

Regulated Medical Waste Program

Effective Date: August 24, 2009

Revision Date: November 10, 2014

Revision Date: August 27, 2015

Responsible Office: EH&S

I. Scope

This program applies to all William & Mary faculty, staff and students, who by the nature of their work or activities, generate, handle, transport, or store regulated medical waste.

II. Preamble

William & Mary's biological waste streams fall under the jurisdiction of Virginia Department of Environmental Quality (VDEQ) for handling, storage, and disposal. The VDEQ refers to hazardous biological waste streams as *Regulated Medical Waste*. Definitions of Regulated Medical Waste (RMW) vary between regulating agencies having jurisdiction, such as OSHA, EPA, and VDEQ, so that a general concordance between them can be difficult to achieve. Further complication of the subject arises because procedures for disposal of all waste, including RMW, are ultimately subject to terms and conditions of privately held waste-transporters and incinerator or landfill operators. Although these contractors are themselves, highly regulated by state and federal legislation, individual contractors may have different requirements with regard to segregation and labeling. This policy is designed to reconcile these demands. The policy attempts to detail procedures to deal with many of the likely scenarios that arise in the University's domain, but a complete and comprehensive description of every situation is not possible, and it is expected that there will be occasions where it is necessary for faculty and staff to consult with the EH&S Office to resolve situations that are not explicitly covered in this document.

III. Purpose

The purpose of this procedure is to ensure that campus biological waste, defined as regulated medical waste (RMV), is properly generated, segregated, handled, labeled, stored and disposed. This procedure applies to any waste that meets the University's definition of RMW.

VI. Definitions

Biosafety Level: A specific combination of work practices, safety equipment, and facilities which are designed to minimize the exposure of workers and the environment to infectious agents.

Biosafety Level 1: This level applies to work with agents that usually pose a minimal potential threat to laboratory workers and the environment and do not consistently cause disease in healthy adults. Research with these agents is generally performed on standard open laboratory benches without the use of special containment equipment.

Biosafety Level 2: This level applies to work with agents that usually pose a minimal potential threat to laboratory workers and the environment and do not consistently causes disease in healthy adults. Research with these agents is generally performed in biosafety cabinets to protect the agent, environment and workers.

Personal Protected Equipment (PPE): Protective clothing, helmets, goggles, gloves or other garments or equipment designed to protect the wearer's body from injury or infection. General work clothes (i.e. uniforms, pants, shirts or blouses) not intended to function as protection against a hazard and are not considered personal protective equipment.

Pre-Treatment: Any physical, chemical or biological process used to reduce or eliminate contaminants in biological waste; prior to disposal.

Regulated Medical Waste: Any waste material that is known to contain, or is highly likely to contain pathogenic organisms that are capable of producing disease in health humans, or that contains any materials at Biosafety Level (BSL) 2 or higher. Examples include:

1. Discarded cultures and stocks of microorganisms, specimen, vaccines, and associated items containing organisms likely to be pathogenic to healthy humans.
2. Discarded Biosafety Level 2 or higher agents and activities that include but are not limited to:
 - a. Certain recombinant DNA activities judged to be BSL-2, or above, in accordance with the National Institutes of Health recombinant DNA Guidelines.
 - b. Infectious organisms listed as BSL-2, or above, in the CDC/NIH Manual of Biosafety in Microbiological and Biomedical Laboratories.
 - c. Unfixed anatomic tissues of human origin.

3. Items saturated with human blood, blood products, or body fluids that would release blood/body fluid in a liquid or semi liquid state if compressed or would flake if handled.
4. Surgically excised human whole organs, unfixed tissue, or anatomical specimen, to include various human and primate cell lines, which are regarded as BSL-2 and are encountered in biomedical research.
5. Wastes from the production of biologicals and antibiotics that have been contaminated by organisms likely to be pathogenic to healthy humans.
6. Sharps; any items having a point or sharp edge, or that are likely to break during transportation and result in a point or sharp edge and have been used in a BSL-2 protocol or that are contaminated by organism likely to be pathogenic to healthy humans. Sharps also include all needles, syringes with attached needles, scalpels and razor blades.
7. Broken laboratory glassware that is contaminated by organisms likely to be pathogenic to healthy humans.
8. Animal carcasses, body parts, bedding, and related wastes that have been infected with organisms likely to be pathogenic to healthy humans.
9. Any residue or contaminated soil, water, or other debris that results from the cleanup of a spill of RMW.
10. Any non-regulated medical waste that is contaminated by or mixed with waste contaminated by organism like to be pathogenic to healthy humans.
11. Exclusions: The following solid wastes are not regulated medical waste:
 - a. Waste contaminated only with organisms which are not generally recognized as pathogenic to humans, even if those organisms cause disease in other animals or plants; and which are managed in complete accord with all regulations of the U.S. Department of Agriculture and Virginia Department of Agriculture and Consumer Services.
 - b. Garbage, trash and sanitary waste from septic tanks and sewage holding tanks.
 - c. Meat or other food items being discarded because of spoilage or non-RMW contamination.

- d. Used personal hygiene products, such as diapers, toilet tissue, facial tissues and sanitary napkins.
- e. Material, not including sharps, containing small amounts of blood or body fluids, and no free flowing or unabsorbed liquids.
- f. Regulated medical waste that has been treated by steam sterilization at an autoclave facility permitted by the department of Environmental Quality for RMW treatment.
- g. Broken glassware that is not contaminated with an organism likely to be pathogenic to healthy humans. For disposal instructions, refer to Broken Glassware Disposal:
<http://www.wm.edu/offices/facilities/services/safety/laboratory/infosheets/index.php>
- h. Animal carcasses, body parts, bedding, and related wastes from animals that have not been infected with organisms likely to be pathogenic to healthy humans.
- i. Any residue or contaminated soil, water, or other debris that results from the cleanup of a spill of material that is not RMW.
- j. Unused portions of inventories of select agents and empty select agent containers. These items shall be de-activated according to approved procedures, in close consultations with the EH&S Office. De-activated select agents, empty select agent containers, and the chemical rinsate used to de-activate the agents/containers shall be collected and disposed of as hazardous wastes, if such precautions are appropriate.

Universal Precautions: The use of protective barriers such as gloves, gowns, aprons, masks, or protective eyewear, which can reduce the risk of exposure of the worker's skin or mucous membranes to potentially infective materials. In addition, under universal precaution, it is recommended that all workers take precautions to prevent injuries caused by needles, scalpels, and other sharp instruments or devices.

V. Responsibilities

- A. Institutional Biosafety Committee (IBC): Review and approve all proposed experiments dealing with biological agents, which is solely responsible for determining the BSL of an experimental activity.
- B. Principal Investigator (PI): In experimental or research settings, Principal Investigators bear primary responsibility for ensuring that his/her research complies with all applicable federal and state regulatory standards for the proper segregation, handling (including containment and/or clean-up of spills), labeling, storage and disposal of regulated medical waste, including recombinant DNA (rDNA, which is generated during his/her research activities. This includes providing instruction for subordinate personnel regarding waste handling. The responsibilities shall not be shifted to inexperienced or untrained personnel.
- C. Environment, Health and Safety Office (EH&S): Responsible for program oversight, regulator inspections of regulated medical waste storage areas, and disposal service coordination.
- D. Health Clinics and Other Operations that generate RMW: Responsible for training his/her personnel regarding the guidelines to properly handle regulated medical waste.

VI. Program

- A. Regulated Medical Waste Management
 - 1. Hazard Analysis: Potential exposure to materials that are capable of producing a disease by an organism likely to be pathogenic to healthy humans can occur during the segregation, handling, staging and disposal of RMW. Use the following administrative and engineering controls to minimize exposure potential when dealing with RMW:
 - a. Person packaging regulated medical waste shall wear safety glasses and heavy gloves of latex (2.2 mil gauge minimum) or equivalent material and other times consistent with level of hazard.
 - b. Never attempt to compress biohazard bags containing RMW.

- c. Carry out any chemical deactivation steps in a biosafety cabinet.
- d. Practice Universal Precautions while segregating and staging, handle everything as if it were infectious RMW.

2. Collecting Regulated Medical Waste

- a. Regulated medical waste shall be segregated at the point of generation. Segregation of regulated medical waste at the point of generation is essential to ensure proper handling, worker safety, and cost efficiency.
- b. Regulated medical waste shall be collected in red or orange bags that meet the following standards:
 - i. All bags shall be highly leak and tear resistant.
 - ii. All bags shall bear the label: “Regulated Medical Waste” in large print. This labeling may be either imprinted on or permanently affixed to the appropriate bags.
 - iii. All bags must bear the universal biohazard symbol of at least 2” in relief.
- c. Red or orange bags shall not be used to collect materials other than regulated medical waste. It is very expensive to dispose of RMW, so non-RMW or other unregulated trash or recyclable material shall not be put into the RMW stream.
- d. Red or orange bag bearing the “Regulated Medical Waste” label shall not be used to line non-hazardous trash receptacles.
- e. Unabsorbed liquids shall be contained in sturdy, highly leak resistant containers that resist breaking (Refer to Attachment 1 for alternative handling).
- f. RMW-contaminated sharps shall be placed directly in rigid puncture resistant containers at the point of generation.
- g. Bags and containers of RMW may be treated by steam sterilization. Red or orange bags, whether treated or not, shall be

placed in secondary containment while awaiting pickup by EH&S Staff.

- h. Filled or partially filled red or orange bags shall not be compacted or subjected to violent mechanical stress at any time during their handling.
- i. Radioactive materials or hazardous chemical waste shall not be mixed together with RMW, or placed in, around, or on top of RMW red bags or fiberboard RMW boxes. Contact the University's Radiation Safety Officer for guidance on the proper handling of radioactive waste that may be unavoidably contaminated with RMW.
- j. Improperly packaged regulated medical waste will be returned to the waste generator for repackaging.
- k. Containers, boxes and bags holding RMW shall be kept closed except during transfer of an item into the bag, container or box.
- l. If you have a question about a materials' waste handling requirements that is not discussed in the Safety Data Sheet (SDS), call the EH&S Office for assistance.

3. Pre-Treating Regulated Medical Waste

- a. William & Mary is a small quantity generator of regulated medical waste. As such, the University is exempt from the VDEQ storage permit requirement in 9 VAC 20-120-170C and the 7 day (non-refrigerated) and 15 day (under refrigeration) storage times listed in Part 5, Special Requirements for Storage Facilities, and 9 VAC 20-123-330-390.
- b. Pre-treatment is not required prior to placement of the University's RMW into storage awaiting disposal.
- c. The University believes that in experimental settings, pre-treatment provides an extra layer of diligent defense. Faculty may therefore choose to pre-treat his/her waste as part of his/her laboratory clean-up process prior to placing the RMW into storage.

- d. Pre-treatment, when performed, shall follow these guidelines:
 - i. Each package of waste to be sterilized must have a sensing tape attached, or other comparable sensing indicator, capable of indicating that the desired sterilization temperature-time has been reached. Waste is not satisfactorily sterilized to qualify for extended storage if the indicator fails to indicate proper temperature was achieved during the process.
 - ii. Pre-treated RMW contained in red or orange bags shall be collected by the EH&S Office and stored in ISC Room 034 until pickup by the RMW disposal contractor.
 - iii. Non-RMW that is to be autoclaved prior to disposal shall be collected in clear autoclave bags. Treatment temperature and times shall be determined by the responsible PI. The bags may be placed in the trash dumpsters after autoclaving.

4. Packaging Regulated Medical Waste

- a. Red or orange bags should never be overfilled. 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.
- b. All waste-filled red or orange bags should be placed within secondary containment bins within the lab. The Principal Investigator shall send a request via email to the EH&S Specialist requesting a biohazardous waste pick-up.
- c. EH&S Staff shall collect and store biohazardous waste in a reusable 96 gallon can that is provided by the disposal contractor.
- d. If the can is full, additional waste shall be collected in corrugated fiberboard boxes lined with a red/orange biohazard bag.
 - i. The contents of the disposal box shall not exceed 45 pounds.
 - ii. Sharps containers shall be closed and placed inside a plastic bag prior to being placed in the box.

- iii. Liquids may be placed in the box (Refer to Attachment 1 for alternative handling); however, liquids in excess of 20cc shall be contained in sturdy highly leak resistant containers that resist breaking, prior to being placed in the box.
 - iv. The RMW containing box shall be closed and all seams shall be taped with clear packaging tape to prevent leakage.
 - v. EH&S will affix a label on all RMW Disposal boxes that include the following generator information: name, address, city, state, and zip code.
 - vi. The date of shipment and manifest number will be completed by the contractor when the waste is picked up. After each box is properly closed, the generator shall affix a pre-printed label on the box.
5. Staging Regulated Medical Waste: Properly packaged, segregated, and labeled RMW waste will be stored in one of the designated waste storage areas on campus until they are picked up for disposal by the RMW contractor.
- a. Animal carcasses determined to be RMW are stored in properly marked primary containers inside of freezers located in the animal care areas at the Integrated Science Center Vivarium and the Population Lab.
 - b. All other RMW is stored in the Biohazardous Waste Storage area located at the Integrated Science Center, Room 034.
 - c. The EH&S Office coordinates directly with disposal contractor and schedules regulated medical waste pickups for all departments except the Student Health Center.
 - d. The Student Health Center stores RMW at the Health Center and coordinates directly with disposal contractors for bi-weekly waste pick up under a separate contract.
 - e. Principal Investigators may use an autoclave to pre-treat his/her regulated medical waste prior to packaging and staging the waste for disposal. Treated liquid materials may be flushed into the

sanitary sewer (Refer to Attachment 1), but once waste has been placed into a red or orange bag and labeled as RMW, it must be disposed of as RMW and cannot enter unregulated landfills.

- f. Solid RMW that has been autoclaved cannot be placed into regular trash because the University does not currently have a permit for the Department of Environmental quality to perform autoclave waste treatment on site. Therefore, autoclaved waste must be handled as RMW for disposal.

6. Transporting Regulated Medical Waste

- a. RMW shall only be transported directly from point of generation to storage areas or to designated steam sterilizers for treatment. Prior to transporting, the red or orange bags must be placed in another containers, such as a polyethylene bucket, or corrugated fiberboard box, marked with the Biohazard symbol and labeled “Regulated Medical Waste.”
- b. In general, RMW shall not be transported by personnel in University vehicles on public roads. There are exceptions to this requirement. For example, it may be necessary to transport materials generated at a field research site back to the University for disposal. The PI should contact the EH&S Office for guidance when exceptions are needed to this general rule.

7. Disposing Regulated Medical Waste

- a. RMW shall be disposed of only by incineration by a licensed RMW disposal facility.
- b. Except for the Student Health Center who operate under a separate disposal agreement, the EH&S Office will coordinate on behalf of generators to arrange for pick-up by the University’s disposal contractor.
- c. The disposal contractor provides a copy of the disposal manifest at the time of pick-up. The EH&S Office retains these records, which are subject to DEQ inspection, for a minimum of 3 years. The

Student Health Center's business manager shall maintain copies of their manifests as part of the Center's accreditation criteria.

8. Regulated Medical Waste Spill Response

- a. Upon identifying an RMW spill, take immediate steps to establish a containment barrier around the material to prevent its spread.
- b. Laboratory spill kits should have the necessary supplies to create a barrier. Then take the following steps:
 - i. Leave the area until the aerosol settles, if applicable, and notify the EH&S Office and cognizant Building Safety personnel.
 - ii. Clean-up an RMW spill shall be done only personnel who have been properly trained to handle the agents involved.
 - iii. If you are not properly trained to handle the agents involved, EH&S Office and cognizant Building Safety personnel will arrange for qualified personnel to undertake necessary steps according to approved clean-up procedures listed in Appendix 2.
- c. In any event, spills of RMW must be cleaned up as quickly as possible to prevent further contamination of the area.
- d. Clean-up of RMW spill shall be done only by personnel who have been properly trained to handle the agents involved.
- e. Clinics and laboratories shall maintain a supply of the following materials:
 - i. Material designed to absorb liquids, such as absorbent pads or blankets, depending on quantity of liquid waste likely to be present.
 - ii. One gallon of hospital grade disinfectant effective against mycobacteria, with a spray bottle capable of discharging its content in a mist and/or a stream.
 - iii. Two sets of liquid impermeable and disposal coveralls, with boots, gloves, and protective breathing devices (surgical masks). Tape to seal the coveralls at wrists and ankles shall be available.

These items are readily available through the EH&S Office.

- iv. Red or orange plastic bags, sealing tape, and biohazard labels or tags.
- v. A first aid kit, fire extinguisher, boundary marking tape and other appropriate safety equipment.

B. Sharps Disposal Procedure

1. Uncontaminated sharps, other than needles, syringes with attached needles, scalpels and lancets, may be disposed of in the same manner as uncontaminated broken glass. This includes sharps that have been used to dissect or inject plant or animal tissue for purposes where they have not been in contact with organisms likely to be pathogenic to healthy humans.
2. The following guidelines deals with contaminated disposable sharps that is sharps that are likely to have been contaminated by organisms that can be pathogenic to healthy humans and all needles, syringes with attached needles and scalpels.
 - a. Sharps shall not be left unattended.
 - b. Sharps shall not be disposed of in broken glass containers or normal trash.
 - c. Sharps receptacles shall be placed in a location convenient to the laboratory workbench to ensure proper segregation and packaging of the waste, and to minimize risk of injury to laboratory personnel.
 - d. Sharps receptacles use shall be restricted to the collection and management of sharps. No other uses shall be allowed.
 - e. Sharps containers for needles, syringes, blades, etc., shall never be placed in the normal waste container, even if autoclaved.
 - f. Sharps should fit easily into the container. Do not force a sharp into a sharps receptacle.
 - g. Used disposable needles and syringes shall be placed, intact, directly into a sharps receptacle without recapping.

- h. Sharps containers shall not be overfilled, but removed and replaced when $\frac{3}{4}$ full.
- i. Sharps containers shall be kept closed except during transfer of an item into the container.
- j. Filled sharps containers shall be closed tightly and sealed by laboratory personnel generating the waste, to avoid spillage during transportation.
- k. Filled sharps containers shall be placed in a red or orange bag lined corrugated fiberboard box provided by the University's RMW disposal contractor.
- l. As an alternative, Principal Investigators may choose to dispose of sharps through Waste Management's "Worry-Free Needle Disposal" program. For more information go to: www.wastemd.com.

C. Animal Carcasses

- 1. Animal carcasses that contain organisms likely to be pathogenic to healthy humans or any other BSL 2 material shall be placed in red or orange biohazard bas.
- 2. Animal carcasses that are not infect with organisms likely to be pathogenic to healthy humans shall be stored in plastic bags that are not red or orange.
 - a. Waste collection bag thickness shall be 2 mil or greater.
 - b. Bags shall be filled to no more than 75% of the bag capacity.
 - c. Excess air shall be removed from the bag prior to closure to prevent a "ballooning effect" once the bag is sealed.
 - d. Large bags (≥ 50 gallons) shall be limited to no more than 30 pounds of waste. Small bags (7 – 10 gallons) shall be limited ≤ 10 pounds of waste.

- e. Each bag shall be labeled with the IACUC protocol number and date the bag was filled.
- f. All animal carcasses are stored in freezers until the day of disposal at which time they are packaged as defined above in Section A Part 4, Packaging Regulated Medical Waste.
- g. Contaminated carcasses shall be segregated from non-contaminated carcasses while in freezer storage.
- h. At the Principal Investigator's discretion, animal carcasses that are not infected with organisms likely to be pathogenic to healthy humans may be sent to a crematorium for disposal or recycled as food to the Sandy Bottom Raptor Rehabilitation Center or to other facilities that may be willing to take them.

D. Special Environmental Controls

- 1. All areas utilized for the staging or storage of red or orange RMW bags must have impervious surfaces which can be readily sanitized. Regulated medical waste materials should never be staged on carpeted or wood floor surfaces.
- 2. Generators shall maintain a spill kit in every lab and staging area where RMW is generated.

E. Training Requirements

- 1. Principal Investigators of laboratories generating regulated medical waste shall instruct assigned personnel in all packaging, labeling, storage, and disposal requirements.
- 2. Individuals assigned to handle RMW that is likely to contain Bloodborne pathogens must complete a Bloodborne Pathogens course.
- 3. All individuals pre-treating RMW shall be trained and approved by an autoclave specialist prior to using the autoclaves. Autoclave training shall include awareness of autoclave temperature, pressure, time and performance testing, and record

keeping requirements.

Appendix 1
Table 1: Biological Waste Disposal Summary

Type of Waste	Recommended Waste Disposal Procedure
ANIMAL RESEARCH SOLID WASTE: RMW infectious carcasses, organs, tissue	<ol style="list-style-type: none"> 1. Place in red or orange biohazard bags. 2. Store in freezer until day of scheduled waste pick-up. 3. Place red or orange biohazard bag into a red or orange bag lined corrugated RMW-labeled disposal box. 4. Dispose of waste through contract disposer.
ANIMAL RESEARCH SOLID WASTE: Non-infectious carcasses, organs, tissue	<ol style="list-style-type: none"> 1. Collect in bag that is not red or orange. Fill bags to $\leq 75\%$ capacity. Remove excess air prior to closing bag. 2. Bags for rat carcasses must be ≥ 2 mil. 3. Load large bags (≥ 50 gal) with ≤ 30 lbs of waste. Limit small bags (7-10 gal) to ≤ 10 lbs of waste. 4. Alternative disposal at Raptor Rehab Center, 757-825-4657.
ANIMAL RESEARCH SOLID WASTE: RMW infectious feces, bedding	<ol style="list-style-type: none"> 5. Place in red or orange biohazard bags. 6. Place red or orange biohazard bag into a red or orange bag-lined corrugated RMW-labeled disposal box. 7. Dispose of waste through contract disposer.
ANIMAL RESEARCH SOLID WASTE: non-RMW feces, bedding	<ol style="list-style-type: none"> 1. Place in black trash bags. 2. Discard in regular trash dumpster.
CELL/MICROBE RESEARCH SOLID WASTE: RMW infectious plastic Petri dishes, tissue culture vessels with or without liquid media, gloves, towels, etc.	<ol style="list-style-type: none"> 1. Place in red or orange biohazard bags. 2. Pre-treatment by steam sterilization. 3. Place red or orange biohazard bag into a red or orange bag lined corrugated RMW-labeled disposal box. 4. Dispose of waste through contract disposer.
CELL/MICROBE RESEARCH SOLID WASTE: non-RMW	<ol style="list-style-type: none"> 1. Place in unmarked autoclave bags. 2. Steam sterilization in autoclave. 3. Discard autoclaved unmarked bags in regular trash dumpster.



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<p>PIPETTES & PIPETTE TIPS, GLASS OR PLASTIC: contaminated with infectious agent</p>	<ol style="list-style-type: none"> 1. Collect in rigid pipette container (i.e. pipette keepers or boxes) or plastic sharps container (for pipette tips) 2. Place in red or orange biohazard bag. 3. Place red or orange biohazard bag in red or orange bag lined corrugated RMW-labeled disposal box. 4. Dispose of waste through contract disposer.
<p>PIPETTES & PIPETTE TIPS, GLASS OR PLASTIC: uncontaminated</p>	<ol style="list-style-type: none"> 1. Place glass tips in waste laboratory glass disposal box. 2. When box is full, tape shut, and dispose of box in regular trash. 3. Plastic pipette tips may be disposed directly into trash.
<p>LIQUID WASTE: blood, urine, or microbial cultures</p>	<ol style="list-style-type: none"> 1. Autoclave or sterilize using addition of 10% by volume of household bleach, mix, and allow to sit for 10-15 minutes 2. Dispose in sanitary sewer. <p>OR Alternatively, seal liquids in sturdy highly leak resistant containers and place in red or orange bag lined corrugated RMW-labeled disposal box. Dispose of waste through contract disposer.</p>

Appendix 1 Continued
Table 1: Biological Waste Disposal Summary

<p>ALL NEEDLES, SYRINGES WITH ATTACHED NEEDLES, SCALPEL BLADES, SCALPELS, LANCETS, AND RAZOR BLADES</p>	<ol style="list-style-type: none"> 1. Place in an appropriately labeled rigid, plastic sharps container. 2. When full, sharps container will be placed in red or orange bag lined corrugated RMW-labeled fiberboard box. 3. Dispose of waste through contract disposer.
<p>SELECT AGENT and EMPTY SELECT AGENT CONTAINERS</p>	<ol style="list-style-type: none"> 1. Deactivate unused portions of select agents (SA) and/or their empty containers according to approved procedures. Contact EH&S to confirm procedure. 2. Label container to indicate it has been deactivated. 3. Dispose of deactivated agents, empty containers, and chemical rinsate through EH&S as hazardous waste as appropriate.
<p>BROKEN GLASSWARE: contaminated with infectious agent</p>	<ol style="list-style-type: none"> 1. Place in an appropriately labeled rigid, plastic sharps container. 2. When full, sharps container will be placed in red or orange bag lined corrugated RMW fiberboard box. 3. Dispose of waste through contract disposer.
<p>BROKEN GLASSWARE, uncontaminated</p>	<ol style="list-style-type: none"> 1. Place in waste laboratory glass disposal box. 2. When box is full, tape shut, and dispose of box in regular trash.

Appendix 2 Regulated Medical Waste Spill Clean-Up Procedure

1. Establish containment perimeter for the spill.
2. Wear personal protective clothing and secure the spill area.
3. Using household bleach, prepare a disinfectant solution of one part bleach and 9 parts water. Germicidal disinfectants can be used in lieu of the bleach solution, if preferred. Be sure to read the label on your disinfectant to ensure that it is capable of de-activating the infectious agent involved in your spill.

Handy Tip: *When gathering decontamination supplies, measure and mark the fill lines on your bucket ahead of time, one fill line for the bleach, and another fill line for the water. You might also want to pre-mark a spray bottle, which may be easier to use than a bucket for smaller spills. Pre-marking your containers gives you easy, measuring-free mixing of your bleach cleaning solution when you need to use it.*

4. Place broken containers (other than sharps) and spillage inside red biohazard bags. Be sure to minimize your exposure while doing so.
5. Spray broken contaminated glass with disinfectant.
6. Do not pick up broken glass or other sharp objects with your hands. Use tongs or gently sweep items into the dust pan provided in your spill clean-up kit. Place in a sharps disposal container.
7. Disinfect the area with a 1:10 bleach solution as follows:

- a. If you are cleaning up a spill of blood, carefully cover the spill with paper towels or rags, then gently pour your 10% solution of bleach over the towels or rags. This will help decrease the chances of causing a splash when you pour the bleach on it. ***Leave it in place for at least 10 minutes.*** This will help ensure that the Bloodborne pathogens are killed before you actually begin cleaning or wiping up the material.²
- b. If you are cleaning a contaminated surface, spray your disinfectant over the surface and leave it in place for *at least 10 minutes* before continuing the cleaning process.
- c. Any materials used to clean up a spill must also be decontaminated immediately, including mops, sponges, re-usable gloves, buckets, etc.

Appendix 2 Continued
Regulated Medical Waste Spill Clean-Up Procedure

8. Clean and disinfect non-disposable items by soaking them in the bleach solution.
9. Remove protective clothing and place disposable items in the red biohazard bag.
10. Launder non-disposable protective clothing items such as lab coats, in a laundering facility specifically designated for cleaning contaminated clothing. The laundering equipment for the University is located at the Population Lab. *Never take contaminated clothing home to launder it.*
11. Replenish your spill containment and cleanup kit.
12. Prepare a spill report documenting the date, location, nature of regulated medical waste involved, and describe the incident, cleanup procedures and disposition of wastes. Forward a copy to the EH&S Office and keep the original.
13. If spill assistance is needed, contact the Director, EH&S at 757-345-9549.

Additional Information:

[College of William & Mary Biosafety/Recombinant DNA \(IBC\)](#)

[EPA Antimicrobial Pesticide Products](#)

[Selected EPA Registered Disinfectants](#)

[OSHA's policy regarding the use of EPA-registered disinfectants](#)

[EPA Listed Avian \(Bird\) Flu Disinfectant](#)



ENVIRONMENTAL HEALTH & SAFETY

Attachment 1

In seeking clarification of disposal of human blood and other body fluids (see email from Sandra Prior 22 Sep 2007) a reply was received in September 2007, by Ms. Sandra Prior, Director, William and Mary Environment, Health, & Safety Office from Mr. Ronald Johnson, Chief, Pre-Treatment and Pollution Prevention, Hampton Roads Sanitation District (HRSD).

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Email inquiry from Sandra Prior

Dear Sir:

I am developing waste disposal guidelines for the College of William & Mary and need your guidance on disposal of blood, human body fluids, and microbial cultures via the sanitary sewer.

Is it acceptable to dispose of blood and human body fluids by flushing to the sanitary sewer? I have noted this practice in the waste disposal guidelines at other colleges and universities and wanted to verify that this is acceptable here. I understand that any solid waste material that is contaminated with blood that is free flowing from the material must be collected in biohazard bags and disposed of through a permitted regulated medical waste disposer.

Second, is it acceptable to flush liquid/aqueous waste consisting of microbial cultures to the sanitary sewer after they have been autoclaved as part of the lab clean-up procedure?

Thank you for your help.

Regards,
Sandra Prior



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Attachment 1 Continued

Reply from Ronald Johnson

Ms. Prior:

Blood and other body fluids are discharged to the sanitary sewer from a variety of sources every day. While blood exerts a high biochemical oxygen demand (BOD) and some of it may contain infectious materials, the volumes of blood typically entering the sanitary sewer from residences, health care facilities, funeral homes and even slaughterhouses (blood is a precious commodity to them) is so low relative to the total volumes of wastewater entering the system that there should be no significant risk of contracting viruses, etc. as a result of contact with wastewater. In addition, sanitary sewers do not provide optimum conditions for pathogens to survive and most blood borne pathogens are destroyed once they leave the host body anyway. Sanitary sewer workers also take health and safety precautions to guard against common infections associated with working around sewage. Therefore, it is presently acceptable to dispose of human body fluids by discharging them to the sanitary sewer.

It is also acceptable at present to flush microbial cultures to the sanitary sewer under the conditions you describe for many of the same reasons the discharge of blood and other body fluids is acceptable.

Please let me know if you have any other questions or need additional information.

Ron Johnson
Chief of Pretreatment & Pollution Prevention
HRSD
Virginia Beach, VA
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