Medical Surveillance Guide

Biosafety

Environmental Health and Safety
June 2022

Carleton University

MEDICAL SURVEILLANCE AT CARLETON UNIVERSITY

The health and medical surveillance program for a particular laboratory is intended to reduce the consequences of exposure should it occur and to identify individuals who need to take special precautions. It needs to be appropriate to the agents in use. As such it is reviewed by the Biohazards Committee as part of the Biohazard Permit Application process.

The risks to lab personnel should be reviewed in order that they each gain an understanding of the biological hazards as they relate to personal immune system susceptibility and medical conditions. Appropriate risk mitigation methods must then be employed. The program may also include but is not limited to the following: a medical examination; serum screening; immunizations; testing and/or storage; and possibly other tests as determined by the risk assessment process.

In practice at Carleton University medical surveillance most commonly includes, as appropriate:

- Specific immunizations (e.g. Hepatitis B, rabies), and serum titre testing to confirm response to the immunization.
- A plan of first aid and medical response is to occur in case of an incident involving exposure must be written, approved, and posted in the laboratory.
- Training to develop an awareness that changes in the health status of personnel can increase their personal risk from the biohazards in that laboratory.
- If the organism being worked with has been attenuated or genetically altered to be less hazardous than wild-type, individuals should be aware of the mechanism of attenuation (if known) and any conditions that might make the attenuated organism more pathogenic for them.
- Changes in health status that might affect immune responsiveness (immune-compromised) should be reported to the supervisor.
- For these individuals, some risk group 1 microorganisms which do not normally cause disease can be pathogenic and Risk group 2 microorganisms can cause much more severe disease than normal and even a possibility of death.
- Note that, without the need to reveal personal medical information, the occurrence of a change in an individual's health that might influence their susceptibility to infection should be reported to your supervisor so that, if necessary, appropriate adjustments in the operations or risk mitigation methods can be made in consultation with their personal physician and/or the Environmental Health and Safety office.

Conditions of concern include:

- Pregnancy (pregnant women may need to take extra precautions or be reassigned to other duties early in their pregnancy because certain microorganisms can damage the fetus and because their own immune responsiveness may be altered)
- Immune-deficiency
- Immune-suppressive drugs (e.g. with organ transplantation)
- Anti-inflammatory medications
- Cancer
- Treatment for cancer

- Age (the elderly; also, very young children are more susceptible to infection, which is one of the reasons that they are not permitted in research laboratories)
- Other conditions as determined by your physician

POST EXPOSURE PROCEDURES

Following exposure:

1. The worker must immediately wash the exposed site
    a. In case of a needle-stick, cut, animal bite or scratch, wash with soap and water after allowing the wound to bleed freely
    b. If mucous (eyes, nose, mouth) membrane or non-intact (cuts, rash, eczema or dermatitis) skin contact, flush with water at the nearest faucet or eye wash station for a minimum of fifteen to twenty minutes
2. The worker must report the incident to their direct supervisor and in emergencies where assistance is required, contact Campus Safety Services at ext. 4444
3. The worker must seek prompt medical attention at Health and Counselling Services (HSC) clinic (during the hours of operation), the nearest hospital emergency department or Urgent Care Clinic, or a Medical Practitioner of their choosing. Any information including the Material Safety Data Sheet or equivalent for the biohazardous agent must also be taken to the care provider.
4. The worker must provide information regarding the circumstances that resulted in the exposure incident, and participate in the investigation and completion of the CU WorkSafe Incident Investigation Report

IMMUNIZATION GUIDE

- Laboratory personnel should be protected against laboratory-acquired infections by obtaining the relevant recommended vaccinations, in accordance with the Canadian Immunization Guide
- Laboratory personnel are expected to familiarize themselves with the guide and address any concerns with their medical service provider
- Periodic testing of antibody titres to be conducted post-vaccination to confirm response to the immunization, and determine if a booster vaccination is necessary

MASKS AND RESPIRATORY PROTECTION

Safe operational practices and the use of primary containment devices can limit the creation of, and exposure to, infectious aerosols or aerosolized toxins.

Workers shall:

- Select proper respiratory protective device in accordance with their supervisor and SDS
- Contact EHS for fit testing prior to using the respirator
- NOT use a respirator if they have a beard or other facial hair that passes between the sealing flange of the respirator face piece and the wearer's face

TRAINING

Biosafety training is mandatory for all persons working with biohazardous materials at Carleton University. It is critical to ensure that all personnel be knowledgeable about the hazard present in the work environment and the tools and practices that can protect them from these hazards.

- The Biosafety awareness training is provided by the Environmental Health and Safety Office and must be documented
- Lab-specific hands-on training and reading including local risk assessments and SOPs are all important aspects of the biosafety training
- The Principal Investigator to ensure that all personnel have both general and laboratory-specific training in the handling of biohazardous material
- Individuals receiving shipments of hazardous materials must be trained and certified. TDG training and certification is available through the Environmental Health and Safety Office
- Refresher training on emergency response procedures to be provided annually and documented

LOCAL RISK ASSESSMENT

It is a requirement of the Public Health Agency of Canada (PHAC) and the Canadian Food Inspection Agency (CFIA) that each laboratory performs a detailed local risk assessment (LRA).

- A local risk assessment is conducted to identify the pathogens and toxins handled, stored, or encountered in the containment zone or throughout the organization, so that risks are identified and safe work practices are developed and documented
- A local risk assessment is used to determine the biohazard containment level required for both facilities and operational practices for the biohazardous agents in use
- The local risk assessment of all work with biohazardous material (Risk Group 1 and 2 and 2+), is to be documented as part of a Carleton University Biohazard Permit Application
- Laboratory supervisors, in consultation with the Biosafety Officer/Biosafety Committee and Environmental, Health and Safety, must perform the local risk assessment