



**Bloodborne Pathogens**  
**Exposure Control Plan**  
for  
**University of Maryland**  
**College Park**

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## Useful Web Sites

OSHA Bloodborne Pathogens Standard, 29 CFR Part 1910.1030, 1991

[://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARDS&p\\_id=10051](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051)

OSHA Needlestick Safety and Prevention Act, April 2001

<http://www.osha.gov/SLTC/bloodbornepathogens/index.html>

Department of Environmental Safety, Sustainability & Risk

<http://www.essr.umd.edu/>

List of EPA registered disinfectants

<https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants>



# Policy Statement

## I. Purpose

This is a statement of official University policy to establish the process for compliance with the Occupational Safety and Health Administration (OSHA) regulation, "Occupational Exposure to Bloodborne Pathogens; Final Rule" (29 CFR Part 1910.1030) and its amendments.

## II Policy

The University is dedicated to providing a safe workplace for employees and students, and to complying with federal and state occupational health and safety standards. It is University policy to comply with the requirements of the OSHA Bloodborne Pathogens (BBP) Standard and its amendments. Laboratory administrators, managers, supervisors, faculty, staff, and students share responsibility for minimizing their occupational exposure to human blood and other potentially infectious materials (OPIM). The *Exposure Control Plan* (ECP) shall be implemented for all facilities at the University of Maryland, College Park (UMD) where performance of employees' duties can be expected to result in occupational exposure to human blood or OPIM.

## III Responsibilities

1. The Department of Environmental Safety, Sustainability & Risk (ESSR) shall:
  - (a) Prepare and distribute the *ECP*;
  - (b) Annually review the *ECP* for effectiveness and update as necessary. The update shall be required to reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens.
  - (c) Provide or coordinate training for all affected workers concerning occupational transmission of bloodborne pathogens, as required in the standard;
  - (d) Maintain training records;
  - (e) Assist departments in identifying employee job classifications in which occupational exposure to human blood may occur; and
  - (f) Coordinate disposal of regulated waste.
  
2. The University Health Center (UHC) shall:
  - (a) Provide medical evaluations, vaccinations and counseling to affected employees. Specific responsibilities include:
    - Pre-exposure prophylaxis (vaccinations)
    - Post-exposure prophylaxis and treatment
    - Employee counseling
    - Follow-up evaluation(s)
    - Control and maintenance of all medical records
  - (a) Evaluate incidents of occupational exposure to human blood resulting from performance of employees' duties and document the circumstances under which the exposure occurred.
  - (b) Provide training to UHC employees.
  - (c) Document in the ECP the evaluation by non-managerial personnel of various medical devices with built-in safety features.



3. The University of Maryland Police Department (UMPD) shall:
  - (a) Provide an appropriately qualified person to conduct training of UMPD employees.
4. Campus Recreation Services (CRS) shall:
  - (a) Provide an appropriately qualified person to conduct training of CRS employees.
5. The affected Department Chairs/Directors shall:
  - (a) Provide, at no cost to the employee, all supplies and personal protective equipment (PPE) and vaccinations that are necessary for compliance with this *ECP*;
  - (b) Ensure that the *ECP* is accessible to all employees in the worksite and that the employees comply with the requirements of the Plan;
  - (c) Provide specific work practice training and maintain copies of those training records; and
  - (d) Solicit input from non-managerial employees who are responsible for direct patient care in the identification, evaluation, and selection of effective engineering and work practice controls and document the solicitation in the *ECP*.
6. University employees with occupational exposure to human blood or OPIM shall:
  - (a) Adhere to the requirements of the *ECP*;
  - (b) Complete all safety training requirements and comply with documentation procedures; and
  - (c) Report all suspected exposure incidents.

#### **IV Information**

Assistance will be provided by ESSR to any Department requesting guidance or training to satisfy implementation of this policy.

Biosafety telephone number: 301.405.3975

E-mail address: [safety@umd.edu](mailto:safety@umd.edu)

Web site address: <http://www.essr.umd.edu/>



# Introduction

In 1991, the Occupational Safety and Health Administration (OSHA) published the Bloodborne Pathogens Standard (29CFR 1910.1030) in response to rising concern over transmission of HIV to healthcare workers. It covers all employees who could be "reasonably anticipated" to contact blood and OPIM as a result of performing their job duties. The standard requires:

- annual training
- use of universal precautions
- use of appropriate personal protective equipment
- provision of hepatitis B vaccine at no cost to employee
- development of a facility exposure control plan
- exposure determination

Bloodborne pathogens are organisms that are present in the blood and certain other body fluids of infected persons. They are transmitted by blood-to-blood contact, not by casual contact. Examples of bloodborne pathogens are the human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV). The occupational routes of transmission of bloodborne pathogens are by 1) needlestick or cut from a contaminated sharp object; 2) splash to the eyes, nose, or mouth; and 3) contact with broken skin.

The BBP Standard refers to blood and OPIM. OPIM includes the following body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, and any body fluid that is visibly contaminated with blood. In this *ECP*, the terms blood and OPIM will be used to include all potentially infectious body fluids.



# **New OSHA Directive CPL 2-2.44D: Enforcement Procedures for the Occupational Exposure to Bloodborne Pathogens**

In November 1999, the Occupational Safety and Health Administration (OSHA) released new guidelines for enforcing the Occupational Exposure to Bloodborne Pathogens standard. The text of this directive is available at:

[https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_id=805&p\\_table=NEWS\\_RELEASES](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=805&p_table=NEWS_RELEASES)

## **Points of particular interest to the University:**

- Engineering controls **must be used** to prevent needlestick injuries. Effective engineering controls include sharps with engineered sharps injury protection (e.g., self-sheathing needles), needle-less systems (e.g., needle-less IV connection), and plastic capillary tubes.
- Diluted bleach must be mixed daily, i.e. no older than 24 hours.
- Appropriate disinfectants include:
  - diluted bleach
  - EPA-registered tuberculocides (list B)
  - EPA-registered sterilants (list A)
  - products registered by EPA against HIV/HBV (list D)

Lists of EPA registered products are available at:

<http://npic.orst.edu/>

- Individuals trained in first aid and CPR do not need to be offered the Hepatitis B vaccination if it is only a collateral duty and the facility offers effective post exposure treatment.
- Resuscitator devices must be readily available and accessible to employees who can reasonably be expected to perform resuscitation procedures.
- An individual working with potentially infectious material must remove gloves before leaving the work area.
- It is recommended that employees who have on-going contact with patients or blood and are at on-going risk for injuries with sharp instruments or needlesticks be tested for antibody to hepatitis B surface antigen after completion of the vaccination series.







# OSHA Needlestick Safety and Prevention Act

## April 2001

The CDC estimates that 62% to 88% of the approximately 580,000 needlesticks from contaminated sharps that occur in the U.S. each year could be prevented by selecting safer medical devices. Based on these data, OSHA has revised its bloodborne pathogens standard to clarify the need for employers to select safer needle devices and to involve employees in identifying and choosing the devices. The updated standard also requires employers to establish a log to track needlesticks rather than recording only those cuts or sticks that actually lead to illness, and to maintain the privacy of employees who have suffered these injuries.

Examples of safer medical devices are:

- sharps with engineered sharps injury protections, a built-in safety feature or mechanism that effectively reduces the risk of an exposure incident, and
- needle-less systems for the collection of bodily fluids after initial venous or arterial access is established.

The new standard requires employers to solicit employee input in choosing safer devices and to document this input in the *ECP*. Example forms for the evaluation of safer medical devices are located in Appendix III. These, or similar forms, must be used by supervisors to document the evaluation of various medical devices by non-managerial employees responsible for direct patient care.



## Definitions

For purposes of this *ECP*, the following definitions apply:

**“Biological waste”** means regulated waste.

**“Blood”** means human blood, blood components, and OPIM.

**“Bloodborne pathogens”** means pathogenic microorganisms that are present in human blood that can cause disease in humans, such as hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV).

**“Engineering Controls”** means controls (e.g., safer medical devices, such as sharps with engineered sharps injury protections and needleless systems, sharps disposal containers, self-sheathing needles) that isolate or remove the bloodborne pathogens hazard from the workplace.

**“ESSR”** means Department of Environmental Safety, Sustainability & Risk.

**“Needleless Systems”** means a device that does not use needles for (A) the collection of bodily fluids or withdrawal of body fluids after initial venous or arterial access is established, or (B) the administration of medication or fluids, or (C) any other procedure involving the potential for occupational exposure to bloodborne pathogens due to percutaneous injuries from contaminated sharps.

**“Other potentially infectious materials (OPIM)”** means human blood, semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, and any body fluid visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids.

**“PPE”** means personal protective equipment.

**“Regulated waste”** means human blood or OPIM, or materials contaminated with them.

**“Sharps with Engineered Sharps Injury Protections”** means non-needle sharp or a needle device used for withdrawing body fluids, accessing a vein or artery, or administering medications or other fluids, with a build-in safety feature or mechanism that effectively reduces the risk of an exposure incident.



# Exposure Determination

The following University job classifications have been identified as ones in which employees have reasonably anticipated exposure (skin, eye, mouth, other mucous membrane, or parenteral) to bloodborne pathogens. This assessment is made without regard to the use of PPE. Job classifications are placed in one of two categories:

**Category 1:** A list of all job classifications in which *all* employees in those job classifications have occupational exposure.

**Category 2:** A list of all job classifications in which some employees have occupational exposure, and a list of all tasks and procedures in which occupational exposure occurs.

Department	Category 1	Category 2	Tasks for Category 2
Academic Departments -Bioengineering -Biology -Cell Biol. & Mol. Gen. -Chemistry & Biochem. -Entomology -Kinesiology -Nutrition & Food Sci. -Technology Advancement Program -Veterinary Medicine		Assistant Professor Associate Professor Faculty Research Assistant Graduate Assistant Graduate Student Postdoctoral Fellow Predoctoral Fellow Professor Research Associate Research Scientist Senior Research Scientist	Use HIV, HBV, HCV, or human material in research
Athletics	Head Athletic Trainer Asst. Athletic Trainer Assoc. Athletic Trainer	Student Assistant Equipment Manager Asst. Equipment Manager Athletic Equip. Specialist	Laundry uniforms, towels
Campus Recreation Services	Life Guards Pool Operators Water safety instructors CRS Staff Facility Supervisors Intramural Sport Supervisor Weight & Fitness Room Monitors Fitness Personal Trainers & Instructors Outdoor Recreation Center: Trip Leaders, Bike Shop, Climbing Wall, Challenge Course		
Center For Young Children	Preschool Teachers Administration		
Dining Services	Plumber Plumber Specialist Facilities Supervisor	Physical Plant Superintendent Maintenance Service Worker HVAC Chief HVAC Mech III Carpenter Sheet Metal Food Service Supervisor Food Service Specialist Dining Services Coordinator Food Service Manager Electrician	Plumbing tasks Laundry linens Emergency Response Knife Cuts



<b>Department</b>	<b>Category 1</b>	<b>Category 2</b>	<b>Tasks for Category 2</b>
Environmental Safety		Assistant Director Manager Coordinator Program Coordinator EH&S Specialist Fire Inspector Chief Fire Protection Engineer Fire Protection Engineer	Respond to emergencies
Facilities Maintenance	Plumber Specialist Plumber Housekeeper Groundskeeper		
Health Center	Physician Physician Assistant Nurse Practitioner Nurse Nurse Aide Medical Assistant Laboratory Technician Medical Technologist Phlebotomist Laboratory Assistant Housekeeper Acupuncturist		
Residential Facilities	Housekeeper Housekeeper Lead Housekeeper Supervisor II MT MultiTrades Chief I, II, III MT MultiTrades Supervisor I, II Plumber Plumber Specialist	MT Structural Trades Chief II MT Structural Trades Supervisor II Environmental Specialist	Equipment cleaning and maintenance
Shuttle Bus		Auto service mechanics	Designated individuals responsible for blood clean-up on shuttle buses.
Stamp Student Union	Service Worker Housekeeper Housekeeper Lead Housekeeper Supervisor II Housekeeping Chief MT Multi Trades Chief I,III MT Multi Trades Supervisor II HVAC Mechanic III Storekeeper II	Assistant Director, Facilities	support of staff
University Police	Police Officer I Police Officer II Police Officer III Police Officer IV Lieutenants		



## **Exposure Control Plan**

Employees covered by the Bloodborne Pathogens standard receive an explanation of this *ECP* during their initial training session. It will also be reviewed in their annual refresher training. All employees have an opportunity to view this plan at any time during their work shifts by contacting their supervisor. If requested, DES will provide an employee with a copy of the ECP free of charge and within 15 days of the request.

The Biosafety Officer (BSO) is responsible for reviewing and updating the *ECP* annually or more frequently if necessary to reflect any new or modified tasks and procedures that affect occupational exposure and to reflect new or revised employee positions with occupational exposure.



# Universal Precautions

All employees will use Universal Precautions, a method of infection control in which *all* human blood, tissue, and OPIM are treated as if known to be infectious for HIV, HBV, HCV, or other bloodborne pathogens.

Universal precautions are intended to prevent occupational exposure to human blood. The routes of transmission for occupational exposure are 1) puncture of the skin with a contaminated sharp object, 2) contact with broken skin, and 3) splash to mucous membranes of the eye, nose, or mouth.

## **Universal precautions include the following practices:**

- Wear gloves when hands may come into contact with human blood or OPIM. Replace gloves when they become torn or contaminated.
- To prevent exposure of mucous membranes of the mouth, nose and eyes, wear masks and protective eyewear whenever splashes, spray, or spatter of blood or potentially infectious materials are likely to occur.
- Wear protective suits, gowns or aprons during procedures that are likely to generate splashing of potentially infectious materials.
- Wash hands and other skin surfaces immediately following contact with human blood or other potentially infectious substances, and after gloves are removed.
- Use care when handling needles, scalpels, razors and other sharp objects contaminated with blood or OPIM. Use tongs or forceps if possible.
- Use appropriately-labeled and constructed containers for disposal, storage, and transport of any potentially infectious material.
- Employees responsible for first aid should use protective resuscitation masks for mouth-to-mouth resuscitation.
- Health care workers or first aid providers must cover skin lesions and wear gloves when treating patients or when handling health-care equipment.
- Do not eat, drink, apply cosmetics or lip balm, smoke, or handle contact lenses in work areas where there is likelihood of occupational exposure. Do not keep food and beverages in refrigerators, freezers, shelves, cabinets, or on countertops where human blood or OPIM are present.



# Personal Protective Equipment

Personal protective equipment (PPE) is provided to our employees at no cost. All employees who have potential skin, eye, mouth, mucous membrane, or parenteral contact with human blood or other potentially infectious material must wear PPE that will act as a barrier to these materials.

The type(s) of protective clothing or equipment used in a specific instance will depend on the job being performed. The following protective clothing and equipment will be made available for use depending upon the activity performed:

- **Gloves** Gloves are worn when there is a possibility for direct hand contact with human blood or other potentially infectious material. There are several types of gloves available, and selection should be based upon the job being performed:
  - **Thin latex or nitrile gloves** are used for operations involving delicate manipulations. These gloves are designed to fit tightly against the skin. The proper size should be selected to fit the worker's hands. Latex and nitrile gloves are available either powdered or powder-free. If an employee has a skin reaction from the gloves, hypo-allergenic and/or powder-free types must be provided. All such gloves are disposable and are not to be reused.
  - **Polyvinyl chloride (PVC) gloves** are also disposable and should not be reused. They do not fit tightly against the skin and should not be used for activities requiring delicate manipulations. PVC gloves may be powdered or powder-free, and are available in a variety of sizes. PVC gloves are not recommended for work with human blood or OPIM because they do not always provide a leak-proof barrier.
  - **Rubber, neoprene or other thicker reusable gloves** are more durable and are generally used for more strenuous activities, such as cleaning blood spills. They may be re-used if properly decontaminated following contact with potentially infectious materials. Reusable gloves should be periodically inspected to ensure there are no cracks, holes or breaks in the material; if any are found, they must be discarded.
  
- **Eyewear** Goggles with solid side shields or chin-length faceshields must be worn when there is a risk of splashing human blood or OPIM. This protective equipment reduces the potential for contact with the mucous membranes of the eyes.
  
- **Masks** The use of protective masks is intended to reduce the risk of splashing human blood onto the mucous membranes of the nose and mouth. If masks are disposable, they must be removed immediately following use and not be reused. Reusable masks and face shields must be properly handled, cleaned and decontaminated prior to reuse.





- **Clothing** Protective clothing must be worn when there is a risk of human blood or OPIM spattering a worker's skin or clothing. There are various types of suits, gowns and aprons available for this purpose. The type of protective clothing selected will depend upon the task and degree of exposure anticipated. Protective clothing should be resistant to fluids, and may be disposable or reusable. Reusable clothing must be properly laundered prior to reuse.
  
- **Resuscitation**
  - Masks** Personnel who perform cardiopulmonary resuscitation (CPR) should have resuscitation masks on hand for use in an emergency. Most resuscitation masks are disposable and should be handled as contaminated waste following use. The resuscitation mask allows for effective CPR without mouth-to-mouth contact. Most masks are also fitted with a one way valve which prevents the flow of materials from victim to rescuer.

All employees using PPE must observe the following precautions:

- Wash hands immediately or as soon as feasible after removal of gloves or other PPE.
- Remove PPE after it becomes contaminated, and before leaving the work area.
- Used PPE may be disposed of in plastic bags, then incinerated or autoclaved.
- Wear appropriate gloves when it can be reasonably anticipated that there may be hand contact with blood or OPIM, and when handling or touching contaminated items or surfaces; replace gloves if torn, punctured, contaminated, or if their ability to function as a barrier is compromised.
- Utility gloves may be decontaminated for reuse if their integrity is not compromised; discard utility gloves if they show signs of cracking, peeling, tearing, puncturing, or deterioration.
- Never wash or decontaminate disposable gloves for reuse.
- Wear appropriate face and eye protection when splashes, sprays, spatters, or droplets of blood or OPIM pose a hazard to the eye, nose, or mouth.
- Remove immediately or as soon as feasible any garment contaminated by blood or OPIM, in such a way as to avoid contact with the outer surface.



# Hepatitis B Vaccination

ESSR will provide annual training to employees that will include information about the hepatitis B vaccine, addressing its safety, benefits, efficacy, methods of administration, and availability.

The hepatitis B vaccination series is available at no cost, after training and within 10 days of initial assignment, to employees identified in the exposure determination section of this plan. Vaccination is encouraged unless: 1) documentation exists that the employee has previously received the series, 2) antibody testing reveals that the employee is immune, or 3) medical evaluation shows that vaccination is contraindicated.

However, if an employee chooses to decline vaccination, the employee must sign a declination form (see Appendix V). Employees who decline may request and obtain the vaccination at a later date at no cost. Documentation of refusal of the vaccination is kept by the trainer.

Vaccination will be provided by the Occupational Health Clinic at the UHC. Employees who have on-going contact with patients or blood and are at on-going risk for injuries with sharp instruments or needlesticks will be tested for antibody to hepatitis B surface antigen one to two months after completion of the vaccination series.

Following hepatitis B vaccinations, the health care professional's Written Opinion will be limited to whether the employee requires the hepatitis vaccine, and whether the vaccine was administered.



## Post-Exposure Evaluation and Follow-up

In the event of an exposure, the employee should contact the UHC Urgent Care Clinic at 301.314.8162. An exposure incident is defined as “a specific mucous membrane, broken skin, or puncture contact with blood or OPIM that results from the performance of an employee’s duties.”

An immediately available confidential medical evaluation and follow-up will be conducted by a UHC physician. Following the initial first aid (clean the wound with soap and water, flush eyes or other mucous membrane with water for 15 minutes), the UHC will:

- Document the routes of exposure and how the exposure occurred.
- Identify and document the source individual (unless the employer can establish that identification is infeasible or prohibited by state or local law).
- After obtaining consent, collect exposed employee's blood as soon as feasible after exposure incident, and test blood for HBV, HCV, and HIV serological status.
- Then obtain consent and make arrangements to have the source individual tested as soon as possible to determine HIV, HCV, and HBV infectivity.
- If the source individual is already known to be HIV, HCV and/or HBV positive, new testing need not be performed.
- Assure that the exposed employee is provided with the source individual's test results and with information about applicable disclosure laws and regulations concerning the identity and infectious status of the source individual (e.g., laws protecting confidentiality).
- If the employee does not give consent for HIV serological testing during collection of blood for baseline testing, preserve the baseline blood sample for at least 90 days; if the exposed employee elects to have the baseline sample tested during this waiting period, perform testing as soon as feasible.

If the UHC is closed, exposed employees shall be evaluated at Washington Adventist Hospital (7600 Carroll Ave., Takoma Park, MD), or at the nearest convenient emergency room. The employee's supervisor is responsible for transporting the employee if evaluation is desired by the employee.

The UHC ensures that the health care professional evaluating an employee after an exposure incident receives the following:

- a description of the employee's job duties, provided by his/her supervisor, relevant to the exposure incident
- route(s) of exposure
- circumstances of exposure
- if possible, results of the source individual's blood test
- relevant employee medical records, including vaccination status

The UHC will provide the employee with a copy of the evaluating health care professional's written opinion within 15 days after completion of the evaluation.



# Evaluation of Circumstances Surrounding An Exposure Incident

The Occupational Health Clinic of the UHC will review the circumstances of all exposure incidents to determine:

- engineering controls in use at the time
- work practices followed
- a description of the device being used
- protective equipment or clothing that was used at the time of the exposure incident (gloves, eye shields, etc.)
- location of the incident (laboratory, clinic, etc.)
- procedure being performed when the incident occurred
- employee's training

If it is determined that revisions need to be made, ESSR will ensure that appropriate changes are made to this ECP.



# Training

Training will be coordinated through ESSR and will be provided by the ESSR - Biosafety program staff and by Occupational Health Unit of the University Health Center. Training will be conducted in a manner appropriate to the educational level, literacy, and language of those employees receiving training. Training materials are available at ESSR.

All employees who have occupational exposure to bloodborne pathogens will receive training on the epidemiology, symptoms, and transmission of bloodborne pathogen diseases. In addition, the training program covers the following elements:

- an explanation of the standard;
- an explanation of our ECP and how to obtain a copy;
- an explanation of methods to recognize tasks and other activities that may involve exposure to blood and OPIM, including what constitutes an exposure incident;
- an explanation of the use and limitations of engineering controls, work practices, and PPE;
- an explanation of the types, uses, location, removal, and disposal of PPE;
- information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine will be offered free of charge to the employee;
- information on the appropriate actions to take and persons to contact in an emergency involving blood or OPIM;
- an explanation of the procedure to follow if an exposure incident occurs, including first aid, the method of reporting the incident and the medical follow-up that is available;
- information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident;
- an explanation of the signs and labels and/or color coding required by the standard and used at this facility; and,
- an opportunity for interactive questions and answers with the person conducting the training session.

## **HIV and HBV Laboratories**

Additional training is required for laboratory employees who work with HBV or HIV. The Principal Investigator (PI) must be proficient in microbiological techniques, and in those operations specific to his/her research. Laboratory workers must have prior experience in the handling of human pathogens or tissue cultures before working with HIV or HBV. For employees who have no such experience, the PI must provide a training program to allow the employee to gain the proper experience. This training program shall be progressive, and must not involve the handling of infectious agents until proficiency has been demonstrated.

Documentation of training and demonstration of proficiency is the responsibility of the PI.



# Communication of Hazards to Employees

**Warning labels**, which are predominantly fluorescent orange or orange-red, shall include the following symbol:



and shall be attached to:

- all containers of biological waste;
- refrigerators/freezers where human blood or OPIM are stored;
- containers used to store, transport or ship human blood or OPIM; and
- equipment that has been contaminated with human blood or OPIM if not decontaminated immediately.

## Exceptions

The only exceptions to this requirement are: (1) red bags or red containers may be substituted for label information; (2) containers of blood, blood components, or blood products that are labeled as to their contents and have been released for transfusion or other clinical use; and (3) containers of biological waste that have been decontaminated (e.g., through steam sterilization) need not be labeled or color-coded, and may be discarded as normal refuse.

**HIV and HBV Research Laboratories** shall have signs posted at the entrance to work areas that contain the following information:



## BIOHAZARD

(Name of the infectious agent)

(Special requirements for entering the area)

(Name, telephone number of the laboratory director or other responsible person)



## Recordkeeping

**Medical records** will be maintained for each employee with occupational exposure in accordance with 29 CFR 1910.20, "Access to Employee Exposure and Medical Records."

The UHC is responsible for maintenance of the required medical records. These confidential records are kept at the Occupational Health Clinic for at least the duration of employment plus 30 years. These records include: (1) name and social security number of the employee; (2) copy of the employee's hepatitis B vaccination status including dates of vaccinations and relevant supporting records; (3) copy of all results of examinations, medical testing and follow-up procedures; (4) copy of any healthcare professional's written opinion; and (5) copy of any exposure incident evaluation reports.

Employee medical records are provided upon request of the employee or to anyone having written consent of the employee within 15 working days. Such requests should be sent to the Occupational Health Clinic at the UHC.

**Training records** will be maintained by ESSR and shall include: (1) dates of training sessions, (2) contents of training, (3) names and qualifications of persons conducting the training, and (4) names and job titles of all persons attending the training sessions. Training records will be maintained for 3 years from the date on which the training occurred. Employee training records are provided upon request to the employee or the employee's authorized representative within 15 working days. Such requests should be addressed to ESSR.

### **OSHA Recordkeeping**

An exposure incident is evaluated to determine if the case meets OSHA's Recordkeeping Requirements (29 CFR 1904). This determination and the recording activities are done by the Occupational Health Clinic.



# General Engineering Controls and Work Practices

Engineering controls and work practice controls will be used to prevent or minimize exposure to bloodborne pathogens. General engineering controls and work practice controls are listed below. Engineering and work practice controls for specific tasks are outlined in following sections of this ECP.

## 1. Work Practices

- Eating, drinking, smoking, storing food, applying cosmetics or lip balm, or handling contact lenses are prohibited in areas where human blood or OPIM are present.
- Handle contaminated material (especially sharps) with tongs, or dustpan and broom. Gloves do not protect against punctures or cuts.
- Dispose of contaminated material as Biological Waste (also referred to as Biological, Pathological and Medical Waste, or BPMW). Place sharp objects into sharps containers. Place other materials contaminated with human blood or OPIM into biohazard disposal bags.
- Bring the appropriate sharps container or biohazard disposal bag to the site, and place the contaminated material(s) promptly inside.
- Wear gloves and other PPE as necessary when handling material.
- Remove gloves carefully to avoid touching their outside surfaces with bare hands, and place into a biohazard disposal bag.
- Place biohazard disposal bags in labeled incinerator boxes designated by supervisors. Keep sharps containers and biohazard disposal bags closed except when placing materials inside. Sharps containers must be puncture-resistant, labeled or color coded red, and leakproof on the sides and bottom.

## 2. Hand Washing

- Wash hands with soap and water immediately after removal of gloves.
- If hand-washing facilities are not available, use a waterless, antiseptic hand cleaner or antiseptic towelettes. However, employees must wash their hands with soap and water at the earliest opportunity.

## 3. Exposure Incidents

- If human blood or OPIM touches:
  - **intact skin**, wash the contaminated skin with soap and water immediately or as soon as possible.
  - **eyes, nose or mouth**, immediately flush the affected area(s) with water and contact the supervisor.
  - **"broken" skin or has penetrated intact skin**, immediately wash the affected area with soap and water and contact the supervisor.





- If human blood or OPIM touches the mucous membranes of the eyes, nose, or mouth, penetrates intact skin, or contacts broken skin, the supervisor must ensure that the employee is offered the opportunity for an immediate medical evaluation. If the employee refuses the medical evaluation, the supervisor must document the circumstances and report the event to DES. Following an exposure, employees should go to the Urgent Care Clinic at the UHC. If the UHC is closed, go to Washington Adventist Hospital (7600 Carroll Ave., Takoma Park, MD), or to the nearest convenient emergency room.

#### **4. Decontamination of Surfaces**

Use a disinfectant labeled “tuberculocidal” or 10% bleach for decontamination of surfaces (see pg. 4 for list of approved disinfectants). If a bleach solution is used, it must be diluted fresh daily. Precautions must be taken by employees to prevent exposure during cleanup and disinfection of surfaces contaminated with human blood or other human material. The level of personal protection should be appropriate for the anticipated exposure. Any procedure involving cleanup of human blood or OPIM should be done in a way that minimizes splashing, spraying, or spattering.

#### **5. Small Spills (< 1 )**

- Put on gloves before beginning cleaning activities.
- A face shield or mask/goggles should be worn if splashing might occur, or if directed by the supervisor, and when decontaminating materials at or above waist level.
- Handle contaminated objects as infectious waste or decontaminate with a tuberculocidal disinfectant or 10% bleach solution (see pg. 4).
- Place contaminated sharp objects into sharps containers.
- Spread paper towels over the contaminated surface(s) and liberally apply disinfectant to the paper towels. The disinfectant should remain in contact with the spilled material for the time period specified by the manufacturer before continuing with decontamination procedures.
- Pick up the paper towels, and wipe the surface with disinfectant-dampened paper towels until all visible traces of the contaminant are removed.
- After removal of all visible material, re-wipe the surface with clean paper towels and disinfectant, and allow surface to dry.
- Place cleanup materials that have touched the contaminated surface (including disposable gloves) into a disposal bag, and place bag in dumpster or trash bins.
- Remove PPE in a manner that prevents skin contact with the potentially-contaminated outer surfaces and immediately place into a disposal bag. Reusable utility gloves may be disinfected prior to leaving the site. If surfaces of faceshields or goggles have been visibly contaminated, clean with disinfectant. Keep sharps containers and disposal bags closed except when placing materials inside. Following disinfection, reusable equipment may be handled as noninfectious.

#### **6. Larger Spills**

- Larger spills usually require more vigorous methods of cleanup, and therefore more PPE.
- If there is a likelihood of splashing, wear protective gloves and faceshields or masks/goggles.



- If strenuous hand activity is anticipated (e.g., mopping), use approved utility gloves.
- If cleaning efforts are likely to cause splashing of clothing or if directed by the supervisor, fluid-resistant coveralls or aprons should be worn. Disposable clothing should be discarded into biohazard disposal bags. Disinfect all reusable equipment with disinfectant.
- If an employee's clothing becomes contaminated with human blood or OPIM, remove it as soon as possible, place in a biohazard disposal bag, and deliver to the supervisor for proper laundering. Employees may elect to have a change of clothing available at their offices.



# Task-specific Work Practice and Engineering Controls

## Removal of Human Blood or OPIM from University Grounds

Human blood or OPIM may occasionally be found on campus. Materials may include sharps (needles, scalpels, razors, etc.) bandages, condoms, or other substances or objects that may be contaminated with human blood or OPIM. These materials should be removed and the grounds disinfected following the work practices and engineering controls outlined in the preceding section.

- Decontamination of outside surfaces (e.g., lawns) requires the same level of personal protection as described in the previous section
- It is often not possible to completely remove all visible traces of a potentially infectious material without causing significant property destruction. In these cases, apply an approved disinfectant in a manner and quantity that allows for complete disinfection.

## Procedures for Cleaning Human Blood from Shuttle Buses

If blood is spilled on shuttle buses, the procedures for spills in Section 5 of the preceding chapter will be used to remove the blood.

The cleanup of vomit is not considered an activity that falls under the requirements of the OSHA Bloodborne Pathogens Standard unless it contains visible blood. It is recommended, however, that precautions be taken to prevent contact with the material by using personal protective equipment such as gloves and eye protection if splashing is likely, and utilizing a general cleaner such as Awesome (Daycon) or Simple Green on to wipe surfaces after the vomit has been removed.

## Plumbing Activities

Most of the body fluids directed into the sanitary system are not regulated under the OSHA Bloodborne Pathogens Standard. However, because several diseases are associated with exposure to sewage, certain employees who are involved in drain plumbing activities will be provided equipment to prevent contact with this type of material.

NOTE: Employees who clear sanitary drain blockages, including use of plungers and snaking, are not considered occupationally-exposed to human blood or OPIM unless visible blood or other regulated body fluid is present in the work area. Appropriate PPE (gloves, eye protection, boots, etc.) shall be available to any worker clearing a blockage in sanitary drain systems.

### Drain Repairs (General)

- Flush piping with excess water (hot water, if available) prior to maintenance of drain piping if possible.
- Wear appropriate gloves before breaking into the drain system.
- If drain traps are removed, disassemble carefully and inspect contents for human blood or OPIM and sharps.
- Immediately place any sharp objects (needles, razors, broken glass) into sharps containers.
- Handle contaminated material, especially sharps, with tongs.



- Keep sharps containers closed except when placing materials inside. Sharps containers must be puncture-resistant, labeled or color coded, and leak proof on the sides and bottom.

### **Drain Repairs (Academic laboratories)**

- In addition to the steps outlined for general drain repairs, employees should take additional protective measures when repairing drains in laboratories to prevent contact with drain contents.
- Confirm from laboratory personnel that any necessary decontamination has been performed prior to entry into the lab.
- Wear appropriate gloves and facemask or goggles/mask before starting repairs.
- If there is a likelihood that drain material will splash onto employees' clothing, wear fluid-resistant coveralls.

### **Sewage Cleanup Operations**

The cleanup and disinfection of areas that have been flooded with sewage is not considered an activity that falls under the requirements of the OSHA Bloodborne Pathogens Standard. It is recognized however, that employee exposure to raw sewage can cause illness and extreme discomfort. Employees should use the following procedures for clean-up of sewage:

- Wear utility gloves for all sewage cleanup.
- If cleanup activities will cause splashing, wear face shields or goggles/mask.
- If sewage depth is greater than 1/8", wear water-proof boots.
- Water-resistant coveralls will be provided for larger cleanup activities that might produce splashing of employees' clothing.
- Remove sewage materials from floors and other surfaces with wet-vacuums, brooms, squeegees, etc., and dispose into a properly-functioning sanitary drain.
- Sewage-saturated papers, books and other items may be discarded into outside trash receptacles after employee has received approval from the occupant(s).
- If occupants wish to keep sewage-contaminated items, contact representatives from DES for advice.
- During cleanup, watch for visible human blood or OPIM such as sharps.
- Immediately place sharp objects (needles, razors, broken glass) into sharps containers.
- Handle contaminated material, especially sharps, with tongs.
- Keep sharps containers closed except when placing materials inside. Sharps containers must be puncture-resistant, labeled or color coded as biohazardous material, and leakproof on the sides and bottom.
- Following removal of the gross sewage material, apply an appropriate disinfectant to all surfaces that were contacted by the sewage. Hard surfaces should be wiped clean and left to dry following application of the disinfectant.
- If the spill site is large use a 5% bleach solution for disinfection. Prepare by mixing 1 part household bleach with 19 parts water. Bleach solutions should not be used to disinfect fabrics such as carpets, and should be used within 24 hours of preparation.
- Try to remove sewage materials from soft or porous surfaces (carpets, office partitions, etc.) with wet-vacuums, carpet-cleaners, steam-cleaners, etc. An appropriate disinfectant should then be applied to these surfaces and allowed to air-dry. Application of bleach solutions to carpets, furnishings, etc., should be avoided.



- Disinfect all reusable equipment with disinfectant prior to removal from the site.

## **Housekeeping Procedures in Bathrooms and Dormitories**

The routine cleanup and disinfection of bathrooms and dormitory bedroom areas are not considered activities that fall under the requirements of the Bloodborne Pathogens Standard. It is recognized, however, that infectious agents responsible for other commonly-occurring diseases may be present. Application of disinfectant to bathroom surfaces is commonly used to reduce occurrences of such diseases. Disinfectants used for this purpose must be used according to the manufacturer's directions. The Material Safety Data Sheet (MSDS) may also reference use of PPE.

### **Broken Glass**

- Broken glass is not considered Medical Waste unless it is visibly contaminated with human blood or OPIM. However, this material must be handled with extreme care nonetheless.
- Sweep broken glass into a dustpan for placement into the disposal container. Broken glassware should be placed into a rigid cardboard box for disposal into the dumpster.
- Visibly contaminated glassware should be placed into an appropriate sharps container. Sharps containers must be puncture-resistant, labeled with the biohazard sign or color coded, and leakproof on the sides and bottom.

### **Bed Linen**

- Bed linen, clothing, or towels are not treated as medical waste unless there is visible contamination with human blood or OPIM.
- Items which appear to be contaminated with human blood or OPIM shall only be handled by employees who have received the required training and PPE. If a non-trained employee finds a potentially-contaminated item, he/she should contact their supervisor, who will call an appropriately trained worker to manage the situation.
- Contaminated linen, towels, etc., may be:
  - disposed as medical waste,
  - decontaminated with an approved disinfectant, or
  - placed in biohazard disposal bags for laundering by trained workers.

### **Housekeeping in Bathrooms**

Employees who are responsible for housekeeping activities in bathrooms need to take preventive measures to prevent contact with human blood or OPIM. Follow the Work Practice and Engineering controls in the preceding section for the cleanup and decontamination of potentially infectious material such as blood spills, contaminated razors or broken glass, used condoms, etc.

**Disposable razors** are routinely discarded in residential bathroom facilities. Workers who are responsible for housekeeping in these areas may carefully handle and discard these razors into the general trash containers unless they are visibly contaminated with human blood or OPIM, or damaged in such a way that the razor blade is exposed. In these situations, workers must wear appropriate gloves and carefully place the razors into an appropriate sharps container. If a razor cannot be easily handled due to breakage, or if a bare razor blade must be discarded, the employee shall pick up the razor with tongs or tweezers.



If **feminine hygiene products** have been placed into the bathroom's common waste receptacle, and the receptacle is lined with a plastic bag, the bag may be removed and disposed as normal trash. Employees should wear gloves when removing and handling the trash bag.

**To empty and disinfect a container that is dedicated for feminine hygiene product disposal:**

- Feminine hygiene disposal containers should be lined with a plastic bag.
- Wear gloves to remove the plastic bag from the container.
- Tie the plastic bag closed and place in the general trash.
- Wipe or spray surfaces of the container with disinfectant.
- Remove gloves in a manner that prevents skin contact with their outside surfaces. If reusable utility gloves are used, disinfect with disinfectant prior to leaving the site.

## **First-Aid and CPR Providers**

Employees who provide first-aid or cardiopulmonary resuscitation (CPR) as a function of their job must have protective equipment available when emergency response is needed. A resuscitation mask should be available for employees who administer CPR. The mask allows for mouth-to-mouth resuscitation without direct contact. A check valve in the mask prevents exposure to the victim's exhaled air or vomitus. Appropriate gloves should be available for use during emergency response activities.

## **Handling and Storage of Regulated Waste**

Regulated waste is sometimes called Medical Waste or Biological Waste. All three names refer to waste material that contains human blood or OPIM. Implementation of the OSHA Bloodborne Pathogens Standard requires proper handling, storage, and disposal of regulated waste. All employees who have been identified for inclusion into the program must be aware of the procedures and precautions for handling and storing regulated waste, which are described in Appendix IV of this document.

- There are two primary types of regulated waste containers that are provided to employees. The **sharps container** is constructed of puncture-resistant material and is designed for disposal of needles, razors, etc. The **biohazard disposal bag** is a large plastic bag that is usually red. Both containers must be labeled with the universal biohazard symbol or be colored red or orange.
- Sharps containers and biohazard disposal bags may be used for multiple disposal opportunities if they are transported and stored so the contents do not spill. If containers are damaged, or if the outside surface becomes contaminated with human blood or OPIM, they should be placed into larger, intact containers for disposal.
- Keep containers in a secure location at all times except during transport or use. It is the supervisor's responsibility to designate appropriate central storage locations for regulated waste containers. Do not leave them unattended when they are in locations accessible to the general campus population. Employees who generate or collect regulated waste shall place it into the central storage location awaiting pick-up.
- 



### **Laboratory regulated waste**

- Laboratory supervisors are responsible for ensuring that regulated waste from laboratories is either decontaminated or properly packaged and disposed.
- Waste that is removed from laboratory facilities should be handled carefully, to prevent contact with the employee's body (i.e., don't allow container to bump into or brush against your body). Since needles and other sharps are commonly used in laboratories, it is prudent for employees to handle laboratory waste as though it may contain sharps. Refer to waste disposal guidelines in Appendix IV. **Sharps containers** should be:
  - closable,
  - easily accessible to personnel,
  - maintained in an upright position,
  - opened only when sharps are placed inside,
  - filled no more than 3/4 full to prevent inadvertent spillage or employee contact,
  - puncture-resistant,
  - labeled or color coded,
  - leakproof on the sides and bottom.
- If there is a possibility of leakage, the sharps container must be placed into a suitably leakproof and labeled secondary container (e.g., an intact biohazard disposable bag.)
- Employees should never reach into the sharps container when placing materials inside and should never attempt to retrieve materials.

### **Biohazard disposal bags:**

- are used for the transport and disposal of human blood or OPIM that are not sharp,
- may be transported by employees between uses, but should be protected from inadvertent damage,
- must be kept closed during transport by means of twist-ties, clips, etc. When the biohazard disposal bag is ready for disposal, employees shall twist the bag closed and secure it with tape, and place it in an incinerator box. Employees should not try to squeeze the air from biohazard disposal bags to reduce its size prior to disposal.

### **Central Storage and Pick-up of Regulated waste**

- Central storage/disposal locations for regulated waste collection should be designated by supervisors. Employees may bring biohazard disposal bags to these locations and consolidate it into larger containers. These central containers should have external support (e.g., labeled cardboard boxes) for added strength and be labeled. Filled, closed sharps containers may be placed into an incinerator box for disposal. Do not attempt to pack down biohazard disposal bags into incinerator boxes. If the outside surface of any container is contaminated by a potentially infectious material, it must be placed into a second container which is leakproof, properly labeled, and closed prior to transport.
- Scheduled pick-ups of regulated waste from designated central storage locations may be arranged through DES if sufficient quantities are routinely generated. The supervisor should request pickup from the DES web site at <http://www.essr.umd.edu/>. Please refer to Appendix IV for specific information about the disposal of regulated waste.





## **Laundering of Contaminated Clothing or Bed Linens**

The Athletic Department is responsible for laundering clothing or bed linen that may be contaminated with human blood or OPIM.

**The identification of contaminated clothing or bed linen** is based upon the visible presence of human blood or OPIM. "Dirty" clothing or bed linen which is not visibly contaminated with blood may be handled and laundered by employees not identified as having occupational exposure to Bloodborne Pathogens. Care must be taken, however, to insure that these employees receive sufficient training to recognize potential contamination so they may defer this work to trained and protected workers.

### **Contaminated laundry or bed linen shall be:**

- handled as little as possible with a minimum of agitation,
- properly bagged and not sorted or rinsed at its point of origin,
- placed in appropriately-labeled and fluid-resistant containers by the generating department. Biohazard disposal bags are suitable for this purpose. The containers must be kept closed during transport and until clothing is removed for laundering.
- washed with detergent and water at a temperature of not less than F for at least 25 minutes.

### **Personal Protective Equipment**

Employees responsible for handling contaminated clothing or bed linen shall utilize PPE to minimize potential for exposures. At a minimum, appropriate gloves must be utilized when handling contaminated clothing or bed linen. If aerosolization of potentially-contaminated materials is likely (e.g., when removing contaminated clothing from a biohazard disposal bag which contains visible free liquid), the employee must wear a face shield or mask/goggles when handling the clothing.

- Remove protective clothing in a way that prevents skin contact with contaminated surfaces.
- Place any disposable items that have come into contact with the contaminated clothing or bed linen (including disposable gloves and the empty biohazard disposal bag) into a biohazard disposal bag for proper disposal.
- If reusable utility gloves are used, discard as regulated waste, or disinfect with disinfectant before leaving the site.
- If surfaces of face shields or goggles have become visibly contaminated, disinfect with disinfectant or place in regulated waste containers.





## **HIV and HBV Research Laboratories and Production Facilities**

This section applies to research laboratories and production facilities engaged in the culture, production, concentration, or experimentation of HIV or HBV. It does not apply to clinical or diagnostic laboratories engaged solely in the analysis of blood, tissues, or organs.

Any PI, Laboratory Manager, or Instructor who plans to work with HBV, HCV, or HIV needs to complete the "Registration of Materials (Potentially) Infectious for Humans" form, and send it to the BSO at ESSR before beginning work. The BSO will evaluate the work and survey the facility according to the criteria in the current edition of the Department of Health and Human Services publication *Biosafety in Microbiological and Biomedical Laboratories*. The BSO will report the proposed work and facility to the Institutional Biosafety Committee (IBC). Work may not begin until the IBC reviews and approves the proposed experiments.

### **Research laboratories and production facilities shall meet the following criteria:**

- Before disposal, all waste from work areas and from animal rooms is either incinerated or decontaminated by a method such as autoclaving known to effectively destroy bloodborne pathogens.
- Laboratory doors are kept closed when work with HIV or HBV is in progress.
- Access to the laboratory facility is limited to authorized persons. Written procedures and policies are established to ensure that only persons who have been advised of the potential biohazard, who meet any specific entry requirements, and who comply with all entry/exit procedures shall be allowed to enter.
- When OPIM or infected animals are present in the facility, a hazard warning sign, as described in 29 CFR 1910.1030(g)(1)(ii) must be posted on all access doors.
- Eating, drinking, smoking, applying cosmetics or lip balm, or handling contact lenses is prohibited in areas where work is occurring.
- Any procedure involving human blood or OPIM should be done in a way that minimizes splashing, spraying, or spattering.
- All work with HIV, HCV, and HBV cultures is conducted in properly operating and certified biological safety cabinets or other physical containment devices within the facility. No work with these materials shall be conducted on the open bench.
- Laboratory coats, gowns, smocks, etc., shall be used in the work area and animal rooms. Protective clothing may not be worn outside the work area and shall be decontaminated before laundering.
- Special care shall be taken to avoid skin contact with OPIM. Gloves are worn when handling animals, and when hand contact with potentially infectious materials is unavoidable.
- After removal of gloves, immediately wash hands with soap and water.
- Protect vacuum lines with liquid disinfectant traps and high-efficiency particulate air (HEPA) filters that are checked regularly and maintained/replaced, as necessary.



- Use hypodermic needles only for the parenteral injection and aspiration of fluids from laboratory animals and diaphragm bottles. Needles shall not be bent, sheared, removed or replaced following use. The needle/syringe assembly shall be immediately placed into an appropriate sharps container and autoclaved or decontaminated before reuse or disposal.
- All spills shall be immediately contained and cleaned up by laboratory staff properly trained and equipped to work with potentially infectious materials.
- A biosafety manual shall be prepared or adopted and updated at least annually.
- Biological safety cabinets (Class I, II or III), physical containment devices, special protective clothing, respirators, centrifuge safety cups, sealed centrifuge rotors, containment cages, etc. shall be used for all activities with infectious materials that pose a health threat due to exposure to droplets, splashes, spills or aerosols.
- Biological safety cabinets must be certified when installed, when moved, and at least annually thereafter.
- Each laboratory shall have available: (1) facility for hand washing, (2) appropriate eyewash, and (3) autoclave for decontamination of infectious materials.

#### **HIV and HBV Production Facilities**

- Production facilities shall be separated from areas of unrestricted traffic flow within the building. Entry into the facility shall be through two sets of doors. Surfaces of doors, walls, floors and ceilings shall be water resistant to facilitate cleaning. Penetrations in these surfaces shall be sealed, or be capable of being sealed to facilitate decontamination.
- HIV/HBV production facilities must have: (1) hand washing facilities near the exit door which are foot, elbow or automatically operated, (2) access doors which are self-closing, (3) an autoclave within or as near as possible to the work area, (4) a ducted exhaust-air ventilation system which creates a directional airflow into the facility and which totally exhausts outside the building away from occupied areas or air intakes.

#### **Special Training**

All employees in HIV/HBV laboratories must have prior experience in the handling of human pathogens or tissue cultures, and demonstrate proficiency in standard microbiological techniques and in the practices and operations specific to the facility before working with HIV, HCV, or HBV. Employees with no prior experience must be provided with a training program. Initial work activities may not include the handling of infectious agents, and a progression of work activities should be assigned as techniques are learned and proficiency is developed. Proficiency must be demonstrated before infectious agents are handled. The PI is responsible for providing and documenting this specific training.



## Research/Teaching Activities Involving Handling of Human Blood or OPIM

- All employees involved in teaching or research activities that require the handling of human blood or OPIM shall take precautions to prevent contact with these materials.
- Any PI, Laboratory Manager, or Instructor who plans to work with human blood, tissue, or OPIM needs to complete the "Registration of Materials (Potentially) Infectious for Humans" form and send it to the BSO. The BSO will survey the facility according to the criteria in the current edition of the Department of Health and Human Services publication *Biosafety in Microbiological and Biomedical Laboratories*. All individuals who will be working with these materials must take the web-based training, which is available on the ESSR web site at <http://www.essr.umd.edu/>.
- Use **Universal Precautions** for all activities with human blood or OPIM.

## Procedures for Athletic Department Trainers and Sporting Event Officials

In the athletics environment, universal precautions should be utilized during the immediate control of bleeding and when handling bloody dressings, mouth guards and other articles contaminated with human blood or OPIM. The use of appropriate gloves for the examination, cleaning and dressing of wounds is required. Gloves must be available for all athletic events, training sessions and physical therapy sessions. Other PPE such as goggles, masks, face shields, fluid-resistant aprons, must be available and used as needed if there is a possibility for splashing or aerosolizing of human blood or OPIM.

- All personnel responsible for the treatment of wounds must be provided the necessary PPE. Place disposable gloves into a biohazard disposal bag immediately after use. Reusable contaminated PPE must be placed into an appropriately-labeled, leak-proof container until decontaminated.
- Use extreme care when handling sharp objects such as needles, razors and scissors. Needles should not be recapped, bent, broken or otherwise manipulated by hand. Disposable sharps must be immediately placed into a puncture-proof sharps container after use. Sharps containers must be puncture-resistant, labeled or color coded, and leakproof on the sides and bottom.
- Athletes may not compete at any level of competition if wounds have not been treated and covered.
- Athletic personnel with exudative lesions, open wounds or weeping dermatitis should avoid situations where they may come into contact with potentially infectious materials.
- The use of common towels or water bottles is discouraged because they may become contaminated with potentially infectious body fluids. Although transmission of bloodborne pathogens in saliva is extremely unlikely, dental or oral injuries increase the



potential for transmission.

- Prior to any intercollegiate athletic competition, a designated representative of the University Athletic Department shall ensure that the visiting team has biohazard disposal bags and sharps containers for disposal of human blood or OPIM. Following completion of the event, the Athletic Department representative shall collect any bags and containers that were used, and place them in incinerator boxes at central locations.
- Employees who provide first aid shall use resuscitation masks which permit administration of CPR without direct mouth-to-mouth contact.
- Place washable materials (jerseys, towels, splints, etc.) that have become contaminated with human blood or OPIM in appropriately-labeled, leak-proof plastic bags. These materials shall be handled and laundered according to the procedures outlined in Section 7, "Laundering of Contaminated Clothing or Bed Linens."
- Disinfect contaminated surfaces, instruments and equipment according to the procedures outlined in General Engineering Controls and Work Practices, pg. 19.
- Even if no contamination is observed, wrestling mats and other similar surfaces should be cleaned and disinfected regularly to prevent the spread of contagious skin infections.

## **UMPD Emergency Response Activities**

Sworn members respond to or have contact with emergency incidents in which they may be required to treat the ill and injured as well as provide for their transport. Activities may include controlling bleeding, application of bandages and dressings, and airway control/CPR. Additionally, these employees may have contact with contaminated body fluids/tissues at crime scenes, arrest situations and evidence/property retrieval.

Designated civilian employees, Police Aides or the Evidence Technician may respond to crime scenes and handle evidence that is contaminated with blood/body fluids.

Personnel shall follow all provisions of these procedures as well as those established in Section V.229 of the UMPD procedural manual.

The following equipment will be utilized for the protection of employees and the public:

- Sharps Containers - will be in all Departmental first aid kits, and in Logistics and Investigations Units. These containers will have a lid to prevent spilling, and will display the biohazard symbol.
- Disposable Latex or Vinyl Gloves - will be issued to all affected employees. Heavy duty rubber gloves will be available for clean-up purposes. Disposable hypoallergenic gloves will be available to personnel who have allergies to regular-use gloves.
- Disposable CPR Masks (with one-way valves) - will be in all first aid kits.
- Disposable Face and Eye Protection - will be in all first aid kits.
- Waterless Hand Cleaner (antimicrobial) - will be in all first aid kits with hand towels as well as in Logistics and Investigations.
- Disposable Gowns and Shoe Covers - will be in all PPE kits.



- Biohazard Disposal Bags and Ties - will be in all first aid kits, Investigations, and Logistics. They will be used for the disposal of infectious waste and containment of evidence contaminated with body fluids/blood. Additional bags will be used if the primary container leaks or becomes contaminated on the outside.
- Contaminated Evidence Shipping/Storage - If contaminated evidence is removed from biohazard bags and placed in other containers for storage or transport to another agency for analysis, the container will display the biohazard symbol.
- Disinfection Kits - will be available to all affected employees for cleaning departmental issued equipment (except for uniforms and clothing), and the interior of transport vehicles.
- Waste Containers - will be placed in designated areas. These containers will have the biohazard symbol on them, and be designed so as not to spill their contents.

**PPE Kits** will be in all Department first aid kits as well as in Logistics and Investigations. Sworn members will check the first aid kits at the beginning of their shift to assure that the PPE is intact. The responsibility of checking the other kits will be left to the individual in charge of the area where they are kept. PPE kits will be located in the following areas:

Duty Office first aid kit  
Designated agency vehicles  
PPE kit in Logistics  
PPE kit in Investigations

PPE kits will consist of:

Eye and Face protection,  
Heavy duty gloves,  
CPR mask,  
Moist antiseptic towelettes,  
Hand towels,  
Sharps container,  
Biohazard Disposal Bags and ties,  
Latex/Vinyl gloves,  
Biohazard Stickers,  
Liquid impervious gown and shoe covers for use when dealing with gross amounts of blood/body fluids, and  
Standard normal first aid supplies.

#### USE OF PPE

- PPE will be used except in rare and extraordinary circumstances where it could compromise the delivery of emergency medical care and public safety. In those cases, the circumstances will be documented by the employee and investigated by the on-duty supervisor, to determine if changes should be made to prevent future occurrences.
- Gloves will be worn whenever hand contact with blood or OPIM is anticipated.
- Disposable gloves will be replaced as soon as possible if they are contaminated, torn,



punctured, or otherwise lose their ability to function as a barrier to exposure.

- Disposable gloves will not be reused.
- Utility (rubber) gloves used for cleaning may be reused if they are disinfected and have no cracks or tears.
- Eye and face protection will be used whenever splashes or spray of blood or body fluids are reasonably anticipated.
- CPR masks with one way valves will be used when performing mouth to mouth resuscitation
- Employees assigned to Investigations, or as Evidence Technician, or employees at crime scenes or scene of injured persons, will wear gowns and shoe covers when large amounts of blood or body fluids are present.
- Employees will remove all contaminated PPE and place it inside a biohazard disposal bag prior to clearing the call. The bag will then be placed in a designated container for disposal.

### WORK PRACTICE CONTROLS

Universal precautions will be exercised at all times. In other words, **all blood and body fluids must be considered potentially infectious materials**. The following work practice controls are effective immediately to reduce the likelihood of contracting or spreading a communicable disease.

- Mouth to mouth resuscitation (without pocket masks) shall be performed as a "last resort" in the management of a non-breathing patient. Not using protection will be documented.
- Latex/vinyl/rubber gloves will be worn when exposure to a contamination is likely. Every reasonable effort should be made to minimize exposure to body fluids.
- Employees will cover all open wounds with bandages prior to reporting for duty.
- As soon as possible, employees will wash their hands after contact with potentially infectious materials even if gloves were worn. Waterless, antiseptic hand cleaner (moist towelettes) will be available in first aid kits and used until the employee can get to hand washing area.
- Mucous membranes should be flushed with water immediately or as soon as possible after an exposure.
- Uniforms or clothing that becomes contaminated will be removed and the skin areas beneath thoroughly washed.
- Gloves should be changed between patients and removed before handling other equipment (i.e., radio, notepad, interior of police vehicle, etc.).
- Recapping, bending or breaking of needles is prohibited. Discard needle in an approved sharps container.
- In any procedure involving blood or OPIM, all affected employees will use caution so as to minimize splashing, spraying and splattering.
- Employees are prohibited from mouth suctioning of blood when dealing with snake or animal bites. This suctioning is no longer part of the Maryland First Responder Medical protocol.





- Eating, drinking, smoking or the application of cosmetics and handling of contact lenses are prohibited in areas where potentially infectious material is present. Do not store food in refrigerators used to store blood or OPIM.
- Prisoners with visible body fluids on their person shall be transported in separate vehicles from other arrestees and maintained in separate holding areas.
- Prisoners with a known communicable disease will **not** be isolated from other prisoners **unless there is a medical reason to do so.**
- If custody of the prisoner is relinquished to another agency, the arresting officer will notify the receiving agency that the prisoner has a communicable disease. This notification will only be given to those with a need to know, thus ensuring the privacy and confidentiality of the patient/prisoner.
- Strip/body cavity searches will be conducted in accordance with Department policy. During this type of search, latex or vinyl gloves will be worn. Employees will wash their hands as soon as possible after this contact.
- Any police equipment that is contaminated must be placed out of service and properly decontaminated prior to reuse, servicing or shipping (i.e. PBT, duty weapon, uniform).
- If it is not possible to clean the equipment before shipping, or the item is of evidentiary value, information regarding the contamination must be communicated to the representative or other law enforcement agency. Evidence containers should display the biohazard symbol.

## HOUSEKEEPING

- Place all used PPE and contaminated non-evidence items in a biohazard disposal bag and handle according to University policy. Police employees may elect to leave the used PPE either at the hospital or inside an ambulance if appropriate disposal receptacles are available for such use.
- All evidence that may be contaminated will be submitted in a biohazard bag or sharps container to the Logistics Unit using the appropriate chain of custody procedure. These items will be placed inside lockers marked with the biohazard symbol.
- Contaminated Clothing and Equipment:
  - Employees whose clothing (i.e. uniforms, personal clothing, body armor) is contaminated should remove it as soon as possible and wash the skin beneath. Place the clothing in a biohazard bag and give to the Logistics Unit who will either dispose of the contaminated uniform according to University policy or have it appropriately cleaned, disinfected, and reissued.
  - Employees' personal clothing will be either cleaned and returned to the employee or disposed of and replaced by the department.
  - Employees whose issued equipment is contaminated (i.e. handcuffs, leather belts, etc.) shall clean and disinfect it as soon as possible using the disinfection kit.
    - Use rubber cleaning gloves when cleaning equipment.
    - Use eye and face protection when splashing is likely.
    - Clean the equipment twice and dry thoroughly prior to reuse.
    - Interior of transport vehicles that have been contaminated will be cleaned as soon as possible. Transport vehicles shall be tagged OUT OF SERVICE until they are appropriately disinfected.



- Contaminated weapons will be unloaded, placed in a biohazard bag, and given to the Department armorer for cleaning and conditioning. The magazine and street rounds in the weapon should also be included for inspection by the armorer.
- A disinfection kit (comprised of a bucket, approved disinfectant, detergent, rubber gloves and paper towels) will be available. After use, the gloves will be cleaned and the water bucket emptied. All used paper towels will be disposed of in approved biohazard containers. Follow procedures for disinfection as described in Section 2, "Decontamination of Surfaces."
- Employees finding spilled blood or other body fluid within agency facilities should immediately isolate the affected area (sign posting or barrier tape) and contact Work Control for clean-up. After-hours notification will be handled the same way. Minor spill (droplets) may be cleaned by department employees using the disinfection kit in the duty office.
- The Arrest Processing area will be cleaned on a daily basis by cleaning personnel.
- Broken glassware that may be contaminated should not be picked up directly with the hands; use mechanical means such as a dust pan and brush, tongs, or forceps. Place contaminated broken glassware in appropriate puncture-resistant *sharps containers*.
- Secondary biohazard disposal bags will be used if the primary bag becomes contaminated or leaks. Do not place excessive amounts of fluids into biohazard disposal bags unless an absorbing material is also placed into the container. The second bag will be placed and secured over the first bag.
- Needles needed as evidence will be packaged into a sharps container and processed according to departmental policy. The Logistics Unit will assure that all needle containers transported to the MSP lab will display the biohazard symbol.
- If custody of a prisoner is relinquished to another agency, the arresting officer will notify the receiving agency of any communicable disease the prisoner is known to have. This notification will only be given to those with a need to know, thus ensuring the privacy and confidentiality of the patient/prisoner.
- The cell area will be inspected weekly for cleanliness in accordance with agency-established guidelines.
- Employees should not reach into sharps containers, as this increases the likelihood of an accidental needle stick or cut.





## University Health Center Activities

Universal Precautions must be used to prevent contact with blood or OPIM. Under circumstances in which differentiation between body fluids is difficult or impossible, all body fluids must be considered potentially infectious materials.

### A. Dental Clinic

- Dentists, Dental Hygienists and Dental Assistants are considered University employees having occupational exposure to BBP.
- The Dental Clinic personnel listed above are the only personnel in the UHC who are authorized to recap and/or resheath used needles. These employees must attend biannual training sessions to assure their proper use of the mechanical resheathing device, and proficiency with the one handed recapping technique. Recordkeeping for this specialized training will be maintained by the Dental Unit's General Assistant Supervisor.
- Dentists who perform anesthetic injections, cavity preparation (drilling), dental extractions, or dental examinations must wear appropriate gloves, protective glasses, surgical masks, and lab coats. Dentists handling sharps must wear appropriate gloves.
- Dental Hygienists who provide dental prophylaxis or dental exams, or take dental X-rays, or assist in any of the activities described above must wear appropriate gloves, protective glasses, surgical masks, and lab coats. Dental Hygienists handling sharps must wear appropriate gloves.
- Dental Hygienists scrubbing and bagging dental instruments must wear appropriate utility gloves, protective glasses and lab coats.
- Dental Assistants who are assisting in any of the activities described above must wear appropriate gloves, protective glasses, surgical masks, and lab coats. Dental Assistants who are developing X-rays, cleaning the treatment room, or handling sharps must wear appropriate gloves.

### B. Laboratory

- Universal precautions are required for handling ALL human blood specimens for hematology, microbiology, chemical, or serology testing. Human serum that is used as a control in a test procedure should also be handled using Universal Precautions.
- Protective gloves must be worn by all personnel engaged in activities that may involve direct contact of skin with potentially infectious specimens, cultures or tissues. Gloves should be carefully removed and changed when they are visibly contaminated. Personnel who have dermatitis or other lesions on the hands, and who may have indirect contact with potentially infectious materials must also wear protective gloves. Hand washing with soap and water immediately after potentially infectious materials are handled and after work is completed even when gloves have been worn as described above, should be a routine practice.
- All phlebotomists must wear appropriate gloves for any phlebotomy procedure. Any exception to this policy must be discussed with the laboratory supervisor.
- Used syringes and needles must be discarded in an appropriate sharps container. The sharps container must be secured and discarded when it is 2/3 full. Addition of syringes/needles into a sharps container that is nearly filled may cause an accidental parenteral exposure. When phlebotomists utilize the vacutainer system, the mechanical needle removal device must be used. Needles shall not be resheathed, bent, or broken.



- Specimens with GROSS EXTERNAL contamination should not be accepted. If these specimens are left by patients, they shall be placed in plastic bags to protect subsequent handlers.
- Specimens placed in a centrifuge MUST BE COVERED by a sealed cap to prevent aerosol formation.
- Acid fast bacilli (AFB) and fungal specimens should be stored, handled and processed in the biological safety cabinet. Autoclave fungal and AFB cultures before leaving the Microbiology area.
- All cultures must be considered pathogenic. Careful technique in their handling should be observed at all times. Large numbers of culture plates should be handled/transported in appropriate baskets or racks. Test tube racks or trays are required for tubed cultures. Do not place tubes in glass or paper cups.
- Needles and loops should be flame sterilized so as not to cause spattering of material.
- Benches should be disinfected before work is begun and when the work shift is finished.
- Specimens must be discarded into leak-proof biohazard disposal bags. Bags should be changed when about half full, and securely sealed to prevent leakage.
- Materials or containers that are to be reused must be autoclaved prior to cleaning. They must be placed in a sealed and clearly labeled container to minimize hazards to others prior to sterilization.

## Spills

### "Dry" spills (overturned or broken culture plates) with no significant aerosol formation:

1. Evacuation of room probably not indicated.
2. At a minimum, protective gloves must be worn.
3. Flood spill area with appropriate disinfectant.
4. Soak up disinfectant and contaminated material with paper towels and place in a doubled biohazard disposal bag.
5. Re-wash spill area thoroughly with fresh disinfectant.
6. Properly dispose of the contaminated material.

### Liquid spills on bench or floor:

1. If significant aerosols are believed to have been generated, the area should be evacuated and access denied for at least one hour.
2. At a minimum, protective gloves must be worn. If it is likely that splashing of the contaminated material may occur during decontamination and cleanup, protective glasses, surgical masks and fluid-resistant clothing should be worn.
3. Cover the spill area with appropriate disinfectant.
4. Soak up disinfectant and contaminated material with paper towels and place in a biohazard disposal bag.
5. Re-wash spill area with fresh disinfectant.
6. Properly dispose of the contaminated material.

### Centrifuge spills:

1. Shut off centrifuge, evacuate area at once, shut down ventilation system for area, and do not re-enter for at least one hour to allow aerosols to settle.
2. Persons entering the room for decontamination should wear appropriate gloves,



- protective glasses, surgical masks, and fluid-resistant clothing.
3. If liquids are present, cover with appropriate disinfectant and soak up with paper towels for disposal as described above.
  4. Thoroughly disinfect surfaces in the centrifuge with disinfectant.
  5. Clean the room thoroughly before resuming work.

**Spills in incubators or other closed areas:**

1. If possible, disinfect, soak up, and dispose of contaminated materials as described above.
2. If routine cleanup is not possible, the unit may require overnight decontamination with a sterilizing gas such as paraformaldehyde or glutaraldehyde (see supervisor).
3. Following disinfection, the unit should be thoroughly washed, if possible.

**C. Housekeeping**

All housekeepers in the UHC are considered to have exposure to BBP.

**Cleanup of Contaminated Areas**

- Dress in the appropriate PPE. Minimal protection includes latex gloves and a laboratory or housekeepers coat. Goggles or face shield will be required if there is any potential for splash or splatter. Disposable shoe covers, and a fluid-resistant gown or apron may also be required depending on the situation. Care should be taken not to splash or aerosolize any of the material during the decontamination process.
- First, identify the extent of the contamination. Then put on the appropriate PPE. Make sure all of the materials necessary for the decontamination activity are present. Items that are commonly needed include:
  - Biohazard disposal bags
  - Puncture-proof sharps containers
  - Forceps or tongs (to pick up contaminated sharp objects)
  - Paper towels to absorb fluids
  - Mop and pail
  - EPA-approved tuberculocidal disinfectant, or a freshly prepared mixture of 1 part household bleach and 9 parts water
- Use forceps to pick up any broken glass or sharp objects, and place them into the sharps container.
- Limit the spread of the spill by gently covering the area with paper towels. Tissue and other organic matter should be removed with the use of paper towels, and placed into a biohazard disposal bag. Care should be taken to prevent splashing or aerosolizing of the material. Absorb the material with paper towels. Work from the outside toward the center of the spill.
- After all of the objects, paper towels, organic matter, etc., have been removed from the spill site:
  - Lay clean paper towels over the area.
  - Gently pour an EPA-approved tuberculocidal disinfectant, or 10% household bleach mixture, over the towels, making sure that the material is not splashed. Note: Bleach must be diluted fresh daily. Disinfectants must be applied to clean surfaces. The greater the amount of organic material present, the less likely that



- the disinfectant will come into direct contact with potentially infectious microorganisms.
- Allow the disinfectant to remain in contact with the spill area for the time period indicated on the label. If a bleach/water mixture is used, it should be allowed to remain in contact for 20 minutes.
  - After the appropriate time period has passed, discard the paper towels into the biohazard disposal bag.
  - The area should be recleaned with standard soap and water to remove all traces of the disinfectant.
  - Remove all PPE, being sure to remove gloves last. All disposable PPE must be placed into the biohazard disposal bag. Thoroughly wash your hands as soon as possible, and put on a fresh pair of gloves to handle or transport Biological Waste containers. Reusable PPE and decontamination equipment, such as goggles and mops, are to be taken to the appropriate area for decontamination, and treated in the same manner as described above. New PPE shall be worn when decontaminating reusable equipment. After equipment decontamination, remove PPE and wash hands thoroughly.

#### **D. Women's Clinic**

- Physicians, Nurse Practitioners, Licensed Practical Nurses and Registered Nurses assigned to this area are considered University employees having occupational exposure to BBP.
- Those employees who perform pelvic examinations must utilize appropriate gloves.
- Employees cleaning medical instruments must wear gloves and laboratory coats. Face shields must be worn if splashing/splattering is anticipated.
- Employees handling sharps must wear appropriate gloves.
- Examination rooms shall be cleaned/disinfected twice daily. Examination tables shall be cleaned/disinfected between patients. The reception area shall be cleaned/disinfected each day. Routine floor care shall include daily vacuuming and mopping and bimonthly stripping/waxing.

#### **E. Modules I and II**

- Nurse Practitioners, Physicians, Clinic Aides and Registered Nurses assigned to these areas are considered as University employees having occupational exposure to BBP.
- Employees giving injections or handling sharps must wear appropriate gloves.
- Employees who perform pelvic examinations must wear appropriate gloves.
- Employees cleaning medical instruments must wear gloves and laboratory coats. Face shields must be worn if splashing/splattering is anticipated.
- Examination and treatment tables shall be cleaned/disinfected twice daily.

#### **F. Urgent Care & Walk-In.**

- Those employees performing wound debridement, irrigation, incision, suturing or drainage must wear appropriate gloves, surgical masks, face shields and shoe covers (if indicated).
- Gloves and laboratory coats must be worn when employees clean and dress wounds,



- remove foreign bodies, excise lesions, infuse IVs, perform phlebotomy operations, or perform pelvic examinations. Gowns and shoe covers shall be utilized if indicated.
- Persons handling sharps must wear appropriate gloves.
  - Employees cleaning medical instruments must wear gloves and laboratory coats. Face shields must be worn if splashing/splattering is anticipated.
  - Counter tops and examination tables shall be cleaned/disinfected at least daily. Floors shall be cleaned with detergent at least daily. Curtains shall be laundered four times each semester. Non-contaminated bed linen shall be laundered after each patient. Contaminated bed linen and laboratory coats shall be handled and laundered as potentially-contaminated, as necessary.

#### **G. Occupational Health Unit**

- The Physician Assistant assigned to this area is considered to have exposure to BBP.
- No procedures are expected to occur in this unit that might expose the employee to BBP. Gloves and a resuscitation mask will be available in this area for any unanticipated events that might increase the risk of employee contact with infectious materials.
- The examination table shall be cleaned/disinfected at least four times daily. The spirometer will be cleaned/disinfected at least weekly. Spirometer tubes shall be cleaned/disinfected after each patient.



# **Appendix I**

## **Bloodborne Pathogens Standard (29 CFR 1910.1030)**

Part Number 1910  
Standard Number 1910.1030  
Title Bloodborne pathogens.

\* [Effective date for this standard, 1910.1030, is Mar. 6, 1992]

Authority: Secs. 6 and 8, Occupational Safety and Health Act, 29 U.S.C.655, 657, Secretary of Labor's Orders Nos. 12-71 (36 FR 8754), 8-76 (41FR 25059), or 9-83 (48 FR 35736), as applicable; and 29 CFR Part 1911.

Section 1910.1030 also issued under 29 U.S.C. 653.

[http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARDS&p\\_id=10051](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051)



# Appendix II

## Title 10

### MARYLAND DEPARTMENT OF HEALTH AND MENTAL HYGIENE

#### Subtitle 06 - DISEASES

##### Chapter 06 - Communicable Disease Prevention - Handling, Treatment, and Disposal of Special Medical Waste

Authority: Health-General Article, §18-102, Annotated Code of Maryland

###### .01 Scope and Purpose.

- A. Scope.
  - (1) These regulations apply to any person who generates, handles, treats, or disposes of special medical waste as defined below.
  - (2) These regulations do not apply to a person who:
    - (a) Generates special medical waste in the home of an individual; or
    - (b) Does not generate special medical waste in the ordinary course of business.
  - (3) These regulations do not apply to waste generated in the handling of an animal unless the generator knows or has reason to know the animal has a disease that is capable of being transmitted to humans.
- B. Purpose.

These regulations are intended to minimize the possibility of disease transmission by establishing procedures for the handling, treatment, and disposal of special medical waste.

###### .02 Definitions

- A. In this chapter the following terms have the meanings indicated.
- B. Terms Defined.
  - (1) "Anatomical material" means human or animal body parts, including tissues and organs.
  - (2) "Autoclaving" means a process by which an article is subjected to steam under pressure for documented periods of time, temperature, and pressure that results in rendering the article incapable of transmitting disease to humans.
  - (3) "Blood" means human or animal blood.
  - (4) "Blood-soiled article" means any article that contains blood in any form as a result of contact with blood.
  - (5) "Chemical disinfection" means application of a chemical agent that results in rendering the article incapable of transmitting disease to humans.
  - (6) "Cremation" means the incineration of human or animal remains.
  - (7) "Incineration" means a process of burning an article in an enclosed device or contrivance using controlled flame combustion for thermal destruction that results in rendering the article incapable of transmitting disease to humans.
  - (8) "Infectious agent" means an organism (including viral, rickettsial, bacterial, fungal, protozoal, or helminthic) that is capable of producing infection or infectious disease in humans.



- (9) "Interment" means burial in a place, other than a landfill, which is approved for that purpose under applicable law.
- (10) "Mechanical destruction" means a mechanical process such as grinding or shredding which renders an article no longer recognizable.
- (11) "Microbiological laboratory waste" means waste from a clinical microbiological laboratory that contains an infectious agent, and includes cultures and stocks of infectious agents and associated biologicals.
- (12) "Sanitary sewer" means:
  - (a) A liquid waste piping network leading to a sewage treatment facility approved under the Environment Article, Title 9, Annotated Code of Maryland; or
  - (b) An on-site sewage disposal system approved under the Environment Article, Title 9, Annotated Code of Maryland.
- (13) "Sharp" means a syringe, needle, surgical instrument, or other article that has:
  - (a) Cut or punctured human skin; or
  - (b) Come into contact with a known infectious agent.
- (14) "Special medical waste" means waste that is composed of:
  - (a) Anatomical material;
  - (b) Blood in a liquid form;
  - (c) Blood-soiled articles;
  - (d) Contaminated material;
  - (e) Microbiological laboratory waste; or
  - (f) Sharps.

.03 Handling, Treatment, and Disposal of Special Medical Waste - In General

- A. A person who generates special medical waste shall assure that all special medical waste the person generates is handled, treated, and disposed of in accordance with these regulations.
- B. Handling.  
Provisions of this chapter relating to the handling of special medical waste apply:
  - (1) From the creation of the waste until its disposal, and
  - (2) Disposal.
- C. Transporting Off Site for Treatment.
  - (1) Whenever special medical waste is transported before treatment, the generator of the waste shall place the:
    - (a) Special medical waste in a leakproof bag or bags with a combined thickness of at least 3 mils or equivalent strength; and
    - (b) Bag or bags in a clearly labeled rigid container to protect the bag or bags from puncture.
  - (2) If a person intends to use a container for any purpose after the use of the container for handling special medical waste, the person shall disinfect the container.
- D. Disposal of Infectious Waste in Landfill Prohibited.
  - (1) A person who generates special medical waste may not send to a solid waste landfill any special medical waste which meets the definition of "infectious waste" under the Environment Article, §9-227, Annotated Code of Maryland.
  - (2) Special medical waste that is handled and treated according to these regulations does not meet the definition of "infectious waste" under the Environment Article, §9-227, Annotated Code of Maryland.





.04 Blood and Blood-Soiled Articles.

A. Handling.

Before disposal, a person shall handle any blood or blood-soiled article by placing it in a container that will prevent blood from spilling or otherwise leaving the container.

B. Treatment.

A person may treat blood or blood-soiled articles only by:

- (1) If the blood is in liquid form, depositing it in a sanitary sewer if allowed under any local ordinance or regulation and the Environment Article, Annotated Code of Maryland;
- (2) Incineration;
- (3) Autoclaving; or
- (4) Chemical disinfection.

C. Disposal.

After treatment, a person may dispose of blood and blood-soiled articles in:

- (1) A place approved for disposal of solid waste under the Environment Article, Title 9, Annotated Code of Maryland; and
- (2) Accordance with any local ordinance or regulation.

.05 Anatomical Materials.

A. Handling.

(1) Before treatment of anatomical materials either on or off site, a person shall place the:

- (a) Materials in a leakproof bag or bags with a combined thickness of at least 3 mils or equivalent strength; and
- (b) Bag or bags in a clearly labeled rigid container to protect the bag or bags from puncture.

(2) If a person intends to use a container for a purpose after use of the container for handling anatomical material, the person shall disinfect the container.

B. Treatment and Disposal.

A person may treat and dispose of anatomical materials only by:

- (1) Interment;
- (2) Cremation;
- (3) Mechanical destruction followed by depositing it in a sanitary sewer if allowed under any local ordinance or regulation and the Environment Article, Annotated Code of Maryland;
- (4) Incineration followed by depositing in:
  - (a) A place approved for the disposal of solid waste under the Environment Article, Title 9, Annotated Code of Maryland, and
  - (b) Accordance with any local ordinance or regulation.

.06 Sharps.

A. Handling.

Before disposal, a person shall place a sharp in a container which is impervious to puncture.

B. Treatment.

A person may treat a sharp only by:

- (1) Incineration; or
- (2) Mechanical destruction after:
  - (a) Autoclaving, or
  - (b) Chemical disinfection.



- C. Disposal.  
After treatment, a person may dispose of a sharp in:
- (1) A place approved for the disposal of solid waste under the Environment Article, Title 9, Annotated Code of Maryland; and
  - (2) Accordance with any local ordinance or regulation.

.07 Contaminated Materials

- A. Sources of Contaminated Materials.  
A person shall treat as contaminated material:
- (1) Microbiological laboratory waste;
  - (2) The feces of an individual diagnosed as having a disease that may be transmitted to another human being through the feces;
  - (3) An article soiled with the feces of an individual diagnosed as having a disease that may be transmitted to another human being through the feces; and
  - (4) An article that has come into contact with a known infectious agent.
- B. Handling.
- (1) A person handling clinical microbiological laboratory waste shall comply with any regulation adopted by the Secretary under Health - General Article, Title 17, Annotated Code of Maryland, intended to ensure safety in handling infectious agents.
  - (2) Before treatment of contaminated material, a person shall place the:
    - (a) Contaminated material in a leakproof bag or bags with a combined thickness of at least 3 mils or equivalent strength; and
    - (b) Bag or bags in a clearly labeled rigid container to protect the bag or bags from puncture.
  - (3) If a person intends to use a container for any purpose after the use of the container for handling contaminated material, the person shall disinfect the container.
- C. Treatment.  
A person may treat contaminated material only by:
- (1) If the material is feces, depositing it in a sanitary sewer if allowed under any local ordinance or regulation and the Environment Article, Annotated Code of Maryland;
  - (2) Incineration;
  - (3) Autoclaving; or
  - (4) Chemical disinfection.
- D. Disposal.  
After treatment, a person may dispose of contaminated materials in:
- (1) A place approved for the disposal of solid waste under the Environment Article, Title 9, Annotated Code of Maryland; and
  - (2) Accordance with any local ordinance or regulation.

.08 Enforcement.

- A. The secretary may enter the property of any person who generates, handles, treats, or disposes of special medical waste to investigate a complaint the Secretary receives regarding the handling, treatment, or disposal of special medical waste.
- B. Criminal Penalties.
- (1) A person who violates these regulations is guilty of a misdemeanor, and on conviction is subject to a fine not exceeding \$500.
  - (2) Each day that a violation exists shall constitute a separate offense.
- C. In addition to any penalty under §B, if a person violates these regulations, the Secretary may suspend or revoke any license, permit, or certificate issued to the person under the Health - General Article, Annotated Code of Maryland.



## Title 26

### MARYLAND DEPARTMENT OF THE ENVIRONMENT

#### Subtitle 13 - Disposal of Controlled Hazardous Substances

##### Chapter 11 - Special Medical Waste

###### .01 Purpose and Scope.

This chapter identifies those solid wastes that are subject to regulation as special medical wastes under COMAR 26.13.12 -- .13. In this chapter:

- A. Regulation .02 defines the terms "solid waste" and "special medical waste", identifies those wastes that are excluded, and establishes management requirements for special medical waste.
- B. Regulations .02 and .03 set forth the criteria used by the Department to identify special medical wastes.
- C. Special medical wastes are Controlled Hazardous Substances (CHS) and are subject to the provisions of COMAR 26.13.11-.13, 26.13.02.02A, and the applicable provisions of 26.13.01.
- D. Special medical waste is hereby exempted from the requirements of Environment Article, §§7-205, 7-224, 7-226, 7-232, 7-249(a)(3), 7-253(3), with respect to the driver's certificate only, and §7-253(4), Annotated Code of Maryland.

###### .02 Definitions.

- A. The following terms have the meaning indicated.
- B. Terms Defined.
  - (1) "Anatomical material" means human or animal body parts, including tissues and organs.
  - (2) "Blood" means human or animal blood.
  - (3) "Blood-soiled article" means any article that contains blood in any form as a result of contact with blood.
  - (4) "Contaminated material" means:
    - (a) Microbiological laboratory waste;
    - (b) The feces of an individual diagnosed as having a disease that may be transmitted to another human being through the feces;
    - (c) An article soiled with the feces of an individual diagnosed as having a disease that may be transmitted to another human being through the feces; or
    - (d) An article that has come into contact with a known infectious agent.
  - (5) "Generator" means any person whose act or process produces a special medical waste.
  - (6) "Microbiological laboratory waste" means waste from a microbiological laboratory that contains an infectious agent and includes cultures and stocks of infectious agents and associated biologicals.
  - (7) "Person" means an individual, trust, firm, joint stock company, federal agency, corporation (including a government corporation), partnership, association, state, municipality, political subdivision of a state, any interstate body, and any combination of persons using a common disposal collection device.
  - (8) "Sharp" means a syringe, needle, surgical instrument, or other article that is capable of cutting or puncturing human skin.
  - (9) "Solid waste" means any waste defined by COMAR 26.13.02.02.
  - (10) "Special medical waste" means a solid waste that is not excluded under Regulation .03 and is composed of:
    - (a) Anatomical material;



- (b) Blood;
- (c) Blood-soiled articles;
- (d) Contaminated material;
- (e) Microbiological laboratory waste; or
- (f) Sharps.

.03 Exclusions.

- A. The following solid wastes are not special medical wastes:
  - (1) Household waste, including household waste that has been collected, transported, stored, treated, disposed of, recovered, or reused. "Household waste" means any waste material (including garbage, trash, and sanitary wastes in septic tanks) derived from households (including single and multiple residences, hotels, and motels).
  - (2) Wastes generated in the handling of an animal unless the generator knows or has reason to know that the animal has a disease that is capable of being transmitted to humans.
  - (3) The ash or by-product from an incinerator authorized by a state to burn special medical waste.
  - (4) Wastes not generated in the ordinary course of business.
- B. Except as otherwise provided in this regulation, if a person generates, in a calendar month, a total of less than 50 pounds of special medical wastes, those wastes are not subject to regulation under COMAR 26.13.12-.13., except as provided in §§C and D.
- C. If a person whose waste has been excluded from regulation under §B accumulates special medical wastes in quantities greater than 50 pounds, those accumulated wastes are subject to regulation under COMAR 26.13.12-.13.
- D. In order for special medical waste to be excluded from regulation under §B, the generator shall comply with COMAR 26.13.12.02 and 26.13.12.05A and C.
- E. If a person sterilizes special medical wastes, those wastes are excluded from the requirements of COMAR 26.13.12 and 26.13.13, except for COMAR 26.13.12.02 and 26.13.12.05A and C.



## Title 26

### MARYLAND DEPARTMENT OF THE ENVIRONMENT

#### Subtitle 13 - Disposal of Controlled Hazardous Substances

##### Chapter 12 - Standards Applicable to Generators of Special Medical Waste

- .01 Purpose, Scope and Applicability.
- A. These regulations establish standards for generators of special medical waste.
  - B. A generator who treats, stores, or disposes of special medical wastes on-site shall only comply with the following regulations of this chapter with regard to that waste:
    - (1) Regulation .02 for determining whether or not he has special medical waste;
    - (2) Regulation .03 for obtaining an identification number;
    - (3) Regulation .06A(3) and (4) for recordkeeping;
    - (4) Regulation .06C for additional reporting.
  - C. An owner or operator who initiates a shipment of special medical waste from a treatment, storage, or disposal facility shall comply with the generator standards established in this chapter.
- .02 Special Medical Waste Determination.
- A person who generates a solid waste, as defined in COMAR 26.13.02.02, shall determine if that waste is a special medical waste using the following method. A person shall:
- A. First determine if the waste is excluded from regulation under COMAR 26.13.11.03.
  - B. Then determine if the waste is a special medical waste pursuant to COMAR 26.13.11.02.
- .03 Maryland Identification Numbers.
- A. A generator may not treat, store, dispose of, transport, or offer for transportation, special medical waste without having received a Maryland identification number from the Secretary.
  - B. A generator who has not received a Maryland identification number may obtain one by applying to the Secretary. Upon receiving the request the Secretary will assign an identification number to the generator.
  - C. A generator may not offer his special medical waste to transporters that have not received a Maryland identification number.
- .04 Manifest.
- A. General Requirements.
    - (1) A generator who transports, or offers for transportation, special medical waste for off-site treatment, storage, or disposal shall prepare an approved manifest (form MDE 181) before transporting the waste off-site.
    - (2) A generator shall designate on the manifest one facility which is authorized to handle the waste described on the manifest.
    - (3) A generator may also designate on the manifest one alternate facility which is authorized to handle his waste if an emergency prevents delivery of the waste to the primary designated facility.



- (4) A generator whose manifest for an interstate shipment has not been returned to the generator within the prescribed time (30 days) shall give notice of that to the Department.
  - (5) A generator whose manifest for an intrastate shipment has not been returned to the generator within the prescribed time (30 days) shall give notice of that to the Department.
  - (6) If the transporter is unable to deliver the special medical waste to the designated facility or the alternate facility, the generator shall either designate another facility or instruct the transporter to return the waste.
- B. Required Information.
- (1) The manifest shall contain all of the following information:
    - (a) A manifest document number;
    - (b) The generator's name, mailing address, telephone number, and identification number;
    - (c) The name and Maryland identification number of each transporter;
    - (d) The name and address of the designated facility and an alternate facility, if any;
    - (e) The description of the waste (for example, proper shipping name, etc.);
    - (f) The total quantity of each special medical waste by units of weight or volume, and the type and number of containers as loaded into or onto the transport vehicle.
  - (2) The following certification shall appear on the manifests: "This is to certify that the above named materials are properly classified, described, packaged, and labeled and are in proper condition for transportation according to the applicable regulations of the Department."
- C. Number of Copies.
- The manifest consists of at least the number of copies which will provide the generator, each transporter, and the owner or operator of the designated facility with one copy each for their records and another copy to be returned to the generator.
- D. Use of the Manifest.
- (1) The generator shall:
    - (a) Sign the manifest certification by hand;
    - (b) Obtain the handwritten signature of the initial transporter and date of acceptance on the manifest;
    - (c) Retain one copy, in accordance; and
    - (d) Provide to the Department a copy of that portion of the manifest describing the characteristics of the waste upon shipment of all special medical waste from a source within the State or which is destined for a facility within the State.
  - (2) The generator shall give the transporter the remaining copies of the manifest.
  - (3) For shipment of special medical waste within the United States solely by water (bulk shipments only), the generator shall send three copies of the manifest dated and signed in accordance with this regulation to the owner or operator of the designated facility or the last water (bulk shipment) transporter to handle the waste in the United States if exported by water. Copies of the manifest are not required for each transporter.
  - (4) For rail shipments of special medical waste within the United States which originate at the site of generation, the generator shall send at least three copies of the manifest dated and signed in accordance with this section to the:
    - (a) Next non-rail transporter, if any;
    - (b) Designated facility if transported solely by rail; or
    - (c) Last rail transporter to handle the waste in the United States if exported by rail.



E. Supplemental Information.

When the following information is not included on the manifest a generator shall forward to the Department within 5 days the:

- (1) Manifest document number;
- (2) Generator's I.D. number;
- (3) Transporter's I.D. number (vehicle certification number);
- (4) Transporter's telephone number;
- (5) Second transporter's I.D. number (if applicable);
- (6) Second transporter's telephone number;
- (7) Facility's telephone number;
- (8) Physical state of waste; and
- (9) Other information that may be required.

.05 Pretreatment Requirements.

A. Packaging.

- (1) Before transporting or offering for transport any blood or blood-soiled article, a generator shall place the blood or blood-soiled article in a container that will prevent blood from spilling or otherwise leaving the container.
- (2) Before transporting or offering for transport any anatomical materials, the general shall place the anatomical materials in a leakproof bag or bags with a combined thickness of at least 3 mils or equivalent strength, and place the bag or bags in a clearly labeled rigid container to protect the bag or bags from puncture.
- (3) Before transporting or offering for transport any sharps, a generator shall place a sharp in a container which is impervious to puncture.
- (4) Before transporting or offering for transport any contaminated materials, a generator shall comply with any regulation by the Secretary of Health and Mental Hygiene under Health-General Article, §18-102, Annotated Code of Maryland, that is intended to ensure safety in handling infectious agents.

B. Labeling.

Before transporting or offering special medical waste for transportation off-site, a generator shall:

- (1) Label each package with the generator identification number and the words, "Special Medical Waste"; and
- (2) Ensure that the label is clearly visible.

C. Treating.

- (1) If a generator treats special medical waste before transporting or offering for transport, then the generator may treat the special medical waste only as provided in COMAR 10.06.06.
- (2) A generator may not dispose of sharps in a solid waste landfill unless the generator incinerates the sharps or first sterilizes and then mechanically destroys the sharps.

.06 Record Keeping and Reporting.

A. Record Keeping.

- (1). A generator shall keep a copy of each manifest signed in accordance with Regulation .04A(1) for 3 years or until the generator receives a signed copy from the designated facility which received the waste. This signed copy shall be retained as a record for at least 3 years from the date the waste was accepted by the initial transporter.
- (2) A generator shall keep a copy of each annual report and exception report for a period of at least 3 years from the date of the report.
- (3) A generator shall keep records of any test results, waste analyses, or other determinations made in accordance with Regulation .02 for at least 3 years from the date that the waste was last sent to onsite or off-site treatment, storage, or disposal.
- (4) The periods of retention referred to in this section are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Secretary.

B. Exception Reporting.



- (1) A generator who does not receive a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within 20 days of the date the waste was accepted by the initial transporter shall contact the transporter and the owner or operator of the designated facility to determine the status of the special medical waste.
  - (2) A generator shall submit an exception report to the Secretary if the generator has not received a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within 30 days of the date the waste was accepted by the initial transporter. The exception report shall include a:
    - (a) Legible copy of the manifest for which the generator does not have confirmation of delivery;
    - (b) Cover letter signed by the generator or the generator's authorized representative explaining the efforts taken to locate the special medical waste and the results of those efforts.
- C. Additional Reporting.  
The Secretary, as the Secretary deems necessary, may require generators to furnish additional reports concerning the quantities and disposition of special medical wastes.

.07 International Shipments.

- A. A person who exports special medical waste to a foreign country or imports special medical waste from a foreign country into the State shall comply with the requirements of this chapter and with the requirements of this regulation.
- B. When shipping special medical waste outside the United States the generator shall:
  - (1) Notify the Secretary in writing 4 weeks before the initial shipment of special medical waste to each country in each calendar year. The waste shall be identified. The name and address of the foreign consignee shall be included in this notice.
  - (2) Require that the foreign consignee confirm the delivery of the waste in the foreign country. A copy of the manifest signed by the foreign consignee may be used for this purpose.
  - (3) Meet the requirements under Regulation .04B for the manifest, except that:
    - (a) In place of the name and address of the designated facility, the name and address of the foreign consignee shall be used;
    - (b) The generator shall identify the point of departure from the United States through which the waste shall travel before entering a foreign country.
- C. A generator shall file an exception report, if:
  - (1) The generator has not received a copy of the manifest signed by the transporter stating the date and place of departure from the State within 30 days from the date it was accepted by the initial transporter; or
  - (2) Within 90 days from the date the waste was accepted by the initial transporter, the generator has not received written confirmation from the foreign consignee that the special medical waste was received.
- D. When importing special medical waste, a person shall meet all requirements of Regulation .04B for the manifest, except that in place of the generator's:
  - (1) Name and address, the name and address of the foreign generator and the importer's name, address, and State identification number shall be used;
  - (2) Signature on the certification statement, the U.S. importer or the importer's agent shall sign and date the certification and obtain the signature of the initial transporter.





## Appendix III

### ENGINEERING CONTROL EVALUATION FORMS

The following links contain sample forms that may be used in evaluating safer engineering controls. These forms are only applicable to certain groups of devices. None of these forms are specifically required by the bloodborne pathogens standard, but they may be useful as guidance documents. Employers are responsible for setting the evaluation criteria for the devices used in their facilities in accordance with the standard.

#### **Sample Forms:**

##### **Safety Syringes**

[http://www.osha.gov/OshDoc/Directive\\_pdf/CPL\\_2-2\\_69\\_APPBForm5.pdf](http://www.osha.gov/OshDoc/Directive_pdf/CPL_2-2_69_APPBForm5.pdf)

##### **Sharps Disposal Containers**

[http://www.osha.gov/OshDoc/Directive\\_pdf/CPL\\_2-2\\_69\\_APPBForm7.pdf](http://www.osha.gov/OshDoc/Directive_pdf/CPL_2-2_69_APPBForm7.pdf)

##### **Safety Dental Syringes**

[http://www.osha.gov/OshDoc/Directive\\_pdf/CPL\\_2-2\\_69\\_APPBForm11.pdf](http://www.osha.gov/OshDoc/Directive_pdf/CPL_2-2_69_APPBForm11.pdf)

##### **Vacuum Tube Blood Collection Systems**

[http://www.osha.gov/OshDoc/Directive\\_pdf/CPL\\_2-2\\_69\\_APPBForm9.pdf](http://www.osha.gov/OshDoc/Directive_pdf/CPL_2-2_69_APPBForm9.pdf)

##### **IV Access Devices**

[http://www.osha.gov/OshDoc/Directive\\_pdf/CPL\\_2-2\\_69\\_APPBForm6.pdf](http://www.osha.gov/OshDoc/Directive_pdf/CPL_2-2_69_APPBForm6.pdf)

If you have questions about these forms, please contact the Biosafety Officer at 301.405.3975.



# Appendix IV

## BIOLOGICAL WASTE DISPOSAL PROCEDURES

Please read and follow the Waste Disposal Guidelines wall chart. Copies may be obtained online from the ESSR web site at <http://www.essr.umd.edu/> or by calling 405.3960.

### I. Biological Waste

- A. All biological waste from BL1, BL2, and BL3 laboratories must be decontaminated prior to disposal.
- B. Decontamination and disposal are the responsibility of the person/laboratory generating the waste.
  - 1. Collect disposable, solid materials contaminated by an infectious agent, excluding sharps, or broken or unbroken glass, into an autoclave bag within a sturdy container. When full, these bags are autoclaved, cooled, and then placed in the building's dumpster.
  - 2. Decontaminate liquids containing a biological agent by the addition of a chemical disinfectant such as sodium hypochlorite (household bleach) or an iodophor, or by autoclaving, then dispose of by pouring down the sink. It is not necessary to autoclave liquids that have been chemically disinfected. However, if a bleach solution has been used in the collection tray for labware that will later be autoclaved, sodium thiosulfate must be added to the bleach to prevent the release of chlorine gas during autoclaving.

### II. Reusable Labware

Items such as culture flasks and centrifuge bottles are decontaminated by lab personnel before washing by one of two methods.

- 1. Autoclave items that have been collected in autoclavable container.
- 2. Chemically disinfect items by soaking in diluted disinfectant for one hour before washing.

### III. Disposal of Blood Products and Body Fluids

- A. All human blood and other potentially infectious materials should be handled using Universal Precautions.
- B. Discard disposable items contaminated with human blood or body fluids (excluding sharps and glassware) into the incinerator boxes that are available from DES. Do not overfill boxes or use without the plastic liners provided with them. These boxes may be used for temporary storage and accumulation of waste. When full, close and seal the plastic liner and box.
- C. Biological waste pickup request forms may be filled out and submitted electronically from the DES web site at <http://www.essr.umd.edu/>. ESSR will collect and dispose of all incinerator boxes.



- IV. Disposal of Sharps and Disposable Glassware
- A. Discard all needles, needle and syringe units, scalpels, and razor blades, whether contaminated or not, directly into rigid, red, labeled sharps containers. Do not recap, bend, remove or clip needles. Sharps containers should not be overfilled. To request pickup of sharps containers, fill out and submit a biological waste pickup request form from the ESSR web site at <http://www.essr.umd.edu/>. Alternatively, closed sharps containers may be packaged in incinerator boxes (Section III above). Sharps containers may be purchased from Chemistry Stores and the Physical Plant Warehouse.
  - B. Uncontaminated pasteur pipets and broken or unbroken glassware are discarded into containers specifically designed for broken glass disposal, or into heavy-duty cardboard boxes that are closeable. When boxes are full, tape closed and place in the building's dumpster.
  - C. Contaminated pasteur pipets and broken or unbroken glassware may be treated in one of two ways:
    - 1. Discarded into approved sharps containers, as in Section A above, or
    - 2. Decontaminated by autoclaving or chemical disinfection, then discarded into glass disposal boxes as in Section B above.
  - D. Sharps that are contaminated with radioactive materials or hazardous chemicals should be discarded into separate sharps containers labeled with the name of the isotope or chemical. Contact ESSR at (40)5-3960 for disposal information.
- V. Multi-hazard or Mixed Waste
- A. Avoid generating mixed waste if possible. Keep volume to minimum.
  - B. Do not autoclave mixed waste.
  - C. When discarding waste containing an infectious agent and radioactive material, inactivate the infectious agent first, then dispose as radioactive waste. Seek advice from the Radiation Safety Officer at (40)5-3985 before beginning inactivation procedures.
  - D. When discarding waste containing an infectious agent and a hazardous chemical, inactivate the infectious agent first, then dispose as chemical waste. Seek advice before beginning inactivation procedures. Contact ESSR at (40)5-3960 for instructions.
- VI. Disposal of Animal Tissues, Carcasses and Bedding
- A. Disposal of animal carcasses/tissues is coordinated through the Central Animal Resource Facility.
    - 1. Place animal carcasses/tissues into plastic bag. Double-bag when carcass contains zoonotic agent (transmissible from animals to humans).
    - 2. Place bag in freezer until pickup.
    - 3. Call Central Animal Resource Facility at (40)5-4921 for pickup.
  - B. Disposal of animal carcasses/tissues that are contaminated with radioactive materials or hazardous chemicals is through ESSR. Disposal instructions are available by phoning (40)5-3960.

## VII. Disposal Containers

Each laboratory is responsible for purchasing containers for the disposal of biological waste, EXCEPT incinerator boxes (with liners), which will be provided by ESSR. The following types of containers are available:

- A. Sharps containers may be purchased from local sources (including Chemistry Stores and the Physical Plant Warehouse) as well as from laboratory product distributors. They are available in various sizes, and should be puncture resistant, red, labeled as "Sharps," and have a tightly closing lid. Do not purchase "needle-cutter" devices, which may produce aerosols when used.
- B. Biohazard Autoclave Bags may be purchased from various laboratory product distributors, such as Fisher Scientific, VWR, and Baxter. Be sure to select polypropylene bags that are able to withstand autoclaving. They should be placed inside a rigid container with lid while waste is being collected.
- C. Incinerator Boxes are provided by ESSR. A plastic liner (also provided by ESSR) must be used to prevent contamination of the box.
- D. Glass Disposal Boxes may be purchased from General Stores and various laboratory product distributors. Alternatively, heavy-duty, closeable cardboard boxes may be used for disposal of broken glass.

## VIII. What to do with Filled Waste Containers

- A. Sharps containers and incinerator boxes - To request pickup, fill out and submit a biological waste pickup request form from the ESSR web site at <http://www.essr.umd.edu/>.
- B. Biohazard autoclave bags and glass disposal boxes - close and autoclave bags, tape glass disposal boxes closed; put both in building dumpster.



## Appendix V

### HEPATITIS B VACCINATION DECLINATION

I understand that due to my occupational exposure to blood or other potentially infectious materials, I may be at risk of acquiring hepatitis B infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine at no charge to myself. However, I decline the hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B infection, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials, and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to myself.

Employee Name: \_\_\_\_\_  
Print

\_\_\_\_\_  
Signature

U ID \_\_\_\_\_

Date: \_\_\_\_\_

