

Bloodborne Pathogens Exposure Control Plan for Research Laboratories

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| --- |
| **Enter Name of Laboratory** |

The OSHA Bloodborne Pathogens Standard requires an **annual review** of the exposure control plan. In addition, whenever changes in tasks, procedures, or employee positions affect, or create new occupational exposure, the existing plan must be reviewed and updated accordingly.

The exposure control plan **must be accessible** to employees, as well as to OSHA and NIOSH representatives. The location of the plan may be adapted to the circumstances of a particular workplace, provided that employees can access a copy at the workplace during the work shift. If the plan is maintained solely on computer, employees must be trained to operate the computer.

A hard copy of the exposure control plan must be provided **within 15 working days** of the employee's request in accord with 29 CFR 1910.1020.

|  |  |  |
| --- | --- | --- |
| **MOST RECENT EXPOSURE CONTROL PLAN REVIEW DATE** | | |
| **Name (Print)** | **Signature** | **Date** |
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# Lab-Specific Information

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| --- | --- |
| Building(s) & Lab Room(s): |  |
| Principal Investigator/Responsible Individual: |  |
| Emergency Phone Number: |  |

**Employee Exposure Determination**

The following is a list of job classifications in which **some** employees in the lab have occupational exposure. Included is a list of tasks and procedures, or groups of closely related tasks and procedures, in which occupational exposure may occur for these individuals. **Note:** Only included procedures/duties performed in which occupational exposure may occur. Add additional rows as needed.

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| --- | --- |
| **Job title (e.g., Graduate Student, Lab Technician)** | **Procedures/duties (e.g., processing blood samples)** |
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|  |  |
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**Human-Derived Materials Used**   
List all human-derived materials and other materials covered by the [standard](https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1030) that are used for research in your laboratory.

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**Engineering and Work Practice Controls**

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| **Engineering controls used** (examples: biosafety cabinets, sharps containers, safety engineered sharps devices, etc.) |  |
| **Work practice controls used** (examples: no eating or drinking in lab, work done in BSC, etc.) |  |
| Describe how new procedures and products for engineering and work practice controls are evaluated.  (Describe the process, literature reviewed, supplier info., and products considered) |  |
| Describe employee involvement in evaluating new procedures and products for engineering and work practice controls |  |

**Personal Protective Equipment**

Location of and how to dispose of (for disposable)/decontaminate (for reusable) personal protective equipment (PPE). Add additional rows, if necessary, for other required PPE:

|  |  |  |
| --- | --- | --- |
| **Items** | **Location in Lab** | **Disposal or Decontamination Procedures** |
| Gloves |  |  |
| Lab coats |  |  |
| Safety glasses/goggles |  |  |

**Additional Information**

|  |  |
| --- | --- |
| Training in the use of appropriate PPE for specific tasks or procedures is provided by: |  |
| Procedure for handling and disposing of sharps containers |  |
| Procedure for handling biohazardous waste |  |
| Procedure for handling contaminated laundry |  |
| Provide a schedule for general disinfection in the lab and list the disinfectants that will be used: |  |

|  |  |
| --- | --- |
| **Equipment to be Labeled (e.g., freezer, dewar)** | **Label Type (e.g., biohazard sticker, red bag)** |
|  |  |
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**Records**

|  |  |
| --- | --- |
| Location of bloodborne pathogens (BBP) training records |  |
| Hepatitis B acceptance/declination forms will be kept by (e.g., PI, department HR contact): |  |

# POLICY

The University of South Carolina is committed to providing a safe and healthy work environment for our entire faculty and staff. In pursuit of this goal, the following exposure control plan (ECP) is provided to eliminate or minimize occupational exposure to bloodborne pathogens in accordance with [OSHA standard 29 *CFR* 1910.1030](https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1030), "Occupational Exposure to Bloodborne Pathogens." This ECP template is applicable to all University departments. Each laboratory must review the plan and enter site-specific information that is applicable to their unique work area. Each laboratory is responsible for implementing this ECP and properly documenting all safety and compliance requirements are fulfilled.  
  
The ECP is a key document to assist the University (including regional campuses) in implementing and ensuring compliance with the standard, thereby protecting our employees. This ECP includes:

* Determination of employee exposure
* Implementation of various methods of exposure control, including:
  + Universal precautions
  + Engineering and work practice controls
  + Personal protective equipment
  + Housekeeping
* Hepatitis B vaccination
* Post-exposure evaluation and follow-up
* Communication of hazards to employees and training
* Recordkeeping
* Procedures for evaluating circumstances surrounding exposure incidents

Implementation methods for these elements of the standard are discussed in the subsequent pages of this ECP.

## Scope

The standard applies to all employees who have occupational exposure to blood or other potentially infectious materials (OPIM). **Volunteers** are not covered by the standard. **Students** are covered if they are compensated.

NOTE: Part-time, temporary, contract and per diem employees are covered by the bloodborne pathogens standard. The ECP should describe how the standard will be met for these employees.

* **Occupational exposure** is defined as reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.
* **Blood** is defined as human blood, human blood components, and products made from human blood.
* **Other potentially infectious materials (OPIM)** is defined as the following: saliva in dental procedures; semen; vaginal secretions; cerebrospinal, synovial, pleural, pericardial, peritoneal, and amniotic fluids; body fluids visibly contaminated with blood; along with all body fluids in situations where it is difficult or impossible to differentiate between body fluids; unfixed human tissues or organs (other than intact skin); HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture media or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

## Policy on Established Human and Non-Human Cell Lines

In 1994, OSHA issued an interpretation of the applicability of the BBP Standard towards human cell lines. According to the interpretation, human cell lines\* are considered to be potentially infectious and within the scope of the BBP Standard unless the specific cell line has been characterized to be free of hepatitis viruses, HIV, Epstein-Barr virus, papilloma viruses and other recognized bloodborne pathogens. In addition, the Biosafety in Microbiological and Biomedical Laboratories (BMBL) recommends that human and other primate cells should be handled using Biosafety Level 2 (BSL2) containment and practices.

In consideration of the aforementioned regulatory interpretation, consensus guidelines and other factors, the USC Institutional Biosafety Committee has adopted the following policy regarding handling established human and non-human cell lines:

**All human and non-human primate cells, including well established cell lines, must be handled according to the BBP Standard and using BSL-2 containment and work practices. Animal Biosafety Level 2 (ABSL-2) containment and practices may be required when these materials are used in animal experiments.**

\* **OSHA Human Cell Line Definition:**

A human cell line is defined as *in vitro* or animal passaged (e.g., nude mouse) cultures or human cells that fulfill traditional requirements of a cell line designation. That is, the cells are immortalized cells, transformed by spontaneous mutation or natural or laboratory infection with an immortalizating agent such as Epstein-Barr virus (EBV). EBV is a bloodborne pathogen. It should be noted that human cervical carcinoma cells or other transformed human cell lines like HeLa cells are sometimes adulterated with laboratory pathogens accidentally introduced by cultivation with other cell cultures, or physically contaminated by other cell cultures handled in the same lab. In order to handle human HeLa cells, without having to comply with the requirements of the bloodborne pathogens standard (BPS), human HeLa cells should be documented to be pure HeLa cells and shown to be free of bloodborne pathogens by testing.

# PROGRAM ADMINISTRATION

Environmental Health & Safety is responsible for reviewing and updating the Exposure Control Plan (ECP) template for research laboratories. Each laboratory is responsible for implementing the ECP and ensuring the plan is site-specific.

The ECP will be maintained, reviewed, and updated at least annually, and whenever necessary to include new or modified tasks and procedures. Those employees who are determined to have occupational exposure to blood or other potentially infectious materials (OPIM) must comply with the procedures and work practices outlined in this ECP. All necessary personal protective equipment (PPE), engineering controls (e.g., sharps containers), labels, and red bags will be provided and maintained in the lab.

The Biosafety Officer is responsible for providing training for research lab personnel handling human-derived research samples. Each laboratory is responsible for maintaining documentation of training and making the written ECP available to employees, OSHA, and NIOSH representatives.

Those employees who are determined to have occupational exposure to blood or other potentially infectious materials (OPIM) must comply with the procedures and work practices outlined in this ECP.

The Division of Human Resources and the Employee Safety Manager will be responsible for ensuring that appropriate employee health and OSHA records are maintained.

## Methods of Implementation and Control

### Universal Precautions

All employees will utilize **universal precautions**. Universal Precautions is OSHA's required method of control to protect employees from exposure to all human blood and OPIM. The term, "Universal Precautions," refers to a concept of bloodborne disease control which requires that all human blood and certain human body fluids be treated as if known to be infectious for HIV, HBV or other bloodborne pathogens.

### 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 can review this plan at any time during their work shifts. If requested, we will provide an employee with a copy of the ECP free of charge and within 15 days of the request. The ECP template is available online on the [Biosafety Bloodborne Pathogens webpage](http://www.sc.edu/ehs/Biosafety/BBP.htm).

### Engineering Controls

The term, "engineering controls," refers to controls (e.g., sharps disposal containers, self-sheathing needles, safer medical devices, such as sharps with engineered sharps injury protections and needleless systems) that isolate or remove the bloodborne pathogens hazard from the workplace.

**Engineering controls** and **work practice controls** will be used to prevent or minimize exposure to bloodborne pathogens. The laboratory must annually consider and implement appropriate, commercially-available and effective engineering controls designed to eliminate or minimize exposure. The Principal Investigator or lab manager must solicit and document for this process input from non-managerial employees responsible for use of **sharps** who are potentially exposed to injuries from contaminated sharps.

Bending, recapping, or removing **contaminated needles** is prohibited, except under certain circumstances. When the Principal Investigator can demonstrate that bending, removal or recapping is required by a specific procedure or that no alternative is feasible, such actions are permitted. However, such actions must be accomplished by some method other than the traditional two-handed procedure (e.g., a mechanical device or a one hand scoop method). For example, these actions may be necessary when performing blood gas analyses; when inoculating a blood culture bottle; or when administering incremental doses of a medication to the same research animal. Where no alternative to bending, recapping, or removing contaminated needles is feasible or such action is required by a specific medical procedure there must be a written justification to that effect included as part of the exposure control plan. On the basis of reliable evidence, this justification must state the reason for the Principal Investigator’s determination that no alternative is feasible or must specify that a particular procedure requires, for example, the bending of the needle and the use of forceps to accomplish this task. Research procedures with a written justification for bending, recapping, or removing contaminated needles must be approved by the USC’s Institutional Biosafety Committee (IBC). Shearing or breaking contaminated needles is completely prohibited.

Sharps disposal containers are inspected and maintained or replaced whenever necessary to prevent overfilling.

The need for changes in engineering controls and work practices are identified through review of OSHA records, employee engagement and feedback, and IBC activities.

### Work Practices

Facilities for proper **hand washing** should be readily available in all areas where occupational exposure to bloodborne pathogens is anticipated.

**Antiseptic hand cleansers** in conjunction with clean cloth/paper towels or antiseptic towelettes are examples of acceptable alternatives to running water. However, when these types of alternatives are used, employees must wash their hands with soap and running water as soon as feasible. These alternatives are only acceptable at worksites where it is infeasible to provide soap and running water.

The standard requires that all **equipment** that may be contaminated must be examined and decontaminated as necessary before servicing or shipping. If complete decontamination is not feasible, the equipment must be labeled with the required biohazard label which also specifically identifies which portions of the equipment remain contaminated. In addition, the lab supervisor must ensure that this information is conveyed to the affected employees, the servicing representative, and/or the manufacturer, as appropriate, before handling, servicing, or shipping.

### Personal Protective Equipment (PPE)

The **responsibility** for providing, laundering, cleaning, repairing, replacing, and disposing of PPE at no cost to employees rests with the Principal Investigator.

The use of **eye protection** would be based on the reasonable anticipation of facial exposure. Masks in combination with eye protection devices, such as glasses with solid side shields, goggles, or chin-length face shields, shall be worn whenever splashes, spray, spatter, or droplets of blood or OPIM may be generated and eye, nose, or mouth contamination can be reasonably anticipated.

Gloves must be worn by employees whenever handling any blood or OPIM and whenever any vascular access procedure is performed, including **phlebotomy**.

**Hypoallergenic gloves**, glove liners, powderless gloves or other similar alternatives must be provided for employees who are allergic to the gloves that are normally provided.

PPE is provided to employees at no cost to them. Training in the use of the appropriate PPE for specific tasks or procedures is to be provided by the principal investigator or responsible individual for the laboratory.

All employees using PPE must observe the following precautions:

* Wash hands immediately or as soon as feasible after removing gloves or other PPE.
* Remove PPE after it becomes contaminated and before leaving the work area. A “work area” is generally considered to be an area where work involving occupational exposure occurs or where contamination of surfaces may occur.
* Used PPE may be disposed of appropriate containers.
* Wear appropriate gloves when it is 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 or 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.

### Housekeeping

OSHA's position is that EPA-registered tuberculocidal disinfectants, diluted bleach solutions and EPA-registered disinfectants that are labeled as effective against both HIV and HBV as well as Sterilants/High-Level Disinfectants cleared by the FDA, meet the requirement in the standard and are **"appropriate" disinfectants** to clean contaminated surfaces, provided that such surfaces have not become contaminated with agent(s) or volumes of or concentrations of agent(s) for which higher level disinfection is recommended.

The particular disinfectant used, as well as the frequency with which it is used, will depend upon the circumstances in which a given housekeeping task occurs (i.e., location within the facility, type of surface to be cleaned, type of soil present, and tasks and procedures being performed). The supervisor’s or Principal Investigator’s written schedule for **cleaning and decontamination** should identify such specifics on a task-by-task basis.

The Bloodborne Pathogens standard uses the term, "**regulated waste**," to refer to the following categories of waste which require special handling: (1) liquid or semi-liquid blood or OPIM; (2) items contaminated with blood or OPIM and which would release these substances in a liquid or semi-liquid state if compressed; (3) items that are caked with dried blood or OPIM and are capable of releasing these materials during handling; (4) contaminated sharps; and (5) pathological and microbiological wastes containing blood or OPIM.

Regulated waste shall be placed in **containers** which are:

* Closable;
* Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping;
* Labeled or color-coded in accordance with paragraph (g)(1)(i) of the standard
* Closed before removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

**If outside contamination** of the regulated waste container occurs, it shall be placed in a second container. The **second container** shall be:

* Closable;
* Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport, or shipping;
* Labeled or color-coded in accordance with paragraph (g)(1)(i) of the standard; and
* Closed before removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

There is no specific requirement to **autoclave waste** before disposal. However, under the section on HIV and HBV Research Laboratories and Production Facilities, there is a requirement stating that all regulated waste from the facilities must be either incinerated or decontaminated by a method, such as autoclaving, known to effectively destroy bloodborne pathogens.

**Sharps containers** shall be maintained upright throughout use, replaced routinely and not be allowed to overfill. When removing sharps containers from the area of use, the containers shall be:

* Closed immediately before removal or replacement to prevent spillage or protrusion of contents during handling, storage, transport, or shipping;
* Placed in a secondary container if leakage is possible. The second container shall be:
  + Closable;
  + Constructed to contain all contents and prevent leakage during handling, storage, transport, or shipping; and
  + Labeled or color-coded according to paragraph (g)(1)(i) of the standard.
* Reusable containers shall not be opened, emptied, or cleaned manually or in any other manner which would expose employees to the risk of percutaneous injury.

Upon closure, duct tape may be used to secure the lid of a sharps container as long as the tape does not serve as the lid itself.

Sharps containers must be **easily accessible** to employees and located as close as feasible to the immediate area where sharps are used or can be reasonably anticipated to be found. Contaminated sharps are discarded immediately or as soon as possible in containers that are closable, puncture-resistant, leak proof on sides and bottoms, and appropriately labeled or color-coded.

Reusable sharps must be placed in containers which are puncture-resistant, leak-proof on the sides and bottom, and properly labeled or color-coded until they are reprocessed. Contaminated reusable sharps must not be stored or reprocessed in a manner that would require the employee to reach by hand into containers.

**Reusable containers** used in the processing, transporting, or storage of blood or OPIM are cleaned and decontaminated as soon as feasible after visible contamination.

**Broken glassware** that may be contaminated is only picked up using mechanical means, such as a brush and dustpan.

### Laundry

**Contaminated laundry** means laundry which has been soiled with blood or other potentially infectious materials or may contain sharps. Laundry in a research laboratory setting will primarily be lab coats or scrubs.

Contaminated laundry shall be handled as little as possible with a minimum of agitation. Contaminated laundry shall be **bagged or containerized** at the location where it was used and shall not be sorted or rinsed in the location of use. Other requirements include:

* Contaminated laundry shall be placed and transported in bags or containers labeled or color-coded in accordance with paragraph (g)(1)(i) of the standard. When a facility utilizes Universal Precautions in the handling of all soiled laundry, alternative labeling or color-coding is sufficient if it permits all employees to recognize the containers as requiring compliance with Universal Precautions.
* Whenever contaminated laundry is wet and presents a reasonable likelihood of soak-through or leakage from the bag or container, the laundry shall be placed and transported in bags or containers which prevent soak-through and/or leakage of fluids to the exterior.
* The employer shall ensure that employees who have contact with contaminated laundry wear protective gloves and other appropriate personal protective equipment.
* When a facility ships contaminated laundry off-site to a second facility which does not utilize Universal Precautions in the handling of all laundry, the facility generating the contaminated laundry must place such laundry in bags or containers which are labeled or color-coded in accordance with paragraph (g)(1)(i) of the standard.

Employees are not permitted to take their protective equipment home and launder it. It is the responsibility of the University to provide, launder, clean, repair, replace, and dispose of personal protective equipment.

There is no OSHA requirement stipulating that employers must purchase a **washer and dryer** to launder protective clothing. It is an option that employers may consider. Another option is to **contract out** the laundering of protective clothing. Finally, employers may choose to use **disposable** personal protective clothing and equipment.

The **decontamination and laundering** of protective clothing are governed by the laundry provisions of the standard in paragraph (d)(4)(iv). Washing and drying the garments should be done according to the clothing manufacturer's instructions.

The following laundering requirements must be met:

* handle contaminated laundry as little as possible, with minimal agitation
* place wet contaminated laundry in leak-proof, labeled or color-coded containers before transport. Use red bags or bags marked with the biohazard symbol for this purpose.
* Wear the appropriate PPE when handling and/or sorting contaminated laundry

### Labels

A **warning label** that includes the universal biohazard symbol (see 29 CFR 1910.1030(g)(1)(i)(B) followed by the term "biohazard," must be included on bags/containers of contaminated laundry; on bags/containers of regulated waste; on refrigerators and freezers that are used to store blood or OPIM; and on bags/containers used to store, dispose of, transport, or ship blood or OPIM (e.g., specimen containers). In addition, contaminated equipment which is to be serviced or shipped must have a readily observable label attached which contains the biohazard symbol and the word "biohazard" along with a statement relating which portions of the equipment remain contaminated.

The **labels** must be fluorescent orange or orange-red or predominantly so, with symbols and lettering in a contrasting color. The label must be an integral part of the container or affixed as close as feasible to the container by a string, wire, adhesive, or other method to prevent its loss or unintentional removal.

**Red bags or red containers** may be substituted for the biohazard labels.

Labeling is **not required** for:

* Individual containers of blood or OPIM that are placed in secondary labeled containers during storage, transport, shipment, or disposal;
* Specimen containers, if the facility uses Universal Precautions when handling all specimens, the containers are recognizable as containing specimens, and the containers remain within the facility;
* Laundry bags or containers containing contaminated laundry may be marked with an alternative label or color-coded provided the facility uses Universal Precautions for handling all soiled laundry, and the alternative marking permits all employees to recognize the containers as requiring compliance with Universal Precautions. If contaminated laundry is sent off-site for cleaning to a facility which does not use Universal Precautions in the handling of all soiled laundry, it must be placed in a bag or container which is red in color or labeled with the biohazard label described above; and
* Regulated waste that has been decontaminated.

The labeling requirements do not preempt either the U.S. Postal Service labeling requirements (39 CFR Part III) or the Department of Transportation's Hazardous Materials Regulations (49 CFR Parts 171-181).

**DOT labeling** is required on some transport containers (i.e., those containing "known infectious substances"). It is not required on all containers for which 29 CFR 1910.1030 requires the biohazard label. Where there is an overlap between the OSHA-mandated label and the DOT-required label, the DOT label will be considered acceptable on the outside of the transport container provided that the OSHA-mandated label appears on any internal containers which may be present. Containers serving as collection receptacles within a facility must bear the OSHA label since these are not covered by the DOT requirements.

Employees are to notify the Biosafety Officer if they discover regulated waste containers, refrigerators containing blood or OPIM, contaminated equipment, etc., without proper labels.

## HIV and HBV Research Laboratories and Production Facilities

Academic **HIV and HBV**research laboratories are regarded as research laboratories under the standard. A research laboratory produces or uses research laboratory-scale amounts of HIV and HBV. Although research laboratories may not have the volume found in production facilities, they deal with solutions containing higher viral titers than those normally found in patients' blood.

The standard covers **animal blood** only for those experimental animals purposely infected with HIV or HBV. Although the standard does not apply to animal blood unless it comes from an experimental animal infected with HIV or HBV, persons handling animals or animal blood should follow general precautions recommended by the Centers for Disease Control/National Institutes of Health Publication, [*Biosafety in Microbiological and Biomedical Laboratories*](http://www.cdc.gov/biosafety/publications/bmbl5).

# HEPATITIS B VACCINATION

The hepatitis B vaccination series is available at no cost after initial employee training and **within 10 days of initial assignment** to all employees identified in the exposure determination section of this plan. Thus, arranging for the administration of the first dose of the series must be done at a time which will enable this schedule to be met. 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.

The University cannot require an employee to take a **pre-screening or post-vaccination serological test**. The University may, however, decide to make pre-screening available at no cost to the employee.

All **medical evaluations and procedures**, including the hepatitis B vaccine and vaccination series, are to be provided according to the current recommendations of the U.S. Public Health Service (USPHS). According to the current guidelines, employees who have ongoing contact with patients or blood and are at ongoing risk for percutaneous injuries should be tested for anti-HBs one to two months after the completion of the three-dose vaccination series. Non-responders must receive a second three-dose series and be retested after the second series. Non-responders must be medically evaluated. <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5011a1.htm>.

If an employee **declines the hepatitis B vaccination**, they must sign a hepatitis B vaccine declination. Employees have the right to **refuse the hepatitis B vaccine** and/or any post-exposure evaluation and follow-up. Note, however, that the employee needs to be properly informed of the benefits of the vaccination and post-exposure evaluation through training. The employee also has the right to decide to take the vaccination at a later date if he or she so chooses. The University must make the vaccination available at that time. OSHA does not have jurisdiction over issues such as the University making the hepatitis B vaccination a condition of employment.

**NOTE:** Research personnel must complete the [hepatitis B vaccine acceptance/declination form](https://sc.edu/about/offices_and_divisions/ehs/documents/biological_safety/hepatitis_b_vaccination_for_research_labs.pdf) before starting work involving blood or OPIM.

The U.S. Public Health Service (USPHS) does not recommend **routine booster doses** of hepatitis B vaccine, so they are not required at this time. However, if a routine booster dose of hepatitis B vaccine is recommended by the USPHS at a future date, such booster doses must be made available at no cost to those eligible employees with occupational exposure.

Vaccination will be provided by the Student Health Allergy/Immunization & Travel Clinic (AIT) for employees on the Columbia campus. Student Healthensures that health care professional(s) responsible for employee's hepatitis B vaccination are given a copy of OSHA's bloodborne pathogens standard.

Following the medical evaluation, a copy of the health care professional's written opinion will be obtained and provided to the employee within 15 days of the completion of the evaluation. It will be limited to whether the employee requires the hepatitis vaccine and whether the vaccine was administered.

## Hepatitis B Vaccine: Safety, Benefits, and Efficacy

The hepatitis B vaccine is safe and effective at preventing hepatitis B. It is a non-infectious, vaccine prepared from recombinant yeast cultures, rather than human blood or plasma. There is no risk of contamination from other bloodborne pathogens nor is there any chance of developing HBV from the vaccine.

The vaccine must be administered according to the recommendations of the U.S. Public Health Service (USPHS) current at the time the procedure takes place. To ensure immunity, it is important for individuals to complete the entire course of vaccination contained in the USPHS recommendations.

The great majority of those vaccinated will develop immunity to the hepatitis B virus. The vaccine causes no harm to those who are already immune or to those who may be HBV carriers. Although workers may desire to have their blood tested for antibodies to see if vaccination is needed, employers cannot make such screening a condition of receiving vaccination and employers are not required to provide prescreening.

# POST-EXPOSURE EVALUATION AND FOLLOW-UP

**For emergency assistance, dial 911. For USC police dispatch, dial (803) 777-4215.**

1. Procedures for needle sticks or other exposures to blood or OPIM:
   1. **Report lab incident to your supervisor immediately** so that medical evaluation can be authorized.
      1. Percutaneous Exposure (e.g., needle stick, cut, animal bite) – Remove glove (if applicable). Immediately vigorously wash or flush the exposed area with soap and water for 15 minutes.
      2. Mucous Membrane Exposure (i.e., eyes, nose, or mouth) – Flush the exposed area with water. If exposure is to the eyes, flush eyes (holding open) using the eyewash station for 15 minutes.
2. For employees, follow the steps outlined in the [USC Workers’ Compensation Guidance for](https://www.sc.edu/about/offices_and_divisions/human_resources/benefits/workers_compensation/index.php) [Work Related Accidents or Injuries.](https://www.sc.edu/about/offices_and_divisions/human_resources/benefits/workers_compensation/index.php) All paid employees of the University of South Carolina are covered by workers' compensation.
   1. Seek medical treatment as soon as possible after the incident. **NOTE:** **CompEndium will direct the injured employee to a medical provider for treatment.** They will also issue a treating authorization number to the medical provider, which will authorize treatment of the injured employee.
   2. Inform the healthcare provider that the injury is a laboratory exposure and inform them of the exposure route (e.g., droplet into the eyes, needle stick), and the agent or sample involved when the incident occurred (e.g., blood from HIV+ patient).
3. Complete a [USC Laboratory Incident Report Form](https://sc.edu/about/offices_and_divisions/ehs/research_and_laboratory_safety/incident_and_near_miss_reporting/index.php) after post-exposure evaluation has been initiated. Then email the completed form to the Biosafety Officer at [smiths69@mailbox.sc.edu](mailto:smiths69@mailbox.sc.edu).

### USC Columbia faculty, staff and students:

The exposed individual should immediately call Compendium Services at **877-709-2667** along with their supervisor and follow the directions given for medical treatment. Compendium Services provides medical case management for the University 24 hours a day, 7 days a week. The exposed individual should complete an [**Employee Injury Report Form (81-B)**](https://www.sc.edu/about/offices_and_divisions/human_resources/docs/hr81b.pdf) and verify that USC’s Human Resources- Central Benefits Office is provided with an incident report and any medical evaluation records. This report must include the date of the incident, person involved and their supervisor, nature and consequences of the incident, root cause, and a description of the material/hazard involved.

### School of Medicine Columbia faculty, staff, and students:

The exposed individual should immediately call Compendium Services **together with their supervisor** and follow the directions given for medical treatment. Faculty, staff, and students should also report the injury to [Jennifer Evans](mailto:jennifer.evans@uscmed.sc.edu) (803-216-3374), the SOM Employee/Student Health Nurse and ensure that she is provided with an incident report and any medical evaluation records. The exposed individual should also complete an [**Employee Injury Report Form (81-B)**](https://www.sc.edu/about/offices_and_divisions/human_resources/docs/hr81b.pdf) and verify that USC’s Human Resources- Central Benefits Office is provided with an incident report and any medical evaluation records. This report must include the date of the incident, person involved and their supervisor, nature and consequences of the incident, root cause, and a description of the material/hazard involved.

**NOTE:** Student Health only provides post-exposure evaluation and follow-up services for USC students not paid by the University (i.e., volunteers) or for employed students receiving care for non-occupational exposures and incidents.

**For life-threatening injuries, dial 911 or go to the nearest emergency room and contact your supervisor and CompEndium as soon as possible.**

Following initial first aid (clean the wound, flush eyes or other mucous membrane, etc.), the following activities will be performed:

* Document the routes of exposure and how the exposure occurred.
* Identify and document the source individual (unless the University can establish that identification is infeasible or prohibited by state or local law).
* Obtain consent and make arrangements to have the source individual tested as soon as possible to determine HIV, HCV, and HBV infectivity. Ensure that two “tiger-top” blood tube specimens are drawn from the potential host patient. Each tube should be labeled with the date of the draw, host’s name, date of birth and medical record number. Document that the source individual's test results were conveyed to the employee's health care provider. If consent cannot be obtained and is required by state law, the employer must document in writing that consent cannot be obtained. Exposures from an unknown source will be managed based on specifics of the injury and the events surrounding the injury. These cases should still be considered worker’s compensation cases and handled accordingly.
* 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).
* After obtaining consent, collect exposed employee's blood as soon as feasible after exposure incident, and test blood for HBV and HIV serological status
* 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.
* Standard worker’s compensation paperwork will be completed for all employees experiencing an occupational exposure. An exposure report must be completed for each incident.

# ADMINISTRATION OF POST-EXPOSURE EVALUATION AND FOLLOW-UP

The exposed employee must ensure that the health care professional conducting the evaluation after an exposure incident receives the following:

* a description of the employee's job duties 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 University must obtain and provide to the employee a copy of the evaluating healthcare professional's **written opinion** within 15 days of completion of the evaluation. The healthcare professional's written opinion for hepatitis B is limited to whether hepatitis B vaccination is indicated and if the employee received the vaccination. The written opinion for post-exposure evaluation must include information that the employee has been informed of the results of the evaluation and told about any medical conditions resulting from exposure that may require further evaluation and treatment. All other findings or diagnoses must be kept confidential and not included in the written report.

The institution that provides medical services (e.g.,Prisma Health Richland Hospital’s Emergency Department) provides the employee with a copy of the evaluating health care professional's written opinion **within 15 days** after completion of the evaluation.

The standard requires that **post-exposure counseling** be given to employees following an exposure incident. Counseling concerning infection status, including results and interpretation of all tests, will assist the employee in understanding the potential risk of infection and in making decisions regarding the protection of personal contacts. For example, counseling should include USPHS recommendations about the transmission and prevention of HIV. These recommendations include refraining from blood, semen, or organ donation; abstaining from sexual intercourse or using measures to prevent HIV transmission during sexual intercourse; and refraining from breast feeding infants during the follow-up period. Counseling based on the USPHS recommendations must also be provided for HBV and HCV and other bloodborne pathogens, as appropriate. In addition, counseling must be made available regardless of the employee's decision to accept serological testing.

## Procedures for Evaluating the Circumstances Surrounding an Exposure Incident

Environmental Health and Safety 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 (including type and brand)
* protective equipment or clothing that was used at the time of the exposure incident (gloves, eye shields, etc.)
* location of the incident (lab, animal facility, etc.)
* procedure being performed when the incident occurred
* employee's training

The Employee Safety Manager in Environmental Health & Safety will record all percutaneous injuries from contaminated sharps in a Sharps Injury Log.

If revisions to this ECP are necessary, the principal investigator or lab supervisor will ensure that appropriate changes are made. (Changes may include an evaluation of safer devices, adding employees to the exposure determination list, etc.)

# EMPLOYEE TRAINING

All employees who have occupational exposure to bloodborne pathogens receive **initial and annual training**. The Biosafety Officer is responsible for providing training for **research lab personnel** handling human-derived research samples.

* OSHA interprets “annual training” to mean that employees must be provided re-training at least once every 12 months (i.e., within a time period not exceeding 365 days.) This annual training need not be performed on the exact anniversary date of the preceding training but should be provided on a date reasonably close to the anniversary date taking into consideration the University's and the employees' convenience in scheduling.

In addition, training must be provided **when changes** (e.g., modified/new tasks or procedures) affect a worker’s occupational exposure. Part-time and temporary employees are covered and are also to be trained on University time.

The person conducting the training is required to be **knowledgeable** in the subject matter covered by the elements in the training program and be **familiar** with how the course topics apply to the workplace that the training will address. The trainer must demonstrate **expertise** in the area of occupational hazards of bloodborne pathogens.

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

* a copy and explanation of the OSHA bloodborne pathogen 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, handling, decontamination, and disposal of PPE
* an explanation of the basis for PPE selection
* 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
* 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 the method of reporting the incident and the medical follow-up that will be made 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
* an opportunity for interactive questions and answers with the person conducting the training session.

# RECORDKEEPING

## Training Records

Training records are completed for each employee upon completion of training. The laboratory is responsible for training records. These documents will be kept for at least **three years**.

The training records include:

* the dates of the training sessions
* the contents or a summary of the training sessions
* the names and qualifications of persons conducting the training
* the names and job titles of all persons attending the training sessions

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 the principal investigator.

## Medical Records

Medical records are maintained for each employee with occupational exposure in accordance with 29 *CFR* 1910.1020, "Access to Employee Exposure and Medical Records."

The **medical record** includes the name and social security number of the employee; a copy of the employee's hepatitis B vaccination status including the dates of all the hepatitis B vaccinations and any medical records relative to the employee's ability to receive the vaccination; copies of all results of examinations, medical testing and follow-up procedures; copies of the healthcare professional's written opinion; and copies of the information provided to the healthcare professional.

The University is responsible for the establishment and maintenance of medical records. However, these records may be kept off-site at the location of the healthcare provider.  The University must ensure that the medical records are kept confidential and are not reported or disclosed without the express written consent of the worker, except as required by the standard or as may be required by law.

The institution that provides medical services (e.g., Prisma Health Richland Hospital’s Emergency Department) is responsible for maintenance of the required medical records. USC’s Human Resources- Central Benefits Office is responsible for obtaining copies of these records for employees. These confidential records are kept for at least the **duration of employment plus 30 years**.  
  
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 USC’s Human Resources- Central Benefits Office.

## OSHA Recordkeeping & Sharps Injury Log

Any employer who is required to maintain a log of occupational injuries and illnesses under OSHA’s Recordkeeping regulation (29 CFR Part 1904) is also required to establish and maintain a **sharps injury log** for the recording of percutaneous injuries from contaminated sharps. The University must also record all work-related needlestick injuries and cuts from sharp objects that are contaminated with another person's blood or other potentially infectious material (as defined by 29 CFR 1910.1030) on the **OSHA 300 Log**.  The University may use the OSHA 300 Log to meet the requirements of the sharps injury log provided they enter the same information required for the sharps injury log on the OSHA 300 Log and maintain the records in a way that segregates sharps injuries from other types of work-related injuries and illnesses, or allows sharps injuries to be easily separated.

If an employee is splashed or exposed to blood or OPIM without being cut or punctured, the incident must be recorded on the OSHA 300 Log if it results in the diagnosis of a bloodborne illness or if it meets one or more of the recording criteria in 29 CFR 1904.7.

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 Employee Safety Manager in Environmental Health and Safety.

All percutaneous injuries from contaminated sharps are also recorded in a **Sharps Injury Log** and must include at least:

* date of the injury
* type and brand of the device involved (syringe, suture needle)
* department or work area where the incident occurred
* explanation of how the incident occurred.

This log is reviewed as part of the annual program evaluation and maintained for at least five years following the end of the calendar year covered. If a copy is requested by anyone, it must have any personal identifiers removed from the report.

# HEPATITIS B VACCINE DECLINATION (MANDATORY)

**Note:** Only to be completed by those who have not had the hepatitis B vaccine and are declining the vaccine.

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, 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 me.

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| --- | --- | --- | --- |
| Signature: |  | Date: |  |