

### 20.0 CHAPTER 20 – HANDLING BIOHAZARDOUS AND MEDICAL WASTE

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#### 20.1 Definitions

##### Biohazardous Waste

- A. Laboratory waste including specimen cultures from medical and pathological laboratories; cultures and stocks of biohazardous materials from research; clinical and teaching laboratories; wastes from the production of biological agents; discarded live and attenuated vaccines; and culture dishes and devices used to transfer, inoculate and mix cultures or material which may contain any biohazards.
- B. Human blood (including articles contaminated with blood), components of blood or body fluids such as cerebrospinal fluid, synovial fluids, pleural fluid, peritoneal fluid, pericardial fluid, and amniotic fluid. An exception to this is when the body fluid contaminant will dry within a couple of hours and does not have enough liquid phase so as to drip from the article, that contaminated article may be treated as "Medical Solid Waste" (see below).
1. Any human or primate tissue.
  2. Sharps [objects or devices having acute rigid corners, edges or protuberances capable of cutting or piercing - including: glass pipettes (small and large), hypodermic needles, blades, slides and broken glass].
  3. Any specimens sent to a laboratory for microbiologic analysis.
  4. Surgical specimens including human or primate animal parts or tissues removed surgically or by autopsy.
  5. Such other waste materials that result from the administration of medical care to a patient by health care providers and are found by the administering agency or the local Health Officer to pose a threat to human health or the environment.
  6. **NOT ALL BIOHAZARDOUS WASTE IS MEDICAL WASTE.**

##### Medical Waste

The Medical Waste Management Act defines “**medical waste**” as biohazardous or sharps waste **and** waste which is generated or produced as a result of the diagnosis, treatment, or immunization of human beings/animals, research

pertaining to the diagnosis, treatment, or immunization of human beings/animals, production/testing of biologicals, or the accumulation of properly contained home-generated sharps waste. Environmental Health and Safety provides the following guidelines for medical waste:

**Please note:** Contact EH&S at (805) 893-8894 or (805) 450-6548, or visit our website at <http://ehs.ucsb.edu> if you need additional information regarding medical/biohazardous waste.

**All labs operating at Biosafety Level-2 using human or primate cells, cell lines, tissues, or body fluids, or infectious agents must dispose of materials as medical waste.**

### **Summary of Requirements for Biohazardous Waste**

- A. Insert a white or clear biohazard bag inside a rigid container and fold the edges over the lip of the container. (Note: orange bags may not be used for any purpose.)
- B. Place only biohazardous material in this container. (It must not be used for disposing of normal trash or sharps). Place sharps only in "sharps containers" designed specifically for that purpose.
- C. Keep a lid on the biohazardous materials waste container except when it is specifically in use.
- D. When the container is one-half to two-thirds full, close and tie off the inside bag, and then close and tie off the exterior bag. Remove the bag from the container and place autoclave tape on it.
- E. All biohazardous waste must be marked with "Biohazardous Waste" (or the biohazard symbol).
- F. Biohazardous waste transported outside the room of generation must be double bagged AND placed inside a rigid, leak-proof container with a leak-proof lid.
- G. Sharps (needles, glass pipettes, blades, etc.) must be placed in a rigid, puncture-resistant, tamper-proof container and labeled with the same information as in item E. above.
- H. All biohazardous waste must be decontaminated prior to disposal, either by autoclaving or chemical disinfection.

### **Summary of Requirements for Medical Waste**

- A. Insert a RED biohazard bag inside a rigid container and fold the edges over the lip of the container. Place a second red bag inside

the first so that biohazardous material waste will be double bagged. (Note: orange bags may not be used for any purpose.)

B. Place only biohazardous material in this container. (It must not be used for disposing of normal trash or sharps). Place sharps only in "sharps containers" designed specifically for that purpose.

C. Keep a lid on the biohazardous materials waste container except when it is specifically in use.

D. When the container is one-half to two-thirds full, close and tie off the inside bag, and then close and tie off the exterior bag. Remove the bag the from container and place autoclave tape on it.

E. All biohazardous waste must be marked with "Biohazardous Waste" (or the biohazard symbol).

F. Biohazardous waste transported outside the room of generation must be double bagged AND placed inside a rigid, leak-proof container with a leak-proof lid.

G. Sharps (needles, glass pipettes, blades, etc.) must be placed in a rigid, puncture-resistant, tamper-proof container and labeled with the same information as in item E. above.

H. All medical waste must be decontaminated prior to disposal, either by autoclaving, chemical disinfection or it must be transported off-site for treatment by an approved medical waste vendor.

## 20.2 Storage & Containment

### 20.2.1 Storage

Segregate from other waste at point of origin. Storage for untreated, bagged biohazardous waste must be secured to deny access to unauthorized personnel. Exterior doors must be marked in both English and Spanish:



**Maximum storage time:**

**7 days or less when stored above the temperature 32° F**

**OR**  
**90 days or less when stored below 0°C.**

### **20.2.2 Sharps**

- Needles and syringes shall not be clipped, bent, broken, sheared or recapped prior to disposal.
- Sharps must be disposed of in containers which are leak-proof, rigid, puncture-resistant and "tamper-proof" (made so that they cannot be reopened without great difficulty).
- Sharps containers must be labeled with "Biohazard" or "Infectious Waste," and the international biohazard symbol.

### **20.2.3 Transportation**

Any time biohazardous waste is moved outside the room in which it was generated, the material shall be transported in a closed, rigid secondary container as described below.

### **20.2.4 Secondary Containers**

- All white or red bags and sharps containers must be placed in secondary rigid containers such as pails, cartons, drums, dumpsters or bins for storage.
- Secondary containers must be leak-proof and have tight-fitting covers.
- Secondary containers must be labeled on the lid and sides with the words, "Infectious Waste," or with the international biohazard symbol and the word "Biohazard."
- Reusable secondary containers must be easy to clean and must be washed and decontaminated each time they are emptied, unless they have been completely protected from contamination.

## **20.3 Disposal of Infectious/Biohazardous Waste**

### **20.3.1 Medical Waste**

Medical waste must be disposed of in one of the following methods:

1. Autoclave using (as a minimum) the standards listed below, and dispose of in accordance with requirements of medical solid waste disposal.

2. Discharge into approved sewer system (liquids and semi-liquids only) after disinfection. Chemicals other than bleach may not be poured into the sewer.
3. Disposal off-campus at a state-approved autoclave or incinerator.
4. Recognizable human anatomical remains must be cremated or interred. Consult the College of Medicine Willard Body Program for further information.
5. Research animals containing infectious agents must be disposed as medical waste.

### **20.3.2 Autoclaving**

Autoclaving to render the waste noninfectious is the primary method used at UCSB to treat biohazardous waste before disposal. Autoclaved waste shall be disposed of as Medical Solid Waste provided it does not contain any other hazardous properties (e.g., radioactivity). Operating procedures for steam sterilizers must include, but not be limited to, the following:

1. Adoption of standard written operating procedures for each steam sterilizer, including time, temperature, pressure, type of waste, type of container(s), closure on container(s), pattern of loading, water content and maximum load quantity.
2. Check of recording and/or indicating thermometers during each complete cycle to ensure the attainment of a temperature of 121°C (250°F) for one-half hour or longer, depending on quantity and compaction of the load, in order to achieve sterilization of the entire load. Thermometers shall be checked for calibration at least annually.
3. Prepared under standard operating conditions, use of the biological indicator *Bacillus stearothermophilus* placed at the center of a load at least monthly to confirm the attainment of adequate sterilization condition.
4. Maintenance of records of procedures specified in 1, 2 and 3 above for a period of not less than three years. Maintain a log of the autoclave operation