Sharps injury reporting amongst surgeons

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ABSTRACT

INTRODUCTION The aim of this study was to evaluate the level of sharps injury reporting amongst surgeons.

SUBJECTS AND METHODS A total of 164 surgeons completed a questionnaire on the reporting of sharps injuries, on the reasons for not reporting and their practise of universal precautions.

RESULTS Out of 164 surgeons, only 25.8% had reported all their injuries, 22.5% had reported some and 51.7% had reported none. The top three reasons for not reporting their injuries included perception of low risk of transmission, not being concerned and no time. Of the respondents, 15.9% practised all three universal precautions of double-gloving, face shields and hands-free technique.

CONCLUSIONS We showed that despite local trust adherence to Department of Health policy, sharps injury reporting rates are inadequate. Further investment into healthcare worker education as well as a facilitation of the process of reporting may be necessary to improve reporting rates.

KEYWORDS

Sharps injury – Reporting – Surgeon

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Approximately 100,000 sharps injuries occur in UK hospitals each year,¹ making up approximately 17% of all accidents to NHS staff.² It is thought that 4% of healthcare workers sustain 1–6.2 sharps injuries each year,¹ with these injuries occurring in clinical areas such as wards and theatres, but also in non-clinical areas due to accidental handling of inappropriately discarded sharps.³ Naturally, this poses significant risk to both the surgeon and, by extrapolation, their patients.

The aim of this study was to evaluate the level of sharps injury reporting amongst surgeons across several specialties in hospitals in our area. We also sought to evaluate the reasons for not reporting sharps injuries.

Subjects and Methods

A questionnaire (Appendix 1) was distributed amongst surgeons from orthopaedics, ENT, general surgery and gynaecology at three district general hospitals. The number of sharps injuries each surgeon had had in the past year, the number of sharps injuries reported and reasons for not reporting were assessed. In addition, attitudes to reporting sharps injuries and practise of universal protection were assessed. Surgeons were also asked about their awareness of their hospital's sharps injury policy.

Results

Out of 200 surgeons, 164 returned the questionnaire (82.0% return rate). Of these, 120 (73.2%) had had a sharps injury in the last year. Only 31 (25.8%) had reported all their sharps injuries, 27 (22.5%) had reported some and 62 (51.7%) had reported none.

When asked why they had not reported some or all of their sharps injuries, out of 89 surgeons, 35 (39.3%) stated that they thought the patient to be of low risk, 20 (22.5%) stated that they were not concerned, 24 (30.0%) stated that they had no time and one (1.1%) thought that with double-gloving and a solid needle the risk for blood-borne transmission of viruses was low. Nine surgeons (10.1%) did not state a reason.

On the use of universal protection, 49 (29.9%) said they always double-gloved, 54 (32.9%) said they always used eye protection and 68 (41.5%) said they practised a no-touch needle technique. Only 26 (15.9%) practised all three.

Fifteen surgeons (9.1%) were not aware of their trust's sharps policy. Thirty-seven (22.6%) said they were aware of the trust's sharps policy but had not seen the policy document. Of respondents, 103 (62.8%) felt that early reporting would benefit the surgeon and 80 (48.8%) felt that early reporting would benefit the patient.

Discussion

Sharps injuries continue to be a serious concern for all healthcare workers. In 2005, the UK's Health Protection Agency⁴ found 2140 incidents reported over 8 years, of which 9 healthcare workers were infected with hepatitis C through needle-stick injuries. It is thought that 100,000 sharps injuries occur in the UK per annum in all healthcare workers.¹ Outside the operating room, the majority of sharps injuries occur with nurses;⁵ however, in the field of surgery, the highest proportion of sharps injuries occurs with operating surgeons and their assistants.⁵⁻⁷ Sharps injuries are common during surgery with rates cited at 1.7–6.9% of all surgical procedures.^{6,8}

Sharps injury reporting, however, remains a continuing problem with reporting levels by healthcare workers cited as low as 15% and as high as 90%.^{1,7,9,10} It has previously been shown that surgeons often under-report.¹⁰ This has been reflected in our study which showed consistently low rates of sharps injury reporting. The surgeons in our study also shared common attitudes with surgeons in other studies, where the reasons for not reporting have included a low perceived risk of transmission of infection, no spare time, no utility in reporting and not being bothered.^{10,11}

Universal precautions are generally accepted as the gold standard in prevention of blood-borne pathogens such as HIV, hepatitis C and hepatitis B.¹² This includes using protective barriers such as gowns, gloves and masks, protective eye-wear and taking precautions when handling sharp instruments such as scalpels and needles. In our study, only 15.9% of surgeons practised all three criteria for universal precautions. Although double-gloving is not universally recommended, it is well known that double-gloving can substantially reduce the risk of percutaneous contact with blood from a perforation. Thomas *et al.*¹⁵ found that 3.75% of gloves had pre-existing perforations, 17.4% of surgeons had pre-existing hand abrasions and that 83.3% of glove perforations during surgery went unnoticed. Other reports have found the rate of glove perforations during surgery to be 7.8–30%.^{14,15} However, one of these studies found that, if double-gloving was practised, only 6.82% of the glove perforations involved both inner and outer gloves. Gerberding *et al.*⁶ found that in double-gloving the inner glove prevented up to 20% of cutaneous exposure to blood and that the outer glove had up to 3 times the rate of perforations as the inner glove. Bennett *et al.*¹⁶ estimated that, when a solid cutting suture needle was passed through a double glove, less than 5% of the original amount of blood was left on the needle, reducing the risk of HIV transmission from 0.3% with a normal phlebotomy needle down to 0.009%.

The reasons for not double-gloving remain a contentious issue amongst surgeons. Many feel that double-gloving reduces tactile sensation and dexterity, although there have been studies to dispute this.^{17,18}

The hands-free technique, whereby sharps are transferred in a neutral zone, has been shown to reduce sharps injuries and percutaneous contamination by as much as 60%.¹⁹ Stringer *et al.*¹⁹ reported that 42% of operations observed utilised a hands-free technique, and also found that a hands-free technique was less common when the risk profile of the surgical procedure was increased. Only 45.7% of the surgeons in our study stated they used a hands-free technique. This could either reflect poor attitudes to sharps safety or could reflect the opinion that a consistent hands-free technique is unrealistic in the stressful arena of the operating theatre.

If surgeons consciously do not use universal precautions and do not consistently report their sharps injuries, they may be more likely to incur such injuries which, in turn, poses a greater risk to themselves and their patients.

In 1998, the Department of Health²⁰ published guidelines for healthcare workers for protection against infection with blood-borne viruses. It states that all employers have a legal obligation to ensure all employees are appropriately trained and proficient to work safely when at risk of contact with blood-borne viruses. This includes the distribution of an updated policy document, providing a safe environment for workers, risk management, incident reporting and appropriate training in infection control.

Despite 9.1% of our surveyed surgeons not being aware of trust policy and 22.6% being aware but not having seen the document, a sharps policy document is given out by the occupational health departments in the hospitals surveyed to all new doctors at induction. This, however, is left to the recipients to read in their own time.

Conclusions

Sharps injuries pose significant risks to surgeons and attitudes to reporting must change. Under-reporting rates mean that the true number of sharps injuries remains undetermined, indicating a potential unquantified risk to surgeons and, therefore, patients. Regular up-dates on policy need to be given to all staff and consideration by all hospitals should be given to designing a simplified method to ease the process of sharps injury reporting. For example, the use of a 24-h sharps injury 'hotline' or increasing the flexibility for reporting at occupational health service clinics may increase sharps injury reporting rates. Ultimately, despite there being a low risk of transmission of blood-borne viruses with a sharps injury, the consequences of transmission are high and it is up to the individual to practise appropriate precautions and report early.

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APPENDIX 1

CONFIDENTIAL SURVEY OF SHARPS INJURIES AMONG SURGEONS

Thank you very much for completing this brief questionnaire regarding sharps injuries.

We define sharps injuries as any contact with body fluids through needles, sharp instruments and blood spatters on mucous membranes or impaired skin.

1. Grade	Consultant	Staff grade	SpR	SHO
2. Specialty				
3. Have you ever had a sharps injury?		Yes	No	
4. Number of sharps injury in past year	0	1–3	4–10	Don't know
5. Number of sharps injury notified to concerned authorities		All	Some	None
6. Reasons for non-reporting (please tick the relevant box)				
Could not spare time				
Not bothered				
Thought patient to be low risk				
Did not know I had to				
Did not know how to				
Afraid positive result may affect my career				
Others (please specify)				
7. Are you aware of the hospital policy for sharps injury?		Yes	No	
8. Have you seen the above policy?		Yes	No	
9. Early reporting of sharps injury would benefit:	(a) Me	Yes	No	
	(b) Patient	Yes	No	
10. Do you take the following precautions with every surgical case?				
Double-gloving		Yes	No	
Visor/other eye protection		Yes	No	
No-touch technique for needle		Yes	No	

Thank you very much for your valuable time in answering this questionnaire.