Appendix C. Infectious Waste Guidelines

C.1 Infectious Waste Generation and Treatment

The Ohio State University, as required by Ohio Administrative Code (OAC) **Section 3745-27**, is registered with the Ohio Environmental Protection Agency (OEPA) as a large-quantity generator of infectious waste. Faculty and staff who generate infectious waste must comply with OEPA regulations. For generators of infectious waste (faculty, staff, students, etc.) the following pages contain information dealing with these regulations. Individual PIs/Supervisors are responsible for assuring compliance with infectious regulations including:

1. identification and segregation;
2. proper packaging;
3. proper treatment;
4. personnel training;
5. spill and containment plans;
6. spill response;
7. spill reporting; and
8. contingency plans.

It is the PI’s/Supervisor’s responsibility to notify the Institutional Biosafety Committee, or OEHS of their activities and to comply with OEPA regulations. Assistance is available from OEHS to help develop and implement procedures consistent with the regulations.

Individuals who wish to treat their own infectious waste must register with OEHS at **614-292-1284**, obtain a treatment facility permit from OEPA and undergo quarterly laboratory audits by OEHS and a representative of OEPA. Records must be kept of all waste treatment and disposal. This includes treating liquid waste with bleach and disposing in the sanitary sewer.
C.2 Definitions of Infectious Waste

1. Cultures and stocks of infectious agents (human pathogens) and associated biologicals, including without limitation, specimen cultures, cultures and stocks of infectious agents, wastes from production of biologicals and discarded live and attenuated vaccines;

2. Laboratory wastes that were, or are likely to have been, in contact with infectious agents that may present a substantial threat to public health if improperly managed;

3. Pathological wastes, including, without limitation, human and animal tissues, organs, and body parts, and body fluids and excreta that are contaminated with or are likely to be contaminated with infectious agents, removed or obtained during surgery or autopsy or for diagnostic evaluation provided that, with regard to pathological waste from animals, the animals have or are likely to have been exposed to a zoonotic or infectious agent;

4. Waste materials from the rooms of humans, or the enclosures of animals, that have been isolated because of diagnosed communicable diseases that are likely to transmit infectious agents. Also included are waste materials from the rooms of patients who have been placed on blood and body fluid precautions under the Universal Precaution System established by the Centers for Disease Control and Prevention in the Public Health Service of the United States Department of Health and Human Services, if specific wastes generated under the Universal Precaution System have been identified as infectious wastes by rules referred to in § C.2.8 below;
5. Human and animal blood specimens and blood products that are being disposed of provided that with regard to “blood specimens and blood products” from animals, the animals were or were likely to have been exposed to a zoonotic or infectious agent. Blood products do not include patient care waste such as bandages or disposable gowns that are lightly soiled with blood or bodily fluids unless such wastes are soiled to the extent that the generator of the wastes determines that they should be managed as infectious wastes;

6. Contaminated carcasses, body parts, and bedding of animals that were intentionally exposed to infectious agents from zoonotic or human diseases during research, production of biologicals, or testing of pharmaceuticals, and carcasses and bedding of animals otherwise infected by zoonotic or infectious agents that may present a substantial threat to public health if improperly handled;

7. Sharp wastes used in the treatment, diagnosis, or inoculation of human beings or animals or that have, or are likely to have, come in contact with infectious agents in medical, research, or industrial laboratories, including, without limitation, hypodermic needles and syringes, scalpel blades, and glass articles that have been broken. Such wastes are hereinafter in this rule referred to as “sharp infectious waste” or “sharps”;

8. Any other waste material generated in the diagnosis, treatment, or immunization of humans or animals, in research pertaining thereto, or in the production or testing of biologicals that the Public Health Council created in Section 3701.33 of the Revised Code, by rules adopted in accordance with Chapter 119 of the Revised Code, identifies as infectious waste after determining that the wastes represent a substantial threat to public health when improperly managed because they are contaminated, or likely to be contaminated with infectious agents.
C.3 Packaging, Storage and Disposal of Untreated Infectious Waste

To meet Ohio Administrative Code Section 3745-27-30 for the packaging, storage and disposal of infectious waste, OSU requires the following:

C.3.1 Material

1. Red bags or biohazard bags, biohazard shipping boxes, and sharps containers;

2. All material in C.3.1.1 except sharps containers are available at no charge from EHS, excluding the Medical Center operations. Contact Environmental Services in the Hospital for additional information. Sharps containers are available through the Medical Stores. For university locations, delivery of waste supplies can be requested by logging into the EHS Online secure web application.

C.3.2 Packaging

1. Assemble the infectious waste box provided by Environmental Health and Safety (OEHS) and ensure that all markings are oriented correctly with the “Up Arrows” pointed upward.

2. Tape all seams with sturdy packaging tape. **NOTE:** Masking tape is not acceptable.

3. Line the infectious waste box with the EHS provided red plastic infectious waste bag prior to placement of infectious waste materials into the container.

4. Place only infectious material or infectious contaminated materials in the infectious waste bags used to line infectious waste boxes.
5. Store liquid infectious waste in Department of Transportation (DOT) approved plastic containers or carboys prior to packaging for pickup. **NOTE:** Total liquid volume is not to exceed four (4) gallons.

6. Place liquid containing infectious waste containers in the bottom of lined infectious waste boxes to facilitate pickup and storage. **NOTE:** Total liquid volume is not to exceed four (4) gallons.

7. **Limit the total weight in the infectious waste boxes to 30 pounds.**

8. Seal the bag prior to sealing the box.

9. Seal the box securely with packaging tape.

10. Include the building name, room number and the name of the principal investigator or lab supervisor, waste request number on the top of the box.

11. Arrange for pickup of packaged infectious waste or to request storage containers or packaging materials via the EHS website (https://ehs.osu.edu/secure/apps)

**C.3.3 Storage**

1. Lock outside storage areas containing infectious waste containers to prevent unauthorized access.

2. Designate infectious waste storage areas. Those storage areas that are not locked, shall be visibly labeled with a sign stating “Warning: Infectious Waste” and/or displaying the international biohazard symbol on all points of access.
C.3.4 Disposal

1. Request pick-up of packaged infectious waste via the EHS website (https://ehs.osu.edu/secure/apps).

2. Generators of infectious waste may discharge untreated liquid or semi-liquid infectious wastes consisting of blood, blood products, body fluids, and excreta into the sanitary sewer system as defined in Section 6111.01 of the Revised Code, unless the discharge is inconsistent with the terms and conditions of any permit for the system involved under Chapter 6111 of the Revised Code (OAC 3745-27-30-C).

C.3.5 Spills

1. All individuals who use biohazard substances must record in a log all spills or accidents involving infectious waste. For spills in quantities greater than one gallon or which involve exposure of laboratory personnel, OEHS must be notified;

2. All individuals who use biohazard substances must develop and implement a spill-containment and clean-up procedure. The procedure must be readily available to persons likely to handle infectious waste;

3. Sections C.7 and C.8 are provided to meet these requirements. Modifications of procedures must be forwarded to OEHS for review and comments.

C.4 Treatment by Incineration

Those who wish to treat infectious waste onsite by incineration must comply with OAC 3745-27-32. In the past, infectious waste (primarily animal carcasses and bedding) had been incinerated at Wiseman Hall, Biological Sciences or Goss Laboratory. These incinerators are not permitted by the Ohio Environmental Protection
Agency to burn infectious waste. Administrative units responsible for these incinerators have been notified that all incineration of infectious waste must cease immediately. Infectious waste currently treated at one of these locations should be packaged according to instructions provided above in C.3. Contact OEHS at 614-292-1284 for further assistance.

C.5 Treatment by Steam Sterilization

1. Those who wish to treat infectious waste onsite using steam sterilization must also comply with OAC 3745-27-32 and be permitted by OEPA. Contact Environmental Health and Safety for more information.

C.6 Chemical Treatment

Chemical treatment of infectious waste also requires complying with OAC 3745-27-32 and be permitted by OEPA. Contact Environmental Health and Safety for information.

The Ohio Environmental Protection Agency has only approved chemical treatment of infectious waste categorized as cultures. Therefore, chemical treatment of any other category of infectious waste must be approved by the Director OEPA or an alternate approved-treatment method used.
C.7 Spill Containment and Clean-up Procedures

According to **OAC 3745-27-30**, spill containment and a clean-up kit shall be available in those areas designated in the Spill Containment and Cleanup Procedures. The location of the kits shall provide for rapid and efficient clean up of spills anywhere within these areas.

C.7.1 Spill Kit Materials

The kit shall include but is not limited to:

1. Absorbent;
2. One gallon approved chemical disinfectant (bleach);
3. Red bags or bags labeled with the biohazard symbol;
4. Impermeable and disposable overalls (preferably tyvek total body coveralls);
5. Gloves (heavy neoprene or latex);
6. Goggles (can be reusable); and
7. Rigid plastic container for sharps.
8. First aid kit unless emergency care is available on the premises.
9. Boundary tape and other appropriate safety equipment.

C.7.2 Clean-up Procedures

1. A copy of the clean-up procedures is provided later in this section (see D.9);
2. More specific or detailed clean-up procedures can be prepared by the generator.

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C.7.3 Spill Log

1. A copy of the spill log is also provided;

2. Spill logs must be maintained for five years;

3. All spills greater than one gallon or which involve exposure of laboratory personnel must be reported to OEHS immediately and those spills of volume greater than one cubic foot must be reported to OEHS and to the Director of OEPA within 48 hours.

C.8 Contingency Plan

In accordance with OAC 3745-27-32 and 35, a contingency plan for treatment facilities must be available at treatment sites. In the event that sites which treat infectious waste cannot meet the storage requirements described below or are experiencing a malfunction in treatment processes, the contingency plan shall be implemented.

C.8.1 Storage

1. Store infectious waste in a manner that maintains the integrity of packing;

2. Maintain waste in a nonputrescent state, using refrigeration or freezing if necessary;

3. Lock outside storage to prevent unauthorized access;

4. Designate and label storage areas by posting biohazard warning signs;

5. Store infectious waste in a manner that affords protection from animals;

6. No infectious waste may be stored more than 14 days;
7. No more than seven times the treatment facility's total maximum daily throughput capacity shall be stored for treatment.

8. Contain and clean up any spill of infectious waste within a storage area using approved methods.
CONTINGENCY PLAN

Emergency Coordinator:

Telephone:

Alternate Coordinator: Michael St. Clair, EHS  Telephone: 614-292-1284

1. If you cannot comply with the storage requirements set forth, the following contingency plan shall be implemented:
   a. Notify your Emergency Coordinator;
   b. Call OEHS and request red bags, biohazard boxes, and sharps containers as needed for packing infectious waste at your treatment location;
   c. Following packaging of infectious waste, OEHS will arrange for offsite incineration.

2. Listing of emergency telephone numbers in addition to the Emergency Coordinator.
   a. OSU Police Dispatcher: 911 from campus phone
   b. OEHS Chemical/Infectious Waste Management: \textbf{(614)292-1284}
   c. OEHS Main Office: \textbf{(614)292-1284}
   d. OEPA Central District Office: \textbf{(614)728-3778}
   e. Emergency Number: \textbf{911}
   f. Columbus Health Department: \textbf{(614)645-7417}

\textbf{CONTACT:} Michael St. Clair, 1314 Kinnear Rd; Tel: (614)292-1284

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D.9 INFECTIOUS WASTE SPILL CONTAINMENT AND CLEAN-UP PROCEDURE

In accordance with OAC 3745-27-30, the following containment and clean-up procedures are to be implemented in the event of an infectious waste spill.

INFECTIOUS WASTE SPILL CONTAINMENT AND CLEAN-UP PROCEDURE

Infectious waste spills must be contained and cleaned up immediately.

I. A spill kit containing absorbent material, bleach or another USEPA registered tuberculocidal disinfectant, biohazard bags, gloves, eye protection, and a biohazard sharps container must be accessible in the laboratory.

II. To use bleach as a disinfectant, a 1:10 dilution (minimum 10% sodium hypochlorite solution) of household bleach should be prepared immediately prior to use, with a minimum of 30 minutes contact time with the waste. If another USEPA registered tuberculocidal disinfectant is used, the manufacturer’s recommendations for concentration and contact time should be followed.

1. Limit access to area to authorized personnel.

2. Open the spill kit.

3. Put on appropriate PPE (i.e. gloves, eye protection, coveralls).

4. Contain liquid spills by covering with absorbent pads. Place contaminated absorbent pads and other contaminated solids into a biohazard bag. Seal the bag by tying in a knot and place
into a second biohazard bag. Sharps (i.e. needles, blades or broken glassware) associated with the spill should be placed in a biohazard sharps container.

5. Clean the spill and cover contaminated surfaces with absorbent pads and soak with appropriate disinfectant (See II above). Allow the disinfectant to stand on the contaminated material for the minimum recommended contact time.

6. Place all materials used during the clean up process in a biohazard bag. Seal the bag by tying in a knot and place into a second bag. Place all biohazard bags into a biohazard burn box.

7. Disinfect all re-usable materials from the spill kit (i.e. goggles, dustpan, etc.) and put back into the kit. Replenish disposable items from the spill kit.

See the OSU Institutional Biosafety Manual for additional information on Decontamination and Spills [http://ehs.osu.edu/manuals.aspx](http://ehs.osu.edu/manuals.aspx)

FOR ASSISTANCE OR QUESTIONS, CONTACT THE OFFICE OF ENVIRONMENTAL HEALTH & SAFETY AT 614-292-1284 OR THE OSU POLICE DISPATCHER AT 911 FROM A CAMPUS TELEPHONE, AFTER WORKING HOURS.
INFECTIOUS WASTE SPILL REPORT

A spill report is required under OAC 3745-27-30(A)(10) for any spill that is greater than or equal to one cubic foot in volume. Complete this report and return to the address listed below.

Date and Time of Spill:
Date of Report:
Location of Spill:
Employee(s) Involved in Clean-up:
Waste Spilled:

Estimated Quantity:

Describe Clean-up Procedure:

Summary of Events Causing Spill (If Known):

Printed Name

Signature

Date

Mail Completed Report To:
Michael St. Clair
Office of Environmental Health and Safety
Room 210
1314 Kinnear Road, CAMPUS