



Biomedical Waste Management Plan

USF Biomedical Waste Management Plan for:

Facility Address: _____

Facility Phone Number: _____

Facility Contact: _____

Division of Environmental Health and Safety
4202 E. Fowler Ave, OPM 100
Tampa, FL 33620
(813) 974-4036
www.usf.edu/eh&s
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I. INTRODUCTION

Biomedical waste is generated by research, instructional, and clinical activities at the University of South Florida (USF) System. The management of biomedical waste in the State of Florida is mandated by Chapter 64E-16, Florida Administrative Code (F.A.C.), and in section 381.0098, Florida Statutes. All areas within the USF System that generate biomedical waste are required to comply with the requirements of the USF Biomedical Waste Management Plan. Departments may choose to implement a more stringent, site-specific Biomedical Waste Management Plan that serves their operational needs and must comply with at least the minimum set forth by the USF Biomedical Waste Management Plan.

II. PURPOSE

The purpose of the USF Biomedical Waste Management Plan is to provide the requirements for the proper management of biomedical waste at USF.

III. RESPONSIBILITIES

- A. The Division of Environmental Health and Safety (EH&S) has the overall responsibility for the Biomedical Waste Program, including the following tasks:
 - **Contract Management:** Ensures that waste is picked up regularly in accordance with the Florida Administrative Code (FAC) 64E-16. This also includes maintenance of shipping manifests, invoices and other contract documents.
 - **Problem Resolution:** Resolves problems between the University and vendors. Complaints or requests for special services should be directed to EH&S who in turn coordinates with the vendors.
 - **Inspection Coordination:** Coordinates Department of Health biomedical waste inspections and provides assistance to the Health inspector. Prepares corrective action reports and forwards them to the Department of Health.
 - **Training:** Offers training sessions to USF System faculty, staff, and students.
- B. Principal Investigators, Instructors, and Clinical Supervisors are responsible for supervising biomedical waste practices in their respective areas. This includes:
 - Ensuring that all biomedical waste is handled and disposed of in accordance with the requirements of the USF Biomedical Waste Management Plan.
 - Maintaining training documentation for all affected personnel.

IV. DEFINITION

1. Biomedical waste -as any solid or liquid waste which may present a threat of infection to humans (Florida Administrative Code (FAC) 64E-16). Biomedical waste is also known as biohazardous waste. Examples of biomedical waste are as follows:
 - Body fluids (include lymph, semen, vaginal secretions, cerebrospinal, synovial, pleural, peritoneal, pericardial and amniotic fluids) Blood and blood products (human and primate; whole blood, serum plasma and blood products) Blood components which include devices which retain visible blood adhering to inner surfaces, such as IV tubing. Animals, animal parts/tissues and animal blood that contain human disease-causing agents Used absorbent materials such as bandages, gauze, or sponges which are saturated with blood or body fluids Needles and needle-syringe units (whether infectious or not) Scalpels, razor blades, hard plastic or glass contaminated with tissues, blood, blood products, or body fluids
2. Disinfection – the process of removing pathogenic microorganisms from objects or surfaces.

3. Sterilization – the process used to destroy of all microorganisms on a surface or object, thereby rendering biomedical waste non-infectious.
4. Cleaning – a process by which soap or detergent and water is applied to an area to remove dirt and organic matter from surfaces or objects. Cleaning may not kill microorganisms, but prepares the object or surface for a more effective disinfection.
5. Point of origin – the room or area where the biomedical waste is generated.
6. Puncture resistant - able to withstand punctures from contained sharps during normal usage and handling.
7. Sharps - Objects capable of puncturing, lacerating, or otherwise penetrating the skin. See Appendix I for a Safety operating Procedure on the use of Sharps.

V. SEGREGATION OF BIOMEDICAL WASTE

Biomedical waste must be separated from all other waste streams at the point of origin as per the requirements of 64E-16 of the Florida Administrative Code (FAC). Once separated, the waste must be placed in either a sharps container or a red bag. Each individual location is required to have an adequate number of sharps containers and red bags to dispose of the biomedical waste generated.

Mixed chemical and biomedical waste

Biomedical waste mixed with chemical waste, as defined in Chapter 62-730, F.A.C., must be managed as hazardous waste. Any biomedical waste that is mixed with chemical waste must be separated if possible. Any questions pertaining to mixed chemical and biological waste disposal should be directed to EH&S.

Mixed radioactive and biomedical waste

Biomedical waste mixed with radioactive waste must be managed in accordance with the provisions of Chapter 64E-16, F.A.C. Any questions pertaining to mixed radioactive and biological waste should be directed to Research Integrity and Compliance (RI&C).

Uncontaminated Laboratory Wastes

The following list of materials may be placed into the regular trash if not contaminated with biomedical waste:

- Non-infectious pipettes or pipette tips
- Scalpels, razors, glass or plastic not containing tissues, blood, blood products, blood components or body fluids. **These materials must be packaged to prevent sharp points or edges from protruding through regular trash bags and containers.**
- Non-infectious tubes, tubing or other glass or plastic containers not containing tissues, blood, blood products, blood components or body fluids (e.g. centrifuge tubes, microcentrifuge or Eppendorf tubes, curettes and capped tubes)
- Non-infectious intact or broken glassware or plastic ware. **It is important to note that broken glass must be placed into appropriate cartons labeled "Broken Glass". In no case may non-infectious needles or syringes be placed in these cartons.**

Animal Waste/Animal Carcasses

Animal waste/carcasses exposed to pathogens requiring ABSL-2 or ABSL-3 biocontainment and all non-human primate carcasses must be segregated from other biomedical waste. The biomedical waste bags used for this type of waste must be placed within leakproof outer containers labeled “Infectious Waste”, or “ For Incineration”. Biomedical waste bags storing this type of waste may be placed in freezers or refrigerators until packaged for shipment to an off-site incinerator. This waste may be autoclaved on site as well.

VI. CONTAINMENT

These minimum containment standards must be followed according to Chapter 64E-16, F.A.C:

- Generators of biomedical waste shall purchase **red** bags from vendors who certify that their bags meet the applicable standards and maintain a copy of the certification on file in their department.
- Sharps containers shall meet the requirements of FAC 64E-16. Generators of biomedical waste shall purchase sharps containers from vendors who meet the above standards.
- Place all contaminated sharps into red sharps containers at the point of origin. Non-infectious needles and needle-syringe units must be placed in sharps containers. Sharps containers must be sealed and labeled prior to disposal by the biomedical waste transporter.
- Sharps shall be discarded at the point of origin into single use or reusable sharps containers. Needles and scalpel blades shall not be placed directly into double-walled corrugated containers. Sharps containers must be sealed when full.
- Sharps containers are considered full when materials placed into it reach the designated fill line, or, if a fill line is not indicated, when additional materials cannot be placed into the container without cramming or when no additional materials are to be placed in the container.
- Red bags must be placed into an outer container at the point of origin prior to disposing of any biomedical waste. The outer container must be rigid, leak-resistant and puncture-resistant. Reusable outer containers shall be constructed of smooth, easily cleanable materials and shall be decontaminated after each use. Red bags must be sealed and labeled prior to disposal by the biomedical waste transporter.
- Ruptured or leaking packages of biomedical waste must be placed into a larger container.

VII. LABELING

All sealed biomedical red bags and sharps containers must be labeled with the following information:

- Facility Name (e.g. USF)
- Facility Address or department physical address
- Facility Phone or department phone number
- Facility Contact or responsible person

If a sealed red bag or sharps container is placed into a larger red bag prior to transport, labeling the exterior bag is sufficient. Outer containers are labeled by the biomedical waste transporter with their name, address, registration number, and 24-hour phone number.

VIII. STORAGE

Biomedical waste must not be stored for more than 30 days:

- after the first non-sharps item of biomedical waste is placed into a red bag,
- after the first non-sharps-item of biomedical waste is placed into a red sharps container, or
- after a red sharps container that contains only sharps is sealed.

Access to indoor biomedical waste storage areas must be restricted through the use of locks, signs, or location. Locate away from pedestrian traffic and maintain in a sanitary condition. The area should be constructed of smooth, easily cleanable materials that are impervious to liquids and vermin/insect free.

Outdoor storage areas also must be conspicuously marked with a six-inch international biological hazard symbol and must be secured from vandalism.

IX. TRANSPORT

Biomedical waste pickups are conducted at least weekly by the USF biomedical waste transporter. Pick-up times may vary by locations. The USF biomedical waste transporter and treatment facility is:

Stericycle, Inc.
4245 Maine Avenue
Lakeland, FL 33840

X. TRAINING FOR PERSONNEL

Biomedical waste training is required annually by paragraph 64E-16.003(2) (a), F.A.C. for all personnel that handle biomedical waste. EH&S provides biomedical waste training through the EH&S Laboratory and Research Safety training classroom course or online. The main components of the training must cover:

- Definition and identification of biomedical waste
- Segregation
- Storage
- Labeling
- Transport
- Spill Clean-up procedures
- Contingency Plan for Emergency Transport
- Procedure for containment
- Treatment method

Each facility must maintain records of employee training. Training records must be kept for participants in all training sessions for a minimum of three (3) years and must be available for review by Department of Health (DOH) inspectors.

XI. TREATMENT METHODS

Pre-treating infectious waste prior to disposal is recommended for BSL-2 labs, but required for BSL-3 labs. The following treatment methods are used to decontaminate biomedical waste within 30 days of collection:

- On-Site/Off-Site Steam Sterilization - autoclaves are used to effectively decontaminate potentially infectious biomedical waste through steam. Each steam treatment unit shall be evaluated for effectiveness with spores of *Bacillus stearothermophilus* at least once each 7 days for permitted treatment facilities, or once each 40 hours of operation for generators who treat their own biomedical waste. A written log shall be maintained for each steam treatment unit.
- Chemical Decontamination – A 10% bleach solution is primarily used for the decontamination of liquid biomedical waste prior to disposal down the sanitary drain. This bleach solution can also be used decontaminate surfaces and objects contaminated with biomedical waste. It is also permitted to use EPA registered chemical germicides for chemical decontamination of biomedical waste.
- Off-Site Incineration – this treatment method occurs off-site through the USF biomedical waste vendor, particularly for infectious animal waste and carcasses.

XII. PENALTIES

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.

XIII. SPILL CONTINGENCY PLAN

Surfaces contaminated with spilled or leaked biomedical waste must be decontaminated with a solution of industrial strength detergent to remove visible soil before being disinfected by one of the following methods:

- Rinse for at least three (03) minutes with a hypochlorite solution containing 100 parts per million (ppm) available free chlorine (note: one tablespoon per two (02) gallons of water is approximately 100 ppm available free chlorine), or rinse for at least three (3) minutes with an iodine solution containing 25 ppm available iodine.
- Use a chemical germicide that is registered by the Environmental Protection Agency (EPA) as a hospital disinfectant, following recommended dilutions and directions. Liquid waste created by these chemical disinfecting operations shall be disposed of into the sanitary sewage system.

Employees cleaning spills of biomedical waste must wear appropriate personal protective equipment such as, but not limited to, gloves, gowns, laboratory coats, face shields or masks and eye protection. Spills should be reported to EH&S using the [Lab Incident Reporting Form](#).

SAFE USE OF SHARPS & DISPOSAL PROCEDURE

Sharps are items that can easily puncture the skin. Examples include needles, razor blades, and broken glass. All sharps must be handled and disposed in a manner that protects you and others from exposure and possible injury. This procedure applies to the handling and disposal of sharps and must be followed to:

1. Prevent personal injury
2. Prevent contamination of personnel or the environment.
3. Ensure proper containment of laboratory and infectious waste during collection, transfer, and disposal.

General Precautions

- Use plastic instead of glass whenever possible. Routinely inspect glassware and remove from service items that are damaged, starred, cracked, or chipped.
- Make sure lighting is adequate and the work space is not crowded for the task at hand.
- Be alert at all times when handling sharps. Don't look away or become otherwise distracted while handling a sharp object.
- Select rounded or blunt end devices when practicable.
- Use cut-resistant gloves if practicable. In some cases, heavy rubber gloves (i.e., glassware washing) or double gloving (when manual dexterity is important) may be appropriate.
- Do not handle sharp objects (i.e., broken glass) with bare hands. Use mechanical devices.
- Do not leave unprotected sharps (i.e., razor blades, scalpel tips, etc.) on bench tops or loose in drawers. Use protective shields, cases, Styrofoam blocks, tube holders, etc.
- Protect the sharp when passing from one person to another. If not feasible, use verbal communication when passing.
- Use needle syringes only when absolutely necessary. If a needle syringe is absolutely necessary to the procedure, use a syringe that automatically resheathes the needle.
- Do not try to recap the needle of a syringe. An accidental puncture might occur.
- Used needles must not be bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal.
- Keep a sharps disposal container immediately accessible. Read the authorized sharps container manufacturer's instructions and recommended user training information prior to use.
- Broken glass must be discarded into a plastic-lined container with the label "Broken Glass", unless it is contaminated with biological materials. Broken glass contaminated with biological materials must be discarded in a red sharps disposal container.

Precautions for the Disposal of Sharps

- Ensure that appropriate sharps disposal containers are available in the immediate work area: The sharps disposal container must be labeled with a biohazard symbol. Sharps disposal containers must be rigid, leak and puncture proof, and sealable.
- Needles and needle-syringe units, whether infectious or not, must be placed in the sharps disposal container.
- Sharps disposal containers storing needles and syringes **cannot** be placed in the normal trash.
- Sharps disposal container must not be overfilled. This hazard should be reported to the lab manager or PI immediately upon notice. If the sharps container is overfilled, obtain a new container and use forceps or tongs to remove protruding devices and place them in the new container. Make sure the sharps container being used is large enough to accommodate the entire device. Notify EH&S for assistance in removing the hazard, if necessary.
- Do not try to retrieve items from sharps disposal containers.
- Never force materials into a sharps container.
- Safety hazards identified with the sharps disposal container, i.e. needles protruding from the container, needles not freely falling into the container, must be immediately reported to the lab manager or PI.

For additional information or assistance with handling or disposing of sharps, please contact the Division of Environmental Health & Safety at 813-974-4036