

# Biomedical Waste Procedures

The following information listed below contains the definition of Biomedical Waste and the procedures for handling Biomedical Waste.

## Definitions:

Many terms are used to identify and characterize biomedical waste such as biohazardous, pathological, and infectious. These terms are often used interchangeably without clearly defining their subtle differences and similarities. These terms are defined below. For the purpose of this document, biomedical waste will be used as the general term. Where the waste may be defined more specifically and require special treatment, this procedure will specify the requirements.

**Biohazardous Waste:** Waste that is known or suspected to contain infectious material or which because of its physical or biological nature may be harmful to humans, animals, plants or the environment

**Infectious Waste:** Waste which contains microorganisms in sufficient quantity which could result in the multiplication and growth of these microorganisms in a host

**Pathological Waste:** Any waste which contains microorganisms capable of causing disease

**Biomedical Waste:** Discarded biological material from teaching, clinical and research laboratories and operations.

Biomedical Waste, as defined in Section 3, Definitions, of the C-4 Management of Biomedical Waste Ontario guidelines applies to McMaster in the following way;

A biomedical waste generating facility means any facility where biomedical waste is likely to be generated including: a laboratory or specimen collection centre, a research facility or any facility where one or more of the following activities occur: research, testing or teaching related to human health care or veterinary services, production, research, testing or teaching related to vaccines, research, testing or teaching related to microbiology, or the provision of needle and syringe exchange programs.

**Biomedical Waste Level 1** - biological agents that are unlikely to cause disease in healthy workers or animals (low individual and community risk).

**Biomedical Waste Level 2** - pathogens that can cause human or animal disease but, under normal circumstances, are unlikely to be a serious hazard to laboratory workers, the community, livestock, or the environment (moderate individual risk, limited community risk).

Laboratory exposures rarely cause infection leading to serious disease; effective treatment and preventive measures are available, and the risk of spread is limited.

## Types of Biomedical Waste

- (a) **Human Anatomical Waste:** This consists of human tissues, organs and body parts, but does not include teeth, hair, nails
- (b) **Animal Waste:** This consists of all animal tissues, organs, body parts, carcasses, bedding, fluid blood, and blood products, items saturated or dripping with blood, body fluids contaminated with blood, and body fluids removed for diagnosis or removed during surgery, treatment or autopsy, unless “a trained person has certified that” the waste does not contain the viruses and agents listed in Risk Group No. 4. This excludes teeth, hair, nails, hooves and feathers.
- (c) **Microbiology Laboratory Waste:** This consists of laboratory cultures, stocks or specimens or microorganisms, live or attenuated vaccines, human or animal cell cultures used in research, and laboratory material that has come into contact with any of these.
- (d) **Human Blood and Body Fluid Waste:** This consists of human fluid blood and blood products, items saturated with or dripping with blood, body fluids contaminated with blood, and body fluids removed for diagnosis during surgery, treatment or autopsy. This does not include urine or feces.
- (e) **Waste Sharps:** Waste sharps are clinical and laboratory materials consisting of needles, syringes, blades, broken glass or other materials that are capable of causing punctures or cuts. They should be placed into rigid, puncture resistant and leak resistant approved Sharps Containers. Sharps containers have a lid which should be designed such that it cannot be removed once it has closed. Glass is not to be disposed in regular garbage. Empty glass chemical bottles can be recycled. Please see Disposal of Empty Chemical Waste Bottles.

## Biomedical waste does not include

Waste that is:

- From animal husbandry;
- Household in origin;

- Controlled in accordance with the Health of Animals Act, (Canada) formally the Animal Disease Protection Act (Canada); or,
- Generated in the food protection, general building maintenance and office administration activities of those facilities to which this definition applies

Biomedical waste shall specifically **exclude and not mean**, human carcasses, radio isotopes/nuclear medical fluids, research or productive mycotoxins, bulk chemicals or reagents, explosives, pressurized containers regardless of contents or propellant, corrosive, reactive, radioactive, toxic and other hazardous waste and substances as defined in any applicable federal, state, county, or municipal laws, regulations and guidelines. Also excluded are any other items or materials not specifically included in the definition of biomedical waste in the preceding definitions.

**Please Note:** Any glass, plastic pipettes, slides, glass bottles or regular broken glass as long as they are **not contaminated** with biomedical waste can be placed in the regular broken glass cardboard boxes in your lab. These boxes will be removed by the custodians.

## Biomedical Waste Storage

Biomedical waste (Biohazard level 1 and level 2) will be segregated from the regular waste stream. Biomedical waste must be safely contained during handling and to the point of its disposal. The packaging must remain intact throughout handling, storage, transportation and treatment. Wastes moved within the building must be done in such a manner as to prevent unnecessary exposure to staff and others.

Biomedical waste may be held in storage areas to await disposal. These storage areas must be totally enclosed and separate from supply rooms or food preparation areas. They must be lockable, and access must be restricted to authorized personnel. Storage areas must be clearly identified as containing biomedical waste, with the biohazard symbol clearly displayed. It is unacceptable for materials other than waste to be placed in the same storage area as biomedical waste. **The Campus biomedical waste closet is in Life Sciences Building, Rm. B120 (LSB B120).**

Anatomical waste must be stored at 4 degrees Celsius or lower. All biomedical waste must be refrigerated at 4 degrees Celsius or lower if stored for more than four days.

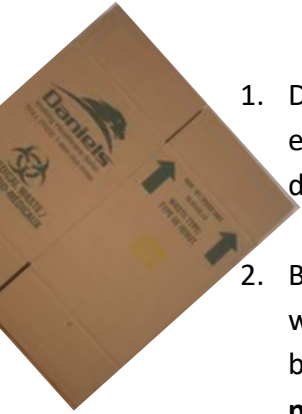
Biomedical waste cannot remain in your lab any longer than four days; therefore, it must be removed for disposal on a regular basis.

## Biomedical/Biohazardous Waste Procedure

Researchers are responsible for arranging transport of their biomedical/biohazardous waste to the biomedical waste closet in the Life Sciences Building (LSB), Room B120.

Biomedical/biohazardous waste must be disposed of in approved yellow biohazardous waste bags, autoclave bags, appropriate sharps containers or pails at the site of generation.

1. Daniels boxes lined with yellow biomedical/biohazardous waste bags will be kept in each area that generates biomedical waste. The primary bag must be sealed. Boxes and drums are for solid waste only. Liquid waste must be placed in the biowaste pails.
2. Biomedical/biohazardous waste boxes must be folded and taped shut. Label each box with the **Date, Department, Supervisor/PI and Lab location**. The box is then transported by the generator to LSB B120. **Bags and boxes, drums and pails will be available for pick up in the vault as needed.**
3. All disposals must be recorded in the Biohazardous Waste Disposal Record (located in the binder in LSB B120).
4. All boxes will be labeled **prior** to arriving at Life Sciences Building (LSB) or they will not be collected.
5. Any leaking or broken boxes must be repacked by the individual responsible for the initial packing. Leaking or broken boxes will not be accepted by the carrier.
6. All animals, such as mice, must be disposed of as per the Animal Utilization Protocol of the Animal Review Ethics Board. All insects must be euthanized before disposal. Any animals **must** be segregated from all other biomedical waste for disposal and must be bagged separately and placed in the anatomical freezer in LSB.
7. The biowaste will be checked periodically by Health Physics for radioactive materials so the definition of biomedical waste must be strictly adhered to.
8. Facility Services will remove appropriately packaged and labeled biomedical/biohazardous waste boxes on request and transport to the Campus' main biowaste holding site in LSB B120. Facility Services will provide boxes and liners upon request. There is a fee associated with this.



9. Questions or concerns should be brought to the attention of Leah Allan at ext. 26309 or EOHSS at ext. 24352.

## ADDITIONAL RESOURCES:

[McMaster University Laboratory Manual 2019](#) and the McMaster University's Risk Management Manual (RMM):

- # 501: Hazardous Waste Management System (WHMIS)
- # 502: Hazardous Waste Management Program
- # 505: Transportation of Dangerous Goods Program
- # 600: Biosafety Program

Additional information, forms, and posters are available on the EOHSS website and following the link Lab Safety>Waste. See [https://hr.mcmaster.ca/employees/health\\_safety\\_well-being/our-safety/lab-safety/waste/](https://hr.mcmaster.ca/employees/health_safety_well-being/our-safety/lab-safety/waste/) or by calling EOHSS at ext. 24352 or Leah Allan at ext. 26309.