QUEENSLAND INJURY SURVEILLANCE UNIT

INJURY BULLETIN

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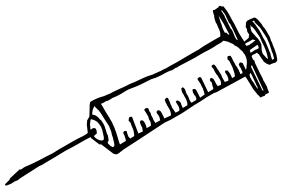
Needlestick



Because of the risk of transmission of blood borne viruses, such as Hepatitis B, Hepatitis C and HIV, needlestick injuries are of major concern, particularly to those working in health services.

In the first six months of 1998, 79 cases of needlestick injury treated at a sample of Queensland hospital emergency departments were reported to the Queensland Injury Surveillance Unit.* Most of these injuries involved persons working in hospitals (66%).

Data from the Body Fluid Exposure database at a major Brisbane hospital suggests that most needlestick injuries which occur in hospital are not seen at emergency departments. For this reason only needlestick injuries occurring outside hospital collected by QISU are presented here, while for in-hospital injuries alternative data sources are used.

In-hospital needlestick injuries

Body fluid exposure data (n=72) collected in a major Brisbane hospital from July to December 1997, shows that of all devices associated with needlestick injuries, the disposable needle is implicated most frequently (67%) (Table 1). Nursing staff make up the largest group (60%) of all health workers injured (Figure 1).

Type of needle	%
Disposable	67
Pre-filled	7
Butterfly	7
Cannula	19

Table 1 In-hospital needlestick injuries by type of needle

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In-hospital needlestick injuries

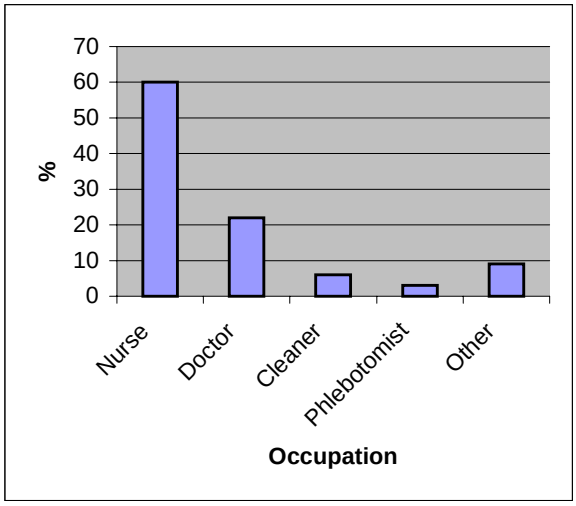

Figure 1 In-hospital needlestick injuries by occupation

Type of activity	%
IM/IV injection	24
Removing cannula etc	6
Suturing	8
Specimen collection	12
Disposal	6
Inappropriate disposal	10
Other	7
Unknown	28

Table 2 In-hospital needlestick injuries by activity

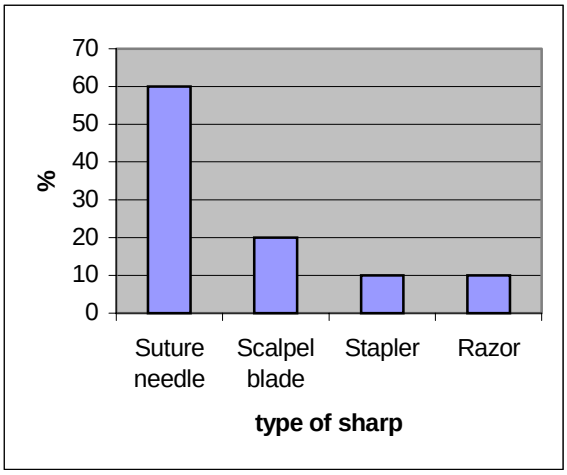

Figure 2 Other in-hospital sharps injuries by type of sharp

The most common activity when injured was giving *injections* or during *specimen collection* (36%) followed by *disposal* (16%) (Table 2). Most injuries occurred after use of the device prior to disposal (56%).

Of the injuries not involving hollow needles, those involving suture needles were the most prevalent (60%) (Figure 2).

Data collected at 77 hospitals in the US on 10,639 needlestick injuries showed a similar pattern of injury. These data also showed most injuries were to the hand (92%); most frequently to the front of the left hand (44%).[1]

> *"although disposable needles are the most common source of injury they have the lowest injury rate per device used"*

Other studies which have examined device specific injury rates have shown that although disposable needles are the most common source of injury they have the lowest injury rate per device used while the less commonly used devices, such as intravenous catheters, had the highest rates.[2]

These studies recommend that device specific injury and usage rates need to be examined to be able to better focus prevention programs.

* 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.

Non-hospital needlestick injuries

Forty one percent of non-hospital needlestick injuries reported to QISU, in the first six months of 1998, occurred in public outdoor areas such as public parks, recreation areas and roads.

The other most frequent locations were: house or flat (15%), school or childcare centre (15%), medical or dental surgery (11%), and entertainment or drinking establishment (7%)

One-third of those injured were engaged in some type of recreational or leisure activity. The other most common activities were working in non-hospital health services (18%) and being nursed or cared for (7%).

More than half of the victims were aged less than 15 years and 30% were aged 20 to 29 years (Figure 3) Slightly more females (56%) were injured than males.

In contrast with the in-hospital needlestick injuries a greater proportion of the injuries were to areas of the body other than the hand although this was still the most common site for the injury (52%). Not surprisingly the next most common injury site was the foot (33%).

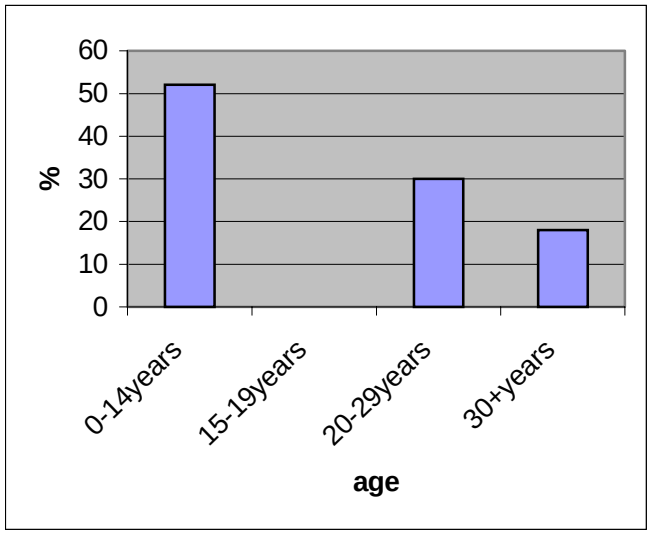

Figure 3 Non-hospital needlestick injuries

Because of the differences between hospital and non-hospital needlestick injuries it is important that these two groups are clearly delineated and prevention strategies developed accordingly.

Recommendations

- Promote the use of safer devices such as retractable needles
- Educate health services staff on: - ways to reduce exposure
  - current infection control practices
- Immunise all health services staff against Hepatitis B
- Investigate the feasibility of collecting data on in-hospital needlestick injuries statewide
- Educate the general public, particularly children on the dangers of discarded syringes
- Promote needle exchange services

1 Exposure Prevention Information Network, *Uniform Needlestick and Sharp Object Injury Report 77 Hospitals, 1993-1995*. International Health Care Worker Safety Centre, University of Virginia

2 Ippolito,G., et al. *Device-Specific Risk of Needlestick Injury in Italian Health Care Workers.* JAMA. 1994 272 (8):607-610.

3 Patel, N., Tignor, G., *Device specific sharps injury and usage rates: an analysis by hospital department. American Journal of Infection Control. 1997 Apr 25(2): 77-84*

Amsterdam – 4th World Injury Prevention & Control Conference

In May this year I was able to represent QISU at the 4th World Conference for Injury Prevention and Control in Amsterdam. The conference, which ran over three days, had a large Australian contingent with over 38 registered out of a total of 780 participants; a large number when you consider the location of the conference. Australian participants not only attended the conference but also gave some very impressive presentations on injury activities in Australia. It was pleasing to note that Australia is up with the major leaders throughout the world when it comes to injury data collection and prevention strategies. The American representatives were extremely impressed with our new gun laws, as the number of firearm injuries in America is absolutely astounding (38,505 deaths in 1994 and an estimated 100,000 non-fatal firearms injuries annually).

A

typical Dutch scene

A number of particularly interesting points were raised throughout the conference. For example, it has been estimated that by the year 2020, injury will be the leading cause of mortality and morbidity throughout the world. This is based on the increasing number of motor vehicles in third world countries, decreasing mortality from disease due to pharmaceutical and surgical innovations and the failure of most injury prevention strategies. To highlight the last point it was demonstrated that despite the introduction of improved safety devices in cars, it has not reduced the number of injuries overall. This was thought to be related to the belief that with improved safety went increased risk taking. There was also mention of the failure of some countries to introduce safety regulations because of fear of political backlash. The Netherlands is a prime example with over 500,000 bicycles in the country yet no laws on bicycle helmets; one of the few injury prevention strategies that has been shown to work.

The RAI Conference Centre

It would appear that most countries are reluctant to spend large amounts of money on injury prevention strategies because their impact is very difficult to measure. All agree that injuries constitute an enormous cost to the community but they are really unsure how to address the problem. It was stated that currently in the US 32% of all hospital attendances are the result of an injury, which translates to an annual attendance of 30,000,000 injury patients.

Finally one of the most disturbing facts presented at the conference was the incidence of suicide throughout the world. Based on per head of population, Australia closely followed by New Zealand has a much higher rate than the USA.

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