

BLOODBORNE PATHOGEN EXPOSURE CONTROL PLAN

Environmental Health & Safety

I. INTRODUCTION

As part of the effort to provide a safe working environment, Environmental Health and Safety (EHS) has implemented this plan which is intended to reduce the risk of exposure to bloodborne pathogens for all those working in the facilities, and who may have such exposure as part of their official duties. This written plan is intended to respect the guidelines issued by the Ministère de la Santé et des Services sociaux du Québec (MSSS), the Canadian Centre for Occupational Health and Safety and the Human Pathogens and Toxins Act regarding work with bloodborne pathogens.

II. DEFINITIONS

A. Significant Exposure:

Exposure is considered significant if it involves a risk of transmission of infection due to contact with blood or other potentially infectious materials (OPIM). Types of exposure presenting a risk of transmission are mainly from working with materials in a laboratory and are:

- **Parenteral exposure** – the pathogen is introduced directly into the body through a break in the skin (existing cuts, sores, abrasions, dermatitis, sunburn or blisters), by needlestick, or through a cut with a contaminated object.
- **Mucous membrane exposure** – exposure through a mucous membrane in the eye, nose or mouth from a splash or spray of contaminated material.

B. Other Potentially Infectious Materials (OPIM):

- Laboratory specimens containing concentrated amounts of hepatitis B, hepatitis C, HIV or other bloodborne pathogens.
- Bodily fluids including: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva or any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to tell the difference between body fluids.
- Fixed tissues and organs, non-intact skin or mucous membranes.

In the text of the plan that follows, when the term "blood" is used, it includes human blood and OPIM as defined above.

III. EXPOSURE DETERMINATION

Each laboratory or department supervisor must determine which workers will be, or have the potential to be exposed to bloodborne pathogens. Protective equipment must be in good condition and worn at all times by these workers: **although protective equipment will decrease the risk of exposure, it will not eliminate the risk completely.**

IV. METHODS OF COMPLIANCE

The following practices, procedures and control measures should be used to minimize or eliminate exposure to blood.

A. ROUTINE PRACTICES – All blood is considered to be, and is treated as if infected. Individuals exposed to direct contact with blood must take the necessary precautions to protect themselves from infection.

B. WORK PRACTICE AND ENGINEERING CONTROLS

1. Accessible handwashing facilities with soap and disposable towels **or** antiseptic towelettes are available and used after removing gloves, following patient care, after processing specimens, after any other contamination of the hands, and before leaving the laboratory. If disposable towelettes are used, handwashing with soap and running water is done as soon as practical.
2. After direct skin contact with blood, touching of the mouth, eyes, or other mucous membranes is avoided until hands have been thoroughly washed.
3. The use of needles and other sharp objects should be strictly limited. If the use of needles cannot be avoided, they must not be bent, recapped, removed, sheared, or broken. If circumstances call for recapping, only a one-handed "scoop" technique or mechanical device is used. See Figure 1 below.

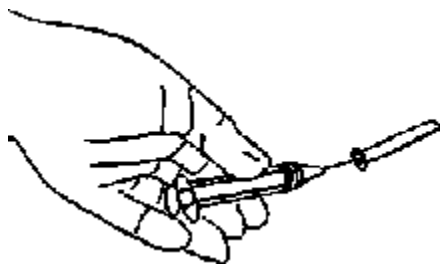


Figure 1: One-handed Scoop Technique:

Place the cap on a hard, flat surface and remove hand. With one hand, hold the syringe and use the needle to "scoop-up" the cap. When the cap covers the needle completely, hold the needle at the base near the hub and use the other hand to secure the cap on the needle.

4. There is no eating, drinking, smoking, applying cosmetics or lip balm, or handling contact lenses in work areas with potential for possible exposure.
5. Food or drink is not stored or kept in areas with potential for blood exposure.

6. Procedures involving blood or blood exposure are done in a way to minimize splash, spray, spattering, or generation of droplets.
7. Mouth pipetting is not allowed.

C. PERSONAL PROTECTIVE EQUIPMENT

1. Personal protective equipment (PPE) appropriate to the tasks being performed is provided and used. PPE is made available in the appropriate sizes and is readily accessible. For those allergic to latex gloves, alternatives such as hypoallergenic gloves or glove liners are made available.
2. Any cleaning, laundering, repairing, replacing, and disposing of PPE is the responsibility of the department. McGill uses a [University-wide laboratory clothing laundry service](#). Note that any PPE that is a potential biohazard must be disposed of, and not sent out to be cleaned or laundered.
3. The following PPE equipment is provided:
 - Gloves
 - Gowns
 - Lab Coats
 - Eye Protection (goggles and glasses with side shield)
 - Face Shields/Masks
4. PPE Use
 - Gloves are worn whenever hand contact with blood can be reasonably expected, and when handling or touching contaminated items or surfaces, and during cleaning and decontamination procedures.
 - Disposable gloves are replaced or changed as soon as practical when contaminated, torn, or punctured. Disposable gloves are not washed or decontaminated for reuse.
 - Utility gloves such as heavy-duty vinyl or rubber gloves may be decontaminated for reuse if they remain in good condition. They are discarded if they become cracked, torn, punctured, are peeling, or are otherwise no longer providing a barrier to contamination.
 - Masks or face shields in combination with primary eye protection, such as goggles, are worn whenever there is significant potential for eye, nose, or mouth contamination from splashes, spray, spatter, or aerosol droplet generation of blood. **Regular safety glasses will not provide adequate protection if splashing occurs.**
 - If a garment is penetrated by blood, the garment is removed immediately or as soon as feasible.
 - All PPE is removed prior to leaving the work area.

D. HOUSEKEEPING

1. The worksite is kept in a clean and orderly condition.

2. A written schedule and procedure for cleaning and decontamination of blood-soiled surfaces is in place and is followed. Minimally, equipment, environmental, and working surfaces are cleaned and decontaminated after a spill or procedure resulting in contamination.

EXAMPLE OF A CLEANING SCHEDULE WITH DECONTAMINATION METHOD

ITEM OR AREA	METHOD OF DECONTAMINATION	CLEANING SCHEDULE
Work Surface	Wash with 1:10 bleach solution or a medical grade disinfectant	After the completion of procedures or end of work shift. When surfaces become obviously contaminated
Medical Devices and Apparatus	According to manufacturer's instructions	After each use

3. Housekeeping Procedures

- Disposable protective coverings for equipment are replaced after being contaminated.
- Contaminated broken glassware is picked up with brush and dustpan, tongs, or forceps; **not with hands.**
- Any contaminated reusable sharps are stored or processed in a way that does not require an individual to reach by hand into the container where these sharps have been placed. Instead, remote handling devices such as tongs or forceps are used.
- Contaminated sharps and other medical waste are disposed of as per Hazardous Waste Management's specified [procedures](#), in the appropriate puncture proof sharps containers.

V. HEPATITIS B VACCINATION

In 2003, the Biohazards Committee (now under the jurisdiction of the [University Laboratory Safety Committee](#)) approved a recommendation that all McGill staff and students working with human blood and body fluids be vaccinated against Hepatitis B.

The [Student Wellness Hub](#) provides vaccination at no charge to full-time students working on research projects that require the handling of blood. This service is provided on both campuses by appointment only. Questions regarding specific details or appointments should be directed to the Student Wellness Hub at 514-398-6017.

Employees who handle blood should contact the Occupational Health Program Administrator at 514-398-4766 to book an appointment with the Occupational Health Nurse to receive vaccination.

Hepatitis B immunization is highly recommended to all staff and students who routinely handle or will have exposure to blood. Those who will have **direct** contact with blood should contact the Occupational Health Program Administrator after vaccination has been completed, for a hepatitis B titer to verify sufficient antibodies are present.

VI. POST-EXPOSURE EVALUATION AND FOLLOW-UP

In the event of an exposure incident, the post-exposure procedure outlined below is to be followed.

- The exposed individual immediately cleanses the wound or exposed surface with soap and water, or flushes exposed mucous membranes with water for 15 minutes.
- The individual notifies his/her supervisor, completes the [Post Exposure Bloodborne Pathogen Risk Identification Checklist](#), and then proceeds to the ER of the Montreal General Hospital (or other suitable post-exposure centre or hospital) to obtain appropriate medical care.
- It is essential to be seen within two hours after the exposure or as soon as possible. If hospital care is required, take your immunization booklet or health record with you and the hospital will run any and all necessary tests.
- Any remaining blood involved in the incident is saved for subsequent testing, and the offending object (syringe, knife, etc.) is disposed of in a safe manner.
- Fill out the [Accident and Incident Report Form](#) and submit to EHS.

VII. COMMUNICATION OF HAZARDS

A. Warning Labels

1. Warning labels using the WHMIS biohazard infectious materials symbol are provided on containers of biological waste; contaminated equipment; refrigerators and freezers containing blood; other containers used to store, transport, or ship blood, except that:
 - a. Individual containers of blood placed in a labeled container for storage, transport, shipment, or disposal need not be individually labeled.
 - b. Biological waste that has been decontaminated need not be labeled.

B. Information and Training

Principal Investigators should ensure that all those working with bloodborne pathogens are properly trained. The [Introduction to Biosafety course](#) offered by EHS is mandatory for anyone working in a lab with human blood, bodily fluid or unfixed tissue.

VIII. RECORDKEEPING

- A. Medical records** for faculty, staff and students seen in the Occupational Health Clinic are maintained by the Occupational Health Program Administrator for the duration of the individual's employment plus 5 years. These records include:
- The name and McGill ID of the individual
 - The individual's hepatitis B vaccine record(s)
 - A copy of any information provided to an outside health care professional
 - A copy of all results of examinations, medical testing, and follow-up procedures
- B. Medical records** are available from the Occupational Health Program Administrator upon filling out the [Authorization to Release Medical Information form](#).
- C. Training records** are maintained for a minimum of 3 years from the training date by Environmental Health & Safety.

IX. Administrative Responsibilities

A. Supervisor/Principal Investigator:

1. Determine those at risk of exposure and forward the names of staff and students to the Occupational Health Program Administrator for registration in the program.
2. Ensure that those at risk of exposure complete the Introduction to Biosafety training and are recommended to receive hepatitis B vaccination.
3. Ensure that individuals are thoroughly informed of the risks associated with their work.
4. Ensure that those at risk of exposure have available and use the appropriate personal protective equipment and that "Routine Practices" are followed.

B. EHS – Occupational Health Program

1. Provide the administration of hepatitis B vaccine for faculty and staff at risk of exposure.
2. Provide hepatitis B titers for faculty, staff and students directly working with human blood.
3. Provide Introduction to Biosafety training for all those working in a lab with human blood, bodily fluid or unfixed tissue.
4. Investigate exposure incidents, as necessary.
5. Audit the Occupational Health Program periodically.
6. Maintain and ensure that medical records remain confidential.

C. Student Wellness Hub

1. Provide the administration of hepatitis B vaccine for students at risk of exposure.

D. Individual

1. Handle all human blood, body fluids and unfixed tissues/cells as if they are potentially contaminated with bloodborne pathogens.
2. Complete the Introduction to Biosafety training, and understand the risks of working with bloodborne pathogens.
3. Consider seriously the offer of hepatitis B vaccination. If the individual refuses, a form stating the risk of doing so must be signed.
4. Follow the appropriate practices and procedures established for the work environment to limit or prevent exposures, and adopt the principle of "Routine Practices"
5. Report any exposures to supervisory personnel, fill out [Accident and Incident Report Form](#) and undertake any necessary medical review or treatment.

References:

- Canadian Centre for Occupational Health and Safety. HIV/AIDS Precautions – Laboratories. (2010). <http://www.ccohs.ca/oshanswers/diseases/aids/laboratories.html>
- Canadian Centre for Occupational Health and Safety. Needlestick Injuries. (2005) http://www.ccohs.ca/oshanswers/diseases/needlestick_injuries.html
- Canadian Centre for Occupational Health and Safety. Routine Practices. (2011). <http://www.ccohs.ca/oshanswers/prevention/universa.html>
- Gouvernement du Québec. Guide pour la prophylaxie et le suivi après une exposition au VIH, au VHB et au VHC. (2019). <https://publications.msss.gouv.qc.ca/msss/document-000319/>
- Gouvernement du Québec. Guide pour la prophylaxie postexposition (PPE) à des liquides biologiques dans le contexte du travail. (2011). <http://publications.msss.gouv.qc.ca/acrobat/f/documentation/2011/11-333-02W.pdf>
- Gouvernement du Québec. Recommandations visant la prise en charge des travailleurs exposés au sang et aux autres liquides biologiques. (1999). <http://publications.msss.gouv.qc.ca/acrobat/f/documentation/1999/99-304-10.pdf>
- Princeton University. Bloodborne Pathogens Exposure Control Plan. (2010). <http://web.princeton.edu/sites/ehs/biosafety/bloodpathogens/ExposureControlPlans/ecp.htm>
- Princeton University. Bloodborne Pathogens and the Diseases they Cause. (2009). <http://web.princeton.edu/sites/ehs/biosafety/bloodpathogens/Training/BBPDiseases.htm>
- Reproline: The Reading Room. One-Handed Recap Method. (2003). <http://www.reproline.jhu.edu/english/6read/6multi/pg/ip2.htm>