

Health and Safety and Environment Committee

Blood borne viruses

CONTENTS

1. University Policy

- 1.1 Policy Statement
- 1.2 Scope

2. Procedures / Guidance.

- 2.1 General principles
- 2.2 Cleaning and disinfection
- 2.3 Gloves and skin protection
- 2.4 Waste disposal and sharps
- 2.5 Immunisation
- 2.6 Needlestick injury
- 2.7 Training
- 2.8 Fitness for work

3. Definitions.

4. Further Reading.

APPENDICES

- A *Good handwashing technique*
- B *Recommended procedure in case of needlestick injury or other exposure to blood/blood stained fluids*
- C *Venepuncture – minimum standards*

1. POLICY

1.1 Policy Statement

It is the policy of Loughborough University to prevent or control the risk of exposure to blood borne viruses, the main viruses of concern being human immunodeficiency virus (HIV, which causes AIDS), hepatitis B and hepatitis C.

The main legislation which is relevant to this subject is the Control of Substances Hazardous to Health (COSHH) Regulations 2002, which includes a specific requirement to manage biological hazards (see Loughborough University's [Control of Substances Hazardous to Health Policy](#) .

Unscreened blood is a biological hazard in Hazard Group 2. All planned work which involves this must also comply with the [University Biological Safety Policy](#).

1.1 Scope

This policy covers anyone across campus who is at risk of exposure to Blood Borne Viruses (BBV). These viruses are carried in the blood of infected people (who may not know they are infected). They are also carried in other body fluids such as semen, vaginal secretions and breast milk.

Body fluids such as saliva and urine may contain the virus but are unlikely to carry an infection risk unless they contain visible blood.

Those covered by this policy include, but may not be limited to:-

- a) Staff carrying out research which involves taking blood or working with blood in a laboratory
- b) Students (under supervision of staff)
- c) University staff working in the medical centre
- d) Staff providing beauty therapies at Burleigh Court
- e) Facilities Management (including Security) and imago staff who may be exposed to contaminated sharps in the course of their work
- f) First aiders
- g) Those providing personal care for disabled students

All departments and sections which have identified a potential for exposure to BBVs must carry out local risk assessments of appropriate activities, taking into account the general guidance given in this policy.

2. PROCEDURES / GUIDANCE

2.1 General principles

The risk of exposure to blood borne viruses can be significantly reduced by following the guidance in this policy, and by:-

- a) Good hand washing practices.
- b) Protective clothing, proportionate to the level of risk.

Health, Safety & Environment Office
Revision for H&S ctte, nov 09

This document forms part of the University Health & Safety Policy.

- c) Covering broken skin with plasters.

No food or drink shall be consumed in any area where there may be a risk of exposure to BBVs. A possible exception to this is where venepuncture is being performed as part of research activities and research subjects are provided with food and drink as part of the research protocol.

2.2 Cleaning and Disinfection

Spillages of blood or other body fluids should be cleaned up using suitable disinfectants, such as 1% Virkon solution or equivalent and disposable paper towels or cloths (see waste disposal guidance below). Local COSHH assessments must be in place covering the use of such substances.

Reusable equipment which is visibly contaminated should be washed in warm (not hot or cold) soapy water prior to disinfection according to local policy.

Laboratory clothing should be washed at a high temperature, ideally at least 60°C. For clothing accidentally contaminated with blood which cannot be washed at these temperatures bleach should be included in the washing process

2.3 Gloves and skin protection

Disposable gloves must be worn when handling body fluids or materials which may have been contaminated with body fluids, or when there is a potential for exposure e.g. during first aid. Gloves must be of a type suitable for the activity, further guidance on this is available from <http://www.hse.gov.uk/latex/labs.htm>

The only exception to this is where an experienced operator chooses not to wear gloves during venepuncture, see Appendix C.

Powdered latex (rubber) gloves must NOT be used because of the high risk of causing allergic reactions.

If latex gloves are used they must be powder free and have a low level of extractable proteins (less than 50 mcg/g). Users must be made aware of the potential for developing allergy and measures should be in place for identifying others (e.g. clients, research subjects, students), who have a pre-existing allergy.

Nitrile gloves are often a good alternative to latex .

Glove wearing does not replace the need for handwashing – hands must be washed after wearing gloves. See Appendix A for guidance on good handwashing techniques.

Alcohol-based hand rubs (minimum alcohol content 60%) may be used as an alternative to handwashing when hands are not visibly contaminated e.g., between research subjects and after removing gloves.

2.4 Waste Disposal and sharps

All sharps must be placed in a designated plastic puncture-proof sharps container for disposal by incineration. Local arrangements shall be established to ensure proper disposal of used sharps containers.

Syringe packaging should not be placed in sharps boxes.

All contaminated material, e.g. cloths, swabs and paper towels containing blood and other body fluids, should be put into plastic yellow bags, preferably in lidded bins. If use of lidded bins creates a risk of contamination small open bins may be used provided the contents are transferred to a larger bin on a frequent basis (e.g. every hour or two).

After double bagging and sealing these large bags must be disposed of by incineration. Local arrangements shall be established to ensure proper disposal.

Blood stained waste generated by first aid incidents must be disposed of properly. For departments which have a system of clinical waste disposal already in place, this can be used. In other departments, it is acceptable for such waste to be disposed of via sanitary bins.

2.5 Immunisation

Immunisation against hepatitis B is recommended for those who may be exposed to human blood/blood stained body fluids in the course of their work where risk assessment indicates that this is necessary. It can be arranged through the Occupational Health department. If immunisation is required for work involving NHS patients or work in an NHS hospital a [research passport](#) may also be required.

Departments where there is a known risk of exposure to blood should encourage staff to advise the department of their immune status regarding hepatitis B.

Routine vaccination against hepatitis B is not normally considered necessary by the Health and Safety Executive (HSE) for first aiders. Protection with gloves, resuscitation devices etc will greatly reduce risk. There are no instances recorded of HIV or hepatitis B being passed through mouth to mouth resuscitation.

There is no immunisation available to protect against hepatitis C and HIV. Therefore, good practice as outlined in this policy is of paramount importance at all times.

2.6 Needlestick injury

In the event of a needlestick injury (e.g. penetration of the skin with a used needle) or any other possible exposure to BBVs (e.g. through blood splash to the eyes, mucous membranes or broken skin), the injury site should be washed under running water and (where appropriate) gently encouraged to bleed.

Advice may be sought from Occupational Health (ext 222851), alternatively the injured party should contact their GP or visit the walk in centre (01509 553998) as soon as possible. The following processes will usually be required:-

- a) Blood to be taken from the injured party **for storage only** (i.e. to be tested if infection is later found to have occurred)
- b) Blood to be taken from the 'source' if known – i.e. the person on whom the needle was used prior to the injury. This will require a competent person, (e.g. Occupational Health, the source patient's GP), to advise the patient on the implications of testing, and to seek consent to test for hepatitis B, hepatitis C and HIV.
- c) Blood to be taken from the injured party 3 and/or 6 months after the incident to ensure no infection has occurred. This is particularly important if the 'source' patient is not known e.g. if the incident is caused by a needle of unknown origin.

Further details, and guidance for GPs and/or the walk in centre on University policy can be found at Appendix B.

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Any injury of this nature must be reported to the Health and Safety department on the University [Accident Report Form](#). Additionally, the incident could be reportable under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 1995.

2.7 Training

All those who may be exposed to BBVs in the course of their work must receive appropriate training in the measures required to minimise risk, and the steps to be taken in the event of a needlestick injury.

This is in addition to any required training to ensure competence in particular techniques such as venepuncture (see Appendix C)

2.8 Fitness for work

All staff and students working with unscreened blood for the first time must be referred to Occupational Health for assessment of fitness for work, in accordance with the University Biological Safety policy.

3. Responsibilities of Duty Holders

3.1 Heads of Department must make arrangements to ensure that;-

- a) suitable and sufficient risk assessments are in place (before work commences);
- b) staff in the department/section have received suitable training;
- c) the names of individuals commencing work with blood (which is a Hazard Group 2 biological hazard) are notified to the Occupational Health Adviser;
- d) records are kept regarding the hepatitis B immunisation status of those who work with blood;
- e) where venepuncture takes place, records are kept to show which staff /postgraduate students are approved to undertake venepuncture;and,
- f) where venepuncture takes place, arrangements are in place to comply with University guidance (Appendix C of this policy).

3.2 Managers/supervisors/leaders of research groups shall;-

- a) carry out suitable and sufficient risk assessments;
- b) ensure all staff/students have received appropriate training in relation to this policy and BBVs in general; and in relation to venepuncture skills where required;
- c) where venepuncture takes place, ensure arrangements are in place to comply with University guidance (Appendix C of this policy);
- d) ensure accidents resulting in potential exposure of individuals to BBVs are reported promptly to Occupational Health (or the Health, Safety and Environment office) and actions taken as in Appendix B of this policy;
- e) ensure staff commencing work with unscreened blood are notified to the Occupational Health Adviser, and,
- f) monitor compliance with this policy.

3.3 Individuals shall

- a) work in accordance with this policy;
- b) report any difficulties complying with this policy;
- c) report accidents resulting in potential exposure to BBVs to the manager/supervisor and to Occupational Health, and follow the guidance in Appendix B, and,
- d) if commencing work with blood, contact Occupational Health for advice on fitness for this type of work and guidance on hepatitis B immunisation.

3.4 Occupational Health shall

- a) provide guidance to managers on the implementation of this policy;
- b) provide/support training on request in accordance with this policy;
- c) assess the fitness of individuals to undertake work with unscreened blood;
- d) arrange hepatitis B immunisation where indicated, and maintain records; and,
- e) issue certificates of hepatitis B immunisation where appropriate.

3.5 Imago shall

- a) make arrangements for disposal of clinical, non-sharps waste arising from students resident in halls;
- b) ensure students are reminded of their personal responsibility to dispose safely of used sharps, in liaison with their own GP and the local authority;
- c) ensure staff have received suitable training e.g. in relation to what actions to take in the event of needlestick injury, or on finding used sharps.

4. Definitions and explanations

Needlestick injury

Needlestick injury or percutaneous exposure to BBVs, occur where the skin is cut or penetrated by a needle or other sharp object (including teeth), which is or may be contaminated with blood or body fluids.

Mucocutaneous exposure occurs when the eye, inside of the mouth or nose, or non-intact skin are contaminated by blood or blood stained fluids. Blood splashing onto intact skin does not carry a risk of exposure to BBVs.

Injured party

An individual who has suffered a needlestick injury or other exposure to blood or blood stained body fluids.

Source patient

A person on whom a needle was intentionally used prior to needlestick injury of the injured party; or the person whose blood has, for example, splashed an injured party in the eye. There may be occasions where the source patient is unknown (e.g. if a needlestick injury is caused by a needle discarded in waste)

Hepatitis B

Hepatitis B is found in the blood and body fluids of those who have or carry hepatitis B. It is most commonly spread by unprotected intercourse, drug users sharing equipment and from mother to baby at birth.

The prevalence of hepatitis B in the UK is 0.3 % (i.e. 3 cases per 1000 people), but is far higher in some countries. Not all carriers of the disease are aware that they are infected.

Following a needlestick injury from an infected person to an unimmunised person, the risk of hepatitis B transmission is about 1 in 3. The risk is much lower in mucocutaneous exposure.

Hepatitis B immunisation - A full course of hepatitis B vaccine consists of 3 injections at intervals of 0,1 and 6 months. A single booster is required if at continued risk after 5 years. Where urgent protection is required due to an activity which carries a high risk, hepatitis B immunisation can be carried out to an accelerated schedule, at 0,1 and 2 months, with an additional dose at 12 months. It is not anticipated that this will generally be warranted within the University.

If hepatitis B immunisation cannot be obtained through the GP, Occupational Health will make arrangements for it to be carried out. Any costs incurred will be recharged to the individual's department.

The vaccine is effective in around 90% of people, a blood test is required 2 months after the third dose of vaccine to ensure good immunity has been achieved.

If an individual who is not immune to hepatitis B is exposed to risk (see section 2.6, "Needlestick injury"), an accelerated course of immunisation started at that time, (ideally within 72 hours), will provide good protection. (see guidance for GPs under Appendix B)

Hepatitis C

Hepatitis C is most commonly spread by blood to blood contact, (e.g. sharing needles). It has a prevalence in the UK of around 0.4 %; around 5 out of 6 people who have or carry it, are not aware.

Following a needlestick injury from an infected person, the risk of hepatitis C transmission is about 1 in 30.

There is no immunisation against hepatitis C.

Human Immunodeficiency Virus (HIV)

Transmission of HIV is through similar routes to hepatitis B. Following a needlestick injury from an infected person the rate of infection is around 1 in 300. If the exposure is mucocutaneous, (e.g. blood splash to the eyes or broken skin), the risk drops to around 1 in 2000.

There is no immunisation against HIV.

4. FURTHER READING

Immunisation against infectious diseases (the Green Book); HMSO, 1996
(available on-line from Department of Health)

http://www.dh.gov.uk/PolicyAndGuidance/HealthAndSocialCareTopics/GreenBook/GreenBookGeneralInformation/GreenBookGeneralArticle/fs/en?CONTENT_ID=4097254&chk=isTfGX

Infection at Work – controlling the risks
Advisory Committee on Dangerous Pathogens
HMSO, 2003

(available on-line from Department of Health)

http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPolicyAndGuidanceArticle/fs/en?CONTENT_ID=4070102&chk=yQc0DS

Blood borne viruses in the workplace: Guidance for employers and employees
HSE 2004 (INDG342)

(available on-line from HSE)

<http://www.hse.gov.uk/pubns/indg342.pdf>

Guidance for Clinical Health Care workers: Protection against infection with Blood borne viruses
DOH 1998

(available on-line from Department of Health)

http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPolicyAndGuidanceArticle/fs/en?CONTENT_ID=4002766&chk=sjOK8W

NHS Skills for Health, Workforce competences; Obtaining Venous blood samples

http://www.skillsforhealth.org.uk/~media/Resource-Library/PDF/Prevention%20First_v3.ashx PDF
pages 20 - 26

Appendix A

Good Handwashing techniques

Wash your hands:-

- before you eat, drink, take medicine, smoke, put on make up etc;
- after any work activity where you may have become contaminated;
- after removing gloves;
- use soap and running water (preferably warm water as hot water increases the risk of skin irritation);
- wash all surfaces thoroughly including wrists, palms, back of hands and thumbs and under fingernails;
- rub hands together for at least 10 – 15 seconds, and,
- rinse and dry hands well (on paper towels, or hand dryers – not on clothes!)

The wearing of watches, bracelets and rings will impair the effectiveness of hand washing. They should be avoided as far as possible, where good hygiene is important.

Appendix B

If a needlestick injury occurs, a copy of this procedure should be taken by the injured party, (and the source patient if known), to either their GP or the walk-in centre.

Recommended procedure in case of needlestick injury or other exposure to blood/blood stained fluids

1. Blood to be taken from injured party for storage

Details 5-10 mls, clotted sample, to be labelled “needlestick injury – for storage”
Reason If the injured party is later found to be infected with a BBV, the blood can be tested to find out whether the infection was present prior to needlestick injury

2. Blood to be taken from source patient

Details Blood to be tested for hepatitis B, hepatitis C and HIV
Informed consent will be needed for this; this should entail discussing with the individual:-

Nature of HIV/Hep B/Hep C infection

Risk activities for infections

Benefits and implications to individuals of having a test/ testing positive

Details of test and how results will be provided.

Further information on HIV testing can be found at

<http://www.bhiva.org/files/file1031097.pdf>

Further information on hepatitis C can be found at

<http://www.dh.gov.uk/assetRoot/04/03/28/46/04032846.pdf>

3. Review of injured party hepatitis B status

If the source patient is unknown, or is known to be Hepatitis B positive, hepatitis B vaccines should be given in accordance with DoH guidelines

Details If unimmunised – give accelerated course of hepatitis B vaccine
vaccine If unimmunised and source patient known to be HBV+ give HBIG in addition to
 If immunised, consider booster dose of hepatitis B
Further information on this can be found in the DoH Green Book (“Immunisation against infectious Diseases”), also at
<http://www.dh.gov.uk/PolicyAndGuidance/HealthAndSocialCareTopics/GreenBook/fs/en>

4. Follow up blood tests for injured party

Details If source patient is unknown, or if source patient is known to be positive for BBV, test injured party blood at 3 and/or 6 months post incident.
Further information is available in Guidance for Clinical Health Care Workers: Protection against infection with blood-borne Viruses, 1998, available at
<http://www.dh.gov.uk/assetRoot/04/01/44/74/04014474.pdf>

Occupational Health at Loughborough University is available on 01509 222851

Health and Safety at Loughborough University is available on 01509 222181

Appendix C

Venepuncture – minimum standards

a) Protective clothing

Laboratory coats or side-fastening gowns and gloves will usually be worn, (and fastened!), at all times when working in a laboratory environment, or during any activities where there is potential for exposure to BBVs. Exceptions to this are that;–

- Laboratory coats need not be worn during venepuncture or when taking blood by fingerprick sample. However, where there is a high risk of blood splash, (e.g. during cannulation), a plastic apron or white coat may be considered appropriate.
- Experienced operators may choose not to wear gloves during venepuncture. However, wearing gloves is strongly recommended – although gloves will not protect against needlestick injury, they may reduce the likelihood of inoculation with blood, (or the volume of inoculation), if a needlestick injury occurs.

Any clothing, gloves or laboratory coats which become contaminated with blood must be removed as soon as possible.

In addition, protective eye wear should be worn during procedures that are likely to generate splashes of any body fluids containing visible blood.

b) Training

Venepuncture and cannulation and withdrawal of blood from a cannula, must only be carried out by staff or postgraduate students who have been trained and assessed for competency. A list of competent persons will be held in each department and reviewed annually.

Training for venepuncture and cannulation may be carried out by an external provider or in-house; as a minimum it should include the following; –

- Health and safety and infection control including
 - good handwashing technique;
 - use of gloves and other protective clothing;
 - risks of blood borne viruses;
 - hepatitis B immunisation;
 - action in case of a needlestick injury.
- Anatomy and physiology of the arm
- Identifying the subject/participant
- Getting informed consent
- Contraindications to venepuncture
- How to find and prepare a suitable site for Venepuncture
- Correct Application and removal of Tourniquet
- Labelling samples, which bottles are required for which test and the order of draw
- Gaining venous access, using the appropriate venous collection system (e.g. monovette, Sarstedt)
- Mixing blood and anticoagulant where appropriate
- Safe disposal of sharps
- Control of bleeding
- Possible adverse reactions (e.g. bleeding, fainting) and how to manage these (and report if necessary)

- Action to take if venepuncture is unsuccessful
- Storage or transportation of blood samples
- Personal responsibility for keeping learning up to date e.g. use of a personal log

Formal assessment of competence is required for all staff and postgraduate students newly trained in venepuncture. This must include a minimum of 15 venepunctures supervised by a member of University staff experienced in venepuncture or a qualified, experienced phlebotomist; and formal 'signing off' by a different, experienced member of University staff or a medical doctor.

Additional training and supervision will be necessary if additional skills are required, e.g. if a member of staff has been assessed competent with one blood taking system but then wishes to use another; or if they have venepuncture experience but wish to undertake cannulation.

Fingerprick testing may be carried out by undergraduate students who have received suitable training, including the risks of BBVs and how to protect themselves. There must be supervision by a competent member of staff.

c) Skin preparation

Provided skin is visibly clean, skin disinfection prior to venepuncture or fingerprick testing is not usually required.

If a cannula is to be left in place, the skin may be cleaned with 70% isopropyl alcohol and allowed to dry (30 seconds) before venepuncture.

d) Exclusion of infected subjects

Where volunteer subjects are sought for research involving blood sampling, steps must be taken to exclude those who know they carry a BBV or whose partner has a BBV. This can be achieved discreetly by including advice to this effect on research information documents which are given to potential subjects.

e) Ethical approval

Where blood samples are taken for the purposes of research, this is subject to approval by the University Ethics Committee, after a suitable application has been submitted

f) Risk minimisation

Steps must be taken to minimise the risks to staff/students arising as a result of venepuncture.

Particular attention should be given to the following; –

- a) closed systems should be the standard means of taking blood (e.g. Vacutainer, monovette, Sarstedt);
- b) techniques involving syringe and needle or syringe and butterfly involve an increased risk of needlestick injury and should only be employed in exceptional circumstances;.
- c) needles should not usually be removed from the syringe before disposal into sharps boxes;.
- d) needles must never be resheathed and,
- e) where possibly, intrinsically safe systems should be used, e.g. retractable needles. This is of particular importance if open systems are being used (as at (b) above).