

SCOPE & DEFINITIONS

This chapter contains criteria for the management of medical waste at DoD medical, dental, research and development, and veterinary facilities generated in the diagnosis, treatment, or immunization of human beings or animals or in the production or testing of biologicals subject to certain exclusions. This also includes mixtures of medical waste and hazardous waste. It does not apply to what would otherwise be household waste.

Cytostatic Wastes – Any waste produced from cytostatic medicaments with the potential for carcinogenic, mutagenic, and/or teratogenic properties.

Infectious Agent – Any organism (such as a virus or a bacterium) that is capable of being communicated by invasion and multiplication in body tissues and capable of causing disease or adverse health impacts in humans.

Infectious Hazardous Waste – Mixtures of infectious medical waste and hazardous waste to include solid waste such as fluid from a parasitology laboratory.

Infectious Medical Waste – Solid waste produced by medical and dental treatment facilities which is specially managed because it has the potential for causing disease in man and may pose a risk to both individuals or community health if not managed properly, and which includes the following classes:

- Microbiology waste, including cultures and stocks of etiologic agents which, due to their species, type, virulence, or concentration are known to cause disease in humans.
- Pathology waste, 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, blood, and bedding are also included.
- Human blood and blood products (including serum, plasma, and other blood components), items contaminated with liquid or semi-liquid blood or blood products, and items saturated or dripping with blood or blood products, and items caked with blood or blood products, that are capable of releasing these materials during handling.
- Potentially infectious materials including human body fluids such as semen, vaginal secretions, cerebrospinal fluid, pericardial fluid, pleural fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids.
- Sharps, including hypodermic needles, syringes, biopsy needles and other types of needles used to obtain tissue or fluid specimens, needles used to deliver intravenous solutions, scalpel blades, pasteur pipettes, specimen slides, cover slips, glass petri plates, and broken glass potentially contaminated with infectious waste.

- Infectious waste from isolation rooms, but only including those items which were contaminated or likely to be contaminated with infectious agents or pathogens to include excretion exudates and discarded materials contaminated with blood.

Noninfectious Medical Waste – Solid waste created that does not require special management because it has been determined to be incapable of causing disease in man or which has been treated to render it noninfectious.

Solid Waste – Any solid waste as defined in Chapter 7 (Solid Waste).

Treatment (of Medical Waste) – Any method, technique, or process designed to change the physical, chemical, or biological character or composition of any infectious hazardous or infectious waste so as to render such waste non-hazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume. Treatment methods for infectious waste must eliminate infectious agents so that they no longer pose a hazard to persons who may be exposed.

CRITERIA

C8.1 SEPARATION OF INFECTIOUS MEDICAL WASTE

Infectious medical waste will be separated from other solid waste at the point of origin.

C8.2 MIXTURES OF INFECTIOUS MEDICAL WASTE & HAZARDOUS WASTE

Mixtures of infectious medical waste with any other waste will be avoided to the maximum extent possible. If accidental mixing does occur, the resultant waste will be handled and disposed of as infectious hazardous waste under DoD Directive 4160.21M and are the responsibility of the generating DoD Component. Priority will be given to the hazard that presents the greatest risk. Defense Reutilization and Marketing Offices (DRMOs) have no responsibility for this type of waste until it is rendered noninfectious as determined by the appropriate DoD medical authority.

C8.3 SOLID WASTE

Solid waste that is classified as a hazardous waste in accordance with Appendix B1 will be managed in accordance with the criteria in Chapter 6. Solid waste that is comparable to municipal solid waste (as defined in Chapter 7) will be managed and disposed of in accordance with Chapter 7.

C8.4 MIXTURES OF OTHER SOLID WASTE

Mixtures of other solid waste and infectious medical waste will be avoided to the maximum extent possible. If accidental mixing does occur, the resultant waste will be handled as infectious medical waste.

C8.5 RADIOACTIVE WASTE

Radioactive medical waste will be segregated from other waste streams and managed in accordance with Service Directives.

C8.6 INFECTIOUS MEDICAL WASTE RECEPTACLES

Infectious medical waste will be segregated, transported, and stored in color-coded bags or receptacles a minimum of 3 mils thick having such durability, puncture resistance, and burst strength as to prevent rupture or leaks during ordinary use and that meet the UNE 53-147-85 standard.

C8.7 MARKING OF STORAGE BAGS

All bags or receptacles used to segregate, transport, or store infectious medical waste will be clearly marked with the universal biohazard symbol and the following words and will include marking that identifies the generator, date of generation, and the contents.

BIOHAZARD

Residuo de Riesgo / Dangerous Waste

Containers for cytostatic waste should be externally labeled with the following words and the corresponding universal symbol for cytostatic products.

Residuos contaminados químicamente - Citostáticos / Chemically contaminated wastes –
Cytostatic

C8.8 SHARPS

Sharps will only be discarded into rigid receptacles. Needles shall not be clipped, cut, bent, or recapped before disposal.

C8.9 INTERNAL STORAGE & TRANSPORTATION

Infectious medical waste will be transported and stored to minimize human exposure, and will not be placed in chutes or dumbwaiters.

C8.10 COMPACTION

Infectious medical waste will not be compacted unless converted to noninfectious medical waste by treatment as described in C8.17. Containers holding sharps will not be compacted.

C8.11 ANATOMICAL PATHOLOGY WASTE

All anatomical pathology waste (i.e., large body parts) must be placed in containers lined with plastic bags that comply with C8.6, and may only be disposed of by burial after being treated for disposal by incineration or cremation.

C8.12 BLOOD & LIQUID WASTES

Blood, blood products, and other liquid wastes will be managed as follows:

- C8.12.1 Disposal of bulk blood or blood products or potentially infectious or infectious liquid waste into clinical sinks is not allowed. These liquid wastes must be contained in receptacles having puncture resistance and burst strength to prevent rupture or leaks and disposed of in accordance with C8.17.
- C8.12.2 Suction canister waste from operating rooms will be sealed into leak-proof containers and incinerated.
- C8.12.3 Non-infectious liquid waste may be disposed through clinical sinks in quantities less than 100 ml. Emptied containers will be disposed of in accordance to C8.17.

C8.13 PROTECTIVE APPAREL

All personnel handling infectious medical waste will wear appropriate protective apparel or equipment (such as gloves, coveralls, mask, and goggles) sufficient to prevent the risk of exposure to infectious agents or pathogens. The clinic/hospital manager or appropriate DoD Medical Authority will determine the required type of protective apparel or equipment based on a risk evaluation of the activity/task.

C8.14 MANAGEMENT OF STORED WASTE

If infectious medical waste cannot be treated on-site, it will be managed during storage as follows:

- C8.14.1 Infectious medical waste will be maintained in a non-putrescent state, using periodic disinfection and refrigeration as necessary.
- C8.14.2 Infectious medical waste with multiple hazards (i.e., infectious hazardous waste, or infectious radioactive waste) will be segregated from the general infectious waste stream.

- C8.14.3 Medical waste (other than sharps containers) collected in temporary storage areas within the medical facility will be transported to the main storage area within 12 to 24 hours of generation. Sharps containers can be used until full, at which time they will be transported to the main storage area. Medical waste may be stored in the main storage area for 48 to 72 hours, or up to 1 week if refrigerated (at 4-15°C).

C8.15 STORAGE SITES

Storage sites must be:

- C8.15.1 Specifically designated
- C8.15.2 Constructed to prevent entry of insects, rodents, and other pests
- C8.15.3 Prevent access by unauthorized personnel
- C8.15.4 Marked on the outside with the universal biohazard symbol and the word "BIOHAZARD" in both English and Spanish.

C8.16 TRANSPORTATION CONTAINERS

Bags and receptacles containing infectious medical waste must be placed into rigid or semi-rigid, leak-proof containers before being transported off-site.

C8.17 TREATMENT

Infectious medical waste must be treated in accordance with Table 8.1 and the following before disposal:

- C8.17.1 Sterilizers must maintain the temperature at 121°C (250°F) for at least 30 minutes at 15 psi. The operating conditions for each sterilization cycle (e.g., temperature, pressure, and time) must be monitored and recorded in a logbook (see C8.3.20).
- C8.17.2 The effectiveness of sterilizers must be checked at least weekly using *Bacillus stearo thermophilus* spore strips or an equivalent biological performance test.
- C8.17.3 Commercial incinerators used to treat medical waste must hold a valid Spanish operating permit. The incinerator must be designed and operated to maintain a minimum temperature and retention time sufficient to destroy all infectious agents and pathogens, and must meet applicable criteria in Chapter 2 for air emissions.

Installations that intend to operate a medical waste incinerator will provide the Spanish Base Commander with sufficient information to seek an operating permit for their unit (see Chapter 1 for the process). A technical report (with the facility's design specifications) and an annex with the corresponding environmental information must be submitted with the permit request.

- C8.17.4 Ash or residue from the incineration of infectious medical waste must be assessed for classification as hazardous waste in accordance with the criteria in Chapter 6. Ash that is determined to be hazardous waste must be managed in accordance with Chapter 6. All other residue will be disposed of in a landfill that complies with the criteria of Chapter 7.
- C8.17.5 Chemical disinfection must be conducted using procedures and compounds approved by appropriate DoD medical authority for use on any pathogen or infectious agent suspected to be present in the waste.

C8.18 CONTINGENCY PLANS

Installations will develop contingency plans for treatment or disposal of infectious medical waste, in case the primary means become inoperable.

C8.19 SPILLS

Spills of infectious medical waste will be cleaned up as soon as possible in accordance with the following:

- C8.19.1 Response personnel must comply with C8.13
- C8.19.2 Blood, body fluid, and other infectious fluid spills must be removed with an absorbent material that must then be managed as infectious medical waste.
- C8.19.3 Surfaces contacted by infectious medical waste must be washed with soap and water and chemically decontaminated in accordance with C8.17.5

C8.20 RECORD-KEEPING

Installations will keep records of the following information concerning infectious medical waste for at least 5 years after the date of disposal:

- C8.20.1 Type and origin of waste
- C8.20.2 Amount of waste (volume or weight), waste composition, and identification of the waste
- C8.20.3 Storage period (including beginning and ending dates) if the waste is stored on base
- C8.20.4 A loading/unloading register (logbook) for infectious medical waste
- C8.20.5 Treatment, if any, including date of treatment

- C8.20.6 Disposition, (including date of disposition); if the waste is transferred to Spanish facilities, copies of the waste manifest (Hoja de Control y Seguimiento) and request for acceptance (Solicitud de Admisión) for each transfer

ADMINISTRATIVE ITEMS

1. Installations that intend to operate a medical waste incinerator will provide the Spanish Base Commander with sufficient information to seek an operating permit for their unit (see Chapter 1 for the process). A technical report (with the facility's design specifications) and an annex with the corresponding environmental information must be submitted with the permit request.

Table 8.1 – Treatment & Disposal Method for Infectious Medical Waste

Type of Medical Waste	Method of Treatment	Method of Disposal
Microbiological	Steam sterilization ¹	Hazardous waste landfill (HWLF) ²
	Chemical disinfection	HWLF ²
	Incineration	HWLF ²
Pathological	Incineration ³	HWLF ²
	Cremation ³	HWLF ²
	Chemical sterilization	HWLF ²
	Steam sterilization	HWLF ²
Bulk blood & suction canister waste	Steam sterilization ⁴	HWLF ²
	Incineration ⁴	HWLF ²
Sharps in sharps containers	Steam sterilization	HWLF ²
	Incineration	HWLF ²

Notes:

1. Preferred method for cultures and stocks because they can be treated at point of generation.
2. As defined in Chapter 6. See C6.10.6 for the land disposal requirements.
3. Anatomical pathology waste (i.e., large body parts) must be treated either by incineration or cremation prior to disposal.
4. Bulk blood or suction canister waste known to be infectious must be treated by incineration or steam sterilization before disposal.