

Blood Taking / Blood Use

Blood and a variety of other human body fluids are used in a variety of procedures within SGUL.

Hazards and Risk Assessments

It is important that the hazards presented by blood or other body fluids has been determined when completing the [Control of Substances Hazardous to Health](#) (COSHH) Risk assessment for a project.

The risk assessment must evaluate the likelihood of needle-stick / sharps injuries occurring both when taking and / or handling the blood and the likelihood of an infection occurring.

Infections could be caused by a blood borne viruses such as Hepatitis B, Hepatitis C, Hepatitis D and HIV. In addition bacteria, parasites and the agent responsible for nvCJD can be transmitted by blood.

Human body fluids are nominally rated as [ACDP Biohazard Group 2](#). Blood which is known or suspected to contain Hepatitis B, Hepatitis C, Hepatitis D and HIV should be handled as a ACDP Biohazard Group 3 agent. Blood or other body fluids which is known or suspected to contain Ebola or other hemorrhagic fever causing viruses which are ACDP Biohazard Group 4 must **not** be handled

The likelihood of the donor fainting while blood is being obtained must be considered as people vary in their reaction to venepuncture.

Risks that should also be considered include.

- Breakage or dropping vacutainers

- Breakage or dropping Falcons, Universals or other fragile centrifuge tubes

- Leaks of blood from containers

Notification of Blood Work

A [Biological agents – Blood notification form](#) must be completed and sent to the SHE Office upon the first use of blood for a project.

Equipment for blood taking

Needles

Needles or butterflies should be of a suitable size to enable blood to be taken quickly but without causing excessive pain to the donor. If possible safe needle systems where the needles can be retracted into sheaths should be used as this reduces the likelihood of needlestick injuries to the person taking the blood.

Never attempt to re-sheath a needle.

Vacutainers

Vacutainers can be connected directly to needles or butterflies and can be used for a variety of blood isolation or testing procedures. If the blood is to be centrifuged, the centrifuge bucket must be of the correct size to hold the tube firmly. The use of incorrectly sized buckets can lead to the Vacutainers breaking with the result that blood and glass will contaminate the centrifuge.

Falcons / Universals

These can be used to hold blood. If they are centrifuged they must fit the centrifuge bucket firmly.

People taking blood

- All individuals taking blood must have attended a phlebotomy training course.
- It is advisable that those who may be involved in taking blood contact Occupational Health and determine whether they need to be vaccinated against Hepatitis B.
- It should be borne in mind that the vaccination course can take several months and that not all individuals are protected by the Hepatitis B vaccine.
- Taking of arterial blood **must** only be done under medical supervision as this poses a considerably greater hazard to the donor than venepuncture.

Before starting the procedure the person taking blood must

1. Find a suitable area.
2. Determine if the donor is fit to donate.
3. Determine if the donor is allergic to plasters.
4. Ensure that they have put in place measures to deal with a person fainting.
5. Ensure that a first aider is available and in the room or nearby. Some individuals faint at the sight of blood. First aiders can be contacted on 0909.
6. Have a spill kit available. It is advisable to clean up spills with 10% Virkon, 10% Sodium Hypochlorite or 10% thick bleach.

Donors

- Individuals may choose to donate blood for studies but must not be pressured into doing so.
- If individuals will be giving blood repeatedly for a long period it may be necessary for them to have their blood count checked especially if there is a suspicion that the donor is or could be anemic.
- Individuals must not transform their own cells as there may be a risk to their future health due to the presence of oncogenes should the blood cells be re-introduced into the individual.
- It is highly advisable that cells from colleagues in the same laboratory are not transformed due to the same risk. If transformations are necessary, sharps must not be used with the cells in the presence of the donor.

Facilities

- Blood must not be taken in laboratories under any circumstances and it must not be taken in tea rooms
- It is advisable that the area where the blood is being taken is uncarpeted as this will be easier to clean in the event of a spill.
- Blood should be taken in an area where a person can sit comfortably during the procedure.
- The area should also provide a degree of privacy and if necessary sufficient space for an individual to recline should they feel faint.

The area where blood is being taken should contain or have readily accessible:

- Sterile swabs
- Disposable gloves / disposable aprons
- Hand wash
- Syringes / needles / Vacutainers
- Sharps bins
- Cotton wool, plasters and hypoallergenic tape
- Hand washing facilities
- First aid kit
- Biohazard spill kit or equivalent including disinfectant and absorbent material.
- A first aider should be in close proximity in case an incident occurs

Transport of Blood

Tubes or Vacutainers containing blood must always be transported inside a sealed secondary container in case of accidental spillage or the tubes being dropped.

Centrifugation

Centrifuges use for blood separation must be suitable for the activity. You must contact the Principal Investigator (PI) who owns the equipment prior using it or other senior staff member (Penny Lympny or Ian Connoley) if a multi-user centrifuge is to be used.

Vacutainers, Falcons or universals must be centrifuged in buckets that hold the tubes securely. Centrifuges must not be run at a speed that may cause the tubes to shatter and they must not run at greater than the maximum recommended speed for a particular rotor

Secondary containment **must** always be used when centrifuging blood or any other body fluid.

Waste Disposal

- All sharps boxes must be suitable for autoclaving at 134°C.
- All sharps and vacutainers must be disposed of via sharps boxes.
- If the blood has been obtained from a person who is undergoing oncology treatment, the sharps and vacutainers must be disposed of via purple topped cytotoxic / cytostatic sharps boxes.
- Never dispose of sharps via autoclave / plastic bags.
- All other material should either be autoclaved or treated with Virkon / Sodium Hypochlorite / bleach and then disposed of via Tiger stripped bags.

Spills of blood

Outside of centrifuges

- Spilt blood must be cleaned using either a biological spill kit or a combination of absorbent material such as Stardust, spill granules or in last resort tissues and a disinfectant e.g. Virkon powder, 10% Sodium Hypochlorite, or 10% bleach.
- It is important to contain the area of the spill.
- All chlorine releasing materials used for dealing with the spill should be disposed of via yellow clinical waste bags.
- Non chlorine releasing materials used for dealing with the spill must be autoclaved prior to disposal.

- The incident should be reported to your line manager / supervisor, the laboratory manager and the SHE office.

Inside centrifuges.

- If it is suspected that a tube has broken or shattered, the centrifuge must be stopped and left for 30 minutes to allow aerosols to settle.
- The complete rotor or individually sealed buckets must be transferred to an operating Microbiological Safety Cabinet (MSC).
- The rotor or buckets should sit for at least 30 minutes to allow any droplets / aerosols to settle. The rotor or buckets can then be opened and the contents transferred with care into a sharps bin.
- Absorbent material should be poured over the fragments to prevent the fragments sliding on the blood.
- The bowl or bucket should be cleaned initially with a rotor compatible cleaning agent e.g. 70% ethanol
- Virkon and hypochlorite can strip the surface of centrifuge buckets and rotors and their use should be checked with the lab manager before using them for the final clean.

The incident must be reported to your line manager, the laboratory manager and the SHE office.

Accidents and Incidents

Sterile / uncontaminated needles

- Place the needle into a sharps bin to prevent further injury.
- Encourage the wound to bleed for 30 seconds and then wash the wound with soap and water.
- Depending on the size of the puncture, the wound should be covered with a plaster.
- Help should be summoned from a first aider (x0909).
- An [accident report](#) should be completed as soon as possible.

Used / contaminated needle

- Place the needle into a sharps bin to prevent further injury.
- The injured person should encourage the wound to bleed for 60 seconds and call for help.
- The wound should be mopped with sterile gauze if available.
- The injured person should wash the wound with soap and water.

- Help should be summoned from a first aider (x0909).

Occupational Health (x1661 / x1662/ x1663) should be contacted as soon as possible either by the injured person or a third party and notified that a needle-stick has occurred with a contaminated needle. Unit 1 of Occupational Health is located above the Rob Lowe sports center on the Perimeter Road. Occupational Health is open between 09.00 – 17.00 Monday to Friday.

If Occupational Health is unavailable or out of hours the person should go to A & E in St. James Wing and receive medical attention.

If possible give information if known about the donor.

An [accident report](#) should be completed as soon as possible.

Further Information

A leaflet on [Blood Borne Viruses](#) such as Hepatitis B, Hepatitis C, Hepatitis D and Hepatitis E and HIV is available from the [HSE](#) . Information is also available from [Public Health England](#).

Information can be obtained from the SHE office on extension 0637 / 5166 / 5365