



DEPARTMENT OF THE NAVY  
BUREAU OF MEDICINE AND SURGERY  
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IN REPLY REFER TO

BUMEDINST 6280.1A  
BUMED-24  
21 Jan 94

BUMED INSTRUCTION 6280.1A

From: Chief, Bureau of Medicine and Surgery  
To: Ships and Stations Having Medical Department Personnel

Subj: MANAGEMENT OF INFECTIOUS WASTE

Ref: (a) 29 CFR 1910.1030, Occupational Exposure to Bloodborne Pathogens

Encl: (1) Guidelines for Management of Infectious Waste  
(2) Treatment and Disposal Methods for Infectious Waste

1. Purpose. To provide minimal standards for the management of infectious waste at Navy medical and dental treatment facilities (MTFs and DTFs). This is a complete revision and must be read in its entirety.

2. Cancellation. BUMEDINST 6280.1.

3. Background

a. Concern about potential adverse environmental and public health effects of infectious waste noticeably increased after isolated incidents of improper disposal gained widespread media attention. While scientific evidence shows that infectious waste is no greater threat to the environment or public health than residential solid waste, medical facilities are perceived to be a source of pollution. This has prompted several states to enact severely restrictive infectious waste disposal regulations.

b. Waste from patient diagnosis, treatment, or immunization may be subdivided into two categories: Infectious and noninfectious waste. Effective plans should include the segregation, packaging and handling, storage, transportation, treatment, and disposal of infectious waste and should establish recordkeeping systems and personnel training programs. Enclosures (1) and (2) provide minimally acceptable infectious waste management standards for Navy MTFs and DTFs consistent with the requirements of reference (a).

4. Action. Commanders, commanding officers, and officers in charge shall:

a. Comply with State and local regulations or status of forces agreements.



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b. Ensure that guidelines in this document are adopted where State or local regulations are less restrictive or absent.



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## GUIDELINES FOR MANAGEMENT OF INFECTIOUS WASTE

### 1. Introduction

a. Exposure to infectious waste that could result in disease is more likely to occur in occupational settings that generate, transport, store, treat, or dispose of potentially infectious materials. Due to biological instability of most micro-organisms commonly regarded as human pathogens, the potential for adverse environmental or public health consequences is negligible.

b. Due to the perception that the risk from infectious waste is greater in the occupational setting, the employer must ensure that such wastes are properly managed on-site and that off-site transport and disposal are properly handled. Reference (a) establishes specific requirements for control of occupational exposure to bloodborne pathogens. The guidelines outlined below establish infectious waste management standards for Navy MTFs and DTFs consistent with these requirements.

2. Noninfectious Waste. Items determined to be noninfectious waste can be treated as general waste, using accepted methods of collection, storage, transport, and disposal. Examples are:

a. Used personal hygiene products such as diapers, facial tissues, and sanitary napkins, unless the waste is from isolation rooms or, in the case of sanitary napkins, originates from post partum suites or gynecological surgery wards.

b. Absorbent materials, not including waste from isolation rooms, containing very small amounts of blood or other body fluids.

### 3. Infectious Waste

a. Definition. Infectious waste is liquid or solid waste containing pathogens in sufficient numbers and of sufficient virulence to cause infectious disease in susceptible hosts exposed to the waste. Examples are:

(1) Sharps, including hypodermic needles, syringes, scalpel blades, suture needles, Pasteur pipettes, specimen slides, cover slips, glass petri plates, and broken glass contaminated with potentially infectious material.

(2) Microbiology wastes from cultures and stocks containing microbes that, due to their species, type, virulence, or concentration, are known to cause disease in humans. This includes specimens from medical and pathology laboratories,

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discarded live vaccines, wastes from production of biologicals, cultures and stocks of infectious agents from clinical research and industrial laboratories, and disposable culture dishes and devices used to transfer, inoculate, or mix cultures.

(3) Liquid or semi-liquid blood or other potentially infectious body fluids including semen, vaginal secretions, cerebrospinal fluid, pleural fluid, synovial fluid, pericardial fluid, amniotic fluid, saliva in dental procedures, and any body fluid visibly contaminated with blood. Also materials that could release blood or other potentially infectious body fluids in a liquid or semi-liquid state if compressed, items caked with dried blood, or other potentially infectious body fluids, capable of releasing these materials during handling, are classified as infectious waste.

(4) Pathological wastes, including human tissues and organs, amputated limbs or other body parts, fetuses, placentas, and similar tissues from surgery, delivery, or autopsy procedures. Animal carcasses, body parts, and bedding exposed to human pathogens are also included in this category.

(5) Medical items from isolation rooms contaminated or likely to be contaminated with blood or other potentially infectious materials.

b. Segregation

(1) Separate infectious waste from noninfectious waste at its point of origin. Infectious waste shall be placed in containers labeled with the universal biohazard symbol and the word "BIOHAZARD" or be red in color. Containers shall be lined with plastic bags of sufficient thickness, durability, puncture resistance, and burst strength to prevent rupture or leaks.

(2) Plastic bags should be of sufficient quality and thickness so that only one bag is needed for most situations. Bags shall be labeled or color coded per paragraph 3b(1) of this enclosure, and secured before being removed or replaced. Bags shall never be overloaded.

(3) Place sharps into rigid, puncture resistant sharps containers which are labeled or color coded per paragraph 3b(1) of this enclosure. Never clip, cut, bend, or recap needles or overfill containers. Sharps containers shall be closed before removal or replacement to prevent spillage or protrusion of contents during handling, storage, or transport.

c. Packaging and Handling

(1) Sharps containers shall be placed in a second container (plastic bag or rigid box) which is labeled or colored coded per paragraph 3b(1) of this enclosure before treatment and disposal.

(2) Minimize human exposure to infectious waste during transport to treatment or storage areas. Do not transport infectious waste in chutes or dumbwaiters.

(3) Place all anatomical pathology waste into double-wall corrugated boxes or equivalent rigid containers that are double-lined with plastic bags for transport and incineration in an infectious waste incinerator. Containers shall be labeled or color coded per paragraph 3b(1) of this enclosure. Ethical considerations may dictate using alternate means of disposal, such as cremation or burial by a licensed mortician. Logistic constraints may require freezing this material before final disposal.

(4) Blood and other potentially infectious liquid wastes.

(a) Blood, suctioned fluids, or other potentially infectious liquid waste may be decanted into clinical sinks (not hand washing sinks), unless this practice is prohibited by State or local regulations. Empty containers shall be treated as infectious waste.

(b) Commercially available absorbent materials which form a semirigid gel when added to liquids (gelatinization) may also be used to solidify blood and other potentially infectious liquid waste in suction canisters or other containers. Solidified, liquid infectious materials shall be treated as infectious waste.

(c) Bulk blood and other potentially infectious liquid waste which cannot be safely decanted (e.g., pleurovacs and hemovacs) or which has not been solidified shall be placed into rigid containers that are double-lined with plastic bags for transport and incineration. Containers must be labeled or color coded per paragraph 3b(1) of this enclosure.

(d) Suction canister waste from operating rooms shall be handled following paragraphs 3c(4)(a), (b), or (c) of this enclosure.

(5) Protective apparel or equipment such as gloves, coveralls, mask, and goggles appropriate for the risk level associated with a particular task shall be worn. Refer to reference (a) for further guidance.

d. Storage. If infectious waste cannot be treated on-site, the following storage requirements apply:

(1) Limit storage without refrigeration to 7 days, except in States with stricter requirements. Contact the local health department for specific information. Keep storage time to a minimum. Consider storage times when contracting for disposal.

(2) Store infectious waste in a designated storage area located at or near the treatment or transport site.

(a) Storage areas shall be constructed to prevent entry of rodents and other pests and kept clean.

(b) The universal biohazard symbol and the word "BIOHAZARD" shall be clearly visible on the outside of the storage area.

(c) Limit access to authorized personnel only.

e. Transportation

(1) Place infectious waste into rigid, leak-proof containers before transporting off-site. Containers shall be labeled or color coded per paragraph 3b(1) of this enclosure.

(2) Refer to Federal, State, and local laws, regulations, or status of force agreements for transportation requirements such as licensing and vehicle labeling.

f. Treatment and Disposal

(1) Infectious waste treatment is achieved through destruction, such as by incineration, or through inactivation by heat, chemicals, or radiation without disintegrating the cells.

(2) Infectious waste treatment and disposal regulations are not sufficiently uniform to allow a single treatment technique for all activities. In the absence of any Federal regulations about specific treatment methods, activities are required to comply with State and local regulations. Enclosure (2) provides generally accepted treatment and disposal methods for infectious waste.

(3) Infectious waste shall be sterilized and rendered noninfectious before compacting or grinding. Bureau of Medicine and Surgery (MED-04) approval is required before the purchase or lease of an infectious waste treatment system. Any new treatment techniques submitted for approval shall be acceptable to local regulating authorities, shall have scientific evidence of

efficacy, and shall have successful use elsewhere for a minimum of 2 years.

(4) In areas without infectious waste management regulations, sharps and potentially infectious medical laboratory waste shall be treated as prescribed in enclosure (2) before disposal.

g. Manifesting and Recordkeeping

(1) Develop a practical system to monitor disposal of infectious waste. This system shall include: date, type of waste, amount (weight, volume, or number of containers), and disposition.

(2) If infectious waste is transported off-site, the receiving facility shall provide written documentation of proper treatment and disposal.

h. Training. All employees with occupational exposure to infectious waste shall receive training at the time of initial assignment to tasks and annually, thereafter. Content of the training is outlined in reference (a). Employees shall receive supplemental training whenever new procedures or processes are initiated. All training shall be documented as required by reference (a).

i. Safety and Occupational Health. Safety and occupational health requirements for personnel with occupational exposure to infectious waste are described in reference (a).

4. Cleanup of Infectious Waste Spills

a. Infectious waste spills shall be cleaned up immediately.

b. Personnel shall wear appropriate protective apparel or equipment, such as gloves, coveralls, mask, and goggles, to prevent exposure to infectious waste when cleaning up spills.

c. Place leaking or broken containers in a new, double-lined container. The container shall be labeled or color coded as in paragraph 3b(1) of this enclosure. Remove blood and body fluid spills with an absorbent material and disinfect the area with an Environmental Protection Agency approved disinfectant or a solution of household bleach diluted 1:10 with clear water.

TREATMENT AND DISPOSAL METHODS FOR INFECTIOUS WASTE		
<u>Types of Infectious Waste</u>	<u>Methods of Treatment</u>	<u>Methods of Disposal</u>
Microbiological	Steam Sterilization <sup>1</sup> Chemical Disinfection <sup>2</sup> Incineration <sup>3</sup>	Sanitary Landfill
Pathological <sup>5</sup>	Incineration <sup>3 &amp; 4</sup> Cremation	Sanitary Landfill Burial <sup>6</sup>
Bulk Blood and Other Potentially Infectious Liquids	Gelatinization <sup>6</sup>	Sanitary Sewer <sup>7</sup> Sanitary Landfill <sup>8</sup>
Sharps in Sharps Containers	Steam Sterilization Incineration	Sanitary Landfill Sanitary Landfill

<sup>1</sup> For effective sterilization, the temperature must be maintained at 121° C (250° F) for at least 90 minutes, at 15 pounds per square inch of gauge pressure. Bacillus stearothermophilus spore strips must be used weekly to test the sterilization process.

<sup>2</sup> Chemical disinfection is most appropriate for liquids.

<sup>3</sup> Ash remaining after incineration may go directly to the sanitary landfill, unless State or local regulations require testing the ash for characteristics of hazardous waste.

<sup>4</sup> Disposal of placentas by grinding with subsequent discharge to a sanitary sewer is acceptable, unless prohibited by county or local laws or regulations.

<sup>5</sup> Burial or cremation is acceptable.

<sup>6</sup> Must be further treated by steam sterilization or incineration.

<sup>7</sup> Discharge to a sanitary sewer is acceptable, unless prohibited by county or local laws or regulations.

<sup>8</sup> Must be treated by steam sterilization or incineration before landfill disposal.