CONTROLLED DOCUMENT

University Hospitals Birmingham NHS
NHS Foundation Trust

Procedure for Prevention of Inoculation Injury Including Sharps and Splash with Body Fluids

CATEGORY:	**Procedure**
CLASSIFICATION:	**Occupational Health/ Health & Safety**
Purpose	**How to prevent and deal with inoculation incidents**
Controlled Document Number:	**948 (previously 433 & 637)**
Version No:	**1**
Controlled Document Sponsor:	**Director of Corporate Affairs**
Controlled Document Lead:	**Deputy Head of Occupational Health**
Approved By:	**Director of Corporate Affairs**
On	**November 2015**
Review Date	**October 2018**
Distribution: • **Essential Reading for:** • **Information for:**	 **All Staff** **All Staff**

CONTENTS

1. Introduction

1.1. This procedure addresses the specific aspect of inoculation injuries which staff may acquire in the course of their work and the protection of patients from infections which may be transmitted by staff.

1.2. An inoculation injury may be a sharps injury, or a splash with body fluids. A sharps injury is defined as an injury where a needle or other sharp object, which may be contaminated with blood or other body fluid, penetrates the skin. This also includes human bites and scratches that break the skin.

1.3. The vast majority of sharps injuries are avoidable, and occur when sharps are handled or disposed of in an unsafe manner. Staff are required to follow this procedure in order to minimise the likelihood of inoculation injuries occurring.

1.4. This procedure provides a clear, evidence-based framework to ensure safe practice when sharps are used, thereby minimising injuries caused by contaminated sharps. It is applicable to all staff who handle sharp items during the course of their work, and applies at all times, in all situations.

1.5. If you have any queries about this procedure, please contact the Health & Safety Team, the Infection Prevention & Control Team or the Occupational Health Department.

2. Risk Assessment

2.1. Under the Control of Substances Hazardous to Health (COSHH) Regulations, there is a legal requirement to carry out a risk assessment. If you believe that there is a risk of inoculation injury associated with clinical tasks in your area then you need to carry out a risk assessment and act on it; the Trust intranet site has a blank proforma: - Preventing Inoculation Injury COSHH (Blank).

2.2. Example assessments are also available via the Trust intranet:

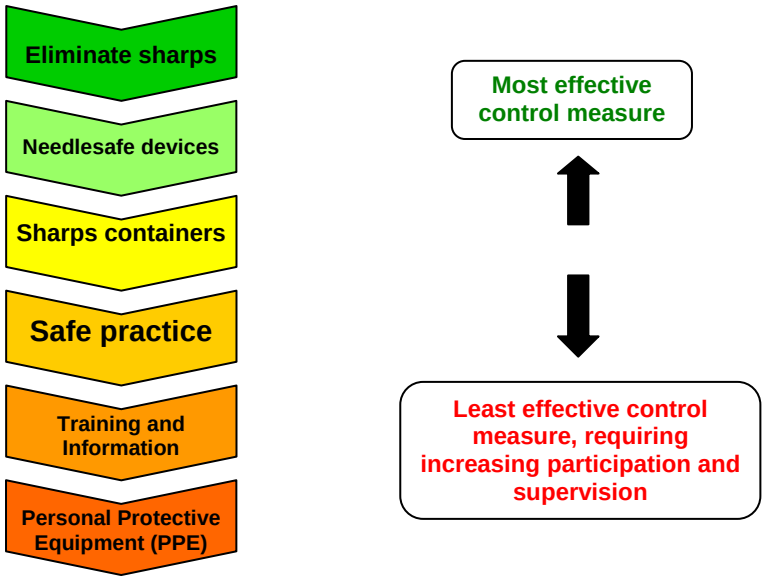
2.2.1. Preventing Inoculation Injury COSHH (Example) – Muscle Biopsy;

2.2.2. Preventing Inoculation Injury COSHH (Example) – AVF Cannulation;

2.2.3. Preventing Inoculation Injury COSHH (Example) – Disposal Of Clinical Waste

3. General Approach to Preventing Inoculation Injury

3.1. Control measures should follow the "hierarchy of control", starting with elimination which is 100% effective, followed by safer equipment, containment (purpose designed sharps containers, secure disposal routes), and supplemented by other measures described below: -



3.2. Good control is usually achieved by a combination of all of these approaches.

4. Elimination of Sharps

4.1. The use of sharps should be avoided where possible. Listed below are examples of elimination of sharps:

4.1.1. Review specimen collection systems to identify opportunities to consolidate and eliminate unnecessary punctures

4.1.2. Needle-free IV delivery systems

4.1.3. Butterfly stitches (steri-strips) and medical superglue for suturing wounds

4.1.4. Electrocautery or chemical cautery (e.g. silver nitrate)

4.1.5. Alternative routes of drugs administration, such as oral or topical (e.g lidocaine gel) when available and safe for patient care

4.1.6. Alternative delivery of vaccination, e.g. nasal sprays, oral, jet injections

4.1.7. Blunt suture needles, blunt drape clips, staples

4.1.8. Non-surgical wound debridement such as larval therapy and chemical methods

4.1.9. Patients self-administering insulin using insulin pens

5. Safer Sharps

5.1. These are devices that incorporate a built-in safety feature in their design, which is intended to reduce the risk of sharps injury. An integrated safety feature is part of the basic design of the device that cannot be removed. A passive safety feature is one that does not require the user to activate it, and remains effective before, during and after use. An active device requires user intervention.

5.2. It is the responsibility of managers to ensure that staff are trained to use safety devices where these have been trialled and adopted. Managers should consider the supply of safety devices, such as Qlicksmart BladeFLASK for the safe disposal of scalpels, in preference to standard devices wherever possible. In areas assessed to be higher risk of infection, safety needles should be used for venepuncture and other procedures.

6. Handling

6.1. All staff have a responsibility to manage the potential for occupational exposures, including sharps injuries, which can and do occur while delivering care. Sharps must always be handled carefully, in accordance with the following principles:

6.1.1. Never re-sheath used needles;

6.1.2. Ensure two people are present when using sharps with a confused or agitated patient; (wait for a member of staff to become available if necessary);

6.1.3. Never pass sharps from person to person by hand – use a receptacle or ‘clear field’ to place them in;

6.1.4. Never walk around with sharps in your hand or pocket;

6.1.5. Dispose of sharps at the point of use to enable single-handed operation – take a sharps bin with you;

6.1.6. Where sharps cannot be disposed of at the point of use e.g. because it is a sterile procedure, then sharps should be disposed of by the user as soon as practical i.e. into a sharps bin at the end of the procedure;

6.1.7. Dispose of syringes and needles as a single unit – do not remove the needle first;

6.1.8. When transporting a blood gas syringe, remove the needle using a removal device and attach a blind hub prior to transport;

6.1.9. Where available, use needleless intravenous devices and safer needle systems if you are trained to do so; and

6.1.10. Encourage insulin dependent diabetics to self-administer and safely dispose of sharps themselves, as far as possible, to reduce the risk injury to others.

7. Use of Sharps Bins

7.1. Sharps must only be disposed of in designated sharps bins that meet the requirements of the British Standard: BS 7320 (1990).

7.2. Always assemble sharps bins correctly:

7.2.1. Lid on properly;

7.2.2. Label completed to facilitate tracing if required; and

7.2.3. Placed in suitable, safe location.

7.3. Ensure sharps bins are of an appropriate size for the clinical activity – do not select excessively large sharps bins, or those that are too small for the size needle/syringes you use.

7.4. Sharps bins should be available at the point of use of the sharp – they should be taken to the bedside, placed on drug and cardiac arrest trolleys, and be carried by all staff that use sharps as part of their work in the community.

7.5. Wall and trolley brackets should be used, where they increase stability.

7.6. Sharps bins must be located at approximately waist height, and never placed on the floor, on top of high surfaces, or where children or confused adults can tamper with them.

7.7. Items must never be removed from a sharps container.

7.8. Between uses, use the temporary closure device on the bin to prevent accidental spillage of sharps if the bin is knocked over.

7.9. Always carry a sharps bin by the handle, or using the carry tray provided for smaller bins – never place it against your body

7.10. Never overfill a sharps bin – replace it when filled to the line marked.

7.11. Do not dispose of gloves, tissues or other waste in sharps bins. They are for SHARPS ONLY.

7.12. Ensure surrounding area is free from blood or body fluid.

7.13. Ensure sharps bins are closed and locked before disposal, and complete the label on the bin.

7.14. Do not place sharps containers in yellow bags for disposal.

7.15. Used sharps bins must be stored in a locked, segregated cupboard or clinical waste bin provided for the purpose.

8. Management of Inoculation Injuries

In the event of an inoculation injury to a member of staff it is essential to act promptly to prevent the risk of acquiring a blood borne infection from the source patient. If the patient involved is known to be a carrier of any blood borne virus it is imperative to seek immediate advice from occupational health or attend the Emergency Department 'out of hours' i.e. 16.30 – 08.00, Weekends and Bank Holidays.

8.1. Immediate Action to be taken by the injured person

8.1.1. In the case of a sharps injury make the wound bleed and wash under running water. In the case of a splash or bite injury irrigate with water.

8.1.2. Report the incident to your manager as soon as practicable and on the Trust Incident Reporting system.

8.1.3. Contact occupational health or, if 'out of hours', attend the Emergency Department and leave a message on the occupational health dedicated answer phone 17170 with your contact details.

8.2. Action to be taken by the Manager

If the source patient of the injury is known, arrange for the clinical team caring for the patient to assess the risk of the patient being a carrier of a blood borne virus. Investigate the cause of the injury and ensure that an incident report has been completed.

8.3. Action to be taken by the clinical team of source patient

8.3.1. Assess the risk of the patient being a carrier of a blood borne virus by considering the risk factors shown at Appendix 4.

8.3.2. Explain to the patient the reason for seeking their consent for blood testing and provide them with the information on the risks and benefits of the test which are written on the consent form (order number SE524). There is no requirement for pre-test counselling other than providing the information on the risks and benefits at this stage. Take a 10 ml clotted sample of blood following consent and request hepatitis B surface antigen, hepatitis C antibody and HIV testing (box A of the serology request form). Record on the green

virology/serology request form that this test is required as a result of an inoculation injury to a member of staff.

8.4. Action to be taken by Occupational Health

8.4.1. Ensure first aid has been carried out and then proceed to check the employee's health record to determine their immunity to hepatitis B. If the employee has recorded immunity to hepatitis B then with their consent a 10 ml clotted blood sample should be taken for serum and store for medico legal reasons. If they have no record of immunity they should be advised to either commence a course of vaccination or have a booster dose of vaccine depending on whether they have received any vaccine in the past. If the source patient is known to be a carrier of Hepatitis B, C or HIV, then specific action is required depending on the virus and this is shown at Appendix 5, 6 and 7.

8.4.2. Record the actions implemented and the time taken to obtain serology results on a dedicated Excel spreadsheet. Inform staff of the results.

8.4.3. Cross reference the number of incidents reported on the Trust Incident Reporting System with those reported to Occupational health. Where a failure to report to Occupational Health is identified a letter will be sent to the individual advising them of the risk of acquiring a blood born virus and copied to their manager for action.

8.4.4. Report all potential exposures to pathogens to the Health and Safety Executive in accordance with the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995.

9. Training

9.1. Occupational Health will provide training sessions, in line with the Trust's Training Need Analysis, on the following:

9.1.1. How to deal with inoculations injuries 'out of hours' to Accident and Emergency staff at least quarterly; and

9.1.2. The methods of protecting health and wellbeing at all induction training for new staff.

9.2. All staff attending their first immunisation and vaccination update are issued with information leaflets on actions to take, if they suspect they have been in a contact with an infectious disease or if they should sustain an inoculation injury. These leaflets are also available via the Occupational Health webpage on the Trust's intranet.

10. Monitoring

Details of monitoring are contained in Appendix 3.

11. References

11.1. Department of Health (2002) 'Getting ahead of the Curve' a strategy for combating infectious diseases.

11.2. Department of Health (1998) Guidance for Clinical Health Care Workers: Protection against Infection with Blood Borne Viruses.

11.3. NHS Employers (2005) The management of health, safety and welfare issues for NHS staff. Associated Policy and Procedural Documentation

11.4. Department of Health (2007) health clearance for tuberculosis, hepatitis B, hepatitis C, and HIV: New healthcare workers.

11.5. Health and Safety Executive (1995) Reporting of Injuries, Diseases and Dangerous Occurrences Regulations, 1995

12. Related policies and procedures

12.1. Health & Safety Policy

12.2. Procedure for the use of protective equipment

12.3. Inoculation Injury Management Procedure

12.4. Policy for the Reporting and Management of Incidents including Serious Incidents requiring Investigation

12.5. Training Catalogue (Training Needs Analysis)

Manager's Preventing Inoculation Injury Checklist

Appendix 1

Ward/Department			
Item	**Yes ✓**	**No X**	**Details of action required**
1. Sharps Bins			
Example: *Lid on properly – snapped on securely?*		*X*	*Clinic Room 3 – Lid not snapped on securely. Meet with HCAs and demonstrate correct assembly of sharps bins*
Lid on properly – snapped on securely?			
Label completed?			
In a suitable/safe location?			
Of appropriate size for the activity?			
Available at point of use?			
Static Sharps Bins: **a)** Securely fixed to trolley with purpose designed bracket? (Cable ties are not appropriate) **b)** Securely fixed to the wall with purpose designed bracket? (Cable ties are not appropriate)			
Portable Sharps Bins: Located on a flat stable surface at waist level or in a purpose designed mobile frame?			
Temporary closure device activated? If closure device not used, is the risk assessment (reason) documented, e.g. in your risk register?			

Item	Yes ✓	No X	Details of action required
Contents safely below fill line?			
Contains sharps only?			
Is surrounding area free from blood or body fluid?			
Once full, is bin closed, locked and label completed?			
Are used bins stored in a segregated and secure waste area?			
2. Personal protection			
Where there is a risk of splash, ensure face protection (visor) is this available at point of use: a) in the sluice b) for the following clinical procedures*: - i) connection or disconnection of ventilator tubing ii) interventional tracheostomy care iii) removing drains or tubing iv) haemorrhage v) cytotoxic chemotherapy treatment vi) extubation **This list is not exhaustive*			
3. Department free from inoculation incidents?			Inoculation incidents indicate that a control measure is not working. Investigate the incident and input details on DATIX, then review your COSHH risk assessment.
COSHH assessment in place and actioned?			

Name		**Signature**		**Date**	

Example of a Local Checklist*

Appendix 2

Ward/Department	
Were patients with high risk blood born viruses (BBV) highlighted at Band 7 handover?	
Were patients with high risk blood born viruses (BBV) highlighted at Band 6 handover?	
Are sharps bins at blood/gas machines free from bloodsplatter?	

Bedspace, Clinical Room	**Does patient have a BBV? Y/N**	**BBV recorded on chart? Y/N**	**Is a sharps bin available? Y/N**	**Is the sharps bin clean? Y/N**	**Is the sharps bin overfull? Y/N**	**Are two visors available per bedspace?**
Example *Bedspace 1*	*Y*	*Y*	*Y*	*Y*	*N*	*N*

Bedspace, Clinical Room	Does patient have a BBV? Y/N	BBV recorded on chart? Y/N	Is a sharps bin available? Y/N	Is the sharps bin clean? Y/N	Is the sharps bin overfull? Y/N	Are two visors available?

Name		Signature		Date	

*The local checklist can be amended to suit local practice

Monitoring Matrix (Occ. Health) **Appendix 3**

MONITORING OF IMPLEMENTATION	MONITORING LEAD	REPORTED TO PERSON/ GROUP	MONITORING PROCESS	MONITORING FREQUENCY
a) Duties and b) reporting of incidents				
Inoculation Injuries are managed in accordance with the procedure The number of inoculation incidents reported to Occupational Health is cross referenced to the number reported on the Trust Incident reporting System	Deputy Head of Occupational health	**Infection Prevention and Control Group (IPCG)**	• Daily email from Informatics identifying all inoculation injuries reported via Datix to the trust collated onto spread sheet • Datix report compared to those reported to Occupational Health • Injured person contacted if not reported incident to occupational Health • Manager contacted if incident reported to Occupational Health but not via Datix • Discrepancy between Datix and occupational health report database reported to IPCG (these meetings are minuted) ….	Daily Daily Weekly Weekly Quarterly
c) Reporting process, including prophylaxis				
Inoculation injuries are managed in accordance with the procedure and reported to the health, safety and Environment.	Deputy Head of Occ Health	HS & E Committee	The HS&E Report covers the following: • Discrepancy between Datix and occupational health report database • Incidents broken down by division • RIDDOR reports sent out per quarter • Prophylaxis report (anonymised)	Quarterly

Potential exposure to pathogens are reported to the HSE			These meetings are minuted.	
d) Training				
All staff are informed of the arrangements contained within this procedure.	Training and Development	Karen Jameson	Corporate Induction	Quarterly
e) Monitoring				
Audit of entire process	Deputy Head of Occupational. Health	Head of Occupational Health	Audit covers checks on employees' health records, Including: • Initial advice and treatment following injury • Follow up screening and outcome • Prophylaxis treatment and outcome	Annual

Human Immune Deficiency Virus (HIV)

ARE YOU AT RISK?

Certain Viruses like HIV are carried in the blood. If a nurse, doctor or other health care worker is exposed to blood from an infected patient (e.g. a needlestick injury), then it is possible for the infection to be passed on.

Whenever a member of staff has an injury involving a patient's blood, it is routine to assess the risk of HIV infection in that patient. This is done to enable appropriate protection to be offered to the staff member, but it also helps patients to identify their own risks. If you have HIV, then it is important for you to know. Beneficial treatments are available, and you will be able to help other members of your family or other close contacts.

Please read the following carefully, and if you fall into any of the groups described, tell the person who has given you this card (you do not need to give specific details if you do not wish to). If you have any further questions, please feel free to ask.

- You, or your partner, are known to be HIV positive.
- You, or your partner, have at some time injected yourselves with intravenous drugs.
- You, or your partner, have been advised not to give blood.
- You, or your partner, have haemophilia or a related blood clotting disorder needing the administration of clotting factor concentrates.
- You, or your partner, have been sexually active in Africa (excluding North Africa), Far East or Indian Sub-continent.
- You, or your partner, have visited a Clinic specialising in the treatment of sexually transmitted diseases (e.g. STD. GUM or VD clinic).
- You or your partner has been homosexually active.
- You, or your partner, have received multiple blood transfusions, or received a blood transfusion abroad.

If you think any of these risks apply to you, then we would like, with your consent, to test a sample of your blood for the human immune deficiency virus (HIV).

You do not have to do this, but if you have identified yourself to be at risk, it would be in your interest to be tested.

All tests are done in strict confidence, and you will be informed of the result as soon as it is available.

Appendix 5

Further Management of Injured Employee Involving Possible or Confirmed Hepatitis B Source

SOURCE PATIENT STATUS	INJURED EMPLOYEE	
	VACCINATION STATUS	ACTION
Hepatitis B surface antigen positive **or** Unknown, but injury to member of staff occurred in clinical area where Hepatitis B Virus positive patients are located	1. Known to be non-responder to Hepatitis B Virus vaccine	Hepatitis B Virus immunoglobulin; Hepatitis B Virus vaccine booster dose; Inform Clinical Microbiologist
	2. Not fully vaccinated against Hepatitis B Virus (≤ 2 doses)	Commence accelerated course of Hepatitis B Virus vaccination; OHD to complete course
	3. Vaccinated against Hepatitis B Virus (> 2 doses) but response unknown	Hepatitis B Virus vaccine booster dose followed by second dose one month later
	4. Fully vaccinated against Hepatitis B Virus and known responder (anti-Hbs > 100miu/ml)	Hepatitis B Virus vaccine booster dose
Hepatitis B surface antigen negative	Not applicable	No immediate action required but all injured employees must report to OHD at earliest opportunity
Unknown, but injury occurred in low risk clinical area	1. Known to be non-responder to Hepatitis B Virus vaccine	Consider Hepatitis B Virus vaccine booster dose; Inform Clinical Microbiologist
	2. Not fully vaccinated against Hepatitis B Virus (≤ 2 doses)	Hepatitis B Virus vaccine booster dose; OHD to complete course
	3. Vaccinated against Hepatitis B Virus (> 2 doses) but response unknown	Hepatitis B Virus vaccine booster dose
	4. Fully vaccinated against Hepatitis B Virus and known responder (anti-Hbs > 100miu/ml)	Hepatitis B Virus vaccine booster dose

Appendix 6

FURTHER MANAGEMENT OF INJURED EMPLOYEE INVOLVING POSSIBLE OR CONFIRMED HEPATITIS C SOURCE

There is currently no Vaccine or treatment to prevent this virus, however the risk of acquiring the virus is lower than that of hepatitis B. In the event of an inoculation injury with a hepatitis C source serology tests are arranged in occupational health at 6, 12 and 24 weeks post injury to monitor for any indication of infection. In the unlikely event infection occurs a rapid appointment is arranged with a Consultant Hepatologist who will undertake the prescribing of appropriate medication and any further investigations that may be required.

Appendix 7

Further Management Of Injured Employee Involving HIV Source (Immediate Action Is Required)

Information obtained from and about the source patient may influence the decision to recommend post-exposure prophylaxis and which drug to use.

The relative risk of transmission may be increased considerably if the source patient has a high viral load.

Information about the source patient's (and his/her partner's) previous and current antiretroviral therapy may be relevant when choosing appropriate post-exposure prophylactic drugs. If appropriate, discuss with clinical staff at Genitourinary Medicine Department.

<u>If source patient HIV POSITIVE or considered to be at high risk</u>

1 Contact GUM physician (GUM Clinic tel.:0121 371 6958/6954, on-call GUM physician via switchboard.

2 The GUM physician will assist in counselling and reassure injured employee of low risk of HIV transmission (a member of the clinical staff at the Genitourinary Medicine Department is available via SOH switchboard for advice at all times).

3 Post-exposure prophylaxis should be recommended to healthcare workers if they have been exposed to blood or other **high risk body** fluids through:

a) Percutaneous exposure.
b) Exposure of broken skin.
c) Mucous membrane exposure.

High risk body fluids include:	
Amniotic fluid	Saliva in association with dentistry
Cerebrospinal fluid	Semen
Human breast milk	Synovial fluid
Pericardial fluid	Unfixed tissues and organs
Pleural fluid	Vaginal secretions

Healthcare workers should not be offered post-exposure prophylaxis following contact through any route with low risk materials (e.g. urine, vomit, saliva, faeces) unless they are visibly bloodstained.

Counselling of the recipient should be arranged (GUM physician will assist), including rationale and side effects of prophylaxis. The recipient should take the final decision on whether or not to take the prophylaxis.

Post-exposure prophylaxis administration is recommended, ideally within one hour of exposure. Initiation of therapy several days after injury may still be appropriate but of less benefit.