

ENVIRONMENTAL HEALTH & SAFETY

UNIVERSITY *of* WASHINGTON

# BIOHAZARDOUS WASTE MANAGEMENT PLAN

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## FOREWARD

*The University of Washington Infectious Waste Committee and the Institutional Biosafety Committee have approved and provided guidance in developing and improving this Biohazardous Waste Management Plan. The Plan has been reviewed and is endorsed by the Senior Director of the Environmental Health and Safety Department (EH&S).*

*Katia J. Harb*

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Katia Harb, Senior Director, Environmental Health & Safety Department (EH&S)



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## SCOPE

The University of Washington Biohazardous Waste Management Plan applies to all University owned and operated facilities including, but not limited to: the Seattle campus including South Lake Union; UW Bothell; UW Tacoma; UW Medicine medical facilities; Husky Health Center; all other University-owned, managed, or operated properties; University leased space as tenant or landlord; and research vessels that are owned or operated by the University.

University facilities outside of the State of Washington must supplement this plan with any state or local requirements that are more stringent than those specified in this manual.

## PURPOSE

The Plan describes the requirements for management of biohazardous waste and methods for compliance with regulations governing handling and disposal of biohazardous waste.

The Plan satisfies Seattle Municipal Code 21.43 and the Code of the King County Board of Health Title 10.07.060 Solid Waste Handling that requires biohazardous waste generators within Seattle and King County to prepare a written management plan for biomedical/infectious waste that is referred to as biohazardous waste in this manual.

The Plan also satisfies federal and state requirements for biohazardous waste found in the National Institutes of Health (NIH) Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules (NIH Guidelines), WA State Bloodborne Pathogens (BBP) Rule, WAC 296-823, and the U.S. Department of Transportation (DOT) 49CFR for packaging and shipping of untreated biohazardous waste via the UW Waste Contractor.

University facilities outside of Seattle/King County may have additional site-specific plans that are based on this plan but modified to meet other local government and/or accreditation requirements where operations are taking place.



## RESPONSIBILITIES

The general roles and responsibilities for health and safety programs at the UW are outlined in UW Presidential Order #55. The Institutional responsibilities for the development of this plan and biohazardous waste oversight are outlined below.

### A. INSTITUTIONAL BIOSAFETY COMMITTEE

The Institutional Biosafety Committee (IBC) reviews, approves, and oversees research involving biohazards and recombinant or synthetic nucleic acids. The IBC is responsible for mandating biocontainment levels for research involving biohazards in accordance with the NIH Guidelines. Refer to UW Administrative Policy Statement 12.3 and the IBC Charter for more information. The IBC has final approval authority for updates to The Plan and for changes/decisions related to biohazardous waste handling and treatment.

### B. INFECTIOUS WASTE COMMITTEE

The Infectious Waste Committee (IWC) is a standing subcommittee of the IBC that establishes and reviews biohazardous waste handling and disposal practices for the University of Washington community in compliance with local, state, and federal biohazardous waste regulations. The IWC will review this plan annually and update it as necessary. Any proposed updates will be shared with the IBC for review and approval.

### C. ENVIRONMENTAL HEALTH AND SAFETY DEPARTMENT

The Environmental Health and Safety Department (EH&S) oversees university health, safety and compliance with regulated waste requirements and procedures. EH&S also serves as the University's official liaison with regulatory authorities, including local and state health jurisdictions. Among other services, EH&S provides technical assistance, policy review, IBC and IWC support, compliance assessment, investigative services, training, and maintains the Biohazardous Waste Management Plan on the EH&S website. EH&S will maintain The Plan and IWC records in accordance with UW records retention schedules.

### D. PRINCIPAL INVESTIGATORS AND/OR SUPERVISORS

Individual laboratory principal investigators and/or department managers/supervisors are responsible for developing standard operating procedures (SOPs) to ensure they are properly identifying, segregating, and/or decontaminating biohazardous waste prior to disposal. These individuals are also responsible for ensuring that SOPs are followed and that their staff is adequately trained to handle biohazardous waste in accordance with The Plan.

### E. CUSTODIAL SERVICES/ENVIRONMENTAL SERVICES

Custodial staff may be responsible for internally transporting treated and properly packaged infectious and sharps waste to the appropriate disposal area. Refer to the Biohazardous Waste Flow Charts for responsibilities by location. Custodial Services/Environmental Services managers and supervisors are responsible for ensuring that staff members follow proper procedures, and that their staff members are adequately trained in identifying and transporting treated and properly packaged biohazardous and sharps waste.

## **F. HEALTH SCIENCES ACADEMIC SERVICES & FACILITIES**

Health Sciences Academic Services & Facilities is responsible for developing and maintaining disposal contracts for regulated medical waste and for all communication with contracted vendor services.

## **G. UW RECYCLING**

UW Recycling is a unit within the Building Services Department in the UW Facilities organization. They act as the non-regulated waste contract administrators for the UW Seattle campus, as well as the liaison with the municipal solid waste division.

## **H. BIOHAZARDOUS WASTE CONTRACTORS**

The University may contract for the removal, treatment, and disposal of waste. Any UW biohazardous waste contractor hauling untreated biohazardous waste is responsible for fully complying with all local, state, and federal regulations regarding biohazardous waste. The Contractor is also responsible for providing University biohazardous waste generators with appropriate packaging materials and copies of all required manifests. To comply with U.S. DOT regulations, shipping regulated medical waste training on proper packaging and record keeping is provided by EH&S.



## DEFINITIONS OF BIOHAZARDOUS WASTE

Biohazardous waste includes waste also referred to as infectious or biomedical waste. This includes pathogenic agents, sharps, human pathological waste, blood and other potentially infectious materials (OPIM), recombinant and synthetic nucleic acids, and lab waste that has come in contact with biohazardous materials. This also includes but is not limited to: disposable laboratory personal protective equipment (e.g., gloves, gowns, shoe covers, masks); disposable laboratory plastic ware (e.g., culture dishes, plates and flasks, pipettes and pipette tips); blood specimen tubes; devices used to transfer, inoculate and mix cultures; and paper and cloth that have come into contact with cultures and stocks of pathogenic agents. The biohazardous waste categories are described below. Additional biohazardous waste categories may be added at the discretion of the IWC in consultation with the IBC.

### A. CULTURES AND STOCKS OF PATHOGENIC AGENTS (ORGANISMS THAT ARE INFECTIOUS AND CAN CAUSE DISEASE)

This includes, but is not limited to, the following:

- Human and non-human primate blood, tissue, and cells
- Pathogenic agents (bacteria, rickettsia, fungi, viruses, protozoa, parasites, and prions)
- Recombinant and synthetic DNA/RNA and cultures, stocks, or cell lines containing recombinant or synthetic DNA/RNA
- Tissue from animals exposed to biohazardous agents
- Specimen cultures and cultures and stocks of pathogenic agent
- Agents requiring biosafety level (BSL) 2 and 3 biocontainment
- Wastes from the production of biologicals and serums
- Discarded live and attenuated vaccines
- Laboratory waste that has come into contact with a biohazard

### B. RECOMBINANT AND SYNTHETIC NUCLEIC ACIDS

Recombinant or synthetically derived nucleic acids, including those that are chemically or otherwise modified analogs of nucleotides (e.g., morpholinos), or both. The NIH Guidelines defines synthetically derived nucleic acid molecules as follows:

- Molecules that a) are constructed by joining nucleic acid molecules and b) can replicate in a living cell (i.e., recombinant nucleic acids)
- Nucleic acid molecules that are chemically or by other means synthesized or amplified, including those that are chemically or otherwise modified but can base pair with naturally occurring nucleic acid molecules (i.e., synthetic nucleic acids)
- Molecules that result from the replication of those described in (a) or (b) above

## C. SHARPS

The term "sharps" is a regulatory waste classification associated with those instruments used to puncture, cut, or scrape body parts and that, in a waste container, can cause punctures or cuts to solid waste handlers or the public. This means that all sharps waste is placed in appropriate sharps containers and decontaminated prior to disposal. Sharps include the following:

- Needles, syringes with needle, and IV tubing with needles attached
- Lancets
- Scalpel blades
- If contaminated with biohazardous waste the following are also considered sharps waste: glass slides; cover slips; razor blades; glass tubes/vials that can be broken during handling such as Pasteur pipettes, ampoules, capillary tubes; and other sharp items not defined above when contaminated with biohazardous materials. If not contaminated with biohazardous materials, these items must be disposed of as laboratory glass in sealed cardboard boxes.

## D. HUMAN PATHOLOGICAL WASTE

Human pathological waste includes human tissues and anatomical parts that emanate from surgery, obstetrical procedures, autopsy, teaching and research laboratories. It does not include human corpses, remains, extracted teeth, and anatomical parts that are intended for interment or cremation. Extracted teeth not intended for interment or cremation are treated and disposed as human pathological waste. The UW Medicine [Willed Body Program](#) can provide guidance on items that may require interment or cremation.

## E. HUMAN BLOOD AND POTENTIALLY INFECTIOUS BODY FLUIDS

Human blood, blood products and other potentially infectious materials (OPIM) as listed in the Washington State Bloodborne Pathogens (BBP) Rule, and include the following:

- Human blood, human blood components and products made from human blood, including medications derived from blood, such as immune globulins, albumin, and factors 8 and 9
- Semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva from dental procedures, or any human body fluid that is visibly contaminated with blood
- All body fluids in situations where it is difficult or impossible to differentiate between body fluids
- Any unfixed tissue or organ (other than intact skin) from a human (living or dead)
- HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions
- Blood, organs, or other tissues from experimental animals infected with HIV or HBV, blood and tissues of experimental animals infected with BBP



## **F. INFECTED HUMAN BODY SUBSTANCES**

Infected human body substances include waste that has come into contact with human body fluids or tissues from humans infected with, or isolated to protect others from, highly communicable infectious diseases.

## **G. ANIMAL WASTE**

Animal waste includes, but is not limited to, animal carcasses, body parts, and bedding of animals that are known to be infected with, or that have been inoculated with, pathogenic microorganisms infectious to humans; animals requiring Animal Biosafety Level (ABSL) 2 and 3 biocontainment.

## **H. NON-HUMAN PRIMATE WASTE**

Non-human primate waste includes, but is not limited to, non-human primate blood, carcasses, tissues, body fluids, and bedding.

## **I. PLANT WASTE**

Plant waste that is to be handled as biohazardous waste includes the following:

- Plants that are genetically engineered by recombinant or synthetic nucleic acid molecule methods to use for experimental purposes to propagate, or to use together with microorganisms or insects containing recombinant or synthetic nucleic acid molecules
- Research plants that are exposed to plant pathogens or that have come in contact with biohazards
- All seeds, spores, plant debris, soil materials from transgenic plants and plants exposed to plant pathogens

## **J. REGULATED MEDICAL WASTE**

Biohazardous waste that is transported off-site is categorized as regulated medical waste (RMW) by the DOT. RMW is defined as untreated waste or reusable material derived from the medical treatment of an animal or human, which includes diagnosis and immunization, or from biomedical research, which includes the production and testing of biological products.

RMW also includes trace chemotherapeutic waste (trace chemo), a mixed waste stream involving trace amounts of chemotherapeutic/hazardous drug waste and biohazardous material. Refer to the EH&S Chemotherapy and Other Hazardous Drugs webpage for more information on safe handling and disposal.

## IDENTIFICATION, SEGREGATION AND CONTAINMENT

Individual principal investigators and/or departmental managers/supervisors are responsible for identifying the biohazardous waste generated by their activity and segregating it into the appropriate waste stream. The University's Biosafety Manual and the EH&S website provide guidance on this activity. At the Medical Centers, assistance is also available from Infection Control departments.

Schematic flow charts describing the categories of biohazard waste streams are available on the EH&S website. The Biohazardous Waste Flow Charts cover the following locations: Magnuson Health Sciences Building, South Lake Union, University of Washington main campus and leased facilities, Life Sciences Building, Harborview Research and Training/Ninth and Jefferson Buildings, University of Washington Medical Center, Harborview Medical Center, University of Washington animal research facilities, and Washington National Primate Research Center.

### A. HANDLING

#### 1. Standard Precautions

Standard precautions and the use of appropriate personal protection are followed when handling and transporting waste. Biohazardous waste is transported in leak-proof secondary containers. Instructions are provided in the University's Biosafety Manual and the EH&S website.

#### 2. Trash Chutes

Trash chutes are not permitted to be used for biohazardous waste.

### B. STORAGE

#### 1. Untreated Biohazardous Waste

Untreated biohazardous waste is stored in secured exterior or interior locations.

#### 2. Sharps Containers

Treated sharps waste is placed into a locked roll-off container that can be held for 180 days before shipping off-site. Refer to "Storage to Treatment Time" in the Treatment and Monitoring section below for storage of untreated sharps waste.

#### 3. Radioactive Animal Carcasses

Radioactive animal carcasses may be held at freezer temperatures for up to 2.8 years (1,022 days).

### C. TRANSPORT

Any transporter (including University employees) of untreated biohazardous waste over public roads will have the necessary permits and will follow all local, state, and federal DOT rules and regulations. This includes the use of secure, secondary, leak-proof containers. Transport of biohazardous waste will follow the University's biohazard transport policy outlined in Appendix C of the UW Biosafety Manual.



## TREATMENT AND MONITORING

### A. DECONTAMINATION OF BIOHAZARDOUS WASTE

#### 1. Steam Sterilization (Autoclave)

“Steam sterilization” means sterilizing infectious waste by use of saturated steam within a pressure vessel at temperatures sufficient to kill all microbiological agents in the waste, as determined by chemical and biological indicator monitoring per requirements set forth by the Seattle Municipal Code, Section 21.43.050. Operating procedures for steam sterilizers must include, but are not limited to the following:

- a. Standard written operating procedures for each steam sterilizer, including time, temperature, pressure, type of waste, type of container(s), closure on container(s), pattern of loading, water content and maximum load quantity.
- b. Ensure autoclave bags are loosely tied to allow steam to penetrate the interior surfaces to better assure sterilization.
- c. Check of recording and/or indicating thermometers during each complete cycle to ensure a minimum temperature of two hundred fifty degrees Fahrenheit (250° F) or one hundred twenty-one degrees centigrade (121° C) for 30 minutes or longer, depending on quantity and compaction of the load, in order to achieve sterilization of the entire load. Thermometers shall be checked for calibration at least annually. Greater time and/or temperatures may be necessary to effectively sterilize a load. Follow manufacturer instructions for the autoclave model's specific time and temperature requirements.
- d. Use of a heat-sensitive tape for each load to indicate that the load has undergone the steam sterilization process.
- e. Use of a chemical integrator at the center of the load of each cycle to confirm adequate sterilization conditions for each biohazardous waste treatment cycle run. The only chemical integrators currently approved by the Seattle-King County Health Department are:
  - 3M Comply Thermalog or Thermalog-S
  - Steriscan
  - 3M Attest Steam Integrator 1243A
  - 3M Attest Steam Integrator 1243B
  - Steris VERIFY™ STEAM Integrating Indicator
  - Crosstex STEAMPlus™ Class 5 Sterilization Integrator
  - 3M Comply SteriGage (no longer manufactured but existing integrators can be used prior to expiration)
- f. Use of a biological indicator, *Geobacillus stearothermophilus* (formerly *Bacillus stearothermophilus*), or other approved biological indicator, placed at the center of a load processed under standard operating conditions at least monthly to confirm adequate sterilization.

- g. Maintain records of steam sterilization for a period of at least six years.
- h. Development and implementation of a written steam sterilization training program for steam sterilizer operators is required.

Principal investigators and departmental managers/supervisors are responsible for monitoring their autoclaves used to treat biohazardous waste. The University's Biosafety Manual and the EH&S website provide information about temperature and time requirements, training, load and performance monitoring, chemical integrators, and required recordkeeping in accordance with Seattle Municipal Code 21.43.050 and Code of the King County Board of Health Title 10.07. EH&S also monitors autoclave and decontamination compliance practices as part of biosafety laboratory inspections.

## **2. Chemical Decontamination**

Chemical decontamination requires the appropriate decontamination agent with an appropriate contact time. Chemical decontamination information is provided in the Biosafety Manual.

## **3. Incineration**

Incineration must be conducted at sufficient temperature and for sufficient duration that all combustible material is reduced to ash. Operating procedures for incinerators shall include, but not be limited to, the following: adoption of a standard written operating procedure for each incinerator that takes into account variation in waste composition, waste feed rate, and combustion temperature; development and implementation of a written incinerator operator training program for incinerator operators.

There are no local incinerators so any waste requiring incineration must be shipped for off-site incineration via a contracted carrier.

Table 1 lists the most common methods of treatment used to decontaminate biohazardous waste. Location specific options for treatment are shown on the EH&S Biohazardous Waste webpage and Flow Charts.

## **B. STORAGE TO TREATMENT TIME**

### **1. Biohazardous Waste**

Commencing from the time of generation, biohazardous waste must be autoclaved within eight (8) days if the waste is stored above 32 degrees Fahrenheit (32° F) or 0 degrees centigrade (0° C) or autoclaved within 90 days if the waste is stored at or below 32 degrees Fahrenheit (32° F) or zero degrees centigrade (0° C).

### **2. Sharps Waste**

Sharps waste is treated by on-site steam sterilization within 90 days of sealing the sharps container. After sterilization, the sharps waste is placed into a locked roll-off container. Sharps waste that is not steam sterilized on-site is collected and treated by the University's biohazardous waste contractor. The waste collected by the University's biohazardous waste contractor for steam sterilization or incineration shall be treated within 90 days commencing from the time of generation.



**Table 1: Treatment by Biohazardous Waste Type**

<b>Biohazardous Waste Type</b>	<b>Treatment</b>
Cultures, Stocks of Pathogenic Agents	<ul style="list-style-type: none"> <li>• On-site autoclave</li> <li>• Off-site treatment</li> <li>• Chemical decontamination</li> </ul>
Biohazardous Lab Waste, including recombinant and synthetic nucleic acids (rDNA)	<ul style="list-style-type: none"> <li>• On-site autoclave</li> <li>• Off-site treatment</li> <li>• Chemical decontamination</li> </ul>
Biohazard Sharps Waste (red sharps containers)	<ul style="list-style-type: none"> <li>• On-site autoclave</li> <li>• Off-site treatment</li> </ul>
Infected Body Fluids	<ul style="list-style-type: none"> <li>• Chemical decontamination, then dispose via sanitary sewer</li> <li>• On-site autoclave</li> </ul>
Human Body Fluids	<ul style="list-style-type: none"> <li>• Chemical decontamination, then dispose via sanitary sewer</li> <li>• On-site autoclave</li> </ul>
Human Pathological Waste	<ul style="list-style-type: none"> <li>• Off-site incineration for pathological waste not intended for cremation or interment (e.g., extracted human teeth)</li> <li>• Teeth containing amalgam are collected by EH&amp;S as hazardous chemical waste for off-site treatment</li> </ul>
Prions	<ul style="list-style-type: none"> <li>• Off-site incineration</li> </ul>
ABSL-2 Animal Tissue/ Carcasses/Bedding	<ul style="list-style-type: none"> <li>• On-site autoclave</li> <li>• Off-site incineration</li> <li>• Steam sterilization for larger animals only when confirmed to be effective</li> </ul>
ABSL-3 Animal Tissue/ Carcasses/Bedding/ Caging	<ul style="list-style-type: none"> <li>• On-site autoclave followed by off-site incineration</li> <li>• On-site autoclave followed by cage wash if reusable caging</li> </ul>
Animal bedding/cages used to transport animals to ABSL-3 that have not been exposed to biohazards within the ABSL-3	<ul style="list-style-type: none"> <li>• On-site autoclave</li> </ul>
Non-Human Primate waste and bedding from animals exposed to biohazardous agents/rDNA	<ul style="list-style-type: none"> <li>• On-site autoclave</li> <li>• Off-site treatment</li> </ul>
Plant Waste	<ul style="list-style-type: none"> <li>• On-site autoclave</li> <li>• Off-site treatment</li> </ul>
Trace Chemo Sharps Waste (yellow sharps containers)	<ul style="list-style-type: none"> <li>• Off-site incineration</li> </ul>
All Other Biohazardous Waste	<ul style="list-style-type: none"> <li>• On-site autoclave</li> <li>• Off-site treatment</li> <li>• Chemical decontamination</li> </ul>

## DISPOSAL

### A. SOLID BIOHAZARDOUS WASTE

Solid biohazardous waste generated in University of Washington owned buildings can be decontaminated on-site, placed in covered dumpsters, and shipped as solid waste by the University's contracted hauler either to the City of Seattle's disposal site, or to Columbia Ridge Landfill in Arlington, Oregon. This practice follows the University's Solid Waste Management Program.

### B. LIQUID INFECTIOUS / BIOMEDICAL WASTE

Liquid waste, once decontaminated, is disposed via sanitary sewer. Guidelines for decontamination of liquid waste can be found in the University's Biosafety Manual and on the EH&S website.

### C. SHARPS CONTAINERS

Sharps containers located within the Magnuson Health Sciences Building and UW Medicine Montlake are sterilized on-site and placed in one of the two covered, locked, non-compacting dumpsters. The contracted hauler transports the dumpsters to the Waste Management Greater Wenatchee Regional Landfill in Wenatchee, WA. For non-Health Sciences locations, sharps containers are picked up by the University's biohazardous waste contractor for treatment and final disposal.

Deviation from these handling and disposal methods for sharps must be approved in writing by the Infectious Waste Committee and Public Health–Seattle and King County.

### D. HUMAN PATHOLOGICAL WASTE

Human pathological waste not intended for interment or cremation (e.g., extracted teeth) can be collected for incineration. Extracted teeth containing amalgam are collected by EH&S Environmental Programs as hazardous chemical waste due to the amalgam content and are sent for treatment at an off-site facility. Contact the UW Medicine [Willed Body Program](#) for guidance on items that may require interment or cremation.

### E. ANIMAL CARCASSES

- Non-infectious (ABSL-1 biocontainment), non-radioactive animal carcasses (including transgenic animals) are double bagged in opaque bags and stored in designated freezers or refrigerators until packaged to go into the regular waste stream.
- Non-human primate carcasses requiring ABSL-2 biocontainment and practices are double bagged in biohazard bags and held in freezers in leak-proof secondary containers until time of shipment to the off-site incineration facility.
- Non-human primate carcasses requiring ABSL-2 biocontainment with 3 practices are double bagged in biohazard bags, autoclaved, and then held in freezers in leak-proof secondary containers until time of shipment to the off-site incineration facility.



- Animal carcasses requiring ABSL-2 biocontainment are double bagged in plastic biohazard bags and held in freezers in leak-proof secondary containers at the University until time of shipment to the off-site incineration facility. They may also be treated on-site by steam sterilization and then are permitted to enter the general waste stream.
- Animal carcasses requiring ABSL-3 biocontainment are double bagged, autoclaved, and then held in freezers in leak-proof secondary containers until time of shipment to the off-site incineration facility.
- The University's biohazardous waste contractor transports all biohazardous animal carcasses requiring incineration to an off-site incinerator.
- Radioactive animal carcasses containing short-lived radionuclides enter the University's biohazardous waste stream after being held for decay for ten half-lives. Carcasses containing long-lived radionuclides are packaged and shipped to an approved low level radioactive materials disposal facility pursuant to Federal and State regulations. For additional information, contact EH&S Radiation Safety at 206.543.0463.

## **F. ANIMAL BEDDING/WASTE**

- Non-human primate bedding/waste from animals that have never been experimentally exposed to any sort of biohazardous agent or recombinant or synthetic nucleic acids can be directly disposed via sanitary sewer or in the solid waste stream.
- Non-human primate bedding/waste from animals that have been experimentally exposed to any sort of biohazardous agent, including recombinant or synthetic nucleic acids, requires autoclaving before entering the solid waste stream.
- ABSL-1 biocontainment animal bedding/waste (e.g., most transgenic mice) is disposed via sanitary sewer or as solid waste unless otherwise directed by the IBC.
- ABSL-2 biocontainment animal bedding/waste requires autoclaving before entering the solid waste stream.
- ABSL-3 biocontainment animal bedding/waste/disposable caging requires autoclaving and then off-site incineration.
- ABSL-3 biocontainment animal reusable caging requires autoclaving and is then sent to cage wash.
- Animal cages and bedding used to transport animals to ABSL-3 that have not been exposed to biohazards within ABSL-3 biocontainment require autoclaving before entering the solid waste stream.

## **G. MIXED WASTE (REQUIRES APPROVAL FROM EH&S PRIOR TO GENERATING)**

For biohazardous waste that contains radioactive material or hazardous chemicals, contact an EH&S Biosafety Officer at 206.221.7770.

## **H. OFF-SITE TREATMENT AND DISPOSAL**

All untreated biohazardous waste that is shipped off-site for treatment and disposal by the UW waste contractor will be packaged, labeled, stored, and offered for shipment according to DOT requirements. Employees who prepare biohazardous waste for collection by the UW waste contractor will take mandatory shipping regulated medical waste training in hazard awareness, safety, function specific shipping preparation, and security awareness.



## CONTINGENCY PLANNING

Each generator of waste that requires on-site steam sterilization must assure that back-up services are available per the following:

### **A. BACK-UP AUTOCLAVE AT UNIVERSITY CAMPUS LOCATIONS AND LEASED SPACES**

When autoclaves are not operational, other autoclaves operating in accordance with Seattle Municipal Code 21.43 and Code of the King County Board of Health Title 10.07.060 for treatment of biohazardous waste are usually available to handle the waste. Autoclave cost centers, including Laboratory Services managed by Health Sciences Academic Services and Facilities, can accept certain types of biohazardous waste for treatment and disposal for a fee. Any transport of regulated medical waste to back-up facilities is required to be in full compliance with the necessary permits and will follow all local, state, and federal regulations and the University's Biohazard Transport Policy in Appendix C of the Biosafety Manual.

### **B. BACK-UP AUTOCLAVE NOT AVAILABLE**

In locations that do not have back-up autoclave capability, the University's biohazardous waste contractor will transport, treat, and dispose of biohazardous waste. In these circumstances, University locations must set up an account with the biohazardous waste contracted carrier; account set-up is managed by Health Sciences Academic Services and Facilities. EH&S Shipping Regulated Medical Waste Training is required for all personnel who will package and ship waste.

## STAFF TRAINING FOR BIOHAZARDOUS WASTE HANDLING

Principal investigators, departmental managers/supervisors, Custodial Services, Environmental Services, Property and Transport Services, and Environmental Health & Safety have the primary responsibility for ensuring proper staff training in the identification of biohazardous waste and the packaging, storage, transport, decontamination, on-site sterilization, and handling of biohazardous waste. Additional information is available at the EH&S website. EH&S will provide assistance and training on request.



## WEB LINKS

1. Seattle Municipal Code, 21.43:  
[https://library.municode.com/wa/seattle/codes/municipal\\_code?nodeId=TIT21UT\\_SUBTITLE\\_IIIS\\_OWA\\_CH21.43INWAMA](https://library.municode.com/wa/seattle/codes/municipal_code?nodeId=TIT21UT_SUBTITLE_IIIS_OWA_CH21.43INWAMA)
2. Code of the King County Board of Health 10.07.060:  
<http://www.kingcounty.gov/healthservices/health/BOH/code.aspx>
3. WA State Bloodborne Pathogens Rule, WAC 296-823:  
<https://apps.leg.wa.gov/WAC/default.aspx?cite=296-823>
4. United States Department of Transportation:  
[http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&tpl=/ecfrbrowse/Title49/49tab\\_02.tpl](http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&tpl=/ecfrbrowse/Title49/49tab_02.tpl)
5. NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules:  
[https://osp.od.nih.gov/wp-content/uploads/NIH\\_Guidelines.pdf](https://osp.od.nih.gov/wp-content/uploads/NIH_Guidelines.pdf)
6. UW Presidential Order #55, University Health and Safety Programs: Policy and Responsibilities:  
<https://policy.uw.edu/directory/po/executive-orders/eo-55-university-health-and-safety-programs-policy-and-responsibilities/>
7. UW Administrative Policy 12.3, Review of Research Projects Involving Biological Hazards:  
<https://policy.uw.edu/directory/aps/section-10-environment-health-safety-security/aps-12-3-review-of-research-projects-involving-biological-hazards-and-recombinant-dna/>
8. UW Administrative Policy 11.2, Management and Disposal of Hazardous Wastes:  
<https://policy.uw.edu/uw-policy-directory/aps/section-10-environment-health-safety-security/aps-11-2-management-and-disposal-of-hazardous-wastes/>
9. UW IBC Charter:  
<https://www.ehs.washington.edu/resource/institutional-biosafety-committee-ibc-charter-54>
10. UW Biohazardous Waste Plan:  
<http://www.ehs.washington.edu/system/files/resources/biohaz-waste-plan.pdf>
11. UW Biosafety Manual:  
<https://www.ehs.washington.edu/system/files/resources/uw-biosafety-manual.pdf>
12. EH&S Biohazardous Waste:  
<http://www.ehs.washington.edu/biological/biohazardous-waste>
13. EH&S Autoclaving Biohazardous Waste Guidelines:  
<https://www.ehs.washington.edu/system/files/resources/autoclave-biowaste.pdf>
14. EH&S Biohazardous Waste Flow Charts:  
<https://www.ehs.washington.edu/biological/biohazardous-waste/biohazardous-waste-flow-charts>

## CONTACT INFORMATION

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