

**STANDARD OPERATING PROCEDURE**

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| **Reference Number** | **MMUHTA\_014** |
| **Title** | **Guidelines For Blood Sampling Via Venepuncture & Cannulation** |
| **Effective Date** | **30th January 2023** |
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| **Author** | **Jason Ashworth** |
| **Reviewer** | **Glenn Ferris** |
| **Authorisation** | **Designated Individual****Professor Degens** |

# Background

The University has introduced a quality management system for the governance of the acquisition, storage and use of human tissue.

This system will ensure that all work is carried out to the highest standard and that the University complies with the licensing obligations of the Human Tissue Act (HTA, 2004).

This SOP forms part of a suite of SOPs (MMUHTA\_001 – MMUHTA\_019) that support implementation of the quality management system and should be used as directed in conjunction with Manchester Metropolitan University’s HTA Code of Practice

# Definitions

## Human Tissue

Any, and all, constituent part/s of the human body containing cells.

# Scope (of this SOP)

Blood sampling at Manchester Metropolitan University.

# Code Of Practice For Persons Having Contact With Human Bodily Fluids

(Safety against Hepatitis, HIV and other blood transmitted diseases).

## General

The training and the handling procedures to be adopted by students and research staff will be the responsibility of the member of staff concerned with the phlebotomy work. Lab coats and disposable gloves must be worn by staff concerned with the phlebotomy work. Lab coats and disposable gloves must be worn by staff and students when handling body fluids or materials which may have been in contact with any bodily fluids. Particular care should be taken to cover any cuts on the hands with waterproof plasters. Wherever blood sampling is taking place, appropriate information on first aiders should be clearly displayed. Members of staff participating in blood sampling procedures are encouraged to obtain a first aid qualification and if venous or arterial sampling is taking place, they should have completed a phlebotomy course.

## Screening Process

Before taking blood, several screening questions must be answered by the patient/participant. In addition, patients/participants should be informed of any discomforts that may arise from the blood sampling procedure and be given the opportunity to ask questions. A list of standard, validated screening questions are shown below. If participating in a research study, volunteers should complete an additional medical screening questionnaire before undertaking any experimental work.

**Please Inform the Phlebotomist of The Following:**

1. If you have any current evidence of haematoma/inflammation
2. Current infection
3. Any devise *in situ*
4. Vascular grafts or fistulae
5. If you have a past or current history of mastectomy
6. Cardiovascular event (stroke).
7. If in the past when phlebotomy has been performed you have fainted.
8. If you suffer from anxiety attack in relation to needles or blood.
9. If you have been diagnosed with any blood borne illnesses such as hepatitis, or HIV.
10. please talk to your phlebotomists about any concerns you may have i.e. if you prefer to lie down or if from previous experience you feel you know which veins are usually reliable.

**With consent, the phlebotomist will undertake the procedure, then ensure that bleeding has stopped and that you are feeling sufficiently well enough to leave the premises.**

## Hand Washing

Hand washing is recognised as the single most effective method of controlling infection. There are two populations of microbes present on the hands. These are transient micro-organisms (temporary microbes superficially present on the skin surface) and resident micro-organisms (established microbes that populate the skin). Good practice in hand washing consists of prior removal of jewellery, nail polish and artificial fingernails; the use of running water, a liquid/foam antibacterial wash (to remove resident microbes) and thorough drying of skin with disposable paper towels. Cuts, abrasions and other skin lesions must be covered with an occlusive waterproof dressing. Examples of antiseptic solutions are: chlorhexidine, iodophors and triclosan. If disposable gloves are not worn, thorough hand washing with an antiseptic solution is essential.

## Blood Sampling

Venepuncture and intravenous cannulation are to be carried out only by staff that have provided evidence of their ability to perform the technique.

* **Never Re-Sheath Needles.**
* **Never Re-Use Needles or Cannulae.**
* **Always Wear Gloves When Handling Blood Samples.**

Finger prick sampling may be carried out by other laboratory users after instruction from supervisors however an experienced individual should be present. Always wear gloves. Never re-use lancets, Autoclix etc. NEVER pipette by mouth. If containers or surfaces become externally contaminated clean with sterilising agents (e.g. alcohol wipes or Milton’s reagent). Do not answer the telephone with gloves on because blood droplets from the outside of the gloves could become deposited on the mouthpiece.

## Handling of Blood

Viral Hepatitis. A cautionary note:

Whole blood, serum, plasma, and other blood products can be infectious, such as serum hepatitis, a serious disease of viral origin, can be transmitted by these materials. Serum hepatitis can lead to permanent liver damage and be lethal. A high standard of personal hygiene and care is essential when handling such specimens. There are two types of hepatitis caused by virus infection. Virus type A is responsible for the occasional outbreaks of ineffective hepatitis, and it is thought that the infection is transmitted by the oral faecal route.

Virus type B hepatitis, the only type we are concerned with here, is transmitted from blood to blood for example, receiving an injection from a contaminated needle, pricking oneself with a needle used to withdraw blood from a subject, allowing even a small scratch to be contaminated with blood from another needle.

The incidence of the carrier state of hepatitis B is low in the general population. Although the virus is rare in the general population infection could very easily spread if precautions are not taken. It is therefore sensible to observe a simple code of practice based on elementary principles of hygiene wherever human blood is taken for experimental work. This code is displayed in this type of experimental work.

Similar precautions apply with respect to HIV.

Medical screening questionnaires completed prior to participation should include the likelihood of hepatitis or HIV infection.

## Code of Practice for Obtaining Blood Samples

The procedure outlined should be followed with the greatest care, always, to minimise the risk of infection:

1. Ascertain whether the subject has ever suffered from hepatitis or if he is a known to be a hepatitis carrier (the same applies for HIV and other blood borne diseases). If so, it would be wise to exclude from the study unless the aim of the investigation is to study patients suffering from these disorders.
2. Set out a tray in an organised fashion. It should include a vacutainer/lancet (Autoclix), sterile swab, paper tissues, cotton wool, gauze, plaster, disposals box (biohazard) and yellow biohazard bags.
3. Wash hands with soap (see hand washing procedures).
4. Label the tubes clearly.
5. Put on protective gloves.
6. Swab the site and dispose of the swab into a blood disposables bag.
7. Obtain the sample.
8. Dispose of the vacutainer/lancet/needle/syringe etc into a sharps box. The district health authority will arrange suitable disposal.
9. Swab off excess blood using light pressure and dispose of swab into disposables box once the bleeding has stopped.
10. Put a cotton pad onto the site of entry and tape onto the arm.
11. Any spillage and equipment concerned with drawing blood should be cleaned/washed with 2% Hycolin Concentrate and then with 5 mg/l Chlorhexidene made up in 70% spirit or another suitable disinfectant.
12. The gloves should be disposed of in a biohazard bag.
13. Following blood collection, it is good practice to again wash and dry your hands.
14. As a matter of good practice, all surfaces that may have encountered any biological fluid, including blood, should be washed with a suitable disinfectant.

## Sharps Injury

To reduce the risk of exposure to blood-borne viruses (BBV), sharps must be disposed of correctly according to local health and safety policy, and the safe handling and disposal of sharps should be part of an overall strategy of clinical waste disposal. The injury could result in the transmission of a range of infections. The risk of transmission from an infected patient following a sharps injury is shown in brackets.

* Localised skin infection
* Septicaemia
* Malaria and syphilis
* Hepatitis B (1:3)
* Hepatitis C (1:30)
* HIV (1:300)

If you obtain a sharps injury it is very important that you act quickly and seek medical advice from a trained healthcare professional. Post Exposure Prophylaxis (PEP) will involve:

* an assessment of the risk of exposure
* a programme of treatment
* counselling and support.

There is currently no PEP available for Hepatitis C. For HIV, some anti-retroviral choices are available. Medication/risk assessment should be taken at the earliest possible opportunity as delay in receiving prophylaxis (if required) could affect the outcome. It is recommended that following a sharps injury:

* Bleeding from the wound is encouraged. Do not suck.
* Wash the area thoroughly with warm running water and soap.
* Cover with water-proof dressing.
* The sharps/splash incident form should also be completed (see appendix).

**There is a vaccine available to give active immunity to hepatitis B. It is recommended that individuals taking blood should be regularly vaccinated. Information on this can usually be obtained from a general practitioner.**

**In case of a sharps or splash injury, the** [**MMU accident reporting procedure**](https://mmuintranet.mmu.ac.uk/Interact/Pages/Content/Document.aspx?id=4042&SearchId=) **must be followed.**

## Handling and Storage of Human Blood Samples

Handling, storage and collection of human blood samples must comply with Human Tissue Act, 2004. The Human Tissue Act 2004 regulatory aim is: “*to create an effective regulatory framework for the removal, retention, use and disposal of human tissue and organs in which the public and professionals have confidence*”. The following procedures should be adhered to when handling and storing blood samples:

* Each blood sample must receive a unique identification number (ID) that anonymously identifies it as belonging to a particular ethics-approved study.
* Blood samples must be kept in sealed and anonymously labelled containers that bear no sensitive patient details/data.
* Blood samples must be handled, transported, and stored strictly according to Health and Safety Regulations and Local Ethics Approval.
* An inventory and tracking system must be implemented to record information relating to the physical location, usage, and disposal of each blood sample.
* Blood samples that are no longer required, or when consent is withdrawn, must be sent for appropriate disposal (*See Clinical Waste Collection and Disposal*).

## Clinical Waste Collection and Disposal

It is the user’s responsibility to dispose of used sharps as soon as possible after the use. The used sharps should be disposed safely:

* Dispose syringes and needles as a single unit.
* Always dispose used sharps into properly constructed containers/bins that meet requirements of *BS 7320: 1990 Specification for sharps containers.* Clinical waste disposal containers are available for purchase from several companies (i.e. Initial, UK; WasteCare UK).
* Always carry a sharps container/ bin by the handle and away from the body.
* Label or tag disposed sharps containers/bins with the name of the institution and date.
* Sharps container/bins must be sealed/locked and taped before collection for disposal.
* Sharps containers must be securely stored until collected by the local clinical waste contractor: Stericyle **SRCL Ltd,** Knostrop Treatment Works, Knowsthorpe Lane, Leeds, LS9 0PJ.

# Version Control

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| **Version** | **Reason for change** | **Date** |
| 1.0 | N/A | 14th June, 2021 |
| 1.1 | A new SOP was added to the suite therefore writing changed to state ‘SOPs (MMU-HTA001 – MMU-HTA016)’ rather than SOPs (MMU-HTA001 – MMU-HTA015) | 25th November, 2022 |
| 1.2 | Changed writing to state ‘SOPs (MMU-HTA001 – MMU-HTA018)’ rather than SOPs (MMU-HTA001 – MMU-HTA016) | 30th January, 2023 |
| 1.3 | Author & Reviewer fields added to title table + changed writing to state ‘SOPS (MMU-HTA001 – MMU-HTA019)’ rather than SOPs (MMU-HTA001 – MMU-HTA018) + minor grammatical & formatting changes | 3rd March, 2023 |
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