every year about 75 people are killed and 20,000 injured on or near ride-on lawn mowers and garden tractors, with one in

five deaths involving a child³.

Line trimmers

Line trimmers or whippersnippers as they are more commonly known are rapidly becoming a normal part of the home handyman's array of equipment. Like all power tools there is the potential for injury to the user or bystanders.

Over the study period 24 line trimmer injuries were recorded with the most common being eye injuries (54%) followed by open wounds (25%) usually to the lower leg or foot. Sixteen percent of these injuries involved children aged less than 15 years (two were aged less than five).

Tool injuries

The single most dangerous tool used around the home is the grinder which was associated with 15% tool injuries followed by ladders with 10% (Figure 2). The most common types of injuries were open wounds (47%) and eye injuries (21%) (Table 1). As would be anticipated three quarters of the victims were adult males while 15% of the injuries were to children (Figure 1). The most commonly involved part of the body was the hand and fingers (33%) followed by the eyes (21%) and feet and toes (14%).

Injuries associated with grinders most often resulted in eye injuries (45%) or an open wound (44%) highlighting the need to wear appropriate protective equipment when using these types of equipment. Ladders on the other hand most commonly resulted in fractures, dislocations or sprains or strains

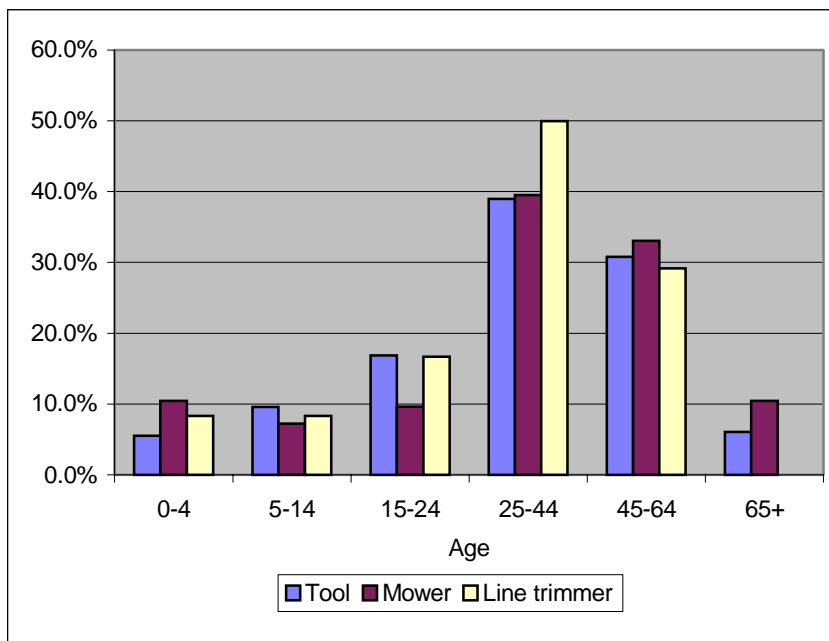


Figure 1 DIY home maintenance injuries, QISU data 1997-98, by age group and device

(59%). Injuries from welding equipment which contributed 8% of DIY tool injuries, were almost all associated with the eyes (91%). This would indicate that users are not taking adequate precautions to protect themselves or bystanders, particularly children, from the effects of arc welding.



DIY tool injuries involving children mostly related to the use of hand tools such as hammers and nails with these two items making up 30% of all tool injuries in children. Almost half the injuries resulted in an open wound. Fortunately there were only five child injuries associated with power tools and four with welding equipment.

Discussion

The problem of DIY injuries in and around the home is largely one of awareness and behaviour. While mechanisms are in place to promote and in some cases enforce safety in workplaces, at home it is up to the individual to identify and adopt safe work practises.

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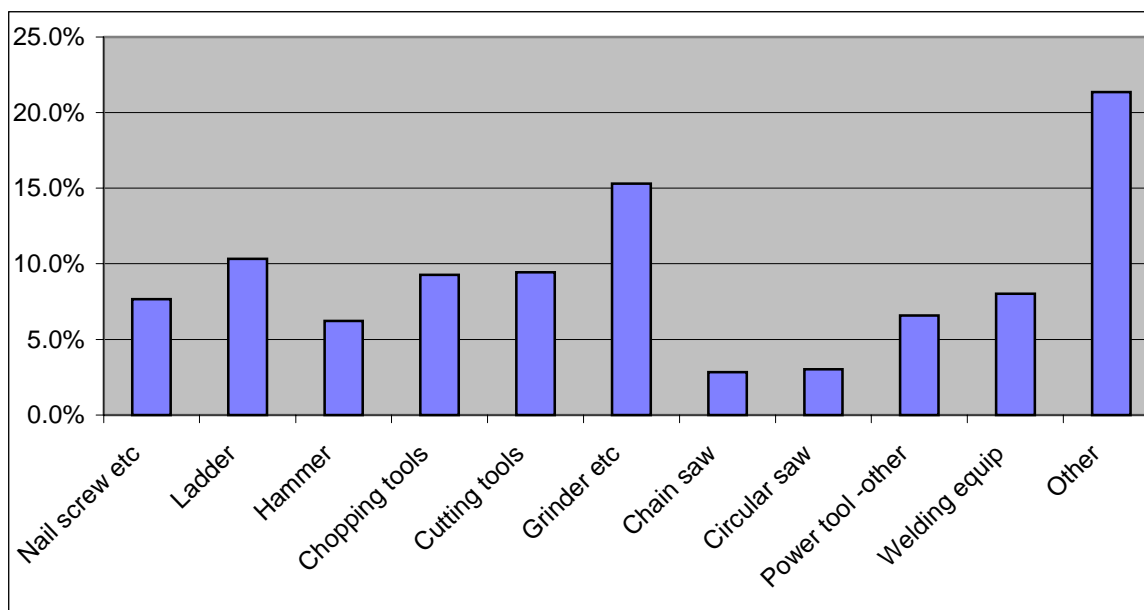


Figure 2 DIY home maintenance tool injuries, QISU data 1997-98, by type of tool

Tool manufacturers and retailers bear some responsibility in ensuring their products are safe as well as providing safety information, but they have little influence on how the product is finally used by the consumer.

In Victoria the Monash University Accident Research Centre has developed, with support from a major sponsor, information brochures aimed at raising awareness of DIY safety for distribution through retail and hire outlets⁴.

This type of prevention strategy needs further investigation and evaluation.

Injuries to children associated with DIY activities can also be addressed by educating carers of the dangers associated with various tools commonly found in and around the home in particular mowers.

Product design provides potential for prevention of DIY injuries, particularly in the case of rotary lawn mowers. Although the benefits of safer design in rotary lawn mowers has been convincingly

Recommendations

• Child safety

- ◇ Keep children away from power tools, line trimmers and mowers especially when in operation.
- ◇ Do not allow children to ride on or operate ride on mowers
- ◇ Supervise children using hand tools

• Mower design

- ◇ blade stopping mechanism
- ◇ muffler guards

• Safe work practices

- ◇ Appropriate tool for the job
- ◇ Protective clothing:
 - eye protection
 - adequate footwear
 - long trousers
 - gloves
- ◇ Non-removal or modification of any existing safety devices or guards
- ◇ Investigation of mechanisms to translate safe work practices from the workplace to the home

1 Ryan M., Hume K. *Lawnmower Injuries* Medical Journal of Australia. 1978 Dec 16;2(13):597-8

2 US Consumer Product Safety Commission. *Power Lawnmower Injuries Decline* Media release 1990;90-131

3 US Consumer Product Safety Commission. *CPSC Warns about Lawn & Garden Care Hidden Hazards* Media release 1998;98-109

4 Monash University Accident Research Centre. 1998 DIY Safety Alert – Preventing injury brochures. URL <http://www.general.monash.edu.au/muarc/diybroch.htm>