

University of California at San Diego Laboratory Template for the  
**BLOODBORNE PATHOGENS STANDARD**  
**EXPOSURE CONTROL PLAN**

**Location:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**PI:** \_\_\_\_\_ **Signature:** \_\_\_\_\_

**Phone:** \_\_\_\_\_ **Emergency Phone:** \_\_\_\_\_

**Lab Safety Contact:** \_\_\_\_\_ **Phone:** \_\_\_\_\_

I. **PURPOSE:** Some techniques or specimens used in this research laboratory are hazardous and could cause exposure to human disease organisms. The purpose of this Exposure Control Plan is to describe how to eliminate or minimize the danger of exposure to human blood or other potentially infectious materials, in compliance with the California OSHA Bloodborne Pathogens Standard (8 CCR 5193, effective January 8, 1993) and the campus Interim Injury and Illness Prevention Program (IIPP). This template is to be completed by each applicable researcher (principal investigator or PI) based upon the unique specimens and the nature of work being conducted under her/his auspices.

**Universal Precautions** [5193(d)(1) and (b)]: It is the policy of the University of California, San Diego and this laboratory to ensure practice of Universal Precautions and all other appropriate methods to reduce exposure to human bloodborne pathogens. Universal Precautions is a method of infection control in which all human blood, tissue and certain body fluids are treated as if known to be infectious for HIV, HBV, HCV or other bloodborne pathogens.

II. **EXPOSURE DETERMINATION** [5193(C)(2)]: The PI, manager will identify positions and procedures in the laboratory which present the possibility of occupational exposure to human or primate blood or other potentially infectious materials. This determination is based on the risk of performing each procedure without the use of personal protective equipment. Self-inspection for these risks is also ongoing under the IIPP.

A. **The materials** used in this laboratory which may cause exposure to human or primate bloodborne pathogens include the following: *(Mark all that apply.)*

- B.
- \_\_\_ Human or primate blood, serum, plasma, blood products, components or cells
  - \_\_\_ Human or primate body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid visibly

contaminated with blood, and all body fluids where it is difficult to differentiate between fluids

- \_\_\_ Any unfixed human or primate tissue or organ (other than intact skin)
- \_\_\_ Cell, tissue or organ cultures containing HIV; culture medium or other solutions containing HIV, HBV or HCV; blood, organs or other tissues from experimental animals infected with HIV, HBV or HCV

**B. The job classifications** in which employees may have occupational exposure to human bloodborne pathogens include the following: *(Check applicable groups and list the names of persons potentially at risk.)*

- \_\_\_ Professor: \_\_\_\_\_
- \_\_\_ Postdoctoral
- \_\_\_ Researcher: \_\_\_\_\_
- \_\_\_ Staff Research Associate: \_\_\_\_\_
- \_\_\_ Laboratory Assistant: \_\_\_\_\_
- \_\_\_ Graduate Student: \_\_\_\_\_
- \_\_\_ Undergraduate Student: \_\_\_\_\_
- \_\_\_ Others:(See Attached list)
- \_\_\_ \_\_\_\_\_
- \_\_\_ \_\_\_\_\_
- \_\_\_ \_\_\_\_\_

**C. The tasks and procedures** used in this laboratory which may pose risk of exposure to human or primate bloodborne pathogens include the following: *(Mark all that apply.)*

- \_\_\_ Phlebotomy or venipuncture of humans or primates (including co-workers or students)
- \_\_\_ Injections (into humans or into animals using primate or human specimens)
- \_\_\_ Other use of needles with human or primate specimens
- \_\_\_ Preparing, dissecting, cutting, or otherwise handling human or primate tissue
- \_\_\_ Pipetting, mixing, or vortexing human or primate blood, fluid or tissue
- \_\_\_ Centrifuging human or primate blood, fluid or tissue
- \_\_\_ Handling tubes or other containers of human or primate blood, fluid or tissue

- \_\_\_ Handling contaminated sharps or other contaminated waste
- \_\_\_ Cleaning up spills of human or primate blood or other body fluids
- \_\_\_ Preparing or handling primary human or primate cell cultures
- \_\_\_ Others:(See Attached list)

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**III. METHOD OF COMPLIANCE** [5193(d) and (i)]: The Bloodborne Pathogens Standard will be implemented in this laboratory by the following methods and schedule:

A. **Written Exposure Control Plan** [5193(c)(1)]: This Exposure Control Plan will be available to all affected employees. The Principal Investigator/Manager will initially complete the plan. It will be reviewed and revised annually, or whenever any significant changes in procedure or personnel occur.

B. **Engineering and Work Practice Controls** [5993(d)(2)]: The following engineering and work practice controls are employed in this laboratory/department as part of Universal Precautions to minimize exposure to human bloodborne pathogens.

1. Handwashing: Laboratory personnel wash their hands frequently while working with biohazardous agents, immediately after removing gloves, and immediately upon any contact with blood or other potentially infectious material.
2. Mouth pipetting or mouth suctioning is strictly prohibited.
3. Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in work areas. Never put anything (pen, pencil, pipette, etc.) into your mouth.
4. Food and drink are not stored in refrigerators, freezers, shelves, cabinets, bench tops, ovens or microwaves where blood or other potentially infectious materials are kept or may be present.
5. Used needles and other sharps are not sheared, bent, broken, recapped, or resheathed by hand. Used needles are not removed from disposable syringes. Contaminated sharps are placed immediately in a puncture-resistant and labeled "sharps container".
6. Leak-resistant containers are used during the collection, handling, processing, storage, transport or shipping of blood specimens and other

potentially infectious materials. The containers are appropriately labeled or color-coded and are closed prior to transport. If outside contamination could occur, the primary container is placed in a second container which prevents leakage.

7. Engineering controls are examined and maintained on a regular schedule to ensure their effectiveness. Biological safety cabinets (BSC's) are checked for proper functioning each time they are used. The laboratory safety person will check them for proper functioning every *month*, by checking the magnehelic gauge and certification date. The biosafety cabinet must be certified annually and the inspection record posted on the Biosafety Cabinet.

**LAST CERTIFIED**

Date: \_\_\_\_\_  
Next Due Date: \_\_\_\_\_

This laboratory uses other engineering controls and equipment which require regular examination. A list of the equipment and the maintenance schedule for each piece is listed below:

<b>EQUIPMENT</b>	<b>SCHEDULE</b>
Centrifuge or aerosol containment devices	_____
Sharps containers	_____

8. All equipment is examined prior to servicing or shipping and is decontaminated as necessary. In the event that decontamination of specific equipment or portions of such equipment is not feasible, a readily observable label, the international biohazard symbol and the word "biohazard" will be attached to the equipment stating which portions remain contaminated. Specific types of equipment which require decontamination are:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9. The CAL-OSHA Bloodborne Pathogens Standard requires any laboratory using human or primate blood, blood products, cell lines, tissues or other potentially infectious materials to use Needleless Systems. In order to comply with the Bloodborne Pathogens Standard the Principal Investigator/Manager must submit as an attachment to the Exposure Control Plan a copy of the Needleless Systems Compliance Form, addressing how

the laboratory will comply with the Standard. The Needleless Systems Compliance Form is available at [www-ehs.ucsd.edu/bio/needlele.pdf](http://www-ehs.ucsd.edu/bio/needlele.pdf).

C. **Housekeeping** [§5193(d)(4)]: The PI has determined that the following procedures are appropriate cleaning and decontamination methods for use in this laboratory to minimize exposure to human bloodborne pathogens. Universal Precautions dictate using appropriate disinfection or disposal techniques for all items potentially contaminated with human blood or other infectious materials. These procedures should be in practice by everyone in the laboratory.

1. The work site is maintained in a clean and sanitary condition. Benches and biosafety cabinets are cleaned at the end of the day and after any spill using the following disinfectant(s):

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which is (are) located:

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Other work areas are cleaned and decontaminated according to the following schedule:

AREA	SCHEDULE	PROCEDURE	DISINFECTANT

2. Broken glassware is not picked up directly with the hands. It must be cleaned up using mechanical means, such as a brush and dustpan, tongs, or forceps.
3. Waste is handled according to the standards of good laboratory practice and the campus Medical Waste Guidelines which are in compliance with state law. Medical waste generated by this laboratory is disposed of by:

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D. **Personal Protective Equipment** [§5193(d)(3)]: Personal protective equipment (PPE) and clothing is used in this laboratory to minimize or eliminate exposure to human bloodborne pathogens. All PPE must be inspected, cleaned, or replaced, as needed, in order to maintain its effectiveness; this will be done at no cost to laboratory personnel. The use of PPE will be established by the Principal Investigator/Manager and will be enforced by the PI/Manager.

1. Laboratory personnel must wear gloves, lab coat, and safety glasses whenever handling human or primate blood, fluids or tissue.

To be effective, gloves must provide a barrier between hand and contaminated material. Occasional testing of your glove brand and type is recommended; one simple test is to fill the glove with water to check for leaks. In any event, gloves must be replaced frequently and immediately if they become contaminated or damaged in any way.

2. Laboratory personnel wear whatever personal protective equipment (apron, booties, face shield, mask, etc.) is needed to prevent blood or other potentially infectious material from reaching their street clothes, skin, eyes, mouth, or other mucous membranes, under normal conditions.

Tasks and procedures in this laboratory which require use of additional personal protective equipment or clothing include:

TASK/PROCEDURE	PPE REQUIRED

3. All necessary PPE, in correct sizes, is readily accessible at these locations:

Disposable gloves \_\_\_\_\_  
 Utility gloves \_\_\_\_\_  
 Lab coats \_\_\_\_\_  
 Safety glasses/goggles \_\_\_\_\_  
 Face shields/masks \_\_\_\_\_  
 Other \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

4. PPE is removed prior to leaving the work area and is placed in designated areas for disinfection or disposal. The following PPE should be put in these locations:

Disposable gloves \_\_\_\_\_  
 Utility gloves \_\_\_\_\_  
 Lab coats \_\_\_\_\_  
 Safety glasses/goggles \_\_\_\_\_  
 Face shields/masks \_\_\_\_\_  
 Other \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

5. Contaminated laundry is handled as little as possible. It should be placed and transported in bags or containers which are appropriately labeled and which prevent leakage of fluids. Contaminated laundry generated by this laboratory is disposed of by:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

(NOTE: At no time will workers be expected to take home any PPE, including lab coats, for laundering or cleaning.)

- E. **Information and Training** [§5193(g)(2)]: Specific training is conducted or provided by the PI/Manager with general assistance from Environment, Health and Safety (EH&S) and the Occupational Health Center (OHC). Instruction will include information required by the Bloodborne Pathogens Standard and specific safety training for each person's duties. General training of the main elements of the Bloodborne Pathogens Standard will be given by EH&S in a series of training sessions. The Bloodborne Pathogens training schedule is available at <http://www-ehs.ucsd.edu/bbptrain.htm>.

The first Bloodborne Pathogens training will occur within ten days of starting work with human or primate specimens, and annually thereafter. Training must be documented; forms are available in the campus IIPP binder. Records are maintained by the PI or the department for a least **three (3) years**.

To receive training on the laboratory specific Bloodborne Pathogens standard information or the Exposure Control Plan contact the PI/Manager. In addition to reading this manual, you should also be trained in proper techniques in the laboratory. For this training, see the PI/Manager.

- F. **Signs and Labels** [ 5193(g)(1)]: All work areas and containers are labeled in accordance with the provisions of the Bloodborne Pathogens Standard. Labels used in this laboratory for human blood and other potentially infectious materials must include the international biohazard symbol and the term

"biohazard" and must be fluorescent orange or orange-red in color. Signs, labels and containers are available from the UCSD Storehouse.

- G. **HIV, HBV, and HCV Research Laboratories** [ 5293(e)]: The Standard defines HIV, HBV, and HCV laboratories as those using high volumes or concentrations of Human Immunodeficiency Virus (HIV) or Hepatitis B Virus (HBV).

Standard Microbiological Practices [ 5293 (e) ] All regulated waste shall either be incinerated or decontaminated by a method such as autoclaving. At UCSD, waste is decontaminated by the autoclave method, or contracted with an Infectious Waste Hauler (BFI) which autoclaves and incinerates the waste.

Special Practices

1. Laboratory doors shall be kept closed when work involving HIV, HBV or HCV is in progress.
2. Access is limited to authorized personnel. Written policies indicate that the following persons have been trained, meet specific entry and exit procedures allowing them to enter work areas and/or animal areas:

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The PI/ manager will be responsible in assuring that such authorized personnel demonstrate proficiency in practices and techniques prior to working with HIV/HBV/HCV, and that such employees have documented prior experience in the handling of human or primate pathogens and/or tissue culture before commencing work.

3. Biohazard signs are posted on all access doors when potential infectious materials/animals are in use. Locations are:

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4. No work with infectious materials is done on the open bench.
5. Vacuum lines are protected with liquid disinfectant traps and HEPA filters. The filters must be checked routinely monthly and maintained or replaced as necessary.



6. All spills are immediately contained and cleaned by properly trained staff equipped to handle infectious materials. These staff members include:

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7. Any spills or accidents that result in an exposure incident are immediately reported to the laboratory PI/supervisor/manager. For large spills please contact EH&S at 534-3660.

**H. Medical Surveillance Program (Hepatitis B Vaccination; Post-Exposure Evaluation and Follow-up) [§5193(f)]:**

The Center for Occupational Environmental Medicine (COEM) will provide appropriate required medical services; these services are already established.

1. **Hepatitis B Vaccination:** The PI/Manager will ensure that all persons in the laboratory/unit area who were determined to have occupational exposure to human bloodborne pathogens (see Exposure Control Plan, Section II-B) are offered Hepatitis B vaccination; within ten days of starting work with human or primate specimens. Hepatitis B vaccination is an effective preventive measure against Hepatitis B infection, a serious disease which may lead to liver cancer and death.

The PI/Manager must determine if the Hepatitis B Vaccination will be required for personnel in their laboratory/facility as a prophylactic treatment or will be available post-exposure.

We will make the Hepatitis B Vaccination available to personnel in the laboratory\_\_\_\_\_

To receive your vaccination, contact the Center for Occupational & Environmental Medicine at (619) 294-6206, located at 330 Lewis Street, Suite 100, San Diego, CA 92103-2199 or Campus Mail Code 8799.

Call 294-6206 at COEM to make an appointment. A healthcare professional will discuss your work, the chances of getting Hepatitis B, and the benefits and risks of the vaccination. They will answer your questions to help you make a decision regarding the vaccination. If you decide to receive the vaccine, COEM will administer it, at no cost to you. COEM will also notify your PI that you have received appropriate medical services, in a manner that does not breach medical confidentiality.

If you want more information, call the COEM at 294-6206. If you chose not to be vaccinated, you must sign a declination form. The Hepatitis B Vaccination and Declination Forms are available at <http://www-ehs.ucsd.edu/biosafe.htm>. The declination form is kept on file by your PI/Manager. If you decline vaccination but later change your mind, and you are still at risk of exposure to human bloodborne pathogens, you may then receive the vaccination.

2. **Post-Exposure Evaluation and Follow-up:** An exposure incident is any situation, such as a spill, splash, needlestick, ingestion, or accident, in which you have direct, unprotected contact with human or primate blood, fluids or tissue. If this happens, you have the right to medical evaluation and treatment.

These post-exposure services will be furnished to you by COEM, at no cost to you, in accordance with the Bloodborne Pathogens Standard.

If you have any direct exposure to human blood, fluids, or tissue, **immediately wash the affected body part with soap and water.**

**Notify your PI or** \_\_\_\_\_  
who is located \_\_\_\_\_

**If the Exposure Occurs During Normal Work Hours: Call the Medical Center Paging Operator at 543-6737 and ask them to page 1447. Stay on the phone.** COEM will assess your exposure and treat you accordingly. Prompt medical attention; may reduce the risk of serious health consequences after an exposure incident. The medical evaluation is confidential. Depending on the risk assessment, you may be advised to proceed to the Thornton or Hillcrest Emergency Department.

**If the Exposure Occurs After Hours, on Holidays, or If the Paging Does Not Work, Proceed Directly to Thornton or Hillcrest Emergency Department and tell them that you have had an Occupational Exposure involving Bloodborne Pathogens.**

- I. **Recordkeeping** [§5193(h)]: The PI/Manager maintains all training records as specified in the Standard and the IIPP for at least three years and provides recordkeeping for compliance with the Hepatitis B vaccination. All medical records are maintained by COEM for thirty years.
- IV. **EVALUATION of EXPOSURE INCIDENTS** [§5193(f)(3)(A)]: Every individual handling material with potential bloodborne pathogens has the responsibility to report any exposure to these materials to the supervisor and to the PI/ Manager. The PI/Manager reports the incident immediately to EH&S and COEM. EH&S and COEM

will investigate the circumstances surrounding the exposure, make recommendations for medical follow-up, and work with the PI/ Manager to modify work practices to prevent additional occurrences.

The employee must be given an "Employee's Claim Form." The employer (PI or department) must complete an "Employer's Report of Injury" within 24 hours of the incident, in accordance with the Campus Workers' Compensation Handbook for Supervisors. These forms are filed with the Business Office.

The primary responsibility for the evaluation of exposure incidents lies with the PI, with assistance from EH&S and COEM. The investigation will document the route of exposure and the circumstances under which the exposure incident occurred, and will make recommendations for modification in work practices to minimize or eliminate the potential of future exposure. Principal Investigators and departmental safety committees will also want to track the progress of any hazard correction activities.

- V. **RESOURCES:** For more information about the OSHA Bloodborne Pathogens Standard or the written Exposure Control Plan, or for assistance in compliance, please contact your supervisor or PI or call EH&S at 46059 or 40353. Copies of the Standard are available through your department, your departmental Safety coordinator and through Internet at <http://www-ehs.ucsd.edu/biosafe.htm>. If you have any questions regarding the Bloodborne Pathogens Standard or the completion of this form please contact EH&S Biosafety at 534-5366.