



Exposure Control Plan  
*Bloodborne Pathogens & Aerosol Transmissible Diseases*  
*Template*

**For Research**

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## About this plan

This document is provided to facilitate laboratory compliance with federal and state Bloodborne Pathogens Standard and Aerosol Transmissible Diseases Standard (Federal OSHA 29 CFR 1910.1030, Cal/OSHA 8 CCR 5193, and Cal/OSHA 8 CCR 5199) which require a written Exposure Control Plan.

Access the Standards:

OSHA 29 CFR 1920.1030

[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)

Cal/OSHA 8 CCR 5193

<http://www.dir.ca.gov/title8/5193.html>

Cal/OSHA 8 CCR 5199

<http://www.dir.ca.gov/title8/5199.html>

The following pages address the minimal requirements stated in the 8 CCR 5193 (c)(1). Principal Investigators with a reasonable risk of exposure to bloodborne pathogens should **save a copy of this form** and add additional laboratory-specific precautions and details to customize the plan. The Exposure Control Plan shall be made accessible to employees, reviewed annually and revised if any significant changes have occurred.

Additionally, 8 CCR 5199.1 explicitly covers operations involving the capture, sampling, or transportation of wildlife and operations involving samples, cultures, or other materials potentially containing zoonotic aerosol transmissible pathogens.

If there are any questions regarding this form, please contact the Biosafety Officer (951) 827-2648.

## Approvals

NOTE: Pursuant to OSHA and CAL/OSHA, the Exposure Control Plan shall be reviewed and updated at least annually and whenever necessary to reflect new or modified tasks and procedures that affect occupational exposure and to reflect new or revised employee positions with occupational exposure.

| Frequency             | Date | Signature<br><i>Principal Investigator</i> |
|-----------------------|------|--|
| <b>First Approved</b> |      |  |
| <b>Annual Review</b>  |      |  |
| <b>Annual Review</b>  |      |  |
| <b>Annual Review</b>  |      |  |
| <b>Annual Review</b>  |      |  |
| <b>Annual Review</b>  |      |  |
| <b>Annual Review</b>  |      |  |
| <b>Annual Review</b>  |      |  |
| <b>Annual Review</b>  |      |  |

## Contact Information

|                                |  |
|--------------------------------|--|
| <b>Department:</b>             |  |
| Phone:                         |  |
| <b>Department Chair:</b>       |  |
| Phone:                         |  |
| <b>Principal Investigator:</b> |  |
| Phone:                         |  |
| Email:                         |  |

## Work Site location(s):

| Building | Room # | BSL Level  | Room Use  | Shared Space   |
|----------|--------|--|---|--|
|          |        | <input type="checkbox"/> BSL 1 <input type="checkbox"/> BSL 2 <input type="checkbox"/> BSL 3 | <input type="checkbox"/> Laboratory<br><input type="checkbox"/> Storage | <input type="checkbox"/> Yes <input type="checkbox"/> No |
|          |        | <input type="checkbox"/> BSL 1 <input type="checkbox"/> BSL 2 <input type="checkbox"/> BSL 3 | <input type="checkbox"/> Laboratory<br><input type="checkbox"/> Storage | <input type="checkbox"/> Yes <input type="checkbox"/> No |
|          |        | <input type="checkbox"/> BSL 1 <input type="checkbox"/> BSL 2 <input type="checkbox"/> BSL 3 | <input type="checkbox"/> Laboratory<br><input type="checkbox"/> Storage | <input type="checkbox"/> Yes <input type="checkbox"/> No |
|          |        | <input type="checkbox"/> BSL 1 <input type="checkbox"/> BSL 2 <input type="checkbox"/> BSL 3 | <input type="checkbox"/> Laboratory<br><input type="checkbox"/> Storage | <input type="checkbox"/> Yes <input type="checkbox"/> No |
|          |        | <input type="checkbox"/> BSL 1 <input type="checkbox"/> BSL 2 <input type="checkbox"/> BSL 3 | <input type="checkbox"/> Laboratory<br><input type="checkbox"/> Storage | <input type="checkbox"/> Yes <input type="checkbox"/> No |
|          |        | <input type="checkbox"/> BSL 1 <input type="checkbox"/> BSL 2 <input type="checkbox"/> BSL 3 | <input type="checkbox"/> Laboratory<br><input type="checkbox"/> Storage | <input type="checkbox"/> Yes <input type="checkbox"/> No |
|          |        | <input type="checkbox"/> BSL 1 <input type="checkbox"/> BSL 2 <input type="checkbox"/> BSL 3 | <input type="checkbox"/> Laboratory<br><input type="checkbox"/> Storage | <input type="checkbox"/> Yes <input type="checkbox"/> No |

## Scope and Purpose

This Exposure Control Plan is prepared to minimize or eliminate employee exposure to bloodborne pathogens as defined in federal OSHA 29 CFR 1910.1030 and Cal/OSHA 8 CCR 5193. Bloodborne pathogens are pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to: Hepatitis B Virus (HBV), Hepatitis C (HCV), and Human Immunodeficiency Virus (HIV). In addition to human blood and blood products, the following fluids and tissues, called Other Potentially Infectious Materials (OPIM) are also capable of transmitting bloodborne pathogens:

### Other Potentially Infections Materials

- Semen and vaginal secretions
- Cerebrospinal, synovial, pleural, pericardial, peritoneal, and amniotic fluid
- Saliva in dental procedures
- Body fluid (any) that is visibly contaminated with blood, and
- Body fluids (any) in situations where it is difficult or impossible to differentiate between body fluids
- Unfixed tissue or organ (any, other than intact skin) from a human (living or dead)

|   |   |
|---|---|
| Our laboratories have the following agents subject to the OSHA Bloodborne Pathogen Standard:          | <input type="checkbox"/> Human blood, serum, plasma, and or other blood products<br><input type="checkbox"/> Human tissues/organs*<br><input type="checkbox"/> Human body fluids*<br><input type="checkbox"/> Primary cell lines*<br><input type="checkbox"/> HIV or HIB cultures, lab scale (i.e., < 10 L total)<br><input type="checkbox"/> Human pathogens |
| Describe or list human tissues / organs, human body fluids, and/or primary cell lines (if applicable) |   |

## Exposure Determination

The specific types of work or “job classifications” that pose hazards to personnel are identified in this section. The Standard requires that each organization assess whether or not its employees are subject to occupational exposure\* to blood-associated pathogenic microorganisms, without regard to personal protective clothing and equipment. *Occupational Exposure* is defined as a reasonably anticipated skin, eye, mucous membrane, or parenteral contact (i.e., needle stick) with blood or other potentially infectious materials that may result from the performance of an employee's duties.

## Job Classifications

|  |  |
|--|--|
| <b>Group 1</b><br>Occupational exposure is part of the job | <i>(check all that apply)</i><br><input type="checkbox"/> Laboratory personnel who work directly with bloodborne pathogens<br><input type="checkbox"/> Phlebotomists, nurses, and/or physicians who work with these agents<br><input type="checkbox"/> Other (describe): _____   |
| <b>Group 2</b><br>Occupational exposure is possible        | <i>(check all that apply)</i><br><input type="checkbox"/> Administrative personnel who transport incoming packages clinical samples, cell lines, etc.<br><input type="checkbox"/> Laboratory personnel who share laboratories and/or equipment with those in “Group 1”<br><input type="checkbox"/> Other (describe): _____ |

## Job Tasks and Procedures

### Use of Sharps

|  |  |
|--|--|
| Our laboratory uses the following sharps:  | <input type="checkbox"/> Pasteur pipettes<br><input type="checkbox"/> Blades (Razors, scalpels, utility knife blades, etc.)<br><input type="checkbox"/> Needles and syringes<br><input type="checkbox"/> Safety needles (retractable, shielded, etc.)<br><input type="checkbox"/> Glass capillary tubes<br><input type="checkbox"/> Other sharp glass (slides, etc.) |
| Are any of the above sharps used with materials subject to the Standard (e.g., blood, tissues, syringes to shear cells and DNA, etc.)? | <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br><input type="checkbox"/> Not Applicable   |

### Procedures

Please identify the procedures involved in the laboratory with Aerosol Transmitted Pathogens (ATPs-L), and means of containment for each.

| Procedure                            | Control  |
|--------------------------------------|--|
| <b>Animal Handling</b>               | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Blending</b>                      | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Centrifuging</b>                  | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Flow Cytometry</b>                | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Grinding</b>                      | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Homogenizing</b>                  | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Injecting</b>                     | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Mixing</b>                        | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Necropsy</b>                      | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Needle / Syringe Manipulation</b> | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Pipetting</b>                     | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Plating</b>                       | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Pouring</b>                       | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Sample Collection</b>             | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Shaking</b>                       | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Sonicating</b>                    | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Vortexing</b>                     | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Other:</b>                        | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Other:</b>                        | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Other:</b>                        | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |
| <b>Other:</b>                        | <input type="checkbox"/> Biosafety Cabinet <input type="checkbox"/> Respirator <input type="checkbox"/> Other: |

## Responsibilities

**Principal Investigators & Supervisors** are to ensure compliance with the provisions of this plan by all employees who have a potential for occupational exposure. This includes providing a copy of this Exposure Control Plan to employees, enforcing compliance with this plan, ensuring new employees are properly trained (including attendance at annual training), and performing follow-up procedures for all exposure incidents.

**Employees** are to perform tasks and procedures in a manner that minimizes or eliminates employee exposure and perform duties as established in this exposure control plan and as trained, and report exposure incidents.

**EH&S** provides (or arranges) Cal/OSHA mandated bloodborne pathogen information and training to all employees with occupational exposure.

## Methods of Compliance

Work with bloodborne pathogens is considered Biosafety Level 2 (BSL-2) per the Centers for Disease Control (CDC). The CDC, together with the National Institute of Health (NIH), publishes the *Biosafety in Microbiological and Biomedical Laboratories* (BMBL) which describes all of the biosafety levels and the appropriate methods of compliance. The following describes both general and specific procedures based on BSL-2 criteria.

## Universal Precautions

**Universal precautions** is the practice of assuming that anything that could be potentially infectious is treated as infectious, such that, all such samples/fluids are treated with the same regard. Universal precautions are observed to prevent contact with blood or other potentially infectious materials, such as the human primary cell lines. Under circumstances in which differentiation between infected and non-infected body fluid types is difficult or impossible, all body fluids are considered potentially infectious materials.

## Engineering Controls

Engineering controls are to be used to eliminate or minimize employee exposure for each task within the work area. Where occupational exposure remains after institution of these controls and work practice controls, personal protective equipment is used. Engineering controls are used where there is a reasonable likelihood of occupational exposure. Engineering controls, when possible to implement, are the preferred control measures over work practice controls and personal protective equipment. Engineering controls are to be examined and maintained or replaced on a regular schedule by the employee working at the particular workstation (or by one assigned person).

|                                    |   |
|------------------------------------|---|
| Our laboratory uses the following: | <i>(check all that apply)</i><br><input type="checkbox"/> Medical waste pails/drums<br><input type="checkbox"/> Bench-top medical waste receptacles<br><input type="checkbox"/> Sharps containers<br><input type="checkbox"/> Biological Safety Cabinets (If yes, list type & number) |
|------------------------------------|---|

## Safety needles

Cal/OSHA has specific requirements as it pertains to the use of needles in activities with human blood, tissues, and other potentially infectious materials. The use of safety needles (or a syringe with a built-in safety mechanism) is required unless at least one of the four following exemptions applies:

### Exemptions

1. It is shown that no needless systems or sharps devices with engineered sharps injury protection are available in the marketplace for their procedure.
2. A licensed healthcare professional directly involved with a patient's care determines that available needleless systems or sharps devices with engineered sharps injury protection would compromise the patient's care or safety.
3. It is shown that available needless systems and sharps devices with engineered sharps injury protection are not more effective in preventing exposure to bloodborne pathogens than the alternative they are using.
4. It is shown that sufficient information is not available on the safety performance of the needless systems and sharps devices with engineered sharps injury protection available in the marketplace, and the employer is actively evaluating such devices.

In any event that laboratories DO NOT use safety needles with activities involving human blood, tissues, and other potentially infectious materials (due to one of the above exemptions), employers are still required to re-evaluate new products on the market at least annually to see if more suitable safety devices become available.

|  |                              |
|--|------------------------------|
| Does your laboratory use needles when working with bloodborne pathogens?   | <input type="checkbox"/> Yes |
|  | <input type="checkbox"/> No  |
| <b>If YES:</b>   |                              |
| a. Do you use <u>safety</u> needles?                                       | <input type="checkbox"/> Yes |
|  | <input type="checkbox"/> No  |
| b. Explain the activities involving needles and the exemptions that apply: |                              |

### Biohazardous waste

When a sharps container reaches a capacity of 2/3 or more full the person responsible for that container is to seal it, and dispose of it as biohazardous waste. All medical waste containers shall be surveyed at least weekly to ensure there are no leaks. When full, and at least once per week (if not daily), the red biohazard bag within each medical waste container is to be sealed shut (via a knot, tape, rubber band, etc.) and transported within secondary containment to a medical waste collection area. Each time a laboratory container is emptied, a new bag is placed into the emptied container, and the lid is disinfected.

### Work Practice Controls

Identify the minimum work practice controls to be used when working in the laboratory.

|  |
|--|
| The minimum work practice requirements when working in our laboratory are the following: |
|  |

### Personal Protective Equipment

Identify the minimum Personal Protective Equipment (PPE) to be used when working in the laboratory. Personal Protective Equipment includes head protection (e.g., helmets), eye and face protection (e.g., safety glasses, face shields), body protection (e.g., laboratory coat, aprons), hand protection (e.g., gloves – latex or nitrile), and foot protection (e.g., closed-toe shoes).

|                            |  |
|----------------------------|--|
| <b>Head</b> (e.g., helmet) |  |
| <b>Eye and Face</b> (e.g., |  |
| <b>Body</b> (e.g.,         |  |
| <b>Hand</b> (e.g.,         |  |
| <b>Foot</b> (e.g.,         |  |

## Housekeeping, Decontamination, and Spill Response

The work site is maintained in a clean and sanitary condition according to a schedule for cleaning and methods of decontamination. The custodial staff provides standard cleaning services every business day.

|  |  |
|--|--|
| What are your procedures for maintaining <b>Laboratory Benches</b> ?   |  |
| What are your procedures for maintaining <b>Equipment and Working Surfaces</b> ?   |  |
| What are your procedures for responding to a <b>Spill</b> ?  |  |
| What are your procedures for managing regulated <b>Biohazardous Waste and/or Medical Waste</b> ? (including sharps containers) |  |
| Are there any additional procedures that may apply to your protocol?   |  |

## Labels & Signs

### Hazard Communication

There are labeling requirements for: specimens and samples, the equipment (centrifuges, dewars, refrigerators, and freezers, etc.) used to store and process the samples; medical waste; and, contaminated laundry. In addition, all doors leading to biosafety level 2 areas should be posted as such and have emergency contact information. All must bear the universal biohazard symbol:



## Training

Supervisors are to ensure that employees with occupational exposure to bloodborne pathogens participate in a training program, provided at no cost to the employee, prior starting work with hazardous materials. Employees are to complete training at the time of initial assignment to tasks where occupational exposure may take place and at least annually thereafter. Additional training requirements apply to employees in HIV, HBV, and HCV laboratories and production facilities. The supervisor ensures employees demonstrate proficiency in standard microbiological practices and operations specific to the facility before being allowed to work with HIV, HBV, or HCV, and have prior experience in the handling of human pathogens or tissue culture. The supervisor provides appropriate training and ensures that employees participate in work activities involving infectious agents only after proficiency has been demonstrated. In addition to formal training, safety issues should be addressed as needed during regular operations meetings.



The following training is required:

1. **Laboratory Safety Orientation** (for individuals who work in the laboratory)
2. **Biosafety** (for individuals who work with ATDs or BBPs)
3. **Aerosol Transmissible Diseases** (for individuals who work with ATDs)
4. **Bloodborne Pathogens** (for individuals who work with bloodborne pathogens)
5. **Hazardous Waste Management** (for individuals who generate, accumulate, or dispose of biohazardous or medical waste)

## Recordkeeping

### Training Records

Training records are kept for at least 3 years from the date on which the training occurred. All training sessions are documented in writing, with records kept by EH&S. The training record includes:

- Date
- Topics
- Names of presenter(s)
- Names of attendee(s)

### Medical Records

Confidential medical records for employees with occupational exposure are kept for the duration of employment plus 30 years. Medical records shall include:

- Employee's name and social security number
- Employee's hepatitis B vaccination status including vaccination dates and any medical records related to the employee's ability to receive vaccinations
- Results of examinations, medical testing, post-exposure evaluation and follow-up procedures
- Health care professional's written opinion
- A copy of the information provided to the health care professional

The occupational health clinic ensures that employee medical records are kept confidential and are not disclosed or reported without the employee's written consent to any person within or outside the workplace except as required by this Standard and by law.

### Vaccinations

List all recommended vaccinations for work with Aerosol Transmissible Diseases and/or Bloodborne Pathogens used in the laboratory:

