**Background**

Exposure to blood and body fluids (BBF) remains a major occupational hazard in health care. Routine testing of source patients for blood borne viruses where exposure has occurred is recommended in the UK. Whilst in practice source patient identification may be challenging the reasons why identified individuals are not tested, including issues relating to consent and procedure compliance, are not fully understood.

**Aims**

To identify the frequency of serological testing in identified source patients and the reasons for not testing, including refusal and absence of consent.

**Methods**

A review of all BBF exposure incidents reported to the Sheffield Occupational Health Service between 1 January 2009 and 31 December 2009.

**Results**

Of 490 reported BBF exposure incidents source patients were identified in 87% of cases and tested in 56% of the incidents. Rates of source patient testing were higher following incidents affecting medical (78%) and nursing staff (69%) than those involving non-clinical (36%) and dental staff (17%). Reasons for not testing source serology among identifiable patients (151) were not recorded in 66% of incidents, in 20% there was incapacity to give consent and in 5% testing was refused.

**Conclusions**

This study found that despite guidance, routine source testing is not universal. Incapacity to consent is a contributory factor for some source serology not being tested and clarification of the ethical and legal position would be helpful. Larger studies should explore other reasons why identified source patients are not tested in practice and explore the policy implications of those findings.

**Key words**

Blood and body fluid; blood borne virus; consent; needlestick injury; source patient testing.

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**Introduction**

Exposure to blood and body fluids (BBF) remains a major hazard in health care, with needlestick injury being the second highest cause of injury in the UK National Health Service [1,2]. Important consequences include a risk of blood borne virus (BBV) transmission, anxiety of the health care worker (HCW) involved and costs incurred by the health service [3]. Current UK recommendations are that consent for source patient testing should be gained following any BBF exposure to evaluate the need for post-exposure prophylaxis. Consent should be obtained by another clinician not the HCW involved in the incident [4]. Source patients should be fully informed of the sequelae of testing, including the implications of a positive result. Published evidence suggests that compliance with this remains variable [2,3] probably due to difficulties in source patient identification or obtaining consent through illness, incapacity or death. Changes to the Human Tissue Act in 2004 and the Mental Capacity Act 2005 led to the withdrawal of General Medical Council guidance in this area [5,6].

A Department of Health working group including clinical and legal representatives discussed how problems related to gaining consent could be resolved. A limited evidence-base in this area has hampered this process. To further inform these discussions we undertook a review of BBF exposures reported to the Sheffield Occupational Health Service (SOHS) to identify the frequency of source patient identification, the frequency of serological testing for BBV in identified source patients and the reasons for not testing when source patients have been identified.
Methods

The study reviewed all BBF exposures reported to SOHS between 1 January 2009 and 31 December 2009 from organizations to which SOHS provides services, including an acute adult hospital, a mental health trust, a primary care trust and a children’s hospital. Incidents were identified from the computerized occupational health database (COHORT, Tempus Software Ltd.). Data was analysed on Microsoft Excel. Recorded details included incident descriptors; whether source patient blood testing occurred, and recorded reason if not done. Demographic data was extracted from the occupational health case notes of affected individuals. Ethical approval was obtained through the Clinical Effectiveness Unit at Sheffield Teaching Hospitals, and the project was registered as a service review activity.

Results

In total, 490 BBF exposure incidents were reported. Source patients were identified in 425 cases (87%), and serology was performed in 274/425 (64%) of these cases. Figure 1 displays rates of serological testing of identified source patients by professional group incurring BBF exposure. Rates were higher amongst doctors (92/121; 76%) and nurses (139/200; 69%) than in dental (5/29; 17%) and non-clinical staff (5/14; 36%). In 25 out of 28 incidents that involved domestic staff no source patient could be identified.

In those source patients who did not have serology performed 20% (30/151) were unable to provide consent (11 deceased and 19 had a documented incapacity to consent), 8 refused consent, 14 did not require testing as they had recent serology and in 66% (99/151) of cases no reason was recorded (Figure 2). Serology was also more frequently performed within acute clinical settings (231/304; 76%) than in dental (21/36; 58%) and community settings (5/42; 12%).

Discussion

This short report suggests that although source patients are identified in the majority of BBF exposures in a substantial percentage (13%) they are not. This could be due to inappropriately discarded needles, such as needles left on work surface and shelves, within clinical waste bags, and toilets. This may well explain our findings regarding the difficulties in identifying source patients in sharps injuries suffered by domestic staff. Such hazards have been recognized previously and present difficulties in risk assessment [7].

Although our limited sample size prevented any statistical comparisons between different groups of health care workers, our findings of lower rates of source testing within community settings merit discussion. This may be due to a lower awareness among primary care staff regarding the management of occupational BBF exposures, logistical difficulties in source testing or lack of awareness of general practitioners and dentists of their obligations under health or safety legislation [8].

A separate analysis of circumstances of exposure showed that 22% (109/490) of recorded incidents happened during or following the disposal of sharps, which may be avoidable if appropriate preventative measures were adhered to. This highlights the importance of such measures which include education on the use of needles and safety measures including the appropriate placement of sharps bins, as well as technological innovations, to reduce the risk of sharps injury and spatter to protect health care workers from BBF exposure [9,10].

The absence of documented reasons for not testing identified source patients in two-thirds cases is of concern. This may represent a failure by clinical staff to request consent in some instances. Other possible explanations include failure to prioritize source testing; need of testing being overlooked; transfer of patients between clinical areas; discharge of patients before testing or late reporting of incidents to occupational health. Clear recording of the reasons for not testing in all such cases should form part of good medical practice and help inform policy in this complex area.

Our study highlights that ‘lack of capacity to consent’ is a significant factor in explaining the absence of source...
patient blood testing. Refusal to consent for testing appears to be relatively uncommon. Further guidance on testing of source patients who lack capacity to consent is required to minimize the impact of BBF incidents on HCWs.

**Key points**
- Needlestick injury remains an important occupational hazard in healthcare, with significant health, social and financial implications.
- Improved documentation of the reasons for the absence of consent in incidents where source patients have been identified would help inform guidance and policy in this area.
- Further clarification is required of the ethical and legal position for testing source patients who lack capacity to consent.

**Conflicts of interest**
None declared.

**References**


