



**THE UNIVERSITY OF MAINE**  
**BIOMEDICAL WASTE MANAGEMENT PLAN**

## TABLE OF CONTENTS

| Section | Title                                | Page |
|---------|--------------------------------------|------|
| 1.      | Purpose .....                        | 1    |
| 2.      | Introduction .....                   | 1    |
| 3.      | Registration .....                   | 2    |
| 4.      | Waste Analysis .....                 | 2    |
| 5.      | Personnel Training .....             | 2    |
| 6.      | Storage & Handling .....             | 3    |
| 7.      | Disposal .....                       | 4    |
| 8.      | Spill Containment and Clean-up ..... | 5    |
|         | Revision Page                        |      |

### Appendices

- A. Associated Procedures and Guidelines

## 1. Purpose

The University of Maine Biomedical Waste Management Plan establishes procedures and practices for the proper disposal of hazardous biological wastes in accordance with the Biomedical Waste Management Rules (06-096 CMR 900) established The Maine Department of Environmental Protection (DEP). These rules require a written Biomedical Waste Management Plan for any waste generator site that generates (on average) 50 pounds or more of hazardous biological waste per month.

## 2. Introduction

Biomedical wastes are generated at the University of Maine through research, teaching, medical procedures, medical testing, and emergency response/first aid activities. Many of these waste producing activities may not seem inherently hazardous, but they none-the-less regulated and the University is subject to fines for failure to comply.

Biomedical waste includes the following:

- Human blood, blood products, body fluids, tissues, organs and anatomical parts.
- Waste saturated with Human blood, blood products, or body fluids.
- Discarded "Sharps" used in patient, animal, or cadaver care or in medical or biomedical research laboratories.
- Cultures, stocks, and devices used to transfer human infectious agents in biomedical labs.
- Discarded clinical specimens and associated containers or vials.
- Discarded biologicals and waste from the production of biologicals<sup>1</sup>.
- Recombinant DNA wastes.
- Carcasses, body parts, bedding, or other waste generated by research facilities from animals containing organisms or agents not usual to the normal animal environment and which are pathogenic or hazardous to humans.
- Cytotoxic drugs not identified as hazardous waste.
- Material that has come in contact with and has no more than a trace of cytotoxic agents.

Biomedical Waste does not include the following:

- Household waste ("Sharps" must be put in rigid containers)
- Urine or feces.
- Wastewater treatment sludge and septage.
- Water samples used for and wastes from routine screening.
- Animal carcasses, anatomical parts, bedding, or other waste generated in the routine handling containing organisms or agents normally found in the animal environment.
- Band-aid and other blood spotted items such as feminine hygiene products.

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<sup>1</sup> Biologicals are products or preparations made from living organisms which are used in medical treatment or biomedical laboratories. These include serums, vaccines, antigens, and antitoxins.

### 3. Registration

The Maine Department of Environmental Protection classifies biomedical waste generators as Very Small, Small or Large Quantity Generators based upon the average amount of waste produced. Registration is filed annually, by the campus, on behalf of the University of Maine System using the average generation rates of the previous year.

The University of Maine (Orono Campus) typically generates between 400 to 1000 lb of waste monthly and is registered as Large Quantity Generator.

|                            |      |
|----------------------------|------|
| UMaine Generator ID Number | 1390 |
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The Darling Marine Center produces (on average) less than 10 lbs of biomedical waste per month and is registered as Very Small Quantity Generator.

|                                     |      |
|-------------------------------------|------|
| Darling Marine Center SQG ID Number | 2611 |
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Small and Very Small Quantity Generators are not required to have a written Biomedical Waste Management Plan; however, they are required to manage their waste according to the DEP Rules and are expected to follow the guidelines established in this plan.

### 4. Waste Analysis

Waste generated at The University of Maine fall into two basic types:

- Teaching and biological research activities are primarily in the form of solid cultures of microorganisms, disposable culture containers, and recombinant DNA wastes.
- Other operations, emergency and medical services (custodial, police and ambulance) produce relatively smaller amounts of waste containing blood and other potentially infectious materials.

### 5. Personnel Training

All waste handling will be carried out by personnel trained in the proper disposal of biomedical waste.

- Persons working with bloodborne pathogens will be trained on biomedical waste requirements during their annual BBP Training as outlined in The University of Maine, Bloodborne Pathogen Exposure Control Program, MF07080 (See SEM web site)
- Other personnel handling biomedical waste are trained on the requirements of this Program by the department/area supervisor or by more experienced personnel through On-the-job training.

Training must include, at a minimum:

- Type of Waste Generated in their area.
- Waste Handling, Treatment, Storage, and Disposal Procedures specific to their area.
- Spill Containment and Cleanup Procedures.
- Name and phone number of the person(s) responsible for biohazard waste management in their area, and the Biosafety Officer.

Departmental Bloodborne Pathogen Plans or Biosafety Plans that include all the required information may be used as training documents. All training must be documented.

## 6. Storage & Handling

Biomedical waste must be stored and handled in a manner that prevents the inadvertent removal of the waste and does not impair or adversely affect the integrity of the packaging. Trash chutes and compactors are not allowed for biomedical waste disposal.

Whenever biomedical waste is handled, gloves and other protective equipment, as needed, should be used. Universal Precautions should be observed when handling biomedical waste. This means that hands must be washed immediately upon removal of gloves. If a sink is not immediately accessible, antiseptic towelettes must be provided and hands must be washed as soon as possible.

Biomedical waste storage areas must be away from general traffic flow patterns and must be clearly labeled. Biohazard warning signs must be used on storage areas to signify the presence of biological hazards and to indicate precautions to be taken.

Biomedical waste storage areas must be maintained in a sanitary condition at all times. They must be capable of protecting the integrity of the waste containers and allow adequate space for inspection of the area and the containers.

The following storage areas are used for biomedical waste:

- Laboratories or other generators may store one box within their designated work area. When full the box is either picked up by SEM or delivered to the department storage area for pickup.
- Biohazard spill cleanup wastes generated throughout the campus are stored in the refrigerator at #7 York Village or at the Hazardous Waste Storage Site.

Biohazard signs and labels must be used to identify storage areas, equipment or containers that are used or for biomedical waste. All red bags must be handled as biomedical waste.

Liquid cultures of bacteria, viruses, etc. are typically autoclaved or inactivated with an appropriate disinfectant before discharge to the sewerage system.

Solid waste from research laboratories should be collected in autoclavable bags. When full, the plastic bags should be sealed and autoclaved. After autoclaving, these bags must be placed in red bags or biomedical waste boxes lined with red bags.

Other solid biomedical waste should be collected in red or red/orange plastic bags, clearly marked with the "Biohazard" symbol. The bags are closed to form a leak resistant seal before disposal.

At the time of generation "Sharps" must be separated from other solid waste. Sharps containers should be discarded when 2/3 full. The container should be sealed and placed in a red bag prior to disposal. All sharps containers must be rigid, puncture-resistant and leak-resistant.

All reusable containers used for the storage of biomedical waste must be decontaminated when emptied unless there is a liner which prevents contamination of the container.

Shipping containers must be labeled with the name and generator ID# of the site generating the waste, the phone number of the Department of Safety and Environmental Management (207) 581-4055, and the date of packaging.

All containers and liners meet DOT specifications and are provided by the disposal firm.

## **7. Disposal**

The department of Safety and Environmental Management oversee the proper disposal of biomedical waste at The University of Maine. Any questions regarding the proper management of biomedical waste should be directed to:

Biosafety Officer  
UMaine, Safety & Env. Mgt. Dept.  
5784 York Village, Bldg 7  
Orono, Maine 04469-5784  
(207)581-4055

Solid biomedical waste is collected in red or red/orange plastic bags clearly marked with the "Biohazard" symbol. The bags are closed to form a leak resistant seal before shipping to a Licensed Disposal Facility.

Sharps are separated at the point of generation and collected in cardboard or hard plastic containers which are securely closed and disposed of at a Licensed Disposal Facility.

Plastic bags containing research material may be autoclaved to reduce the potential for release of research organisms to the environment. Even after autoclaving, the biomedical waste is still regulated by the Maine DEP and must be shipped to a Licensed Disposal Facility.

Liquid cultures of bacteria, viruses, etc. are typically autoclaved or inactivated with an appropriate disinfectant before discharge to the sewerage system.

All containers of biomedical waste from Large Quantity Generators must be transported off-site by a State of Maine Licensed Biomedical Waste Transporter.

Small Quantity Generators may transfer their waste to another site for storage and disposal, in accordance with the Maine Biomedical Waste Rules.

## **8. Spill Containment and Clean-up**

The proper implementation of infection control procedures is imperative when dealing with infectious waste.

Areas where biological materials meet Biosafety Level 1 or 2 criteria may use the Biohazard Spill Clean-up Standard Operating Procedure, MP11192 (available on the SEM website).

Laboratories conducting research with organisms at biosafety level 3 or 4 are required to prepare specific spill cleanup procedures as part of their Laboratory Biosafety Manual.

## Revision Page

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## Appendix A

### Associated Procedures and Guidelines

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|  |           |
|--|-----------|
| BIOMEDICAL WASTE DISPOSAL GUIDELINES - Orono | MG11191 O |
| BIOMEDICAL WASTE DISPOSAL GUIDELINES - DMC   | MG11191 D |
| BIOHAZARD SPILL CLEANUP PROCEDURE            | MP11192   |

AFTER THIS PAGE