HARVARD
Campus Services
ENVIRONMENTAL HEALTH & SAFETY

# Harvard University Exposure Control Plan

## Contents







To request this document in an alternative format contact ehs@harvard.edu

# Introduction and Scope

The Occupational Health and Safety Administration (OSHA) oversees the Bloodborne Pathogens (BBP) Standard (29 CFR 1910.1030), requiring employers to minimize the risk of exposure to BBP that are found in blood and other potentially infectious materials (OPIM). BBP are pathogenic microorganisms present in human blood, capable of causing disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

OPIM that may harbor BBP:

- Human bodily fluids as defined by OSHA
- Human tissues, organs, cells, or cell lines
- Extracted human teeth and saliva in dental procedures
- Cultures of BBP
- Blood or tissue from experimentally infected animals

In accordance with the OSHA BBP Standard, Harvard University is committed to providing a safe and healthy work environment by striving to minimize or eliminate occupational exposure to BBP.

The Exposure Control Plan (ECP) includes:

- Plan administration
- Exposure risk determination
- Methods of exposure control
- Personal protective equipment
- Biological waste disposal
- Biohazard labels
- HBV vaccination
- Post-exposure evaluation and follow-up
- Training
- Recordkeeping

# Plan Administration

**Supervisor/Departmental Contact/Principal Investigator:**

The supervisor/departmental contact is responsible for execution of the ECP. They manage the maintenance, review, and updates to the document annually, whenever new procedures or tasks are added, and if the general scope of work changes.

Supervisor/departmental contact responsibilities as part of the review:

- Documenting the annual assessment of the ECP to evaluate effectiveness of controls to eliminate or reduce exposure to BBP, reflecting updates in exposure control technologies and any changes to job and job tasks that would alter risk.
- Ensuring all personnel who have occupational exposure to blood or OPIM comply with the procedures and work practices outlined in this plan.

- Providing personnel with the requisite personal protective equipment (PPE), engineering controls, labels, and other items required under this plan and ensuring that adequate supplies of this equipment are available to staff.
- Ensuring that all medical actions required by the standard are performed and that appropriate health and OSHA records are maintained.
- Providing work-specific training, documentation of training, and ensuring the ECP is available to personnel, OSHA, and other regulatory representatives.
- Offering workers with potential for exposure to blood or OPIM the HBV vaccination prior to starting work with these materials and maintain documentation of this offer.

# Exposure Risk Determination

## Exposure Risk Determination List

The Exposure Risk Determination List is a list of job titles with tasks that have reasonably anticipated exposure to blood or OPIM in the course of their duties for Harvard. See Exposure Risk Determination List Instructions for examples.

| Job Title/Classification | Department/Location | Tasks/Procedures Performed |
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# Methods of Exposure Control

## Universal Precautions

All persons who fall under this ECP will utilize universal precautions, which is the concept of treating all blood and OPIM as potentially infectious.

## Exposure Control Plan

The ECP outlines measures for evaluating potential exposure to blood and OPIM, as well as methods of eliminating or reducing the risk of exposure.

Persons covered by the OSHA BBP Standard receive an explanation of the ECP during their initial training session. Controls outlined within the plan will also be reviewed in the annual refresher training.

All persons can review this plan at any time during their work shifts by contacting the supervisor/departmental contact.

If requested, a written copy of the ECP must be provided free of charge and within 15 days of the request.

## Engineering and Work Practice Controls

An engineering control is any equipment or structure that is used to aid staff in preventing exposure to blood or other potentially infectious material. Work practices may also be used to reduce exposure by modifying how persons complete tasks.

Examples of these controls include:

- Reducing sharps use wherever possible. Sharps should not be manipulated (for example, recapped or bent) before disposal and must be disposed only in a closable, hard-walled, puncture-resistant, and

labeled sharps container. Use only mechanical means of handling sharps (such as a dust broom and pan for blood contaminated broken glass).

- Working in ways to minimize splashing, spraying, and droplets of blood and OPIM.
- Separating food and drinks from areas where blood or OPIM are present. Eating, drinking, smoking, and handling personal items are prohibited where blood and OPIM are present.
- Labeling contaminated items or equipment used to store, transport, or process blood or OPIM with a biohazard label that is red or orange.
- Decontaminating surfaces and equipment with an appropriate disinfectant (record disinfectant type and procedure in Exposure Control Items and Work Practices List), minimally at the end of work and whenever contamination is obvious.
- Washing hands after removing PPE and after completing work.

## Exposure Control Items and Work Practices List

Name the item or work practice you will use to minimize your chances of exposure to blood and OPIM. Identify specific equipment or practices to reduce exposure based on the tasks listed in Exposure Risk Determination List.

HIV and HBV research labs must document the additional controls they will implement, as required under the OSHA BBP Standard (1910.1030(e)(3)).

See Exposure Control Items and Work Practices List Instructions for examples.

| Item/Practice | Description |
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# Personal Protective Equipment

PPE is the last layer of protection from exposure to blood or OPIM.

The supervisor must ensure required PPE is appropriate for reducing the risk of exposure, purchased and available for use during the work shift, and replaced as needed.

All PPE users must observe these precautions:

- Wash hands as soon as possible after removing gloves and other PPE.
- Remove and replace PPE after it becomes contaminated and remove completely before leaving the work area.
- All used, disposable PPE that is contaminated or potentially contaminated must be placed in the appropriate biowaste containers.
- Wear gloves when it is reasonably anticipated that there may be hand contact with blood/OPIM or contaminated items and surfaces.

- Replace gloves if they are torn, punctured, contaminated, or if their ability to function as a barrier is compromised.
- Never wash or decontaminate disposable PPE for reuse.
- Wear appropriate face and eye protection when procedures may generate splashes, sprays, spatters, or droplets of blood or OPIM.
- Remove any garments that have been contaminated with blood or OPIM as soon as possible.

Any reusable cloth PPE will be laundered by a service provided by the university, on or off-site, by trained personnel. Reusable PPE, such as protective eyewear or face shields, must be wiped down with an appropriate disinfectant following use.

All contaminated laundry must be handled as little as possible and placed in appropriately labeled containers prior to laundering.

## PPE to be Used and Associated Tasks List

See PPE to be Used and Associated Tasks List Instructions for examples.

**Vendor service or location of on-site laundering facility name:**

**Laundry service phone/contact information:**

| PPE to be Used | Associated Tasks |
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# Biological Waste Disposal

## Liquid Waste

Liquid waste containing biological materials should be treated for at least 20 minutes with either bleach (final dilution of 10% bleach or 0.5% sodium hypochlorite) or other approved disinfectant before disposal.

Contact biosafety@harvard.edu with questions.

## Solid Waste

Solid waste is placed in reusable plastic biowaste bins or disposable biowaste cardboard boxes labeled with the biohazard symbol that are lined with red biowaste bags (two red bags if using cardboard biohazard waste boxes). This prevents spillage or protrusion of contents during handling.

## Sharps Disposal

Needles, scalpels, lancets, slides, coverslips, glass pipettes, capillary tubes, broken glass, or similar sharp materials contaminated with blood or OPIM must be collected in an appropriately labeled, closable, hard walled, and puncture-resistant sharps containers.

## Waste Containers

Waste containers must be conveniently located near the areas where work is being performed. If your job only sporadically involves potential contact with blood or OPIM, you may need to request these containers

Contact biosafety@harvard.edu with questions about where to obtain different containers.

# Biohazard Labels

Specific labeling, which incorporates the universal biohazard symbol (red or orange), must be placed on any equipment such as regulated waste containers, containers storing blood or OPIM, or equipment used in procedures with blood or OPIM. These labels warn personnel about the risk of BBP contamination.
If you need any labels, contact biosafety@harvard.edu.

# HBV Vaccination

EHS Bloodborne Pathogens Training provides information to staff on HBV vaccinations, addressing safety, benefits, efficacy, methods of administration, and availability.

The HBV vaccination series is available to all persons identified in the Exposure Risk Determination section of this ECP. They are available no cost through Harvard after completing initial Bloodborne Pathogens Training and within 10 days of initial assignment.

Vaccination is encouraged unless:

- Documentation exists that the person has previously received the series
- Antibody testing reveals that the person is immune
- Medical evaluation shows that vaccination is contraindicated

Persons falling under the Exposure Risk Determination section of this ECO must complete the Harvard University HBV Vaccination Offer Form, whether they plan on accepting the vaccination or declining it.

If there is question of immunity, persons can also request antibody testing to determine the need for vaccination.

Persons who initially decline may request and obtain the vaccination at a later date.

**A copy of the completed form will be kept with:**

*(Supervisor/Departmental Contact/Principal Investigator)*

This copy must be maintained in accordance with the OSHA BBP Standard and Harvard's record retention policies.

# Post-Exposure Evaluation and Follow-Up

If an exposure event occurs:

- For any exposure through a cut or break in the skin, wash the affected area thoroughly with soap and lukewarm water for at least 15 minutes. Cover the area with a sterile bandage or gauze, if available.
- For eye, mouth, or mucous membrane exposure, rinse the affected area continuously with lukewarm water for at least 15 minutes.
- For serious and life-threatening medical emergencies, call 911.
- For exposures occurring within a research setting, call the Exposure Response Call Center (1-866-360-8100).
- For all other exposures, contact Harvard University Health Services (UHS), your primary medical provider, or an urgent care facility for immediate treatment.

  UHS Urgent Care (Cambridge): 617-495-5711

Providers may wish to test the exposure material (if available) to determine HIV, HBV, or Hepatitis C infectivity, unless already known, to aid occupational health staff.

Following exposure treatment:

1. Report the incident to your supervisor. Your supervisor must complete an incident report either online or over the phone.
    - Document the routes of exposure and how the exposure occurred
    - Identify and document the source of exposure material
2. Your supervisor and EHS will review the circumstances of the exposure incident to determine:
    - Engineering controls in use at the time
    - Work practices followed
    - A description of any devices in use
    - Protective equipment or clothing that was used at the time of the exposure incident (such as gloves or eye shields)
    - Location of the incident
    - Procedures being performed when the incident occurred
    - Personnel training record
    - If any additional reporting is required

# Training

Initial and refresher BBP training is available online through the Harvard Training Portal (HTP). In person classes may be given.

Initial training must be taken before starting tasks listed under the ECP Exposure Determination. The refresher training must be taken annually.

# Recordkeeping

All records are maintained in accordance with the OSHA BBP Standard and Harvard's record retention policies.

Training records are kept within HTP. Once training is completed, records are available online.

HBV vaccination declination statements are retained by the supervisor or department of the individuals under this ECP.

Medical records are kept confidential and include:

- HBV vaccination records and other records relevant to the individual's immunization status.
- Results of any post-exposure evaluations, examinations, medical testing, or follow-up procedures.

All injuries from contaminated sharps are also recorded in a Sharps Injury Log through the post-exposure online reporting system that is used for all injuries across campus.

All recorded incidences must include at least:

- Date of the injury
- Type and brand of the device involved (such as syringe or scalpel)
- Department or work area when the incident occurred
- Explanation of how the incident occurred

Injury reporting and follow-up should include this information. This log must be kept and maintained by the university for at least five years following the end of the calendar year covered. The log is housed centrally.

**Supervisor/Departmental Signature:**

**Date:**

# Annual Plan Review Log

The Supervisor/Departmental Contact or their designee has reviewed, and updated, if necessary, the applicable plan(s) for their area.

If you're using an alternative log or another page, please note the location in this section.

| Signature of Reviewer | Date of Review/Update |
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# Appendix A: ECP Instructions

In addition to reading through the Harvard University ECP, there are parts of the ECP that you're responsible for completing, specific to your area or department. This section explains how to complete those sections.

If you have questions when completing your ECP, contact biosafety@harvard.edu.

## Plan Administration Instructions

In Plan Administration, write who will serve as the person to manage the implementation and review of the ECP. This should be a person with authority to make changes to work processes and PPE. For labs, this is generally the Principal Investigator. For other departments, it might be anyone from a manager to the director.

## Exposure Risk Determination List Instructions

In Exposure Risk Determination List, write the jobs/position titles of people that may be exposed to blood or OPIM as part of their duties.

| Job Title/Classification | Department/Location | Tasks/Procedures Performed |
|---|---|---|
| Example 1: Nurse | UHS | Drawing blood, handling patient samples, first aid |
| Example 2: Researcher | Science Department | Human cell culture, spinning down human blood |

## Exposure Control Items and Work Practices List Instructions

In Exposure Control Items and Work Practices List, write the items or work practices you'll use to minimize your chances of exposure to blood and OPIM.

| Item/Practice | Description |
|---|---|
| Example 1: Tongs | Used to pick up broken biologically contaminated glass |
| Example 2: Retractable needle | Used for administering vaccines (needle retracts into syringe after administration, decreasing risk of needle sticks) |
| Example 3: Biosafety Cabinet | Used to protect against biological aerosols/droplets when culturing human cells and BBPs |

## PPE to be Used and Associated Tasks List Instructions

In PPE to be Used and Associated Tasks List, write the types of PPE you'll use to reduce risk of exposure. If a laundry service is used for reusable PPE, also record that information.

If you complete a PPE assessment in another part of your job, you can reference it here and add any additional PPE that might fall outside of that assessment pertaining to BBP protection.

**Vendor service or location of on-site laundering facility name:** Generic Laundry Service

**Laundering phone/contact information:** 617-555-5555

| PPE to be Used | Associated Tasks |
|---|---|
| Example 1: See PPE assessment posted in X location | |
| Example 2: Goggles | Cleaning up large spills of blood or OPIM (e.g., human cell cultures) |

## HBV Vaccination Instructions

In HBV Vaccination, write the location of where the HBV Vaccination forms will be kept.

For labs, list the Principal Investigator/supervisor/departmental contact. For facilities staff, list Human Resources.

## Recordkeeping Instructions

After completing all other sections of the ECP, the same person listed in Plan Administration must sign and date the ECP in Recordkeeping.

This person or their designee must also complete and document the yearly review of this plan. An Annual Plan Review Log is included in Recordkeeping.