

OLD DOMINION UNIVERSITY

REGULATED MEDICAL WASTE MANAGEMENT GUIDELINES



**Prepared by the Environmental Health & Safety Office
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1 Introduction

It is the intent of Old Dominion University (ODU) to comply with state and federal regulations regarding management of regulated medical waste. In this regard, generators of regulated medical waste are responsible for proper handling, storage and disposal of these wastes. This guide provides procedures to ensure regulated medical waste is properly handled. Central management of the program is under the Environmental Health and Safety Office (EHSO). Questions about the program should be directed to the EHSO.

Reference: Regulated Medical Waste Management Regulations, June 19, 2002,
Commonwealth of Virginia
Department of Environmental Quality
VR 672-40-01:1/9VAC20-120

2 Characteristics of Regulated Medical Waste

GENERAL

A waste shall be considered capable of producing an infectious disease if it has, or it may have, been contaminated by an organism that is pathogenic to humans, such organism is not routinely and freely available in the community and if such organism has a significant probability of being present in sufficient quantities and with sufficient virulence to transmit disease.

Specific categories of regulated medical waste are:

Cultures and stocks of microorganisms and biologicals

Discarded cultures, stocks, specimens, vaccines and associated items that may be pathogenic to humans. Discarded etiologic agents and waste from the production of biologicals and antibiotics that may have been contaminated by organisms pathogenic to humans.

Blood and blood products

Waste consisting of human blood, human blood products (includes serum, plasma, etc.) and items contaminated by free-flowing human blood.

Tissues and other anatomical wastes

All human anatomical wastes that are human tissues, organs, body parts, or body fluids.

Sharps

Sharps likely to be contaminated with organisms that are pathogenic to healthy humans, and all needles, syringes with attached needles, suture needles, and scalpels are regulated medical wastes. This includes sharps generated through veterinary practice.

Animal carcasses, body parts, bedding and related wastes

When animals are intentionally infected with organisms likely to be pathogenic to healthy humans for the purposes of research, in vivo testing, production of biological materials or any other reason; the animal carcasses, body parts, bedding material and all other wastes likely to have been contaminated are regulated medical wastes when discarded, disposed of or placed in accumulated storage.

Miscellaneous waste

Any residue or contaminated soil, water, or other debris resulting from the clean up of a spill of any regulated medical waste. Any waste contaminated by or mixed with regulated medical waste.

3 Exclusions

NON-REGULATED WASTE

The following solid wastes and medical wastes are not subject to the requirements of this guide:

1. Meat or other food items being discarded because of spoilage or contamination, and not included in section 2 above.
2. Garbage, trash, and sanitary waste from septic tanks and sewage holding tanks that has been generated at any of the following locations: single or multiple residences, hotels, motels, bunkhouses, ranger stations, crew quarters, campground, picnic grounds and day-use recreation areas, except for regulated medical waste resulting from the provision of professional health care services on the premises, provided that all medical sharps discarded at those locations are placed in an opaque container with a high degree of puncture resistance and labeled "do not recycle, medical sharps" or otherwise managed in accordance with a local "safe sharps" program before being mixed with other wastes or disposed.
3. Used products for personal hygiene, such as diapers, facial tissues and sanitary napkins, underpads and adult incontinence products, unless a health care professional has determined these items to be regulated medical wastes in accordance with section 2 above.
4. The following discarded items, when they are empty: urine collection bags and tubing, suction canisters and tubing, IV solution bags and tubing, colostomy bags, ileostomy bags, urostomy bags, plastic fluid containers, enteral feeding containers and tubing, hemovac, and urine specimen cups, unless the items are subject to regulation under The Occupational Health and Safety Administration (OSHA) or comparable state or federal standard.
5. The following discarded items: urinary catheters, suction catheters, plastic cannula, IV spikes, nasogastric tubes, oxygen tubing and cannula, ventilator tubing, enema bags and tubing, enema bottles, thermometer probe covers, irrigating feeding syringes, and bedpans/urinals, unless the items are subject to regulation under OSHA or comparable state or federal standard.
6. Items such as bandages, gauze, or cotton swabs or other similar absorbent materials unless at any time following use they are saturated or would release human blood or human body fluids in a liquid or semiliquid state if compressed. Items that contain or that are caked with dried human blood or human body fluids and are capable of releasing

these materials during handling are regulated medical waste. An item would be considered caked if it could release flakes or particles when handled.

7. Regulated medical waste that has been treated by steam sterilization (as per section seven of this guide).

4 Packing and Labeling Requirements

GENERAL

Segregation of regulated medical waste at the point of generation is essential to ensure proper handling and worker safety. Waste generators are responsible for ensuring regulated medical waste is discarded directly into clearly identifiable containers and labeled as described below. Improperly packaged regulated medical waste will be returned to the generator for repackaging. Regulated medical waste must be packaged and labeled before it is stored, treated, transported or disposed of. Persons packaging regulated medical waste shall wear heavy gloves of latex (22 mil gauge minimum) or equivalent material and other items consistent with level of hazard.

PACKAGING

This section refers to waste accumulated at the site of generation.

- All bags containing regulated medical waste shall be red in color and leak-proof, including bags used in steam sterilization. Any waste contained in red bags shall be considered regulated medical waste and handled as such.
- Free liquids shall be contained in sturdy highly leak resistant containers that resist breaking.
- Sharps shall be placed directly in approved, rigid puncture resistant containers at the point of generation.
 - Approved sharps containers are rigid, leak-proof, puncture resistant boxes of various sizes made of hard red plastic, with a lid that can be securely sealed to keep contents from falling out, and clearly marked with the bio-hazard symbol.
- All bags shall be filled no more than **3/4 full**.
- All bags and containers shall be labeled according to the labeling section below.
- As bags and containers become full, they shall be sealed such that no waste materials can leak.

- Bags and containers shall be placed in a fiberboard disposal box immediately once full or treated via steam sterilization.

This section refers to waste prepared for transportation to the University's contracted disposal facility.

- Regulated medical waste shall be placed in the red bags and corrugated fiberboard boxes that are provided by the University's regulated medical waste disposal contractor. One bag shall be used to line the box.
- Liquids may be placed in the box; however, free liquids in excess of 20cc shall be contained in sturdy highly leak resistant containers that resist breaking, prior to being placed in the box.
- Sharps containers shall be closed and placed inside a plastic bag prior to being placed in the box.
- The contents of the box shall not exceed 45lbs.
- When the bag is full, it shall be sealed by lapping the gathered open end and then binding it with tape or a closing device such that no liquid can leak. The box shall be closed and all seams shall be taped with clear packaging tape to prevent leakage.
- The label on the box shall be completed according to the labeling section below.

LABELING

This section refers to labeling bags and containers at the site of generation.

- All bags and containers shall display a label with the biological hazard symbol and the words "Potentially Infectious Material" and "Autoclave Bag" on the bags.
- The label shall be securely attached to the outer layer of packaging and be legible. The label may be a stick-on or tied-on tag affixed to the package or pre-labeled package.
- All bags, sharps containers shall include a label/markings with the following information: Researchers Name and Lab number.

This section refers to labeling the disposal boxes.

- The disposal boxes come pre-printed with the applicable labeling required for transport. Indelible ink shall be used to complete the generator information section on the box.
- Prior to putting any waste in the box, the following generator information shall be completed: name, address, city, state, zip code and business phone number. The date of shipment and manifest number will be completed by the contractor when the waste is picked up.

5 Waste Storage

GENERAL

Storing small quantities (less than 64 gallons) of regulated medical waste awaiting transportation to a collection area or disposal site is permissible as long as the packaging and labeling requirements of section four and conditions of this section are met. Areas designated for storage shall have controlled access, i.e., locked room. Carpets and floor coverings with seams should not be used in storage areas. Vectors shall be controlled.

6 Waste Pick-Ups

WASTE PREPARATION, LAB PERSONNEL:

Containerize all medical wastes in accordance with this *Guideline*.

When the Medical Waste box/bag is filled, seal the bag liner and box and notify EHSO (x 4495) for pick-up; or

Waste will be picked up on your scheduled date as indicated below.

- **Dental Hygiene** (pick-up every 3rd week)
- **Student Health** (pick-up every 3rd week)

Where pick-ups are infrequent or limited, contact EHSO (x 4495) to arrange for pick-up.

WASTE PICK-UP BY ENVIRONMENTAL HEALTH & SAFETY OFFICE (EHSO):

Regulated Medical Waste will be collected from clinics and laboratories by the EHSO or other designee.

Waste that is not appropriately packaged will not be picked up. The EHSO will call the attention of the supervisor in the lab or clinic the packaging deficiency/hazard or request his supervisor to do the same. This may result in:

- Education of the Lab/Clinic Personnel, or
- Demonstration of appropriate packaging in leak-proof impervious containers, or
- Recommendation for purchase of alternative receptacles by clinic or lab to adequately contain their waste per OSHA requirements.

All waste will be double bagged and placed in an outer container, such as a polyethylene bucket or corrugated fiberboard box and labeled in accordance with section four.

Collection carts should not leak if original waste packaging is appropriate. Impervious material may be used for cart lining to ensure containment.

- External contamination should be cleaned to prevent exposure during use.
- If the interior of the receptacle is contaminated, it must be cleaned to prevent exposure/cross contamination during use.
- If the interior of receptacle is filled with blood or body fluid, this suggests that inappropriate liquid specimens are being disposed of. Education of staff may be needed.

The waste will be transported to the EH&S laboratory or to one of the permitted on-site autoclaves.

Bags and containers shall be placed in a fiberboard disposal box immediately once full or treated via steam sterilization as instructed in section 7 below.

7

Treatment and Disposal

GENERAL

Regulated medical waste shall be disposed of only by 1) steam sterilization (autoclaving) followed by placement in the solid waste stream or 2) incineration by a licensed regulated medical waste disposal facility. Incineration of regulated medical waste in the Biology incinerator is not permitted.

STERILIZATION

Whenever regulated medical waste is treated in a steam sterilizer, the waste shall be subject to the following operational standards (at one hundred percent steam conditions and all air evacuated):

- Temperature of not less than 250 degrees Fahrenheit for 90 minutes at 15 pounds per square inch of gauge pressure,
- Temperature of not less than 272 degrees Fahrenheit for 45 minutes at 27 pounds per square inch gauge pressure, or
- Temperature of not less than 320 degrees Fahrenheit for 16 minutes at 80 pounds per square inch gauge pressure.

STERILIZATION CONTROLS AND RECORDS

- Each package of waste sterilized must have a tape attached that will indicate if the sterilization temperature has been reached. Waste is not satisfactorily sterilized if the indicator fails to indicate proper temperature was achieved during the process.
- Steam sterilization units shall be evaluated under full loading for effectiveness with spores of *B. stearothermophilus* no less than once per month.
- A log shall be kept at each steam sterilization unit that is complete for the proceeding three-year period. Entries shall include the date, time, and operator of each usage; the type and approximate amount (pounds) of waste treated; the post sterilization reading of the temperature sensitive tape, dates and result of calibration and monthly effective testing with *B. stearothermophilus*.

Note: Waste shall not be compacted or subjected to violent mechanical stress before sterilization. After sterilization it may be compacted in a closed container.

DISPOSAL

- The Environmental Health and Safety Office will establish an annual contract with a vendor to remove regulated medical waste generated on campus.
- Regulated medical waste shall only be transported for disposal by transporters registered with the Virginia Department of Waste Management and to incineration facilities permitted by the State Air Pollution Control Board.
- Treated waste contained in red bags and steam sterilized shall be placed in orange plastic bags, sealed and disposed of via the solid waste stream. The bag shall have a label placed on it with the following message in indelible ink and legible print of a 21 point or greater typeface stating:

"The generator certifies that this waste has been treated in accordance with the Virginia Regulated Medical Waste Management Regulations and is no longer regulated medical waste.

Treated: _____ (include date treatment performed)

Generator: _____ (include name, address and telephone number of generator) _____"

WASTE DISPOSAL BY A WASTE CONTRACTOR:

A contract with a commercial waste disposal service will be maintained. Medical waste will be removed by this service when on-site waste treatment is not feasible.

The waste contractor will be notified to arrange for pick-up when 4 boxes of RMW have accumulated in the EH&S lab.

8

Transporting Waste on Campus

GENERAL

Regulated medical waste shall only be transported from point of generation to a storage area within your department/building or to designated steam sterilizers for treatment. Prior to transporting, the red bags must be placed in an outer container, such as a polyethylene bucket or corrugated fiberboard box and labeled in accordance with section four.

The waste in the cart or container must be packaged and labeled in accordance with this guideline.

Immediately following each time a reusable cart or container is emptied and prior to being reused it is thoroughly cleaned with detergent or general purpose disinfectant.

When reusable carts or containers containing regulated medical waste are used for off-site transport, all aspects of the cart or container management shall comply with federal Department of Transportation Hazardous Material Regulations 49 CFR Parts 171 to 178, as applicable.

9 Training

GENERAL

Clinics and laboratories generating regulated medical waste shall instruct assigned personnel in packaging, labeling, storage and disposal requirements of this guide. Additionally, individuals assigned to treat regulated medical waste by steam sterilization shall attend bloodborne pathogens training and shall be aware of autoclave temperature, pressure, time and performance testing and record keeping requirements.

Records of training shall be maintained by each generator for verification.

10 Management of Waste Spills

GENERAL

Spills of regulated medical waste must be cleaned up immediately to prevent further contamination of the area. This shall be handled only by personnel who have met all training and vaccination requirements of the University's Bloodborne Pathogens Program. Clinics and laboratories shall maintain a supply of the following materials:

- Material designed to absorb liquids, such as absorbent pads or blankets, depending on quantity of liquid waste likely to be present.
- One gallon of hospital grade disinfectant effective against mycobacteria, with a spray bottle capable of discharging its content in a mist and stream.
- Two sets of liquid impermeable and disposable coveralls, with boots, gloves, and protective breathing devices (surgical masks). Tape to seal the coveralls at wrists and ankles shall be available.
- Red plastic bags, sealing tape and biohazard labels or tags. The bags shall be large enough to over-pack containers normally used to store regulated medical waste.
- A fire extinguisher, boundary marking tape and other appropriate safety equipment.

Note: These materials should be kept within the vicinity of any area where regulated medical waste is managed; however, the materials may be kept in a central location in a building as long as the materials are easily accessible and a rapid and efficient cleanup of spills can be accomplished.

SPILL CONTAINMENT AND CLEAN UP

Upon spilling waste or finding regulated medical waste that has been spilled, take immediate steps to prevent further loss of material by establishing a barrier around the material to prevent its spread. Then take the following steps:

- Leave the area until the aerosol settles (if applicable).
- Clean up crew shall don personal protective clothing and secure the spill area.
- Spray the broken containers of regulated medical waste with disinfectant.
- Place broken containers and spillage inside over-pack bags, minimizing exposure.
- Disinfect the area and take other steps deemed appropriate.
- Clean and disinfect non-disposable items.
- Clean and disinfect protective clothing before removing.
- Remove protective clothing and place disposable items in waste bag.
- Replenish containment and cleanup kit.
- Prepare a waste report documenting the date, location, nature of regulated medical waste involved, and describe the incident, cleanup procedures and disposition of wastes. Forward on copy to the Environmental Health and Safety Office and keep the original.