

Needle-stick injuries in the National Health Service: a culture of silence

B Elmiyeh MRCS¹ I S Whitaker MA MB¹ M J James FRCS FRCS (Plast)² C A A Chahal MB BSc⁵
 A Galea MD AFRCS(Ed)³ K Alshafi FRCPATH⁴

J R Soc Med 2004;97:326–327

SUMMARY

Injury by contaminated sharp instruments and needles constitutes a major occupational hazard for healthcare workers. In a confidential survey at a district general hospital, 300 healthcare professionals were asked about their personal experience of needle-stick injury and their attitudes to reporting.

279 individuals responded, of whom 38% had experienced at least one needle-stick (mean 1.8) in the past year and 74% had sustained such an injury during their careers (mean 3.0). Although 80% of respondents were aware that such incidents should be notified, only 51% of those affected had reported all needle-stick injuries. Doctors were less likely to report than nurses, despite a higher liability to injury.

This survey adds to evidence of a culture of silence pertaining to needle-stick injuries. The consequent risks to health, and the ethical and financial implications, remain uncertain.

INTRODUCTION

The National Audit Office report *A Safer Place to Work*¹ highlighted the risk to National Health Service (NHS) staff posed by contaminated 'sharps'. Needle-stick injuries are the second most commonly reported adverse incident within the NHS (17%), and constitute a major hazard for the transmission of viral disease—hepatitis B and C and HIV. They are also a potential source of transmission of prion diseases. The risk of transmission of hepatitis C (3%), hepatitis B (30%), and HIV (0.3%) from the patient to the healthcare worker depends on the viral load of the patient and the amount of blood that passes from one to the other.^{2–4} The prevalence of these viruses in the hospital patient population and in healthcare workers is uncertain. We conducted a survey of exposure to such injuries and of reporting practices in a district general hospital.

METHODS

The Lister Hospital, Stevenage, is a 512-bedded acute district general hospital within the East & North Hertfordshire Trust providing a full range of core NHS services. A report by the Commission for Health Improvement had praised the Trust for worthwhile progress

in clinical risk management, at both strategic and operational levels. A confidential questionnaire (available from authors) was posted between October 2002 and May 2003 to 300 healthcare professionals in clinical work (175 nurses, 125 doctors).

RESULTS

279 (93%) of the 300 questionnaires were completed correctly. In total, 158 (57%) of the 279 respondents had sustained one or more needle-stick injuries in their careers, 115 (38%) in the past year (mean 1.8). Of these individuals, 80 had reported all of them (22 doctors, 58 nurses), 41 some of them (23 doctors, 18 nurses) and 37 none of them (25 doctors, 12 nurses); thus doctors were less likely to report injuries than nurses. Only 51% of those affected had reported all injuries. The principal reason for non-reporting was a low perceived risk of transmission of infection (Table 1). Almost everyone in the study (94%) acknowledged the benefits of early reporting concerning themselves, but only 61% thought that early reporting would benefit the patient. 79% were aware that the Trust had a policy on reporting though not all had seen it.

DISCUSSION

The rate of needle-stick injury revealed by this small local survey is disturbing. It is higher than that reported elsewhere.^{5,6} Institutional reports, moreover, have been deemed to underestimate actual injuries by about 50%.^{7,8} Although doctors and nurses are aware of the benefits of

¹Department of Anatomy, University of Cambridge; Departments of ²Plastic and ³Orthopaedic Surgery and ⁴Department of Microbiology, Lister Hospital, Stevenage; ⁵Department of Surgery, Leeds General Infirmary, Leeds, UK

Correspondence to: Dr I S Whitaker, 3 Magellan House, Armouries Way, Leeds LS10 1JE, UK

E-mail: lain_whitaker@yahoo.com

Table 1 Reasons for not reporting needle-stick injuries

Reason for not reporting	Doctors	Nurses
Very low risk of transmission at the time	70.8%	39.3%
I could not spare the time	22.9%	17.8%
I could not be bothered	18.7%	3.6%
Low incidence of HIV/Hep B/Hep C in my patient group	18.7%	7.1%
Did not know I had to	8.3%	7.1%
Did not know how to	8.3%	7.1%
Afraid positive result would affect my career	6.2%	-
Other	16.7%	17.8%

early reporting, a culture of silence persists.⁹ The exact reasons for under-reporting remain unclear.¹⁸ Doctors, who are less likely to report than nurses, may be more inclined to make their own risk assessment before deciding how to proceed. Workload pressures and time constraints are likely to cause both needle-stick injuries^{10,11} and under-reporting. Our survey does not indicate whether the advent of safer needle devices,¹²⁻¹⁴ has lessened the risk of injury. Initial studies indicate these devices to be cost-effective, and introduction in some hospitals in the United States has become compulsory.¹⁵⁻¹⁷

Mandatory post-exposure testing of healthcare professionals, although theoretically simple, in practice presents complex moral, ethical and legal dilemmas. Those who become infected are at risk of being uncompensated and deprived of gainful employment. Unless specific infective incidents can be identified, neither employer nor insurance company is likely to be generous.

The responsibility for protection against lethal viral pathogens lies partly with the healthcare workers, who must handle sharps carefully^{18,19} and adhere to guidelines. The employer, in turn, has a duty to provide a safe environment, to educate all employees about the risk of viral transmission²⁰ and to enforce reporting of all incidents.^{21,22} Simple, rapid, confidential access to post-exposure tests must be made available. In the event of injury the onus of taking blood and getting consent from the involved patient should not lie with the healthcare professional. There must be a clear and adequate compensation policy. Occupationally acquired HBV and HIV infections require swift action in confidence and without prejudice.²³

REFERENCES

1 *A Safer Place to Work: Improving the Management of Health and Safety Risks to Staff in NHS Trusts*. London: National Audit Office, 2003

2 Public Health Laboratory Services AIDS & STD Centre. *Occupational Transmission of HIV*. London: PHLS 1999:73

3 Goldmann DAJ. Blood-borne pathogens and nosocomial infections. *Allergy Clin Immunol* 2002;**110**(2 suppl):S21-6

4 Goldberg D, Johnston J, Cameron S, et al. Risk of HIV transmission from patients to surgeons in the era of post-exposure prophylaxis. *J Hosp Infect* 2000;**44**:99-105

5 Gillen M, McNary J, Lewis J, et al. Sharps-related injuries in California healthcare facilities: pilot study results from the Sharps Injury Surveillance Registry. *Infect Control Hosp Epidemiol* 2003;**24**:113-21

6 Ng LN, Lim HL, Chan YH, Bin Bachok D. Analysis of sharps injury occurrences at a hospital in Singapore. *Int J Nurs Pract* 2002;**8**:274-81

7 Roy E, Robillard P. Underreporting of accidental exposures to blood and other body fluids in health care settings: an alarming situation. *Adverse Exposure Prev* 1995;**1**:11

8 Cato D, Mulhal BP. Needlestick injuries in health care professionals: continuing risk and under-reporting. *Med J Aust* 1994;**161**:285

9 Doebbeling BN, Vaughn TE, McCoy KD, et al. Percutaneous injury, blood exposure, and adherence to standard precautions: are hospital-based health care providers still at risk? *Clin Infect Dis* 2003;**15**:37:1006-13

10 Clarke SP, Sloane DM, Aiken LH. Effects of hospital staffing and organizational climate on needle stick injuries to nurses. *Am J Publ Health* 2002;**92**:1115-19

11 Clarke SP, Rockett JL, Sloane DM, Aiken LH. Organizational climate, staffing, and safety equipment as predictors of needle stick injuries and near-misses in hospital nurses. *Am J Infect Control* 2002;**30**:207-16

12 Alvarado-Ramy F, Beltrami EM, Short LJ, et al. A comprehensive approach to percutaneous injury prevention during phlebotomy: results of a multicenter study, 1993-1995. *Infect Control Hosp Epidemiol* 2003;**24**:82-5

13 Asai T, Hidaka I, Kawashima A, et al. Efficacy of catheter needles with safeguard mechanisms. *Anaesthesia* 2002;**57**:572-7

14 Safer needles. *AIDS Policy Law* 1999;**14**:12

15 Peate WF. Preventing needle sticks in emergency medical system professionals. *J Occup Environ Med* 2001;**43**:554-7

16 Hatcher IB. Reducing sharps injuries among health care professionals: a sharps container quality improvement project. *J Qual Improv* 2002;**28**:410-14

17 Rabaud C, Zanea A, Mur JM, et al. Occupational exposure to blood: search for a relation between personality and behavior. *Infect Control Hosp Epidemiol* 2000;**21**:564-74

18 Stringer B, Infante-Rivard C, Hanley JA. Effectiveness of the hands-free technique in reducing operating theatre injuries. *Occup Environ Med* 2002;**59**:703-7

19 Wang H, Fennie K, He G, Burgess J, Williams AB. A training programme for prevention of occupational exposure to bloodborne pathogens: impact on knowledge, behaviour and incidence of needle stick injuries among student nurses in Changsha, People's Republic of China. *J Adv Nurs* 2003;**41**:187-94

20 Higher priority urged for needle stick prevention. *Aids Alert* 1998;**13**:113-15

21 Sterling ML. Report of the Council on Scientific Affairs: preventing needle stick injuries in health care settings. *Arch Intern Med* 2001;**161**:929-36

22 Debnath D. Improving reporting of sharp injuries. *Hosp Med* 2000;**61**:852-4

23 Wright JG, McGeer A. Human immunodeficiency virus transmission between surgeons and patients in orthopaedic surgery. *Clin Orthop* 1993;**297**:272-81