2019

University of California, Merced Environmental Health and Safety

Bloodborne Pathogens Exposure Control Plan (modified version)

EH&S
University of California, Merced
04/17/2019

UC Merced Environmental, Health and Safety

Bloodborne Pathogens Exposure Control Plan

May 2013

For compliance with the Cal/OSHA Bloodborne Pathogens Standard: Title 8, CCR, Section 5193

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an individual who is knowledgeable in the subject matter being presented. Training material presented must be appropriate in content and vocabulary to the educational level, literacy and language of employees. Modifications of any potentially hazardous tasks will require re-training of employees assigned to those tasks. Training must include at a minimum the following elements:

- Where copies of the Standard are available.
- A review/explanation of the contents of the Standard.
- A general discussion on bloodborne diseases and their modes of transmission.
- An explanation of the facility's exposure control plan and its availability.
- Methods for recognizing tasks and other activities that may involve exposure to blood and OPIM.
- A discussion of the use and limitations of engineering and work practice controls and personal protective equipment.
- Information on types, selection, proper use, location, removal, handling, decontamination and disposal of personal protective equipment.
- Hepatitis B vaccine information (efficacy, safety, benefits, method of administration, free of charge).
- Emergency response procedures involving blood or OPIM.
- Information on how to handle exposure incidents.
- An explanation of the post-exposure evaluation and follow-up program.
- An explanation of signs, labels and/or color coding.

The employees must be given the opportunity for interactive questions and answers with the training facilitator.

EH&S shall ensure that general training is provided. Each facility will be responsible for site specific training.

9.00 RECORDKEEPING

9.1 Medical Records

These records shall be kept for employees with occupational exposure. They shall be confidential and shall not be disclosed without the employee's written permission. Records must be maintained for the duration of employment plus 30 years and shall include:

- Employee's name and social security number;
- Hepatitis B vaccination status, including dates, of all the hepatitis B vaccinations and any medical records relative to the employee's ability to receive vaccination;
- Results of any examinations, medical testing, and follow-up procedures;
- A copy of the information provided to the health care professional; and
- A confidential copy of the health care professional's written opinion.

EH&S is responsible for maintaining medical records related to occupational exposure as required by the Standard.

9.2 Training Records

Required training records shall be maintained for 3 years and shall contain the following information:

- Dates and contents of training;
- Name and qualifications of trainer; and
- Names and job titles of all employees attending training sessions.

General training records will be maintained at Environmental Health and Safety. Site specific records will be maintained at each facility.

9.3 Equipment Records

Biological safety cabinets that are used to prevent harmful exposure from biohazard agents or biohazardous materials must be certified when installed, annually and whenever they are moved or undergo major servicing (HEPA filter replacement, motor repairs, etc.) Records of tests performed must be retained for 5 years.

9.4 Availability of Records

- All records required to be maintained shall be made available upon request to the subject employee, the Chief of the Division of Occupational Safety and Health of the California Department of Industrial Relations or designated representative and the Director of the National Institute for Occupational Safety and Health (NIOSH), U. S. Department of Health and Human Services or a designated representative for examination and copying;
- Employee training records required by this Standard shall be provided upon request for examination and copying to employees, to employee representatives, to the Chief and to NIOSH; and
- Employee medical records required by this Standard shall be provided upon request for examination and copying to the subject employee; to anyone having written consent of the subject employee, to the Chief, and to NIOSH.

9.5 Transfer of Records

- The employer shall comply with the requirements involving transfer of records; and
- If the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer shall notify NIOSH at least three (3) months prior to their disposal and transmit them to NIOSH, if required to do so, within that three (3) month period.

10.00 HIV, HBV, and HCV RESEARCH LABORATORIES

All UC Merced laboratories engaged in the culture, production, concentration, experimentation, and manipulation of HIV, HBV, HCV are required to comply with the following special provisions in addition to the other requirements contained in this Plan and guidelines established by the National Institutes of Health and the Centers for Disease Control (refer to Biosafety Level 3 facility and practices, or Biosafety Level 2 facility with Biosafety Level 3 practices as printed in the NIH/CDC Guidelines titled "Biosafety in Microbiological and Biomedical Laboratories"). These special provisions do not apply to clinical or diagnostic laboratories engaged solely in the analysis of blood, tissue or organs.

10.1 Special Practices

- Supervisory personnel shall be responsible for preparing, implementing, reviewing and updating written biosafety procedures for their work site. This manual will be required reading for all personnel and will be adopted into the Site Specific Exposure Control Plan. Personnel shall be advised of potential hazards and shall be required to follow the written practices and procedures;
- Personnel must be advised of potential hazards, must read instructions on practices and procedures, and must follow them;
- Laboratory doors must be kept closed when work with HIV, HBV, and HCV is in progress;
- Access to the work area must be limited to authorized persons;
- Written policies and procedures must be established whereby only persons who have been advised of the potential biohazard, who meet any specific entry requirements (vaccination, PPE, etc., if required), and who comply with all entry and exit procedures shall be allowed to enter the work areas and animal rooms;
- When OPIM (with the potential of HIV, HBV, and HCV contamination) or infected animals are present in the work place, hazard warning signs must be posted on all access doors, and all doors must be kept closed while work is in progress. Such warning signs must comply with the following requirements: Signs shall be florescent orange-red or predominantly so and bear the biohazard symbol and the word “BIOHAZARD” in contrasting color along with the following legend:

    1. Name of the Infectious Agent;
    2. Special requirements for entering the area; and
    3. Name, telephone number of the laboratory director or other responsible person

- All regulated waste must be incinerated or decontaminated by a method known to effectively destroy bloodborne pathogens (e.g., autoclaving). Such methods are further specified in California Health and Safety Code, Chapter 6.1 and Part 14;
- Contaminated materials must be placed in durable, leak proof, labeled or color-coded containers that are closed before being removed from the work area for decontamination;

- Before disposal, all waste from work areas and from animal rooms must be incinerated or decontaminated;
- No work with OPIM (with the potential of HIV or HBV contamination), HIV or HBV is to be conducted on an open bench. Use biological safety cabinets or other physical containment devices for manipulations;
- Laboratory coats, gowns, smocks, uniforms, or other appropriate protective clothing must be used in the work areas and animal rooms;
- PPE must not be worn outside of the work area and must be decontaminated before being laundered;
- Avoid skin contact with OPIM (with the potential of HIV, HBV, or HVC contamination), HIV, HBV, or HVC. Gloves must be worn when handling infected animals and when making hand contact with OPIM is unavoidable;
- Vacuum lines must be protected with liquid disinfectant traps and HEPA filters or similar quality filters. Check traps and filters routinely. Replace as necessary;
- Extreme caution must be used when handling needles and syringes;
- Only needle-locking syringes or disposable syringe-needle units (i.e., needle is integral to syringe) shall be used for injecting or aspirating OPIM. Hypodermic needles and syringes are to be used only for parenteral injection and aspiration of fluids from laboratory animals and diaphragm bottles;
- Do not bend, shear, replace in the sheath or guard, or remove needles from syringes after use;
- After use, needles and syringes must be placed promptly in puncture-resistant containers and autoclaved or decontaminated before reuse or disposal;
- All spills must be immediately contained and cleaned up by properly trained and equipped personnel; and
- A spill or accident that results in an exposure incident must be reported immediately to the laboratory director (Principal Investigator) or other responsible supervisor.

10.2 Containment Equipment

- Certified biological safety cabinets (Class I, II, or III) or other appropriate combinations of personal protection or physical containment devices (e.g., special protective clothing, respirators, centrifuge safety cups, sealed centrifuge rotors, and containment caging for animals) shall be used for all activities with OPIM (with the potential of HIV, HBV, or HVC contamination), HIV, HBV, HCV that pose a threat of exposure to droplets, splashes, spills or aerosols.
- Biological safety cabinets shall be certified when installed, annually, and whenever they are moved or undergo major servicing (HEPA filter replacement, motor repairs, etc.). Records of tests performed must be retained for at least 5 years.

10.3 Other HIV, HBV, and HCV Research Laboratory Requirements

- Each laboratory must include hand washing and eye wash facilities which are readily available within the work area; and
- An autoclave for decontamination of regulated waste shall be available.

10.4 Additional Training Requirements

Laboratory Principal Investigators/Supervisors must ensure that prior to working with HBV, HCV or HIV, employees will:

- Demonstrate proficiency in standard microbiological practices and techniques, and in those practices and operations specific to their work site;
- Be experienced in handling human pathogens or tissue culture; and
- Demonstrate proficiency in techniques in a progression of work activities, but without handling infectious agents, if there is no prior experience in human pathogen handling. Employees will be allowed to participate in work activities involving infectious agents only after proficiency has been demonstrated.

11.00 SITE SPECIFIC INFORMATION FOR THE EXPOSURE CONTROL PLAN

11.1 Facility Information
School: _____
Supervisor: _____
Location (Building/Room) _____
Phone Number: _____
Date of Preparation of Plan: _____
Emergency Phone: _____
EH&S: (209) 228-4639 (Biosafety Officer); (209) 228-7864 (Chemical Hygiene Officer); (209)228-4234 (EHS Director)
Emergency, UC Merced Police: (209) 228-2677 or Dial 9-911

Contact one or more of the following for further assistance:

Patients First Medical Center. 394 E Yosemite Avenue, Merced, CA 95340. P: 209-383-3990

_____is responsible, for preparing, implementing and maintaining the Plan and also for performing the annual Plan review, updates to plan, procedures, and reviews of work practice controls.
Copies of the Plan may be obtained from_____(name/position)
at_____(location).

11.2 Exposure Determination (See 4.00 for details)
Following a review of work practices, without regard to the use of personal protective equipment (PPE), it has been determined that the following employees or tasks have a risk of exposure to bloodborne pathogens (BBP) and/or other potentially infectious materials (OPIM):

Employees:

Tasks:

11.3 Methods of Compliance

11.3.1 Engineering and Work Practice Controls (See 5.02 for details). In this facility the following engineering and work practice controls will be used:

_____is responsible for ensuring that biological safety cabinets are certified as required. These records must be maintained for 5 years.

11.3.2 Required Personal Protective Equipment (PPE) (See 5.03 for details)
Work practices have been reviewed and the following PPE (e.g., gloves, masks, eye protection, gowns and aprons) is required.

Task/Procedure	Gloves	Masks	Eye Protection	Face Shields	Gowns	Coats	Other

11.3.3 Responsibility for Personal Protective Equipment (PPE) (See 5.03 for details)
The individual(s) specified below is (are) responsible for the provision; use; accessibility; cleaning; laundering and disposal of PPE.

11.3.4 Housekeeping (See 5.04 for details)

a. _____is responsible for ensuring that spill cleanup procedures are followed, as described in: General Procedures for Spill Cleanup from the UC Merced Biosafety Manual.

b. This work site will be cleaned and decontaminated according to the following schedule:

Area	Schedule	Procedure and Cleaner/Sanitizer Used

11.4 Hepatitis B Vaccination (See 6.00 for details)
The hepatitis B vaccine and vaccination series will be offered to all employees who have occupational exposure.

_____will ensure that all employees in their facility who have occupational exposure are offered the vaccination series unless the employee has previously received the complete hepatitis B vaccination series, antibody testing has revealed that the employee is immune, or the vaccine is contraindicated for medical reasons. Employees who decline to take the vaccine will be required to sign a Cal/OSHA required waiver indicating their refusal (see Appendix A).

11.5 Post Exposure Evaluation and Follow Up (See 7.00 for details)
All exposure incidents shall be reported, investigated and documented. When an employee incurs an exposure incident, it shall be reported to the employee's supervisor and EH&S.

Post-exposure evaluation and follow-ups will be performed by

Patients First Medical Center. 394 E Yosemite Avenue, Merced, CA 95340. P: 209-383-3990

EH&S shall ensure that the health care professional evaluating an employee after an exposure incident is provided with the following:

- A description of the exposed employee's duties as they relate to the exposure incident;
- A copy of the Standard;
- A description of the exposed employee's duties as they relate to the exposure incident
- Documentation of the route(s) of exposure and circumstances under which the exposure occurred;
- Results of the source individual's blood testing, if available; and
- All medical records relevant to the appropriate treatment of the employee, including vaccination records

EH&S shall obtain and provide the employee with a copy of the evaluating health care professional's written opinion within 15 days of the completion of the evaluation.

11.6 Hazard Communication

11.6.1 Labels and Signs (See 8.01 for details)
_____shall ensure that biohazard labels shall be affixed to containers of regulated waste, refrigerators and freezers containing blood or OPIM, and other containers used to store, transport or ship blood or OPIM.

11.6.2 Information and Training (See 8.02 for details)
Environmental Health and Safety shall ensure that general training is provided. Each facility will be responsible for site specific training.
_____shall ensure that training is provided to employees at the time of initial assignment to tasks where occupational exposure may occur, when any modifications to any potentially hazardous tasks are made, and that it shall be repeated within twelve months of the previous training.

11.07 Recordkeeping

11.07.1 Training Records (See 9.02 for details)
General training records will be maintained at Environmental Health & Safety. Site specific records will be maintained at each facility.
_____is responsible for maintaining the training records in accordance with the requirements of the Standard. These records shall be maintained for 3 years.

11.8 HIV, HBV and HCV Research Laboratories

11.8.1 Special Practices (See 10.01 for details)

_____is responsible for writing and maintaining written biosafety procedures for this facility and shall ensure that all laboratory personnel who are required to do so have read these procedures.
Attach the written biosafety procedures (i.e., biosafety manual) that are specific for the work site.

11.8.2 Containment Equipment (See 10.02 for details)
_____is responsible for ensuring that laboratory employees use appropriate containment equipment (e.g., biosafety cabinets) and adhere to proper laboratory procedures while carrying out their work tasks at this site.

11.8.3 Additional Training Requirements (See 10.04 for details)
_____is responsible for training and documentation of the special training required in labs where workers are at risk of HIV, HBV, or HCV exposure.

GLOSSARY

Blood: Human blood, human blood components, and products made from human blood.
Bloodborne Pathogens (BBP): 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 virus (HCV) and human immunodeficiency virus (HIV).
Biological Safety Cabinet: A device enclosed except for necessary exhaust purposes on three sides and top and bottom, designed to draw air inward by means of mechanical ventilation, operated with insertion of only the hands and arms of the user and in which virulent pathogens are used. Biological safety cabinets are classified as:

Class I:	A ventilated cabinet for personnel protection with an inward airflow away from the operator and high efficiency particulate air (HEPA) filtered exhaust air for environmental protection.
Class II:	A ventilated cabinet for personnel, product, and environmental protection having an open front with inward airflow for personnel protection, HEPA filtered laminar airflow for product protection, and HEPA filtered exhaust air for environmental protection.
Class III:	A total enclosed, ventilated cabinet of gas tight construction. Operations in the cabinet are conducted through attached protective gloves.

Contaminated: The presence, or the reasonably anticipated presence, of blood or other potentially infectious materials on a surface, or in or on an item
Contaminated Laundry: Laundry which has been soiled with blood or other potentially infectious materials, or may contain sharps
Contaminated Sharps: Any contaminated object that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.
Decontaminate: The use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use or disposal.
Engineering Controls: Controls (e.g., Biosafety cabinets, sharps disposal containers, self-sheathing needles) that isolate or minimize the bloodborne pathogens hazard in the workplace.
Exposure Incident: A specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.
HBV: Hepatitis B virus.
HCV: Hepatitis C virus
HIV: Human immunodeficiency virus.
Medical Waste: The definition of medical waste as stated in the regulations is complex. In most of the situations encountered at UC Merced the definition can be summarized as follows: Medical waste is waste that includes fluid blood or material of a biological origin with known or suspected infectious components.
According to the regulations, Medical Waste must meet both of the following requirements:
1. The waste is generated or produced as a result of any of the following actions:
    a. Diagnosis, treatment, or immunization of human beings or animals.
    b. Research pertaining to the diagnosis, treatment, or immunization of human beings or animals.
    c. The production or testing of biologicals.

2. The waste is either of the following:
    a. Biohazardous waste.
    b. Sharps waste.

Occupational Exposure: 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.

OPIM: Other Potentially Infectious Materials

1. The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any other body fluid that is visibly contaminated with blood such as saliva or vomit, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids such as emergency response;
2. Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and
3. HIV-containing cell or tissue cultures, organ cultures, and HIV, HBV, or HCV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV, HBV, or HCV.

Parenteral: Piercing mucus membranes or the skin barrier through such events as needle sticks, human bites, cuts and abrasions.
Personal Protective Equipment (PPE): Specialized clothing or equipment worn or used by an employee for protection against a hazard. General work clothes (e.g., uniforms, pants, shirts or blouses) not intended to function as protection against a hazard are not considered to be personal protective equipment.
Regulated Waste: Liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials. Regulated Waste includes "medical waste" regulated by Health and Safety Code Chapter 6.1 and Part 14.
Source Individual: Any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee. Examples include, but are not limited to, hospital and clinical patients, clients in institutions for the developmentally disabled, trauma victims, clients of drug and alcohol treatment facilities, residents of hospices and nursing homes; human remains and individuals who donate or sell blood or blood components.
Sterilize: The use of a physical or chemical procedure to destroy all microbial life including highly resistant bacterial endospores. Sterilization includes procedures regulated by Health and Safety Code Section 25090.
Universal Precautions: An approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.
Work Practice Controls: Controls that reduce the likelihood of exposure by altering the manner in which a task is performed (e.g., prohibiting recapping of needles by a two-handed technique).

REFERENCES and Additional Information:

1. Biosafety in Microbiological and Biomedical Laboratories, Third Edition, Centers for Disease Control and Prevention (CDC) and National Institutes of Health (NIH), U. S. Department of Health and Human Services, Public Health Service, May 1993.

2. Barclays California Code of Regulations, Title 8 §5193, p 844.10 – 884.12(f), Register 2001, No 31; 03 August 2001

3. Biosafety in Microbiological and Biomedical Laboratories, Fifth Edition, Centers for Disease Control and Prevention (CDC) and National Institutes of Health (NIH), U. S. Department of Health and Human Services, Public Health Service, HHS Publication No (CDC) 21-1112, December, 2009.

Signature Page

Date First Approved: _____

Principal Investigator: _____ Bldg:_____Room No: _____

Student/Staff Signatures (indicating knowledge & understanding of this Plan):

X_____Date_____ X_____Date_____

X_____Date_____ X_____Date_____

X_____Date_____ X_____Date_____

X_____Date_____ X_____Date_____

X_____Date_____ X_____Date_____

X_____Date_____ X_____Date_____

X_____Date_____ X_____Date_____

NOTE: Pursuant to 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.

a) Annual Review:_____ PI:_____
Date Signature

b) Annual Review:_____ PI:_____
Date Signature

c) Annual Review:_____ PI:_____
Date Signature

d) Annual Review:_____ PI:_____
Date Signature

e) Annual Review:_____ PI:_____
Date Signature

f) Annual Review:_____ PI:_____
Date Signature

g) Annual Review:_____ PI:_____
Date Signature

Appendix A

UCMERCED
Office of Environmental Health and Safety
Biosafety

Hepatitis B Vaccine Declination

The Bloodborne Pathogen Standards, CCR Title 8 5193, issued by the Occupational Health Administration require the employer to ensure that employees who decline to accept the Hepatitis B vaccination sign the following statement.

I understand that due to my occupational exposure to blood or other potentially infectious materials that I may be at risk of acquiring Hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with the 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 could 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 material and I want to be vaccinated with the Hepatitis B vaccine, I can receive the vaccination series at no charge to me.

California Labor Code § 142.3

_____	_____	_____
Sign	Print Name	Date

_____
UCMerced email