Management of Sharps Injuries and Splash Incidents

Authors	Sharon King RN NIP MSc PGDip PGCert Dr Martyn King MBChB MSc PGDip PGCert		
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Seriousness		Frequency	
Minor		Common	
Minor to Moderate		Occasional	
Moderate		Infrequent	
Serious	X	Rare	X
Major		Very rare	

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Abstract

Practitioners working in non-surgical aesthetic practice are often more at risk of suffering a sharps injury or splash incident than their counterparts working in healthcare due to the nature of their work. However, many of these practitioners are also working in isolation and do not have an occupational health department or consultant experienced in infectious disease to help manage these incidents. It is essential that practitioners are familiar with the most up to date guidelines and what action to take in the event such situation arises.

Keywords

Sharps injury, splash incident, needlestick, blood borne virus, Hepatitis, HIV, vaccination, PPE, ACE Group.

Definition

Sharps Injury: Exposure to blood or body fluids caused by laceration or puncture of the skin (these can include bites, scratches, sharps). Sharps include needles, scalpels, broken glass, or any items that may lacerate or puncture the skin.

Splash Incident: Where blood or body fluids come into contact with the eyes, mouth, broken skin or mucous membranes.

Introduction

An inoculation incident can occur to any person, a staff member, patient, visitor, or contractor. Inoculation risk infections are primarily blood borne and pose a risk to those in whom blood to blood contact occurs and includes Hepatitis B, Hepatitis C and HIV[1].

There are several pieces of legislation along with guidelines to prevent the spread of infection and reduce the risk of sharps and splash incidents in healthcare which practitioners have a legal and professional duty to be aware of.

- Health and Safety at Work etc Act 1974[2]
- The Health and Social Care Act 2008[3]
- Safe Management of Healthcare Waste (2011)[4]
- Healthcare-associated infections (2012): Prevention and control in primary and community care[5]
- Management of Health and Safety Regulations 1999[6]

Incidence

A survey carried out in 2008 of 4407 nurses found that just under half (48%) had been injured with a needle or sharp previously used on a patient and that 52% of those surveyed feared an injury. A significant number felt that they had received no or little training from their employer[7]. A similar survey carried out among a group of UK surgeons showed that 44% anonymously admitted to having a needle-stick injury. Only 3 of the 33 (9%) who sustained a needle-stick injury said that they followed the agreed local policy[8]. Data compiled by Public Health England in December 2014 warned that healthcare workers remain at risk from blood borne viruses[9].

A new survey carried out on behalf of the RCN and published in May 2021 stated that out of those taking part in the survey, 96% had experienced a blood or body fluid exposure and 63% had experienced a sharps injury. The reason for the high incidence of events was difficult to ascertain in the UK, however, it was deemed to be likely related to COVID-19 workloads[10]. Practitioners returning to aesthetic practice after an extended period of absence, such as that experienced during the pandemic, could be more likely to receive a sharps injury due to wearing of PPE.

Areas of caution

Healthcare workers are particularly at risk from exposure to blood-borne viruses. Accidental exposure to blood or other body fluids from patients can lead to infection if the patient is infected with a blood-borne virus such as HIV,

Hepatitis B or Hepatitis C. Infection is not only damaging for health, but it could also prevent certain work within the healthcare setting.

Published and observed risk of blood-borne virus transmission amongst health care workers following a percutaneous injury from a known infected patient[1]:

Blood-borne virus	Risk of transmission
Hepatitis B (HBV)	1 in 3
Hepatitis C (HCV)	1 in 30
HIV	1 in 300

Blood-borne viruses are those viruses that are transmitted from the blood of one person to the blood of another person. Of particular concern are Hepatitis B Virus (HBV), Hepatitis C Virus (HCV) and Human Immunodeficiency Virus (HIV). Although the number of sharps injuries each year is relatively high, only a small number have caused infections that have led to serious disease[11].

Minimising the risk

Vaccination

Hepatitis B infection can be effectively avoided by vaccination. There is currently no vaccine available for Hepatitis C (HCV) or HIV. Vaccination must be offered free of charge by their employer to all workers and students delivering healthcare with exposure to blood or body fluids[12].

In the event of a sharps or splash injury, it is useful if the healthcare worker can provide their most recent hepatitis B antibody titre.

General measures

- Policies and procedures must be in place and available for all healthcare workers.
- Employers must organise and provide mandatory training to workers on a regular basis considering monitoring, modernisation and improvements[12].
- Wash hands before and after contact with each patient and before putting on and after removing gloves.
- Change gloves between patients.
- Cover with waterproof plasters or dressings any existing wounds, skin lesions and all breaks in exposed skin. Always wear gloves if hands are extensively affected.
- Wear gloves when contact with blood can be anticipated.
- Avoid sharps usage where possible.
- Where sharps usage is essential, exercise care in handling and disposal.
- Avoid wearing open footwear in situations where blood may be spilt or where sharp instruments or needles are handled.
- Clear up spillage of blood promptly and disinfect surfaces.
- Pre-employment occupational health assessment should identify those with damaged skin (e.g. fissured hand eczema) who may be at higher risk of occupational acquired infection and ensure that advice is given about minimising any occupational health risk to which they may be exposed.
- Wear gloves when cleaning equipment prior to sterilisation or disinfection, when handling chemical disinfectant and when cleaning up spillages.
- Follow safe procedures for disposal of contaminated waste.
- All sharps or splash injuries need to be reported to the employer/designated person[12].

Specific measures

Dependent on the procedure being undertaken

- Use of new, single-use disposable equipment for all injections is highly recommended.
- Reusable equipment should only be considered if single use is not available and if the sterility can be documented according to manufacturer's instructions with appropriate audit (e.g. time and temperature indicators).
- Discard contaminated sharps immediately and without re-capping[12] in puncture and liquid proof sharps containers.
- Document the quality of the sterilisation for all medical equipment used for percutaneous procedures.
- Wash hands with soap and water before and after procedures; use protective barriers

such as gloves, gowns, aprons, masks, and goggles for direct contact with blood and other body fluids.
- Disinfect instruments and other contaminated equipment.
- Practitioners should wear gloves and a disposable apron when handling soiled linen and keep contact to a minimum. Soiled linen should be transported in a suitable leak proof bag.
- Cleaning should occur outside patient areas, using detergent and hot water.
- Use sharps with safety-engineered protection mechanisms if a risk assessment has indicated that they will provide safer systems of working for healthcare workers, carers and patients[12].
- More detailed advice, including use of blunt-tipped needles, and 'neutral zones' for passing of sharps during surgery, are available in "Guidance for Clinical Health Care Workers"[13].

National Institute for Health and Clinical Excellence (NICE) recommendations[14]

Safe use and disposal of sharps

- Sharps should not be passed directly from hand to hand and handling should be kept to a minimum.
- Used needles must not be bent or broken before disposal and must not be recapped.
- Used sharps must be discarded immediately by the person generating the sharps waste into a sharps container conforming to current standards.

Sharps containers

- Must be in a safe position that avoids spillage, is at a height that allows the safe disposal of sharps, is away from public access areas and is out of the reach of children.
- Must not be used for any other purpose than the disposal of sharps.
- Must not be filled above the fill line.
- Must be disposed of when the fill line is reached.
- Should be temporarily closed when not in use.
- Should be disposed of every three months even if not full, by the licensed route in accordance with local policy.

Management of a sharps injury[11]

- Encourage the wound to gently bleed, ideally placing it beneath running water.
- Applying pressure above the wound may induce further bleeding from the wound[15].
- Wash the wound with running water and plenty of soap.
- Disinfectant agents may provide greater risk reduction (such as 10% iodine, 70% alcohol or hypochlorite solutions).
- Don't scrub or suck the wound.
- Dry the wound and cover it with a waterproof plaster or dressing.
- Seek urgent medical advice as you may need post-exposure prophylaxis (in a private healthcare setting, this may mean contacting your local infectious disease consultant or an Accident and Emergency department or GUM department). There should be no delay as ideally, prophylaxis should be commenced within an hour of injury[15].
- The final step in the to report the incident to your employer, manager, or occupational health department. In certain situations, a sharps injury may need to be reported to HSE (Health and Safety Executive) under the Reporting of Injuries, Disease and Dangerous Occurrences Regulations 1995 (RIDDOR).

Following exposure to blood or body fluids contaminated with a BBV, it may take 6 months for seroconversion to occur, and the healthcare worker should be tested at 6 weeks, 3 months and 6 months[15]. The practitioner does not need to refrain from work during this time as the risk of seroconversion and passing on the infection from occupational exposure is too low to consider[13]. However, practitioners should practice safe-sex and refrain from blood donation[13].

Identify patients at high-risk

In the event of a sharps or splash injury, the healthcare worker should ascertain the level of

risk associated with the injury. There are some very personal and confidential questions that can be asked to identify high-risk patients, these are often best asked by a senior and separate practitioner (Table 1). Ideally a sample of blood is taken from the patient to test for BBVs. The patient is not obliged to answer any questions or to provide a sample and undue pressure should not be applied.

Table 1: Identifying whether a patient is in a high-risk group for BBV (Adapted from NHS Blood and Transplant screening questions):	
1	Have you ever tested positive for HIV/AIDS, Hep B or Hep C?
2	If you are male, have you ever had sex (even safe sex) with another man?
3	Have you ever injected yourself with drugs (including body-building drugs)?
4	Have you ever received hospital treatment in Africa or any Far Eastern country?
5	Have you ever received a blood transfusion from anywhere outside of the UK?
6	Have you ever had sex with someone for drugs or money?
7	Have you had sex with anyone in any of the above groups?

Management of Sharps Injuries or Splash Incidents

ACE Group World have produced a series of evidence based and peer reviewed guidelines to help practitioners prevent and manage complications that can occur in aesthetic practice. These guidelines are not intended to replace clinical judgement and it is important the practitioner makes the correct diagnosis and works within their scope of competency. Some complications may require prescription medicines to help in their management and if the practitioner is not a prescriber or not familiar with the medication, the patient should be appropriately referred. Informing the patient's General Practitioner is considered good medical practice and patient consent should be sought. It may be appropriate to involve the General Practitioner or other Specialist for shared care management when the treating practitioner is not able or lacks experience to manage the complication themselves. Practitioners have a duty of care and are accountable to their professional bodies and must act honestly, ethically, and professionally.

Aesthetic Complications Expert Group World protocol for the Management of Sharps Injuries and Splash Incidents.

SHARPS INJURY

Stop work immediately, seek first aid.

Assess sharps injury
Depth, contamination with blood, bleeding, higher risk procedures (venepuncture, IV cannulation).

Encourage bleeding .
Apply pressure above the wound.
Wash with running water.
Use soap or appropriate disinfectant.
Do not scrub or suck the wound.
Pat dry the wound.
Apply a waterproof plaster or dressing.

SPLASH INCIDENT

Stop work immediately, seek first aid.

Assess splash incident
Blood or body fluid, skin contact, open wound, mucous membrane, eyes, amount, time between splash incident and splash.

Rinse skin with warm, running water.
Do not scrub or suck the wound.
Use soap or appropriate disinfectant.
Eye washes or saline for eye incidents.
Water or saline for splashes to the mouth.
Do not swallow water used for rinsing.
Irrigate for several minutes.

Assess patients risk factors—HIV, Hepatitis B, Hepatitis C?
Identify healthcare workers immune status for Hepatitis B.
Sympathetically and confidentially ask questions to assess patient risk.
Consider taking patient blood for testing for Blood Borne Viruses

High Risk

Seek urgent advice as you may need post -exposure prophylaxis (anti-retroviral treatment for HIV or Hepatitis B immunoglobulin and rapid vaccination).

Contact your Occupational Health Department, Consultant in Infectious Disease, GUM Department or Accident and Emergency

Report incident, further advice.

Low Risk

Report incident, further advice.

https://uk.acegroup.online
info@acegroup.online

References

1. Public Health England. Bloodborne viruses: Eye of the Needle (2020). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/863470/Eye_of_the_Needle_Report_-_February_2020.pdf (Accessed: 24/10/21)
2. Health and Safety at Work etc. Act (1974). Available at: https://www.legislation.gov.uk/ukpga/1974/37/contents (Accessed: 24/10/21)
3. Health and Social Care Act (2008). Available at: https://www.legislation.gov.uk/ukpga/2008/14/contents (Accessed: 24/10/21)
4. Department of Health. Safe Management of Healthcare Waste (2011) Available at: https://www.england.nhs.uk/wp-content/uploads/2021/05/HTM_07-01_Final.pdf (Accessed: 24/10/21)
5. National Institute for Health and Care Excellence. Healthcare-associated infections (2012): Prevention and control in primary and community care. Available at: https://www.nice.org.uk/guidance/cg139 (Accessed: 24/10/21)
6. The Management of Health and Safety Regulations (1999). Available at: https://www.legislation.gov.uk/uksi/1999/3242/contents/made (Accessed: 24/10/21)
7. Royal College of Nursing (2009) Needle stick injuries, The Point of Prevention. London RCN
8. Thomas, W. J. and Murray, J. R. Prevention and control of healthcare-associated infections in primary and community care. Annals Royal College of Surgeons Eng, 91 (1). p.7-12.
9. Public Health England (2014) Work exposures to HIV, hepatitis B, hepatitis C still rising.
10. Royal College of Nursing (2021) Blood and Body Fluid Exposures in 2020. Available at: https://www.rcn.org.uk/professional-development/publications/rcn-blood-and-bodily-fluid-exposures-uk-pub-009-687 (Accessed: 24/10/21)
11. Health and Safety Executive. Sharps injuries. Available at: https://www.hse.gov.uk/healthservices/needlesticks/ (Accessed: 24/10/21)
12. Council Directive 2010/32/EU of 10 May 2010 implementing the Framework Agreement on prevention from sharp injuries in the hospital and healthcare sector concluded by HOSPEEM and EPSU (Text with EEA relevance) OJ L 134, 1.6.2010, p. 66–72
13. Department of Health (1998) Guidance for Health Care Workers: Protection against Infection with Blood-borne Viruses. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/382184/clinical_health_care_workers_infection_blood-borne_viruses.pdf (Accessed: 24/10/21)
14. National Institute for Health Care Excellence (2012) Infection: Prevention and control of healthcare-associated infections in primary and community care. Available at: https://www.nice.org.uk/guidance/cg139 (Accessed: 24/10/21)
15. Smith, A., Cameron, S., Bagg, J. et al. Management of needlestick injuries in general dental practice. Br Dent J 190, 645–650 (2001). https://doi.org/10.1038/sj.bdj.4801064