Last revised 12/16/2016

COMS Policy on Suitable Methods of Solid Biological Waste Decontamination and Disposal

I. Purpose

To satisfy the 105 CMR 480.000 Minimum Requirements for the Management of Medical or Biological Waste regulation on the proper disposal of biologically contaminated solid waste.

II. Applicability

In July 2008 the Massachusetts Department of Public Health required certain changes in the disposal of biological waste. This policy applies to all institutions that generate biological waste and use the Committee on Microbiological Safety (COMS) as their IBC of record. This procedure applies for final treatment and disposal of solid biological waste.

III. Definitions

A. *Medical or Biological Waste:* Waste that because of its characteristics may cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or pose a substantial present potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

B. *Solid biological waste:* Identified and defined as medical or biological waste, and have been adapted from the requirements of 105 CMR 480.000 if they are contaminated with COMS Regulated Materials ("CRM") as defined in the Policy Introduction, (II) Scope.

C. *Pathological Waste:* The following types of pathological waste are identified and defined as pathological waste, and have been adapted from the requirements of 105 CMR 480.000:

- Human anatomical parts
- organs
- tissues and body fluids removed and discarded during surgery
- autopsy, or other medical or diagnostic procedures

- specimens of body fluids and their containers; and
- discarded material saturated with body fluids other than urine.

D. *Contaminated Animal Waste*: The following types of animal waste are identified and defined as contaminated animal waste, and have been adapted from the requirements of 105 CMR 480.000:

- Contaminated carcasses
- body parts
- body fluids
- blood or bedding from animals known to be exposed to a CRM.

IV. Implementation Procedures

A. General Information

Contact your institutional biosafety officer should you have any questions about solid biological waste disposal.

B. Procedure

Two options are provided for disinfection of solid biological waste.

Option 1: Off-Site Biological Waste Disinfection

1. Policy

   Institutional policies will dictate the selection of the solid biowaste collection company in accordance with all applicable City, State, and Federal Regulations. Institutional policies must dictate the selection of a solid biowaste collection company in accordance with all applicable City, State, and Federal regulations.

2. Recommended Personal Protective Equipment

   The following should be worn while handling or moving solid biological waste collection containers.

   - Lab coat
   - Disposable safety gloves
   - Safety glasses

3. Procedure

The solid biological waste collection containers should be placed in locations that are easily accessible to all laboratory users of biological materials.

- Solid biological waste should be added to the waste collection container.
- When the experiment is completed, all solid biological waste containers should have a cover placed over the working container.
- Institutional policies will dictate the personnel and department responsible for the collection, temporary storage of, and replacement of solid waste containers.

4. Storage

   An on-site storage facility shall be provided for all biological waste until it is picked up for off-site disposal. The facility must be separate from all other storage and laboratory areas and must be used only for the storage of biological waste.

5. Documentation

   An on-site treatment log and validation is required for all solid biological waste at the waste collection designated area.

Option 2: Autoclave

1. Policy

   Autoclaving is an effective means of sterilizing BL1 and BL2 solid waste. Sterilization refers to the complete killing of all living organisms, including spores.

2. Recommended Personal Protective Equipment:

   - Lab coat
   - Disposable safety gloves
   - Heat resistant gloves
   - Safety glasses

3. Procedure

- Collect BL1 and BL2 solid waste in autoclavable, leak proof containers. Do not fill containers more than ¾ full.
- Place containers in an autoclavable tray in the autoclave. Fold over but do not seal each biohazard waste container and place indicator tape on each top.
- Adequate cycle time varies depending on load, type of autoclave, and secondary containment. Every autoclave facility needs to validate their autoclave for waste sterilization to determine the appropriate cycle parameters. Typical cycle times for sterilizing solid waste range from 45 to 90 minutes at 250°F (121°C) and 15 psi.
- The methods which rely on heat must be evaluated for each load or cycle by using a recording thermometer, thermocouple, parametric monitoring device, thermal indicator strip or by an equivalent method approved in writing by MA DPH. The method must be qualitatively validated quarterly using a method of 1×10^4 minimum challenge population of a bacterial organism that is most resistant to any aspect of the treatment technology guidelines established by MA DPH (MA DPH 105 CMR 480.150). Please see Appendix A for further instructions.
- Institutional policies will dictate the personnel and department responsible for the collection, temporary storage of, and replacement of solid waste containers.
- Documentation of autoclaving must be completed using a site-specific log provided by 105 CMR 480.000. Please see "Resources" for site specific log from the 105 CMR 480.000. Should an institution choose to use their own log it must be approved by the MA DPH.

4. Storage

   An on-site storage facility shall be provided for all biological waste until it is picked up for off-site disposal. The facility must be separate from

all other storage and laboratory areas and must be used only for the storage of biological waste.

5. Documentation

   An on-site treatment log and validation is required for all solid biological waste. Records must be retained for 3 years.

V. Policy Authority

The Office of Biological Safety of the Harvard Medical School is responsible for supporting the Committee on Microbiological Safety. This includes preparation and revising of the COMS Policy Manual for committee review and approval. The Committee on Microbiological Safety (COMS) authorizes this policy.

VI. Related Policies

- Suitable Methods of Liquid Biowaste Decontamination and Disposal
- Suitable Methods for Use of Sharps

VII. Resources

- Log: 105R 480.000 on-site treatment log
- Supplies: Supplies and information about validation of the biological waste treated in an autoclave using *Geobacillus stearothermophilus* are available. COMS does not endorse particular products or suppliers and other suppliers may be used in addition to those suggested in Appendix A.
- Equipment: Autoclave vendor information can be found in Appendix B.

VIII. References

- 105 CMR 480.000 Minimum Requirements for the Management of Medical or Biological Waste (State Sanitary Code Chapter VIII), effective July 11, 2008.

Appendix A: Suggested Vendors for Autoclaves

COMS does not endorse particular vendors for equipment.
Other vendors may be used in addition to those suggested in this appendix.

1. **Ranger Engineering**
   P.O. Box 3111
   Framingham, MA 01705
   (508) 877-3166

Appendix B: Suggested Vendors for Biological Waste Validation Supplies

COMS does not endorse particular products or suppliers.
Other suppliers may be used in addition to those suggested in this appendix.

1. Mesa Laboratories
2. VWR