

Introduction

Welcome to the Bloodborne Pathogens (BBP) Training Course (OHS_BIO500). UAB Campus Employees whose job duties put them at increased risk for exposure to bloodborne pathogens are **required to complete this course**.

Exposure to bloodborne pathogens may occur through inhalation of infectious aerosols, ingestion of contaminated materials, direct contact with mucous membranes, or through the skin via open wounds or punctures with contaminated sharps. **Anyone that comes in contact with human blood, body fluids, or Other Potentially Infectious Material (OPIM) is at risk!**



This course is designed to train UAB campus employees on the principles and requirements of the OSHA BBP Standard. If you are not a UAB campus employee, more thorough training may be needed, particularly regarding your reporting and exposure-response procedures, which will differ from those outlined herein. If you have any questions, please call UAB's Department of Occupational Health and Safety (OH&S) at (205) 934-2487.

Objectives

At the conclusion of this course, participants will be able to:

1. Apply the precautions outlined in the Bloodborne Pathogens Standard.
2. Recognize the importance of an Exposure Control Plan (ECP).
3. Identify the sources and risks of Bloodborne Pathogens (BBP) in their work area.
4. Apply the correct response procedures and treatment plan if an exposure occurs.

The Bloodborne Pathogens Standard

The [OSHA Bloodborne Pathogens Standard](#) was established to minimize occupational exposure to Human Immunodeficiency Virus (HIV), Hepatitis B Virus (HBV), and other pathogenic microorganisms that are present in human blood and can cause disease in humans. The UAB Biosafety Manual contains additional information if needed.

Regulatory Definitions

These are OSHA regulatory definitions used in the Bloodborne Pathogens Standard.

Contamination

Contamination refers to anything soiled with human blood, OPIM, or BBP's.

Decontamination

Decontamination refers to making surfaces and equipment safe for being handled or used, and disposed of by removing, inactivating, and destroying the infectious material.

Human Blood

Human Blood is any product made from human blood and blood components.

Occupational Exposure

Occupational Exposure is reasonably anticipated contact (e.g., skin, eye, mucous membrane, or parenteral contact) with human blood or other potentially infectious materials that may result from the performance of an employee's job duties.

Other Potentially Infectious Materials (OPIM)

OPIM are any other fluids that could be potentially contaminated. OPIM includes:

- Unfixed human tissue or organs
- Cells, tissues, or organ cultures containing HIV, HBV, or HCV
- Culture medium containing HIV, HBV, or HCV
- Animal specimens (such as blood and organs) with HIV, HBV, HCV, or other BBP
- Untested human body fluids that potentially contain blood

Other examples: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, and amniotic fluid.

Universal Precautions

Universal Precautions is the premise that all human blood, blood products, and body fluids are affected by BBP contamination. You should always handle materials using the appropriate controls and precautions.

Four Key Elements

The Bloodborne Pathogens Standard contains four key elements.

1. **Exposure Control Plan (ECP):** An ECP is a site-specific risk assessment, conducted by a Principal Investigator (PI) or other Designee, designed to identify and reduce the risk of BBP exposures. It must be reviewed and updated at least annually by the PI or Designee, or earlier if significant changes in personnel or procedures occur.
2. **Determination of Risk:** An evaluation must be made to determine if an employee's duties place them at an increased risk for a BBP exposure. If an employee is identified to be at risk, the offering of the HBV vaccination and follow-up procedures, by the Employer are required.
3. **Vaccinations and Post-exposure Follow-Up Procedures:** Employees who are at risk for BBP exposure must be offered HBV vaccinations within ten days of initial assignment. Confidential medical evaluation and follow-ups must also be available to employees that have experienced an exposure incident. Follow-Up Procedures include any needed BBP testing, preventive treatment, counseling, or other associated treatments.
4. **Training:** Employees whose job assignments place them at risk for BBP exposure must complete training within ten working days of initial appointment and annually after that.

2018 Featured Topic: Exposure Control Plan (ECP)

The purpose of an Exposure Control Plan (ECP) is to:

1. Identify materials or procedures in the workplace that pose an increased risk for exposures to BBP (i.e., human blood or OPIM).
2. Determine which jobs/duties place employees at risk for exposure to BBP.
3. Define the controls required to reduce those risks.

Each laboratory working with material of human origin must include an ECP in their Safety Manual. This manual **must be** available to **all employees** determined to be at risk for occupational exposure to human BBP.

Determination of Employee Exposure

The Laboratory Supervisor or the designated Safety Officer will identify the materials, procedures, and job duties that pose an occupational exposure risk to BBP.

Job Classifications

Employees working in the following job classifications are likely to be at risk for occupational exposure to Bloodborne Pathogens. **This list is by no means is exhaustive.**

- Medical Research Personnel
- Healthcare Workers
- Physicians
- Clinical Lab Workers
- Campus Police Workers
- Fire and Rescue Personnel
- Environmental Services Personnel
- Occupational Health and Safety Staff

Routes of Exposure

The occupational exposure may occur by the following:

1. Inhalation (infectious aerosols)
2. Absorption (skin or mucous membrane contact)
3. Ingestion (eating)
4. Injection (skin puncture)

Implementation of Controls

Administrative and Workplace Controls

Administrative controls are typically described as the policies and Standard Operating Procedures (SOP's) in place to prevent exposures and safely work with hazardous materials, whereas workplace practices are the actual implementation of these policies and procedures.

Work areas **must be**:

1. Cleaned and decontaminated with an appropriate disinfectant:
 - a. Daily, after work has concluded
 - b. Immediately, after contamination with blood or OPIM
2. Labeled with a Universal Biohazard Symbol if used for storage or processing of human blood or OPIM



Handwashing

Wash hands as soon as possible in the following situations:

- After the removal of gloves or other PPE
- After unintentional any contact with human blood or OPIM
- Before leaving the work area



If liquid soap and water are not immediately available for handwashing, use antiseptic paper towels or an antiseptic hand lotion until a handwashing sink can be located.

Engineering Controls

Engineering controls eliminate or reduce exposure to BBP through the use or substitution of engineered safety machinery or equipment.



Safety Centrifuge Cups and Biosafety Cabinets (BSC) are the most common engineering controls used for the manipulation of blood and body fluids.

Sharps Containers

Always place sharps in the proper sharps containers! These containers should be:

- Made out of hard plastic
- Designed for the storage of used sharps
- Labeled with the Universal Biohazard Symbol
- Replaced when the contents reach the fill line on the container or when approximately $\frac{3}{4}$ full



Mechanical Pipettes

Mechanical Pipettes purpose is transferring human blood or bodily fluids. **Mouth pipetting is prohibited!**

Needleless System

A needleless system is defined as “non-needle sharp or a needle with a built-in safety feature or mechanism that effectively reduces the risk of a percutaneous¹ exposure incident.”

¹ Percutaneous means “administered, removed, or absorbed by way of the skin, as an injection, needle biopsy, or transdermal drug”

Personal Protective Equipment (PPE)

PPE is explicitly worn to prevent BBP exposures and contamination. Always wear PPE when working with human blood or OPIM. PPE must be replaced frequently, or immediately if it becomes contaminated or damaged in any way.

Minimal Required PPE:

- Appropriate Gloves - must be made of a material that does not absorb liquid (e.g., nitrile gloves).
 - **Never** reuse single-use gloves!
 - **Never** use ripped or compromised gloves.
- Cleaned and buttoned lab coat
- Safety glasses and face shield (if there is a risk of a splash hazard)



The PI or Department is responsible for supplying, replacing, or cleaning PPE, as needed.

HBV Vaccination Program

The PI/Manager will ensure that all persons determined to be at risk for occupational exposure to human Bloodborne Pathogens are offered a Hepatitis B Vaccination within ten days of starting work. **The PI or department must maintain documentation of HBV participation or declination.**

Medical records are confidential and are to be maintained by the UAB Occupational Medicine Program or healthcare provider for at least 30 years post-employment.

Hazard Communication

Employees

Training

OSHA requires hazard communication to employees who may come in contact with Bloodborne Pathogens. Accomplishing this is completed by warning signs, labels, and annual employee training. Posting Biohazard Warning Labels on or near the entrance to an area or lab where blood or OPIM is stored/used is a requirement.

Signage will include:

- Universal Biohazard Symbol
- Special PPE requirements
- Name of biohazardous materials used
- Emergency contact information

All UAB Campus Employees with the potential for BBP exposure in their work environment must complete the Bloodborne Pathogens Training (OHS_BIO500) course annually. The Bloodborne Pathogens Training (OHS_BIO500) course is in the [UAB Learning System](#). The PI or the department is responsible for maintaining paper copies of your Bloodborne Pathogens Training (OHS_BIO500) annual completion for a minimum of three years.

Warning Labels

Biohazard Warning Labels must be:

- Red or fluorescent orange
- Imprinted with the Universal Biohazard Symbol
- Placed on all biohazard storage areas, medical waste containers, work surface areas, or equipment
- Placed on sample containers when leaving the work area
- Posted on lab entrances
 - List names of infectious materials or agent(s) used in the lab (e.g., “Human tissues,” or “HBV”)
 - List entry requirements for the area (e.g., PPE, training required for entry).



No specific Biohazard Warning Label is required for clinical specimens if the samples do not leave the facility and if Universal Precautions have been followed.

Exposure

Medical Treatment



Prompt medical attention may reduce the risk of serious health consequences after an exposure event.

Have you been exposed to human blood or OPIM? You should:

- Wash affected areas with soap and water for 15 minutes
- Flush mucous membranes with water for 15 minutes
- Notify your Supervisor/Manager as soon as possible
- **Researchers** (not hospital/medical care associated exposures)
 - During Work Hours (Monday-Friday, 7am-4pm)
 - The Workplace Clinic, 1201 11th Avenue South, Birmingham, AL 35205 (205) 930-7007
 - After hours or weekends: UAB ED, 1802 6th Ave S, Birmingham, AL 35233 (205) 934-4011
- **Hospital Employees** (hospital/medical care associated exposures)
 - Needlesticks and other incidents (including exposures to blood or body fluids) call the Rapid Response Team (RRT) at (205) 934-3675 or page 934-3411.

Reporting

To receive the following at no cost, you must report the exposure incident within 48 hours:

- A confidential medical exam
- Counseling
- Blood testing/analysis
- A confidential reply from the attending healthcare professional within 15 days

Despite the 48-hour reporting requirement, you are strongly encouraged to report all exposures and injuries immediately, since the timing of post-exposure treatment for HIV is a critical determinant of efficacy.

UAB On-The-Job Injury (OJI) Program

You are required to report any exposure or injury to a Supervisor, PI, or Manager. A completed [Initial Medical Evaluation Authorization Form](#), signed by a Manager/Supervisor, should accompany any employee seeking treatment. Campus employees seeking medical help on weekdays, between 7 am and 4 pm, should go to [The Workplace](#) Clinic, within UAB Highlands. Outside of these hours, or on weekends, campus employees should go to UAB Urgent Care, USED, or Highland ED. Completing the [OJI Application for Benefits](#) form, [Release of Information](#) form, and Trend Tracker Report is a requirement for any medical treatment with a chance of generating a bill.

The PI/Manager is also responsible for reporting the incident to UAB Occupational Health & Safety at (205) 934-2487. OH&S will investigate the circumstances surrounding the exposure, and work with the PI/Manager to modify work practices or develop additional prevention strategies.



Conclusion

The Exposure Control Plan for your work areas should contain everything that you need to know about how to work safely with or around human tissues, OPIM, or specific BBP that could be in your area.

If you have not taken the assessment, please do so now. You must score 90% or higher to pass.

Remember: If you are responsible for managing your labs medical waste, you are also **required** to complete the Medical Waste Management for Labs (OHS_BIO301L) training course.



If you have any questions about Bloodborne Pathogens, UAB Policies and Procedures about biological safety, or other related topics, please contact UAB Department of Occupational Health and Safety (OH&S) at (205) 934-2487.

Want to Learn More?

OH&S has developed many training courses that are available to all active UAB employees and students. These course topics include radiation safety, biosafety, bloodborne pathogens, chemical safety, controlled substances, building life safety, hazardous and medical waste, universal waste, PPE, hazard communication. While all courses are broadly available to the UAB community, the training may be intended for a particular audience at UAB. More detailed instruction or alternative reporting/response procedures may be appropriate, depending on your specific roles and responsibilities at UAB.

We have a [decision tree](#) to assist you in choosing the right course to match the knowledge/skills you may need at work every day as well.

If you have any questions or comments, please feel free to contact OH&S at (205) 934-2487.