

FIU Biomedical Waste Plan

PURPOSE

The purpose of this Biomedical Waste Plan is to provide guidance and describe requirements for the proper management of biomedical waste generated by FIU sites. Guidelines for management of biomedical waste are found in Chapter 64E-16, Florida Administrative Code (F.A.C.), and in section 381.0098, Florida Statutes.

SCOPE

This Biomedical Waste Plan covers all FIU site that generate and/or store biomedical waste.

DEFINITION

The F.A.C. 64E-16.002(2) defines biomedical waste as any solid or liquid waste which may present a threat of infection to humans, including non-liquid tissue, body parts, blood, blood products, and body fluids from humans and other primates; laboratory and veterinary wastes which contain human disease-causing agents, and discarded sharps.

RESPONSIBILITY

It is the responsibility of the waste generator to properly handle, contain, and dispose of biomedical waste in compliance with the requirements of F.A.C. 64E-16 and the guidelines provided in the plan. EH&S is responsible for providing oversight and ensuring the disposal of biomedical is done in accordance the regulatory requirements, and that proper documents and permits are maintained

PERMITS

All biomedical waste generating facilities are inspected and required to obtain a permit from the Dade County Health Department on an annual basis. Because FIU is a state-owned and operated facility, FIU is exempt from paying the annual permit fee. Permits are issued in October and expire in September of the following year. The EHS Biosafety Office is responsible for obtaining and managing the permit information for all FIU sites generating biomedical waste.

INSPECTIONS

The Department of Health conducts unannounced annual inspections. EH&S is required to be notified when DOH is on the premises to conduct inspections. Please contact the Biosafety Office at (305) 348-3387 for more information.

ENFORCEMENT AND PENALTIES

Any person who generates, transfers, treats, stores, transports or disposes of biomedical waste in violation of Chapter 64E-16, F.A.C.; or who interferes with, hinders, or opposes any employee of the Department of Health in the discharge of his duties, or who impersonates an employee of DOH, is chargeable with a misdemeanor of the second degree. Violation of any provision of Chapter 64E-016, F.A.C., may result in denial, suspension or revocation of the university's biomedical waste permits or an administrative fine of up to \$2500 per day for each violation of this chapter or other enforcement action authorized by law.

GENERATOR LOCATIONS

Biomedical waste is generated at three Florida International University campuses:

Modesto Maidique Campus
11200 SW 8th street

Miami, FL 33199

Biscayne Bay Campus
3000 NE 151st street
North Miami Beach, FL 33181

The Engineering Center
10555 West Flagler Street
Miami, FL 33174

The points of origin that generate biomedical waste are as follows:

Campus	Buildings
Modesto Maidique (MMC)	Owa Eha, Academic Health Centers 1-4, Student Health Center, FIU Health Mobile Unit, Deuxieme Maison, Recreation and Wellness Center, FIU Stadium
Biscayne Bay (BBC)	Student Health Center, Academic Center 2, Marine Science Building
Engineering Center (EC)	OU, Engineering Center, AMERI Building

COLLECTION

The collection schedule for FIU campuses and satellite locations ranges from once a month to every week. The pick-up schedule can be customized to the needs of the generating area as long as the pick-up is within the 30-day requirement as mandated by FAC 64E-16. Collection of generated waste is scheduled through the EHS Biosafety Office.

CONTAINMENT

The following minimum containment practices apply:

- Place medical waste into impermeable red plastic bags, sealed, and placed into cardboard boxes supplied by the medical waste transporter.
- Place sharps in sharps containers at the point of origin, sealed, and placed into the designated cardboard boxes.
- Label red bags and outer cardboard boxes with the generator's name and address.
- Identify the outer cardboard box with the international biohazard symbol.

LABELING

- Label biomedical waste bags and sharps containers with the generator's name, bldg, and room #.
 - Bags and sharps containers placed into larger bags prior to transport are not required to be labeled with the generator's information. The outer bag shall be labeled with the generator's information.
 - Labels provided by the transporter for bags and sharps containers that are generator-specific satisfy the labeling requirements.
- Outer containers should be labeled with the transporter's name, address, registration #, and 24-hour telephone number.

- **NOTE:** Secondary containment for biomedical waste should also be labeled with the biohazard symbol and the type of waste.

STORAGE

- Store sealed red bags, sharps containers, and outer containers in areas that are restricted through the use of locks, signs, or location.
 - FIU waste generating facilities cannot store biomedical waste for more than 30 days. The 30-day period commences when the first non-sharps item of biomedical waste is placed into a red bag or sharp container, or when a sharps container containing only sharps is sealed. Biomedical waste remains at the generating facility until removed by the transporter.
- Restrict access to indoor storage areas
 - Locate away from pedestrian traffic and maintain in a sanitary condition.
 - The areas should be constructed of smooth, easily cleanable materials that are impervious to liquids.
- In addition to the above criteria, mark outdoor storage areas (containers) with the international biohazard symbol and secure against vandalism and unauthorized entry. The biohazard symbol on an outdoor container should be a minimum of six inches in diameter.

TRANSFER

Biomedical waste should not be transferred from the generating facility to other buildings on campus. However, if transfer is unavoidable, generators must adhere to the following requirements:

- Transfer of biomedical waste within the generating facility should be conducted safely and with appropriate care. Minimum protective equipment for handling biomedical waste is disposable latex gloves.
- Place bags of waste and sharps containers in a leak-proof secondary container with a secure lid (i.e., latchable, secured with tape, etc.) for transport. The secondary container must be labeled with a biohazard symbol and an emergency contact name and phone number.
- Use the shortest available route, and move the materials with the aid of a cart. Do not use public elevators if at all possible and avoid traveling with the waste through common public areas.
- Do not touch door handles, elevator buttons or other common contact surfaces with gloved hands. (Use the one-gloved hand technique, or get assistance from other staff for opening doors, etc.)

TREATMENT AND DISPOSAL

Autoclave Use

In accordance FAC 64E-16, all biohazardous waste must be inactivated before it is disposed of by waste disposal services. This can only be achieved if the waste is exposed to the right temperature for the right amount of time, and if the autoclave is working correctly.

Responsibility for validating autoclave performance lies with those who use the autoclave for treating biohazardous waste. EH&S recommends that a designated individual be identified among the lab staff who will be responsible for the validation of the autoclave and the training of personnel who use the autoclave.

For more information on Autoclave Use and Safety, please refer to the FIU Biomedical Waste webpage: <http://ehs.fiu.edu/Programs/BioSafety/Pages/Biomedical-Waste.aspx>

Chemical Treatment of Biohazardous Liquids

Disinfectants, such as household bleach, may be used for treatment of biohazardous liquids. Add the bleach to the container so that the bleach makes 10% of the final volume. Allow a contact time of at least 30 minutes. Carefully discharge the mixture to the sanitary sewer by way of the lab sink, then thoroughly rinse down the sink with water. **Remember to wear splash goggles, gloves, and a lab coat for handling of bleach and bleach-treated liquids.**

NOTE: Diluted bleach solutions may go down the drain in most cases. However, many chemicals used for disinfection cannot be discarded down the drain. Contact EH&S Environmental Compliance at (305)348-2622 to determine if sink disposal of disinfectants other than diluted bleach solutions is acceptable.

Autoclave Treatment of Biohazardous Liquids

Biohazardous liquids may also be autoclaved for treatment. The collection container should be closed, placed in a secondary container, and transported by cart to the autoclave facilities. Treat by autoclave using the liquid cycle. **(Remember to loosen or remove the closure on the container before placing in autoclave.)** Wait for the treated liquid to cool prior to discharging to the sanitary sewer by way of the lab sink.

Note: Only personnel who have received training regarding the operation of the autoclave should use this device. Autoclave treatment should not be used if the liquid is mixed with chemical or radioactive materials.

Solid Biomedical Waste

- **Infectious, potentially infectious, or rDNA waste:**

- human pathogens
- animal pathogens
- plant pathogens
- recombinant DNA
- human and primate blood, blood products and other potentially infectious material (OPIM)
- any material containing or contaminated with any of the above (test tubes, needles and needle/syringe combinations*, syringes, tubing, culture dishes, flasks, gloves, other PPE, etc.)

- **Non-infectious**

This category includes waste that is **NOT** contaminated with any of the biological wastes listed above. Sterile or unopened *biomedical* materials that require disposal are also considered biological waste.

gloves	test tubes	petri dishes
needles*	razor blades*	Tissue culture flasks
syringes	culture dishes	Serological pipettes
scalpels*	Pasteur pipettes**	Micropipette tips
broken glass and plastic ware **	Needle/syringe combinations *	

* Must be placed in FDOH-approved sharps container

**Must be placed in approved broken glass container for disposal

- **Mixed radioactive/biological waste**

- Manage biohazardous waste mixed with radioactive waste in a manner that does not violate the provisions of Chapter 64E-5, F.A.C.

- The radioactive component takes precedence over the Biohazardous component, and must be managed as such until the radioactive component has decayed in storage. Please check with the Radiation Safety Office (348-0489) regarding the disposal and storage of radioactive waste.

- **Mixed chemical/biological waste**
 - Manage biomedical waste mixed with hazardous waste, as defined in Chapter 62-730, F.A.C., Hazardous Waste, as hazardous waste.
 - Autoclaving is not recommended because of flammable or reactive compounds and potential explosion hazards. Please check with the Environmental Compliance Office (348-2622) for guidance regarding particular chemicals.

- **Animal carcasses and materials**
 - Freeze animal carcasses prior to removal and packaging. Dispose of animal carcasses and other animal materials and tissue by requesting a pick-up through EH&S.
 - Do not dispose of any animal bodies or material as regular trash.
 - Contain animal carcasses and other animal material that may spread an animal or human pathogen appropriately before disposal.

- **Human remains**

Please contact the Biosafety Office (348-3387) for information regarding the final disposition of human remains and body parts.

DISPOSAL

Disposal of biomedical waste is coordinated through the EHS Biosafety Office. Biomedical waste is stored on-site until removed by a licensed transporter for disposal. Refer to the Biomedical Waste Disposal Flowchart for more information or contact the Biosafety Office at (305) 348-3387. To request pick-up service, email the Biosafety Office at ehs@fiu.edu, Subject line: Biomedical Waste Disposal Request.

Transportation and treatment services for FIU biomedical waste is provided by:

Healthcare Environmental Services (HES)
5195 NW 77th Avenue
Miami, FL 33166

In the event that HES cannot provide disposal services or there is a spill of material that cannot be contained, secondary emergency response services will be provided by:

SWS Environmental Services
6900 NE 12th Avenue
Ft. Lauderdale, FL 33309

RECORDKEEPING

FIU biomedical waste disposal records are maintained at:

Environmental Health and Safety
University Park, Campus Support Complex 146
Miami, FL 33199
Tel: (305) 348-2621
Fax: (305) 348-3574

The records maintained by Environmental Health and Safety include waste manifests, monthly account statements, annual operating permits, and FDOH inspection reports. Environmental Health & Safety and waste generating locations are required to maintain training records and manifests for 3 years.

TRAINING

Biomedical waste training is provided as required by paragraph 64E-16.003(2)(a), F.A.C, and details compliance with this biomedical waste plan and with Chapter 64E-16, F.A.C. The main components of the training cover:

- Definition and Identification of Biomedical Waste
- Segregation
- Storage
- Labeling
- Transport
- Procedure for Decontaminating Biomedical Waste Spills
- Contingency Plan for Emergency Transport
- Procedure for Containment
- Treatment Method

Environmental Health & Safety provides on-line training for biomedical waste generators/handlers. Employees handling biomedical waste must complete training (**Safe Management of Biomedical Waste**) at the time initial assignment and annually thereafter. For more information on how to access the training, please visit the EH&S Online Safety Training Website at <http://ehs.fiu.edu/Training/Pages/default.aspx>

REFERENCES

FAC Chapter 64E-16 Biomedical Waste
FIU Biosafety Manual
FIU Blood-borne Pathogen Exposure Control Plan
Autoclave Use and Safety

Biohazardous Waste Disposal

