The Management of Inoculation (Sharps) Injury or Blood-Borne Pathogen Exposure Policy for DCU Undergraduate Students

Contents

Introduction

Dublin City University (DCU) is obliged, under the Safety, Health and Welfare at Work (Biological Agents) (Amendment) Regulations 2020 (S.I. No 539 of 2020), to protect employees and, specific to this policy, undergraduate students from exposure to biological hazards (as far as is reasonably practicable).

A hazard is a potential source of adverse health effect that may result from exposure to a Biological Agent, such as a bacterium or virus, or a biological specimen, such as blood. The deployment of blood samples (or tissue samples containing traces of blood) as analytical samples for research purposes presents a risk of exposure to 'Adventitious Agents.' The World Health Organisation (WHO) defines Adventitious Agents as 'microorganisms, unintentionally introduced into a process resulting in the production of a biological medicinal product.' Direct exposure to blood, resulting from the undertaking of a placement-based project in a Hospital Setting, presents a similar risk.

A key example of an Adventitious Agents is Hepatitis B Virus (HBV). HBV is detectable in virtually all body secretions and excretions. Notwithstanding this fact, only blood and serum-derived fluids, semen, vaginal fluids and saliva have been shown to demonstrate infectivity potential. The mechanism of transmission is largely believed to result from contact of mucous membranes or disrupted (non-intact) skin with blood or blood-containing products.

To minimise risk of exposure to Adventitious Agents for undergraduate students who may become exposed to blood, a secretion contaminated with blood (e.g., saliva, urine) or a biological specimen contaminated with trace amounts of blood (e.g. tissue, biopsy), there is a requirement to implement an infection control programme, which includes but is not exclusively limited to vaccination for HBV. Where undergraduate research and/or training modules may involve exposure to biohazardous material, including blood samples or pathogenic bacterial samples, immunisation acts as an adjunct to good infection control procedures, and may be an appropriate method of protection, depending on the outcomes of undertaking a risk assessment. All undergraduate students exposed to (or potentially exposed to) such materials should be Risk-Assessed as to their requirements for receiving vaccination. In parallel, the risks from working directly with Biological Agents or from indirect exposure to them should be communicated by their project supervisor or module coordinator.

This policy must be implemented in conjunction with all other relevant University policies, and the standard precautions to control the risk of occupational infection, as contained in **Appendix A.** Hand hygiene is one of the most effective methods of preventing infection, and HSE-approved guidelines on good practice pertinent to handwashing can be found on the HSE website.

Purpose

1) To ensure that all undergraduate student researchers whose allocated research and/or training modules specifies activities involving direct contact with blood, blood-contaminated secretions (e.g., urine, saliva) or biological specimens contaminated with trace amounts of blood (e.g. tissue, biopsy) are identified as requiring immunisation, are protected by vaccination, and are serologically-tested to show adequate protection.

2) To comply with immunisation Guidelines set by the National Immunisation Advisory Committee (NIAC), with particular emphasis on Hepatitis B vaccination. NIAC functions to promote effective, evidence-based policies on vaccination and immunisation in Ireland. See the NIAC website for additional information.

Scope

This Policy applies to all Schools, Research Units and wholly owned Campus Companies of the University, both academic and support, where undergraduate teaching/placement/research activities are undertaken, where there is a potential risk of exposure to blood, blood-contaminated secretions (e.g. urine, saliva) or biological specimens contaminated with trace amounts of blood (e.g. tissue, biopsy). These are all hereinafter collectively referred to as the 'University.'

Roles and Responsibilities

1) Heads of Schools / Research Centres / Units are responsible for ensuring:

a) Identification of all undergraduate research, placement or training modules that may involve direct or indirect exposure to blood, blood-contaminated secretions (e.g., urine, saliva) or biological specimens contaminated with trace amounts of blood (e.g., tissue, biopsy).

b) Referral of undergraduate students who are identified as requiring vaccination to the DCU Student Health Service for immunisation. This is the recommended method of receiving immunisation for DCU students, and should be considered in preference to alternative options, such as receiving immunisation from a General Practitioner.

2) The Research Group Principal Investigator (P.I.) or Module Coordinator is responsible for ensuring:

a) Undergraduate researchers under their remit (including visiting researchers), undertaking research, placement or training modules, that may involve direct or indirect exposure to blood, blood-contaminated secretions (e.g., urine, saliva) or

biological specimens contaminated with trace amounts of blood (e.g. tissue, biopsy) are informed of the benefits of vaccination, and receive appropriate vaccinations and the necessary follow-up procedures.

b) That, in the event that an undergraduate student resource departs a project, that the replacement resource receives appropriate vaccinations and the necessary follow-up procedures.
c) That an appropriate serum-based titre for Hepatitis B Surface Antigen (HBsAg) is evident, ahead of commencing the relevant research project, placement or training module.
d) Overseeing the completion of a Risk Assessment to determine the necessity for vaccination for undergraduate researchers undertaking a research project, placement or training module where there is potential exposure to blood, blood-contaminated secretions or biological specimens contaminated with trace amounts of blood.
e) Submission of a Biological Agent Risk Assessment to the BSC and the individual School of an application to undertake undergraduate research, or the placement of training module that involves the use of a Biological Agent or Biological Sample.

3) The Vaccination Service Provider is responsible for:

a) Administering appropriate vaccinations and the necessary follow-up procedures.
b) Maintaining confidential vaccination records on behalf of the University.
c) Providing guidance and advice on immunisation.
d) Issuing/managing and retaining a record of consent/decline forms (see Appendix B, Appendix C).

4) Undergraduate students, identified as requiring vaccination (through the undertaking of a Risk Assessment) are responsible for:

a) Ensuring they are present for scheduled vaccination appointments and follow-up appointments in line contracted provider's advice, and as directed by the Schools / Research Centres / Unit's Risk Assessments.
b) Completing a declination form, where they decline immunisation or fail to complete a course of vaccinations identified as being necessary by their School / Research Centre / Unit Risk Assessment.

Applicable Undergraduate Modules

Current undergraduate modules where vaccination may be recommended (subject to the outcome of a Risk Assessment) are listed the following **Tables 1 and 2**. In the event that any additional courses/modules are added to a curriculum, that present a risk of exposure to adventitious agents, this must be notified to the DCU Biological Safety Committee (BSC) is

notified in advance of commencing these activities, so that they may be considered for inclusion herein.

Table 1. Undergraduate Research / Training Modules where Hepatitis B Vaccination may be Recommended in the School of Health and Human Performance (SHHP), including the following Research Programmes:

- **ATT**
- **Sports Science**

Specific Activity	**Analytical Samples**	**Vaccination Recommendation**
Laboratory Assessment: Metabolic response to exercise (expired air analysis)	• Saliva	• Hepatitis B
Laboratory Assessment: Metabolic response to exercise (lactate measurements)	• Blood (fingerprick) • Blood (earlobe)	• Hepatitis B
Laboratory Assessment: Glycaemic response to a meal (glucose measurements)	• Blood (exposed finger prick)	• Hepatitis B
Clinical and Applied Practice: Laboratory Placements	• Blood • Saliva • Urine	• Hepatitis B
Year 1: Clinical Placements **Semester 1**: Occupational Screening	• Blood	• Hepatitis B
No activities are identified as involving direct or indirect contact with blood or bodily fluids	• None	• None

Table 2. Undergraduate Research / Training Modules where Hepatitis B Vaccination may be Recommended in the School of Nursing, Psychotherapy and Community Health (SNPCH), including the following Research Programmes:

- **BNGN**
- **BNGC**

- **BNPY**
- **BNID**

Specific Activity	Analytical Samples	Vaccination Recommendation
Student Placement:	● Blood ● Saliva ● Urine	● Hepatitis B ● Evidence of childhood vaccines (See below)

a) With reference to the School of Health and Human Performance (SHHP), the **Laboratory Fitness Testing Module** involves the collection of expired gases from a panel of cohorts (e.g., general population, athletes, clinical patience). Here, Hepatitis B vaccination would be recommended in the event that saliva is collected from a patient cohort with elevated risk of Hepatitis B or is understood to be contaminated with traces of blood.

b) With reference to the School of Health and Human Performance (SHHP) **Laboratory Assessment** (Hydration Status) Module, where urine is selected as an analytical sample, Hepatitis B vaccination would be recommended where urine is collected from a patient cohort with elevated risk of renal damage or Hepatitis B infection or is understood to be contaminated with traces of blood.

c) With reference to the School of Nursing, Psychotherapy and Community Health (SNPCH), there is no requirement for students to be vaccinated if they are not undertaking a placement in a hospital / service setting. If a student is on placement, each hospital / service is responsible for the provision of Occupational Health Appointments and Vaccinations to individuals undertaking these placements. Here, evidence of the Bacillus Calmette-Guérin (BCG) vaccine – or QuantiFERON Test, may be requested by the hosting entity prior to the commencement of the placement, in addition to evidence of the Measles, Mumps and Rubella (MMR) vaccine, Varicella (Chicken Pox) immunity and evidence of immunity to Hepatitis B and C.

Applicable Research Projects

a) With reference to the School of Health and Human Performance (SHHP) **laboratory-based assessments of aerobic and anaerobic fitness,** undergraduate Final Year Projects (FYPs) may involve the collection of blood, urine, saliva or exposure to saliva in the collection of expired gases. Here, Hepatitis B vaccination would be recommended in the event that saliva is collected from a patient cohort with elevated risk of Hepatitis B or is understood to be contaminated with traces of blood.

b) For the School of Biotechnology, and the National Institute for Cellular Biotechnology, emphasis will be placed on undertaking final year / undergraduate projects that do not present a risk of exposure to adventitious agents, such as Hepatitis B Virus. However, in cases where this is mandatory, the undertaking of Final Year Projects involving the selection of blood as an analytical sample, or the use of biological tissue that may contain traces of blood, will only be permitted to proceed with formal approval from the DCU Biological Safety Committee (BSC), with students informed of the benefit of receiving Hepatitis B Vaccination.

c) Policy guidelines outlined herein are also applicable to other Schools and Research Centres within DCU where vaccination for Hepatitis B Virus may be considered, subject to the outcome of a Risk Assessment.

d) The vaccination status should be monitored by the Principal Investigator, to ensure that adequate primary protection is provided ahead of commencing research activities.

Records Retention

Records of vaccination will be retained in instances where the student provides consent on the form entitled: Hepatitis B Vaccination Sample Consent (Appendix B) or Decline Form (Appendix C). Where consent is provided, a record of the vaccination status is shared with the School of Health and Human Performance (SHHP) for the purpose of laboratory practical sessions.

Policy Statement

Vaccination Guidelines

Although vaccination confers additional protection against infection, it must never be considered the primary defence because:

- not all infections can be treated by vaccination;
- immunisation may be partial, where some individuals receive inadequate protection;
- some persons may demonstrate unsuitable side effects to the vaccine; &
- there may be contraindications.

Vaccination is not mandatory, but undergraduate students should be informed of its benefits and possible disadvantages. Where an undergraduate student declines vaccination, a consent form must be signed by them. In some cases, where vaccination is identified as being highly desirable by the University, but is declined by the undergraduate student, and where other risk reduction controls are not reasonably possible to implement practicably, it may be

necessary to relocate the undergraduate student away from the risk of exposure, or to participate in an observational capacity only.

Where vaccination is required, this includes the administration of follow-up boosters (to elevate antibody titres), and other relevant measures for as long as the risk is of exposure is thought likely. Specific to this policy, and as outlined above, a serum-based anti-Hepatitis B Surface Antigen (HBsAg) titre is desirable ahead of commencing a research project, placement or training module where there is potential exposure to blood, blood-contaminated secretions or biological specimens contaminated with trace amounts of blood.

When should Hepatitis B vaccination be conducted?

The risks of exposure to adventitious agents in blood samples, or biological specimens containing trace amounts of blood (e.g., saliva, urine, tissue) must be fully assessed by the research group Principal Investigator or Module Coordinator ahead of commencing the intended activity (see Responsibilities, above). These risks should be fully discussed with each individual and their supervisor, mediated through engagement with the designated contract provider. Vaccination must be conducted before exposure to the Biological Agent(s) begins. However, post-exposure vaccination may occasionally be indicated.

Who conducts the vaccination?

Vaccine administration may only be provided by the Selected Vaccine Provider, specifically the DCU Student Health Centre.

What if I have already been vaccinated?

If you have received vaccination and intend to complete an Undergraduate Research / Training Module specified in Table 1, the continued efficacy of immunisation will be assessed by a competent person. This normally requires documentary evidence of the type of vaccine and dates of administration.

Contact

Any queries regarding this policy should be directed to the DCU Health and Safety Office, or Biological and General Safety Officer.

Policy Review

This policy will be reviewed every 3 years, or in the event of changes in national guidelines / local practice.

Version Control

Policy Name	The Management of Inoculation (Sharps) Injury or Blood-Borne Pathogen Exposure Policy for DCU Undergraduate Students
Unit Owner	Faculty of Science & Health
Version Reference	Original - V1.0
Approved by	Executive
Effective Date	10th January 2023

End.

APPENDIX A - STANDARD PRECAUTIONS TO CONTROL THE RISK OF OCCUPATIONAL INFECTION

Standard precautions outlined below are infection control principles that treat all human blood and other potentially infectious materials as being infectious. The risk of exposure to blood-borne viruses and other biological hazardous agents can be significantly reduced by following the guidance in this policy, and by adhering to the following recommendations:

1. Apply good hand washing practices, for example by adhering to the HSE guidelines.

2. Wear protective clothing, proportionate to the level of risk. For laboratory-based staff, Personal Protective Equipment (PPE) guidelines recommend the use of a (i) fully buttoned laboratory coat, (ii) laboratory glasses, (iii) full-length trousers, (iv) closed-toed shoes and (v) nitrile gloves, removed upon completion of the activity and prior to departing the laboratory (if latex, if deemed appropriate).

3. Cover all breaks in exposed skin with plasters.

4. Wear a full-face visor or safety spectacles (combined with a facemask) when there is a risk of splashing/direct contact when working with blood or bodily fluids.

5. Wear waterproof protective clothing (plastic aprons) where splashing or direct contact with clothing is a possibility.

6. Wear rubber boots or plastic disposable overshoes when the floor is likely to be contaminated.

7. Avoid contaminating surfaces with blood and bodily fluids.

8. Commence decontamination procedures immediately after contamination occurs or is observed.

9. Dispose of contaminated biological waste (e.g., solid, liquid, Genetically Modified, GM) in accordance with specified and documented local procedures. Here, individuals are referred to their local safety statements, which should issue clear guidelines pertinent to the proper disposal of hazardous waste.

10. Appropriate and multiple Biohazard waste disposal bins (for Biohazardous sharp material, such as syringes, glass etc.) must be provided in all locations where work

with Biological Agents is to be undertaken. These individual units must be filled to the recommended level, as indicated on the container by a dashed line. Overfilling must be avoided at all times, and individuals should not attempt to reduce the height of accumulated waste by depressing, as this presents a high risk of receiving a needlestick injury / laceration.

11. Biohazard waste disposal bins should be secure and identifiable according to the second schedule of the Biological Agents Regulations, 2013. These bins should be replaced on a regular basis, and those members of staff required to handle these bins in a safe manner should receive adequate information, training and vaccination to ensure a Safe System of Work can be adhered to. Needles **must not** be re-sheathed.

12. All staff likely to be exposed to Biological Agents must be trained to work safely with Biological Agents, through attending SafeLab Module and Module BE550, coordinated through the School of Biotechnology.

13. No food or drink shall be consumed in any area where there may be a risk of exposure to blood-borne viruses and other hazardous Biological Agents.

1.1 Cleaning and Disinfection

Spillages of blood or other bodily fluids must be properly managed, to reduce the risk of the individual – or other individuals working in proximity to the area – being exposed to a potential biohazard.

Biohazard spillages should be managed in accordance with specified and documented local procedures. Here, individuals are referred to their local safety statements, which should issue clear guidelines pertinent to the proper management of biological spillages (inclusive of blood and bodily fluids).

1.2 Gloves and skin protection

Guidelines on the correct use of gloves (which confer skin protection, if used correctly) should be managed in accordance with specified and documented local procedures. Here, individuals are referred to their local safety statements, which should issue clear guidelines pertinent to the proper use of personal protective equipment (PPE).

Data Protection Notice

Please ensure that you have read and understood your Student Intake Form Data Protection Notice. The DCU Student Health Centre is collecting this information form you in order to provide the service for the vaccine. The information will be retained for the purpose of administration relating to this service. It will be retained as part of your medical record within the Student Health Centre.

APPENDIX B - HEPATITIS B VACCINATION SAMPLE CONSENT FORM

Vaccine Used: Engerix, Yeast Based
Precautions:
Are you allergic to Yeast products? Yes_____/No_____

Have you had Hepatitis B previously? Yes_____/No_____

Have you had any adverse reactions to any previous medications or vaccinations? Yes___/No__

Are you in generally good health at this time? Yes_____/No_____

If no, list ailments: _____

Temperature: _____ BP: _____

i. **Females only (complete this section):** I, ……

Consent to the Hepatitis B vaccine. I am aware that Hepatitis B is contraindicated in pregnancy. I declare that I am not pregnant at present and understand, that in order to complete the three-dose schedule of vaccine, that I should avoid pregnancy until one month after final dose, i.e., for the next 7 months. **LMP:** ……
ii. **For the attention of both male and female students:** It should be noted that having completed the primary course (3 doses) of this vaccine, it is necessary for you to have a blood test, to check if you have acquired immunity. This should be carried out **two months** after completing the primary course of Hepatitis B. The student health centre takes no responsibility for those who fail to complete the full course of the Hepatitis B vaccination or their blood test to confirm immunity.

I declare that I have read the above paragraphs (i), (ii) and the information sheet and have had the opportunity to ask questions. I give informed consent to the primary course of the Hepatitis B Vaccine.

"I authorise the Student Health Centre to share the information on Hep B status with the School of Health and Human Performance at DCU"

Signed: …… **Student ID: ……..**

Date: ……

APPENDIX C - HEPATITIS B VACCINATION SAMPLE DECLINE FORM

I have read the information about Hepatitis B and the Hepatitis B vaccine.

I UNDERSTAND that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future, I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can contact the DCU and receive the vaccination series.

Signed: …… **Print Name ……..**

Student ID: …… **School/Research Centre: ……..**

Date: ……

References

S.I. No.539/2020-Safety, Health and welfare at work (Biological Agents) Code of Practice 2020.

[Accessed 12th October, 2022]

How to clean your hands. 2019 Health Service Executive.

[Accessed 12th October, 2022]

Immunisation Guidelines. HSE National Immunisation Office.

[Accessed 12th October, 2022]

Dublin City University (DCU): Working with Blood – Frequently-Asked Questions (FAQs).

[Accessed 12th October, 2022]

End.