

Environment, Health & Safety

**INTERIM GUIDANCE ON MANAGING THE REGULATED MEDICAL WASTE STREAM AT THE
UNIVERSITY OF BUFFALO**

7-27-04

All responsible individuals who generate, package, store or offer for off-site transport and disposal of biohazardous waste should be familiar with the current New York State regulations under 6 NYCRR 360-10, 360-17, and 364-9 (Department of Environmental Conservation [DEC] Regulations; and 10 NYCRR 70-1 and 70-3 (New York State Department of Health [DOH] Regulations. Online version of New York State guidance available at <http://www.health.state.ny.us/nysdoh/envIRON/waste.htm>.

The general definitions states "Regulated Medical Waste (RMW) shall mean any of the following waste which is generated in the diagnosis, treatment or immunization of human beings or animals, in research pertaining thereto, or in production and testing of biologicals":

Sharps:

- Discarded used or unused needles (even if not exposed to any infectious agents), hypodermic needles, complete syringes (needle & syringe body)
- Pasteur pipettes, scalpel blades and razor blades
- Broken glass, broken plastic Petri dishes, rigid plastic culture tubes, flasks, beakers and other lab ware in contact with infectious agents
- Blood vials used in animal or human patient care, medical research, and clinical laboratories
- Broken or unbroken glass slides and their covers that have been in contact with infectious agents

NOTE: RMW exceptions - Syringe barrels

When only the barrel of a syringe unit is used (no attached needle) and it did not come in contact with infectious agents, chemical, or radioactive materials, it can be disposed of as solid waste, not RMW. However, syringe barrels must be collected in a sturdy fiberboard box that can be taped closed and that will not break open during normal handling. Syringe barrels should not be discarded freely in a trash container.

NOTE: Disposal of Plastic Pipettes as Sharps

While technically not considered sharps by the NY DEC, plastic pipettes if discarded in plastic red bags will puncture the light weight plastic material. We therefore strongly recommend that contaminated plastic pipettes be disposed of in sharps containers.

Cultures and Stocks:

- Agents infectious to humans (those that require biosafety level 2 and 3 containment), including cultures and stocks from medical, pathological, or research laboratories, and their associated biologicals
- Wastes from the production of biologicals (e.g., biologicals defined as serums, vaccines, antigens, antitoxins, cell lines, and cultures), as well as materials used for cleanup of spills
- Discarded live or attenuated vaccines, biological toxins
- Systems used to grow and maintain infectious agents in vitro, including, but not limited to nutrient agars, gels, and broths

- Culture dishes and devices used to transfer, inoculate or mix cultures, including, but not limited to: plastic or glass plates, paper, gloves, growth media, gels, filters, stoppers, plugs, flasks, inoculation loops and wires, contaminated pipette tips, tubes, stirring devices, jars, etc.
- Cell lines- human, primate, and any other animal (mammalian) cell lines, even in the absence of overt contamination, may contain latent viruses and/or other opportunistic pathogens or zoonotic agents (capable of transmitting disease from animals to man). Therefore, these materials must be disposed of as RMW in New York State.

Human Blood, Blood Products, and Human Pathological Wastes:

- Discarded waste blood and/or blood components (e.g., serum, plasma)
- Containers and/or materials containing free-flowing blood or blood components, and materials saturated with blood or blood products
- Tissue, organs, body parts, body fluids removed during autopsy, or other medical procedures
- Specimens of body fluids and their containers and discarded material saturated with such body fluids (other than urine). Human body fluids include: blood, cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, amniotic fluid, and any body fluid that is visibly contaminated with blood. NOTE: RMW Exceptions
- Feminine hygiene products used to absorb menstrual flow, along with
- bandages and gauze, for example, are not RMW. Organs and tissues fixed for histological or cytological examinations must be processed as hazardous waste since the fixatives used are considered to be hazardous chemicals.

NOTE: Universal Precautions Application

All individuals handling human blood and/or blood products must comply with the OSHA Blood-Borne Pathogen Standard 29 CFR 1910 and follow Universal Precautions.

Animal Wastes:

- carcasses, body parts, body fluids, blood, or bedding from animals known to be contaminated with infectious agents (e.g., zoonotic organisms) or from animals inoculated during research, production of biologicals, or pharmaceutical testing with infectious agents. Exposure to a known infectious agent is necessary before the waste is considered RMW.

Other:

- Waste generated at Biosafety Level 2 and 3 are regarded as regulated medical waste. Additionally, regulated medical waste cannot contain any hazardous chemical or radioactive waste components. The biological component must first be decontaminated and then treated as chemical or radioactive waste.
- Laboratories operating at Biosafety Level 1 produce wastes that can be decontaminated by autoclaving, and then disposed of in the regular trash.

NOTE: THIS DOCUMENT SPECIFICALLY ADDRESSES RMW. ALL INVESTIGATORS USING BIOLOGICAL MATERIALS MUST PERFORM A RISK ANALYSIS AND IMPLEMENT ALL NECESSARY CONTROL MEASURES TO PREVENT THE RELEASE OF ANY ORGANISM, AGENT, TOXIN OR OTHER MATERIALS THAT MAY ADVERSELY AFFECT ANY ANIMALS, PLANTS AND OR ENVIRONMENTAL SYSTEMS. CONTACT THE OFFICE OF ENVIRONMENT, HEALTH AND SAFETY FOR SPECIFIC GUIDANCE.

MANAGING THE MEDICAL WASTE STREAM

Containers:

Containers for collection of regulated medical waste should be red in color, or if using framed containers the bag should be red in color. The containers shall have the biohazard symbol prominently visible to anyone approaching the container.

All bags, containers, including sharps containers that are no longer in active use shall be sealed and have a tag affixed that displays the biohazard symbol, indicates the contents, the generator identification (usually the name of the PI) and any special instructions (e.g. incinerate only).

All RMW bags leaving the laboratory shall be double bagged and/or placed in a secondary container appropriately designed for transport of the materials and bearing the biohazard symbol. Again, generator information, contents and special instructions shall be affixed to the outside of the container.

Segregation and Packaging:

All RMW must be segregated into the proper waste category (i.e., sharps, cultures, solid waste, liquid waste, animal carcasses, etc.), and into a properly labeled container at the point of generation. All biohazardous waste needs to be packaged, contained in a way that protects and prevents its accidental release to the environment at any time. Additionally, each bag or container must have a properly completed and attached RMW tracking tag or form prior to pickup.

RMW Sharps:

Collected in approved, rigid, leak proof, puncture-resistant containers that can be secured to prevent loss of contents. Each container must be red in color and prominently labeled with a universal biohazard sign or the word "Biohazard". Food containers (e.g., empty coffee cans) are not permissible as sharps containers. Appropriate containers are available through various scientific supply companies. Needles and syringe units should be discarded as a unit without clipping, bending, breaking, shearing, or recapping (sharps boxes that clip off the needle are prohibited). Sharps containers should be discarded when they are three quarters (3/4) full.

Non-RMW Sharps:

Non-RMW sharps should not be disposed of individually in the regular trash because they can puncture bags and injure custodians or other personnel. Non-RMW sharps should be collected in approved, rigid, puncture resistant containers that are not red and not marked with the biohazard symbol. Prior to final disposal in the trash, these containers should be securely taped closed and then disposed in the trash. If sharps contain residues of hazardous or radioactive materials, additional rules will apply (Contact EH&S for guidance)

Cultures:

Culture wastes may be placed in red biohazard bags or, alternatively, if they are liquid cultures they can be autoclaved or chemically decontaminated (see section on liquid waste).

Liquid Waste:

Liquid wastes that contain infectious agents (e.g., culture media, blood, body fluids), may be disposed of in a sanitary sewer (lab sink), after proper decontamination. Refer to the agent protocols to

determine the proper disinfection method. For example, many biological liquid wastes can be treated with a 10-fold dilution of household bleach (i.e., 9 parts liquid waste plus 1 part household bleach) for 10-15 min before discharging down the laboratory sink drain. Biological liquid wastes may be autoclaved, and then discarded in the sanitary sewer.

Contaminated Articles:

Items such as cloth, gloves, plastic, and paper items that have been exposed to infectious agents that are hazardous to humans shall be placed in red biohazard bags.

Animal Carcasses and Waste:

The guidance of the UB Laboratory Animal Facilities (LAF) shall be sought for handling and disposal of animal waste and carcasses. As a general rule, animal materials should be placed in black bags, double bagged and labeled/tagged as animal waste with generator information noted (Name, Department, Building Address, etc.). Experiments using animals exposed to infectious agents (BL-2 and above) shall only be performed in the appropriate LAF containment rooms and using approved procedures.

STORAGE, TRANSPORT AND DISPOSAL OF RMW

There is NO centralized regulated medical waste pick up at the University. Each department should make arrangements with the RMW Contractor. We encourage departments to form collaborative groups within a building to provide a single collection point and share responsibilities for packaging and transport.

After being removed from the laboratory, all RMW materials shall be stored in a secure and adequately ventilated room. The ventilation must be sufficient to prevent the accumulation of odors during the storage period, and an active insect and rodent control program must be in place. All doors to the area must have controlled access and be prominently labeled with the universal biohazard symbol, emergency contact names and phone numbers for contact after normal business hours.

Before RMW is transported from the generator's facility, it must be placed for storage or handling in disposable or reusable pail, cartons, drums or portable bins. The containment system must be leak proof, have tight fitting covers, and must be labeled with either the word "biohazard" or the universal biohazard symbol. In addition, the outermost surface of the containment system must be marked with a water-resistant tag or label containing the following information:

- The generator or intermediate handler's name;
- The generator or intermediate handlers address;
- Transporter's name;
- Transporter's permit or identification number, or if not applicable the transporter's address;
- Date of shipment; and
- Identification as medical waste

Note: Some of this information may be preprinted on the supplied shipper's container.

Prior to transport, inner containers, including red bags, sharps and fluid containers must be marked with the generator's or intermediate handler's name and address.

Regulated medical waste storage areas must be locked to prevent unauthorized access and must protect the waste from the elements, and avoid exposure to the public. Regulated medical waste must be clearly separated from other wastes, and should not be stored on site for more than 30 days.

All RMW generators and coordinators who package untreated RMW for off-site transport must complete and sign an approved Medical Waste Tracking Form (MWTF), receive a copy of the hand-signed form, and receive a hand-signed copy of the form from the destination facility within 35 days. Both copies must be kept on file for at least three years. If a copy of the completed form is not received from the owner or operator of the destination facility within 45 days of the date the waste was accepted by the initial transporter, an exception report must be filed with the state department of Environmental Conservation. (DEC). State law also requires that all employees involved with the on-site management of RMW must be trained in accordance with the requirements of the OSHA Exposure to Bloodborne pathogens regulations in 29 CFR 1910.1030.

EH&S strongly encourages the practice of autoclaving potentially infectious materials as close to the generation site as possible (e.g. in the laboratory or central departmental autoclave) prior to transport to the storage area. Please be aware that the NYS Department of Environmental Conservation (DEC) still requires that the autoclaved RMW materials be disposed of as RMW unless the autoclave has been certified, and such certification has been approved by the DEC.

Other related waste streams:

1. Regular (non-contaminated) trash destined for a sanitary landfill shall be placed in a clear bag.
2. Plastic Poly bags designed to be autoclaved, shall be placed in bags of appropriate color after autoclaving.

Note: If the materials within the bag are designated for disposable as municipal waste, and could be confused with infectious materials, they should be labeled prominently as NONINFECTIOUS. For example, "fruit fly" media after use. Glassware, whether broken or unbroken, must be placed in a hard-walled container (such as a cardboard box) of size and strength that would allow a single custodial to lift it without the danger of box collapse. Glassware disposed of in this manner shall not be potentially infectious.