1.0 Purpose

The purpose of this operating procedure is to implement the requirements of "The Management of Inoculation (Sharps) Injury or Blood Borne-Pathogen Exposure Policy".

This procedure will provide instruction on the steps to be followed to prevent the acquisition of Blood-Borne infections following an inoculation (sharps) injury, incision injury or through direct exposure to a Blood-Borne pathogen or Adventitious Agent that may be present in an unscreened Clinical Sample.

This procedure also outlines the post-exposure steps to be followed in the event of an inoculation (sharps), incision injury, or Blood-Borne Pathogen exposure.

2.0 Scope

This procedure applies to all DCU Staff (including employees, contractors working for on behalf of the University, visiting staff, and emeritus and adjunct staff), Researchers and Students (both, graduate and undergraduate) when they are working within DCU, and when they are working for or on behalf of the University at other establishments or at other locations.

This procedure applies to, but is not limited to, all sharps injuries where any hazardous substance (Biological Agents, Clinical Samples, Biological Toxins, and Chemicals) or article capable of penetrating the dermis of the skin is involved, and where there is a Risk of percutaneous injury or direct exposure to a blood-borne pathogen through the use of a Clinical Sample.

The process also extends to activities involving the use of animal models, where sharps injuries resulting from bites and scratches may occur.

3.0 Definition(s)

- Inoculation - The penetration of the skin by a sharp object such as a needle, glass or scalpel blade.
- Splash - Blood, body fluid or blood-contaminated liquid splashed into the eye, mouth or onto the skin surface that has an open cut or abrasion.
- Bite or scratch - Any injury caused by an animal that breaks the skin.
- Recipient - The person suffering the injury.
- Donor - The source of the blood/body fluid.

- Article – a particular item or object; specific to this procedure this may include a needle, scalpel, or broken glass.

- Adventitious Agent – a Biological Agent (e.g. bacteria, virus) that is unintentionally introduced into a manufacturing process workflow intended to produce a product of biological or medicinal importance.

4.0 Responsibilities

4.1 Principal Investigator / Project Leader / Manager/Supervisor:

It is the responsibility of the staff member/researcher's Manager/Supervisor / Principal Investigator / Project Leader:

- To oversee the completion of a Risk Assessment, to identify the hazards associated with the work, and to define the associated Control Measures to minimise Risk of exposure.
- To share this Risk Assessment with all relevant staff and where necessary, on-site contractors.
- To ensure training in the management of sharps and sharps injuries is provided to all staff and students who may be exposed to sharps / occupational blood-borne pathogens/viruses.
- To ensure that appropriate sharps disposal facilities are available, and that work with sharps does not proceed in the absence of these facilities.
- To provide relevant staff and students with a written procedure for the timely removal of filled sharps containers and their replacement with appropriate empty containers.
- To ensure that this procedure is implemented in all situations where a sharps injury could occur.
- To organise referral of the recipient to the Accident and Emergency Department of the nearest hospital (Mater Misericordiae University Hospital Rapid Injury Clinic (Smithfield) or Beaumont Hospital), subject to the outcome of a post-incident Risk Assessment.
- To record the incident on the DCU Injury/Incident Report Form; https://www.dcu.ie/safety/report-accidentincidentnear-miss
- To inform the Health and Safety Office of outcome of the initial consultation, and whether monitoring is required.

4.2 Staff / Researchers:

It is the responsibility of **all staff** and students, including researchers and medical professionals within DCU, to:

- Review this procedure document, prior to initiating work effort that may involve the use of sharps, animal models or may present a Risk of direct exposure to a Clinical Sample (e.g. blood) that may contain Adventitious Agents/Blood-Borne Pathogens.
- To comply with the procedure outlined below.

4.3 Health & Safety Office:

It is the responsibility of the Health and Safety Office:

- If required, to refer all reported sharps injuries to the DCU Health Risk Management Specialist.
- If required, to investigate the circumstances behind the incident, and to recommend appropriate preventative and corrective actions.

5.0 Procedure

5.1 Risk Assessment

A Risk Assessment must be completed in advance of undertaking any activities were there is a foreseeable Risk of exposure.

The Risk Assessment process will assist in defining Control Measures to be implemented to ensure a Safe System of Work, prior to commencing these activities.

This process should be managed at a local level by the Principal Investigator / Project Leader / Manager / Supervisor. Risk Assessment templates are available to DCU staff members, through the following links:

DCU Health and Safety Office Risk Assessment Standard Operating Procedure:
https://www.dcu.ie/sites/default/files/2021-01/dcu-hso-sop-002-hazard-identification-and-risk-assessment_final.pdf

DCU Health and Safety Office Risk Assessment Templates:
https://www.dcu.ie/safety/risk-assessment

Biological Agent Risk Assessment:
https://www.dcu.ie/science-and-health/bsc-regulations-and-guidelines

5.2 Vaccination

Following the completion (and approval) of the Risk Assessment specific to the intended work, vaccination may be identified as a suitable Control Measure, in particular for work processes that may involve exposure to an Adventitious Agent / Blood-Borne Pathogen/Virus. The Vaccination Policy for DCU Staff is accessible at the link below, and should be consulted in the event that vaccination is identified as a mechanism of Risk reduction.

Vaccination Policy for DCU Staff Members (Including Postgraduate and Postdoctoral Laboratory-Based Staff)
https://www.dcu.ie/system/files/2021-02/133-vaccination_policy_hs_v2.pdf

5.3 Management of Laboratory Sharps

It is important that all staff and students within DCU, including researchers and medical professionals, are familiar with the correct management of sharps to prevent injury to oneself or a colleague.

The following steps outline the correct management of sharps:

- A sharps disposal container must be present in the work area. This must be labelled as being for collection of sharps, and a fill-line (above which the container must not be filled) must be clearly-visible. Sharps disposal containers can be obtained from the relevant school or research centre technical team.
- Ensure correct assembly of sharps container.
- Sign and date label on sharps container.
- Never carry needles or sharps by hand or in pockets.
- Use designated procedure tray (or other suitable container) for carrying sharps and ensure the tray is clean after use.
- Never recap, bend, break or manipulate used needles.
- Dispose of needle and syringe as single unit into nearest sharps container.
- Place used syringes, needles and other sharp items in designated sharps container i.e.

    - Yellow sharps containers with blue trim for disposal of sharps including: needles, syringes, scalpels, sharp tips of I.V. sets, slides, blood stained or contaminated glass, stitch cutters, guidewires / trochars and razors.
    - Yellow sharps containers with purple trim for disposal of needles, syringes, sharp items, cartridges and broken glass which have been used for the administration of cytotoxic drugs.

- These designated sharps containers should be present on the bench, or on the floor in direct proximity to the individual.
- Never place needle and syringe into already full sharps container.
- Once the sharps container has reached 3/4 full, close and lock lid and apply designated tag for traceability.
- Sign and date sharps container when locked.
- Leave locked sharps containers in a designated area at point of origin for collection. Sharps containers are subsequently removed by the designated waste collection service provider and inactivated off-site. The schedule of collection is managed at a local level, either by the school or research centre in consultation with the waste collection service provider.
- Contact the relevant school or research centre technical team for information on disposal of containers and replacement of same.
- Report any problems with the sharps container to the supplier.

6.0 Post-Exposure Protocol

In the event of a sharps/incision injury, or direct exposure to a Clinical Sample through an unforeseen splashing event, immediate First Aid should be carried out as follows:

6.1 Inoculation (Sharps) Injury (including incision injury):

- Encourage gentle free bleeding of the wound under running water. The wound should not be sucked.
- Wash the wound thoroughly under running water and antibacterial soap, if available. A nail brush should not be used.
- Cover the wound with a waterproof dressing.
- Report incident to Manager/ Supervisor/ Principal Investigator / Project Leader and seek First Aid assistance.
- Further to the outcomes of a post-incident Risk Assessment, should the injury require further medical attention in addition to that provided by a First-Aid responder, the individual may attend the Accident and Emergency Department of the nearest hospital; for example, the Mater Misericordiae University Hospital Rapid Injury Clinic (Smithfield) or Beaumont Hospital. In the event of an inoculation injury with a Poison or Biological Toxin, individuals **MUST** refer immediately to the Beaumont Hospital Poisons Information Centre webpage. Link
- Document incident on DCU Injury/Incident Report Form. Link

6.2 Mucocutaneous Exposure (Mouth, Mucous membranes):

- Wash the affected area with copious amounts of water.
- Report incident to Manager / Supervisor / Principal Investigator / Project Leader and seek First Aid assistance.
- Further to the outcomes of the aforementioned Risk Assessment, should the injury require further medical attention in addition to that provided by a First-Aid Responders, the individual may attend the Accident and Emergency Department of the nearest hospital; for example, the Mater Misericordiae University Hospital Rapid Injury Clinic (Smithfield) or Beaumont Hospital. In the event of an inoculation injury with a poison, individuals **MUST** refer immediately to the Beaumont Hospital Poisons Information Centre webpage. Link
- Document incident on DCU Injury/Incident Report Form. Link

6.3 Eye Splash:

- Irrigate the effected eye with copious amounts of an eye wash bottle or water, in the first instance.
- If available, a sink-based eye-washing fountain should be used. If contact has been made with the eye, it is recommended that the contaminated eye is pointed downwards during this flushing process.
- Contact lens wearers should irrigate as above before and after removal.
- Report incident to Manager / Supervisor / Principal Investigator / Project Leader and seek First Aid assistance.

- Further to the outcomes of the aforementioned Risk Assessment, should the injury require further medical attention in addition to that provided by a First-Aid Responders, the individual may attend the Accident and Emergency Department of the nearest hospital; for example, the Mater Misericordiae University Hospital Rapid Injury Clinic (Smithfield) or Beaumont Hospital. In the event of an inoculation injury with a poison, individuals **MUST** refer immediately to the Beaumont Hospital Poisons Information Centre webpage. Link
- Document incident on DCU Injury/Incident Report Form. Link

7.0 References

DCU Vaccination Policy

- https://www.dcu.ie/system/files/2021-02/133-vaccination_policy_hs_v2.pdf

DCU Biological Safety Committee: Working with Blood: Frequently-Asked Questions

- https://www.dcu.ie/science-and-health/working-blood-frequently-asked-questions

Health Service Executive (HSE): Safe Use of Sharps

- https://www2.healthservice.hse.ie/organisation/national-pppgs/hse-policy-on-the-management-of-sharps-and-prevention-of-sharp-injuries/

Guidance from US CDC

- http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5409a1.htm
- http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5011a1.htm

Guidance for Clinical Health Care Workers: Protection against infection with Blood-Borne Viruses. Recommendations of the Expert Advisory Group on AIDS and the Advisory Group on Hepatitis. UK Health Departments, (March 1998)/

- https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/382184/clinical_health_care_workers_infection_blood-borne_viruses.pdf