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# Institutional Biological Safety Committee

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## Bloodborne Pathogen Exposure Control Plan

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## 1. Introduction

### 1.1 Purpose

This plan is established to provide a coordinated program of education, vaccination, Universal Precautions, and exposure follow-up to minimize or eliminate workplace exposure to hepatitis B, Human Immunodeficiency Virus (HIV), and other potentially infectious material.

### 1.2 Scope

In accordance with the Occupational Safety and Health Administration (OSHA) Bloodborne Pathogens Standard, 29 CFR 1910.1030, the following Exposure Control Plan (ECP) has been developed for Carnegie Mellon University (CMU). The ECP is designed to minimize exposure to bloodborne pathogens (BBP), which are defined as: pathogenic microorganisms present in human or non-human primate blood, fluids, tissues or other potentially infectious material (OPIM).

The ECP covers faculty and staff that may reasonably anticipate skin, eye, mucous membrane, or parenteral contact with blood or OPIM during the performance of their job duties at Carnegie Mellon University. Although not mandated by OSHA 29 CFR 1910.1030, university departments and centers should apply all aspects of this ECP to students.

The ECP will be reviewed and updated annually by Carnegie Mellon University. Implementation of the ECP is monitored and coordinated by the university's Department of Environmental Health and Safety (EHS). The university biological safety staff manages and oversees compliance of the university's BBP program. Additional information can be found in the university's Biological Safety Plan and the EHS web-site ([www.cmu.edu/ehs](http://www.cmu.edu/ehs)). Questions or concerns can be addressed at (412) 268-8182.

### 1.3 Definitions

**1.3.1 Faculty:** Any faculty member employed by Carnegie Mellon University and working within the university's facilities.

**1.3.2 Staff:** Any staff member employed by Carnegie Mellon University and working within the university's facilities.

**1.3.3 Student:** Any individual not employed by Carnegie Mellon University and enrolled at the university that performs his/her duties within the university's facilities.

**1.3.4 Blood:** Human or non-human primate blood, blood components, and products made from blood.

**1.3.5 BBP:** Bloodborne pathogens are defined as pathogenic microorganisms present in human or non-human primate blood, body fluids, tissues, or other potentially infectious material (OPIM) that can cause disease in humans.

**1.3.6 Engineering controls:** Methods of controlling employee exposures by modifying devices or systems in a fashion that isolates the employee from the hazard.

**1.3.7 OPIM:** Other potentially infectious material includes:

(1) The following human or non-human 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 that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids;

(2) Any unfixed tissue or organ (other than intact skin) from a human or non-human primate (living or dead); and

(3) Human or non-human primate cell cultures, tissue cultures, organ cultures

(4) BBP containing culture medium or other solutions;

(5) Blood, body fluids or other tissues from experimental animals infected with a BBP.

**1.3.8 Parenteral Contact:** Contact with blood or OPIM through piercing mucous membranes or the skin barrier through such events as needlesticks, human or non-human primate bites, cuts, and abrasions.

**1.3.9 Universal Precautions:** An infection control approach in which **all** human or non-human primate blood and other potentially infectious materials are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens

## 2. Bloodborne Pathogen Exposure Determination

OSHA 29 CFR 1910.1030 requires employers to perform a BBP exposure determination for employees that may experience occupational exposure to blood or OPIM. This exposure determination is made without regard to the use of personal protective equipment (PPE), i.e. employees are considered to be exposed even if they wear PPE. The purpose of this exposure determination is to identify the university job classifications that are required to comply with this ECP.

### 2.1 Specific job classifications and specific tasks assigned to university employees that may experience occupational exposure to BBP.

The university EHS has developed a list of specific job classifications that were determined to reasonably anticipate exposure to blood or OPIM. The following list identifies the job title and specific task. This list is not all inclusive and ultimately, it is the responsibility of the department or center to identify employees under their supervision that may have occupational exposure to BBP (see Section 2.2).

Title	Specific Task
University Police Officer	First responder
Medical/Health Related	Provide medical care
Childcare Center Employee	Provide first aid and CPR
Coach/Athletics/Physical Education	Provide first aid and CPR
Lifeguard	Provide first aid and CPR
Select researchers	Research involving HIV, HBV, human cells and cell lines, animals, blood and OPIM
Animal care and use personnel	Care and use of research animals which are potentially infected with BBP

### 2.2 Exposure determination for specific job classifications assigned to university employees that may experience occupational exposure to BBP.

Not all employees in these job classifications are expected to experience occupational exposure to BBP, thus specific tasks or procedures must be identified. Appendix A, *Bloodborne Pathogens Exposure Determination*, lists the criteria to determine if employees are expected to experience occupational exposure to BBP.

## 3. Compliance Methodology

OSHA 29 CFR 1910.1030 requires that this ECP include a method of implementation for the various requirements of the standard.

### 3.1 Universal Precautions

Universal precautions shall be observed at Carnegie Mellon University in order to prevent contact with blood or OPIM by providing barriers between the individual and infectious material. All blood or other OPIM shall be considered infectious and individuals covered under this plan shall adhere to infectious-control precautions to minimize the risk of exposure to blood and OPIM.

### 3.2 Exposure Control Plan

Employees covered under this ECP receive an explanation of this ECP during their initial BBP training session. It will also be reviewed in their annual BBP refresher training. An employee may review the ECP at any time by visiting <https://www.cmu.edu/ehs/Laboratory-Safety/biological-safety/documents/BloodbornePathogenExposureControlPlan.pdf> or request a written copy of the exposure control plan.

EHS is responsible for reviewing and updating the ECP annually. If necessary, the ECP may be updated more frequently to reflect any new or modified tasks and procedures, revised employee positions, or regulatory requirements that may affect occupational exposure.

### 3.3 Engineering controls and equipment

Engineering controls and equipment shall be utilized to eliminate or minimize exposure to employees at the university's facilities. Where potential for occupational exposure still exist after implementation of these controls, personal protective equipment (PPE) shall be utilized. General controls are applicable to all work areas and include: accessible handwashing facilities, controlled disposal of contaminated sharps, separate storage for food/drink and infectious material, and protected transport

of properly labeled specimens of blood or OPIM. Specific controls will be determined by EHS or individual university departments or centers.

Specific controls determined by EHS are listed below, whereas, specific controls determined by departments or centers shall be listed in the department's or center's infectious control policies, e.g. mouthpieces for mouth to mouth resuscitation, biosafety cabinets, engineered sharps with injury protections. EHS will identify the need for changes in general and specific engineering controls and work practices, at a frequency not to exceed one calendar year. The need for changes will be identified through reviews of the Sharps Injury Log with follow-up exposure investigation and through discussion with the university's Institutional Biological Safety Committee (IBC).

### 3.3.1 General Controls

**3.3.1.1 Hand washing facilities:** Facilities shall be available to employees who could incur exposure to blood or OPIM. OSHA requires that facilities be readily accessible after exposure. Hand washing facilities must be located in the room where the potential for exposure exists. After removal of personal protective gloves, employees shall wash hands and any other potentially contaminated skin area immediately, or as soon as feasible, with soap and water.

**3.3.1.2 Sharps containers:** Individuals disposing of sharps are responsible to monitor the capacity of the container and ensure that it is replaced when it is two-thirds full. The container is to be closed when not in use and securely closed for final disposal as biohazardous waste. Only sharps containers meeting the requirements of 1910.1030(d)(4)(iii)(A)(1) as determined by EHS are to be utilized.

### 3.3.2 Specific Controls

**3.3.2.1 Mouthpieces:** Departments or Centers required to administer cardiopulmonary resuscitation (CPR) will provide mouthpieces to all employees who respond to medical emergencies as part of their employment duties.

**3.3.2.2 Biological Safety Cabinets:** Individuals working with potentially infectious material should utilize biological safety cabinets and shall disinfect the work surface of the cabinet before and after each use. If the cabinet has a front drain, the department or center shall ensure that it is checked weekly, disinfected, and drained. The cabinet will have an annual performance certification that the department or center is responsible for arranging.

**3.3.2.3 Engineered sharps with injury protections:** These devices are needle-less or otherwise altered with a built-in feature or mechanism that effectively reduces risk of an exposure incident. These devices shall be utilized whenever they are judged to be appropriate, commercially available and effective at reducing the risk of an exposure incident.

It is the responsibility of those with supervisory or managerial duties at Carnegie Mellon University to solicit input from their employees with direct patient care duties in the identification, evaluation, and selection of safety devices. A list of available devices by product class and product type is available from the International Health Care Worker Safety Center at the University of Virginia Health System at the following website address:

<https://www.medicalcenter.virginia.edu/internet/safetycenter/internetsafetycenterweb/pages/trainingeducationalresources/whatisasafetydevice.pdf>.

Supervisors of employees with direct patient care duties may contact the Biological Safety Office at 8-8405 to obtain evaluation forms for various classes of safety devices. Supervisors should utilize these forms to solicit input from employees with respect to the selection of safety devices. The supervisors must then submit the names of those individuals that have performed the evaluations to:

Department of Environmental Health and Safety  
Biological Safety Office  
311 MI

## **3.4 Work Practices and Procedures**

Work practices and procedures should be designed to eliminate or minimize exposure to employees at the university's facilities. Where potential for occupational exposure still exists after

implementation of these controls and procedures, personal protective equipment shall also be utilized.

**3.4.1 Personal Protective Equipment:** Personal protective equipment shall be provided by the department or center and should be utilized. The equipment will be cleaned, laundered, and disposed of by the department or center at no cost to the employees. Equipment includes, yet is not limited to, gloves (vinyl, latex, or heavy-duty rubber), gowns, face shields or protective eyewear with side shields, and resuscitation bags or other mouth-resuscitation devices. Appropriate protective equipment functionally must:

**3.4.1.1** *Prevent passage* of blood or OPIM through to employee's clothing, skin, eyes, mouth, or mucous membranes under normal conditions of use and for the duration of time that the protective equipment will be used.

**3.4.1.2** *Be available in appropriate sizes that are readily accessible* at the work area or issued to the employees. Hypoallergenic gloves or other similar alternate shall be readily accessible to employees who are allergic to the gloves normally provided by the department or center.

**3.4.1.3** *Be in working condition* with repair or replacement as needed to maintain equipment effectiveness at no cost to the employee.

**3.4.2 Work Area Restrictions:**

In work areas where there is a reasonable likelihood of exposure to blood or OPIM, employees should comply with the following restrictions.

**3.4.2.1 *General:***

**3.4.2.1.1** No eating, drinking, applying cosmetics or lip balm, smoking, or handling contact lenses

**3.4.2.1.2** No storing food and beverages in refrigerators, freezers, shelves, cabinets, or on counter tops or bench tops where blood or OPIM are present. All areas of storage for biohazards shall be labeled with the universal biohazard symbol.

**3.4.2.1.3** No mouth pipetting. Automatic or manual pipetting devices shall be provided by the department or center.

**3.4.2.1.4** Conduct all procedures in a manner that minimizes splashing, spraying, splattering, and aerosolizing of blood or OPIM.

**3.4.2.2 *Research Laboratories:***

**3.4.2.2.1** All laboratory areas possessing BBP will have biohazard signs at the entrance to the work area. The sign will have the universal biohazard symbol with the following information: (1) risk group of the infectious agent, (2) special requirements for entering the area, (3) name and telephone number of a responsible person.

**3.4.2.2.2** Laboratory doors shall be kept closed when work with BBP, blood, or OPIM is in progress

**3.4.2.2.3** Access to the work area shall be restricted to authorized personnel. Only personnel trained on the potential hazards of BBP and who comply with the entry and exit procedures shall be allowed to enter the work area.

**3.4.2.2.4** Vacuum lines shall be protected with liquid disinfectant traps and HEPA filters or anti-siphon devices. The department or center should check these protective devices twice a year and replace them as necessary.

**3.4.2.2.5** Each laboratory shall contain a facility for hand washing and an eye wash station.

**3.4.2.3 *Needles:*** Contaminated needles and other contaminated sharps shall not be bent, recapped, removed, sheared or purposely broken. If no alternative is feasible, then the recapping or removal of the needle must be accomplished using a mechanical device or the one-handed technique.

- 3.4.2.4 Containers for Reusable Sharps:** Immediately, or as soon as feasible, place contaminated sharps into appropriate containers. Appropriate containers are puncture resistant, labeled with a biohazard symbol, and are leak proof on the sides and bottom.
- 3.4.2.5 Specimen Containers:** Specimens of blood or OPIM will be placed in a container that prevents leakage during collection, handling, processing, storage, and transport of the specimens. The container used for this purpose will be labeled in accordance with requirements of the OSHA standard as follows: *A fluorescent orange or orange-red biohazard label shall be affixed as close as feasible to the container by string, wire, adhesive, or other method that prevents their loss or unintentional removal.* Any specimens that could puncture a primary container will be placed within a secondary container that is puncture resistant. If outside contamination of the primary container occurs, the primary container shall be placed within a secondary container that prevents leakage during the handling, processing, storage, and transport of the specimen.
- 3.4.2.6 Contaminated Equipment:** Equipment that has become potentially contaminated with blood or OPIM shall be decontaminated as necessary unless the decontamination of the equipment is not feasible. If decontamination of equipment or portions thereof is not feasible, then readily observable labels shall be attached to the equipment which remains contaminated. The labels shall state the location where contamination remains. The equipment should be wrapped or contained to prevent exposure to contaminants.
- 3.4.2.7 Personal Protective Equipment:** All personal protective equipment shall be removed before leaving the work area and stored near the entrance to the work area. All garments that are penetrated by blood or OPIM shall be removed immediately or as soon as feasible. It shall then be placed in an appropriately designated container or area for storage, washing, decontamination, or disposal. Employees must not wear or take home personal protective clothing that is visibly contaminated or thought to be contaminated with blood or OPIM. After removal of personal protective equipment, employees shall wash hands and any other potentially contaminated skin area immediately or as soon as feasible with soap and water.
- 3.4.2.8 Housekeeping:** All work areas shall be maintained in a clean and sanitary condition. All contaminated work surfaces will be decontaminated after completion of procedures and immediately or as soon as feasible after any spill of blood or OPIM, as well as at the end of the work shift if the surface may have been contaminated since the last cleaning. The disinfecting agent is selected based on the area or substance to be decontaminated as well as the suspected agent to be destroyed. Information concerning utility and selection of disinfectants may be obtained from the selected EPA-registered Disinfectants page: <https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants>. The department or center shall ensure that all bins, pails, and similar receptacles are inspected and decontaminated on at least a monthly basis. Broken glassware which may be contaminated will not be picked up directly with the hands. A mechanical means will be used to pick up glassware. Large pieces are to be picked up with tongs or forceps and small pieces are to be swept into a dust pan with a dust broom designated for this use only.
- 3.4.2.9 Infectious Waste Determination:** The following are deemed to be regulated infectious waste likely to be generated at the university.
- 3.4.2.9.1 Cultures and stocks of infectious agents:** includes (1) waste from the production of biological agents, (2) discarded live and attenuated vaccines, and (3) culture dishes and devices used to inoculate and mix cultures
- 3.4.2.9.2 Pathological wastes:** includes tissues or body parts removed during minor surgical procedures.
- 3.4.2.9.3 Human or animal blood, blood products and body fluid waste:** includes (1) items saturated or dripping with human or animal blood, (2) items caked with dried human or animal blood, (3) wastes contaminated by body fluids, (4) specimens of body fluids and their containers.

- 3.4.2.9.4** *Sharps*: includes (1) sharps used in patient care or treatment, including hypodermic needles, syringes (with or without attached needle), (2) Pasteur pipettes, (3) scalpel blades, (4) glass blood vials, (5) needles with attached tubing and glass culture plates, (6) broken or unbroken glassware which were in contact with body fluids, including slides and cover slips, (7) unused sharps, including hypodermic, suture needles, syringes, and scalpel blades.
- 3.4.2.9.5** *All materials contaminated with blood, excretion, exudates, or secretions*: includes (1) gloves, (2) dressings, (3) Q-tips, and (4) cytobrushes
- 3.4.2.9.6** *Discarded medical equipment and parts that were in contact with infectious agents*.
- 3.4.2.10** *Infectious Waste Disposal*: Carnegie Mellon University generates solid and liquid infectious waste. Prior to the commencement of the generation of infectious waste, generators must request proper biohazard storage and disposal containers from EHS as well as training in the proper disposal of these materials (Please refer to the university Biological Safety Plan for more information)
- 3.4.2.11** *Laundry Procedures*: Laundry contaminated with blood or OPIM will be handled as little as possible, according to the procedures laid out in the Biological Safety Plan. Such laundry will be placed in 3-mil red polyethylene biohazard bags at the location where it was used. Such laundry will not be sorted or rinsed in the area of use. All employees who handle contaminated laundry will utilize personal protective equipment to prevent contact with blood or OPIM.

## 4. Hepatitis B Vaccine

All employees with the potential for exposure to BBP through blood and OPIM will be offered a vaccination for the Hepatitis B virus at no cost to the employee. The recombinant hepatitis B vaccine will be offered within 10 working days of an employee's initial assignment of work involving the potential for occupational exposure to BBP. The employee will have to sign the University's **Consent to Vaccinate with Recombinant Hepatitis B Vaccine** (see Appendix B). This form verifies that he/she was informed of the potential health hazards that Hepatitis B virus represents in his/her work environment. This form also serves as a record of his/her choice to consent to receive the Hepatitis B vaccine, to decline the Hepatitis B vaccine, or to attest to prior Hepatitis B immunization and consent to a core antibody test.

Employees consenting to vaccination will receive the Hepatitis B vaccine at no cost. Vaccinations and through the university's Student Health Services located in the Morewood Gardens E Tower. Employees who initially decline the HBV vaccine, but later wish to have it, may then resubmit the vaccination form and be given the vaccine at no cost. The university's Student Health Services maintains inoculation records. It is vital that all three vaccinations of the Hepatitis B Vaccine series be completed according to the required schedule in order to confer immunity to the Hepatitis B Virus.

### 4.1 Costs for Hepatitis B Vaccine

Costs for vaccinating employees and students with the Hepatitis B vaccine are the responsibility of that individual's department(s). The "department" is considered the department where the potential for the employee or student to have exposure to BBP through blood and OPIM exists

## 5. Procedure following exposure to BBP

A bloodborne pathogen exposure incident is eye, mouth, other mucous membrane, non-intact skin, or parenteral (under the skin) contact with blood or OPIM agent that results from the performance of an employee's duties. In the event of exposure to bloodborne pathogens, university employees should adhere to the following procedures:

- (1) Immediately wash or rinse the exposed area for 10 to 15 minutes. If immediate first aid is required for the exposed employee, contact university police at (412) 268-2323 to be transported to the emergency room at UPMC Presbyterian Hospital.

**Note:** *Employee injuries associated with animal exposures shall adhere to the standard operating procedure for treating possible animal exposures provided by the employee's respective department or center.*

- (2) Immediately following washing, the injured employee should contact medical providers for post-BBP exposure evaluation and/or medical treatment provided in section 5.1 Post-Bloodborne Pathogen Exposure Evaluation
- (3) Employees should notify their supervisor immediately after the BBP exposure incident and provide detailed information about the incident. The employee's supervisor shall notify EHS immediately at 412-268-8182 and complete the **Post-Bloodborne Pathogen Exposure Incident Report** (see Appendix B), the **Supervisor's Injury/Illness Report** (see Appendix F), and if applicable, the **Sharps Injury Report** (see Appendix D). The supervisor will complete and submit these forms in accordance with section 5.2 **Procedures for Evaluating the Circumstances of a BBP Exposure Incident**.

### 5.1 Initial Post-Bloodborne Pathogen Exposure Evaluation

Immediately following washing, exposed employees should contact the following medical provider(s) for an initial post-BBP exposure evaluation and/or medical treatment within 2 hours of the exposure.

#### **Human exposure:**

Concentra has been chosen to conduct all other post-BBP follow-up exposure evaluations, provide medical treatment, and maintain medical records for Carnegie Mellon University employees. The following physician has been designated by Concentra to conduct these said post-exposure functions.

Michael Rowe, M.D. (Occupational Medicine)  
Concentra-University Center  
120 Lytton Avenue  
Suite 275  
Pittsburgh, PA 15213  
(412) 621-5430

The above listed physician may choose to consult with or refer individuals to another qualified physician if determined that it is in the best interest of the exposed individual. After an exposed individual reports to UPMC Presbyterian Hospital Emergency Department and is treated, he/she must follow-up with their medical care and evaluation by notifying Concentra of the incident. If the exposed individual provides his/her consent, Concentra will request a transfer of medical records pertaining to the exposed individual's post-exposure treatment and counseling, and will assist in the exposed individual's post BBP-Exposure follow-up.

***Note: It has been determined that post-exposure prophylaxis is most effective when administered within 2 hours of the initial exposure.***

#### **Animal exposure:**

Employee injuries associated with animal exposures shall adhere to the standard operating procedure for treating possible animal exposures and post-exposure evaluation provided by the employee's respective department or center.

#### **Exposure Evaluation and will include the following**

- (1) Documentation of the route of exposure and the circumstances related to the incident.
- (2) The employee will be offered the option of having blood collected for testing of the employee's HIV/HBV/HCV serological status. The blood sample will be preserved for at least 90 days to allow the employee to decide if the blood should be tested for HIV status. However, if the employee decides prior to that time that testing will be conducted then the appropriate action can be taken and the blood sample discarded.
- (3) The exposed employee's supervisor will attempt to notify the source individual of the incident and obtain his/her consent to collect blood. The status of the source individual will be determined. The blood of the source individual will be tested (after consent is obtained) for HIV/HBV/HCV infectivity.
- (4) Results of testing of the source individual will be made available to the exposed employee, but the applicable laws and regulations concerning disclosure of identity and infectivity of the source individual will be strictly followed. Current Pennsylvania law concerning disclosure of the HIV status of an individual without consent is governed by the requirements of the Pennsylvania Confidentiality of HIV Related Information Act. This law provides that an employee who has been

- notified of the identity and test result status of the source individual must not divulge this information to others unless the source individual signs a special written consent.
- (5) The employee will be offered post-exposure prophylaxis in accordance with the current recommendations of the U.S. Public Health Service.
  - (6) The employee will be given appropriate counseling concerning precautions to take during the period after the exposure incident. The employee will also be given information on what potential illness to be alert for and to report experiences to appropriate personnel.
  - (7) If an employee denies follow-up care, he/she must sign the ***Post-Exposure Evaluation and Follow-up declination waiver form*** (see Appendix D).

**Note: Follow-up Post BBP-Exposure Evaluation must be within 1-2 hours of the initial exposure**

## 5.2 Procedures for Evaluating the Circumstances of a BBP Exposure Incident

Employees should notify their supervisors immediately after the exposure incident. The supervisor records the details of the exposure incident, including the route of exposure, the infective agent, and an estimate of the dosage.

The supervisor shall submit the *Supervisor's Injury/Illness Report* to Human Resources and a ***Post-Bloodborne Pathogen Exposure Incident Report*** (see Appendix C) to the Department of EHS. The ***Supervisor's Injury/Illness Report*** form and detailed reporting procedures are provided on the university website at <https://www.cmu.edu/ehs/Workplace-Construction/accident-prevention.html> or by calling 412-268-8182

If the exposure involves a sharp, the supervisor shall collect and provide to the Biological Safety Office the following information regarding the exposure on the ***Sharps Injury Report*** (see Appendix D).

- (A) Employee name
- (B) Social Security Number
- (C) Date of Incident
- (D) Occupation
- (E) Department
- (F) Building
- (G) Type/Brand of Device
- (H) A brief description of how the injury occurred, including the task which was being performed as well as any PPE worn or utilized
- (I) Was an animal involved
- (J) Recommendation for preventing recurrence
- (K) Supervisor's Name
- (L) Date

**[Appendix C Post-Bloodborne Pathogen Exposure Incident Report](#)**

**[Appendix D Sharps Injury Report](#)**

Paper copies can be obtained from EHS by calling (412) 268-8405

The Department of EHS compiles all "Sharps Injury Report" forms into a "Sharps Injury Log" for recording of percutaneous injuries from contaminated sharps as required by OSHA. The Department of EHS will annually review the Sharps Injury Log to determine if changes are necessary to the procedures outlined in this Exposure Control Plan and to ensure that appropriate changes are implemented.

## 6. Employee training program

Training for all employees will be conducted for employees prior to initial assignment to tasks where occupational exposure to bloodborne pathogens or OPIM may occur. The EHS department schedules and conducts BBP training. All employees must receive annual refresher training provided by EHS. Supervisors must contact the Biological Safety Office, (412) 268-8405, to arrange training dates and times. BBP training includes an explanation of the following:

- (1) Overview of BBP
- (2) Epidemiology, symptoms, and routes of transmission of BBP
- (3) Prevention techniques

- (4) Use of and limitations of engineering controls, work practices, and personal protective equipment
- (5) Spill cleanup procedures
- (6) Accident and exposure follow-up procedures
- (7) Elements of 29 CFR 1910.1030
- (8) Exposure Control Plan, HBV vaccinations, methods of compliance, hazard communication, record keeping

### **7. Recordkeeping program**

All records required by the OSHA standard will be maintained by one of three entities. Carnegie Mellon University's Department of Environmental Health and Safety will maintain the university employee training records and Sharps Injury Log. The Student Health Services will maintain inoculation and core antibody testing records. Concentra will maintain the university employee medical records regarding post-exposure evaluation, counseling, and treatment.

### **8. Appendices**

- (A) APPENDIX A, *Bloodborne Pathogens Exposure Determination*
- (B) APPENDIX B, *Consent to Vaccinate with Recombinant Hepatitis B Vaccine*
- (C) APPENDIX C, *Post-Bloodborne Pathogen Exposure Incident Report*
- (D) APPENDIX D *Sharps Injury Report*
- (E) APPENDIX E, *Post-Exposure Evaluation and Follow-up Declination Waiver*
- (E) APPENDIX F, *Supervisor's Injury/Illness Report*

## APPENDIX A-BLOODBORNE PATHOGEN EXPOSURE DETERMINATION

The Carnegie Mellon University Criteria for Determining the Risk of Occupational Exposure to Hepatitis B Virus or other Bloodborne Pathogens (courtesy of the Centers for Disease Control and Prevention)

Does the employee ever:

a) work with animals, such as primates, that are infected or potentially infected with Hepatitis B or other bloodborne pathogens OR perform tasks where such animals are housed?

(b) work with Hepatitis B Virus or other bloodborne pathogens or with preparations, such as liquid solutions or powders containing the Hepatitis B Virus?

(c) handle human blood products such as whole blood, plasma, serum, platelets, or white cells?

(d) handle human body fluids such as semen, cerebrospinal fluid, vaginal secretions, joint fluid, pleural fluid, peritoneal fluid, pericardial fluid, or amniotic fluid?

(e) handle unfixed human tissue or organs? (Tissues and organs soaked in chemical preservatives such as alcohol or formaldehyde are “fixed”)

(f) handle blood, blood products, body fluids or unfixed tissues or organs of animals infected with the Hepatitis B Virus or other bloodborne pathogens?

(g) handle sharp instruments such as knives, needles, scalpels, or scissors, which have been used by others working with human or non-human primate blood, or other potentially infectious materials to include unfixed human or non-human primate organs, tissues or body fluids OR used by others working with similar body parts and fluids from animals infected with the Hepatitis B Virus or other bloodborne pathogens?

(h) enter areas where other individuals work with human or animal blood, body fluid, tissues or organs which are infected with the Hepatitis B Virus or other bloodborne pathogens AND perform tasks where any of the aforementioned body substances may come into contact with the laboratory worker's unbroken skin, broken skin, or mucous membranes?

(i) perform tasks which may potentially result in the lab workers exposed skin or mucous membranes coming in contact with human or animal blood, body fluids, organs, or tissues which are infected with the Hepatitis B Virus or other bloodborne pathogens?

(j) handle human or non-human primate cell lines known to harbor and propagate HIV or human cells likely to support the replication of *Human Immunodeficiency Virus* and which have not been tested or verified to be free of *Human Immunodeficiency Virus* (see next page) ?

(k) respond to medical emergencies as part of assigned tasks?

(l) work with lentiviral vectors, based on the *Human Immunodeficiency Virus* or *Simian Immunodeficiency Virus*, that can possibly infect humans?

**IF THE ANSWER TO ANY OF THE ABOVE QUESTIONS IS “YES”, THEN THE EMPLOYEE IS CONSIDERED TO BE AT OCCUPATIONAL RISK OF CONTRACTING HBV OR OTHER BLOODBORNE PATHOGENS**

In addition, other potentially infectious materials (OPIM) include but are not limited to the following human clinical specimens:

- Human blood
- Unfixed tissues or organs
- Amniotic fluid
- Cerebrospinal fluid
- Pericardial fluid
- Peritoneal fluid
- Pleural fluid
- Semen
- Synovial fluid
- Vaginal secretions

In addition, the following research specimens are also considered to be OPIM:

- HeLa cells
- Cell, tissue, or organ cultures or specimens from animals known to be infected with bloodborne pathogens
- Human or non-human primate cell lines, if known or reasonably likely to contain or be infected with HIV, HBV, or HCV; based on this definition, some human cell lines are known to support HIV replication.

They include:

All primary human or primate T cells  
All human or non-human primate T cell clones  
All human or animal cells expressing human CD4  
MT2  
MT4  
Jurkat (and derivatives)  
CEM (and derivatives)  
HOS (and derivative such as GHOST)  
HeLa-CD4  
HEK 293  
HL3T1  
U937  
H9 (and derivatives)  
THP1 (and derivatives)  
U38  
M311

Any worker using any of the aforementioned human cell lines should be enrolled in the Carnegie Mellon Bloodborne Pathogen Program. Anyone using human cell lines must be aware of the potential of those cell lines harboring pathogenic viruses.

The only human cell lines that are acknowledged to be HIV free are:

- Cell lines that don't support the replication of HIV
- Primary cells that don't support the replication of HIV
- Cells that have been tested by the vendor and found to be free of HIV (results of tests must be provided)
- Cell lines that support the replication of HIV but have been tested in the laboratory and are verified, by PCR or other sensitive assays, to be free of HIV

All human or non-human primate cell lines, whose HIV origin is not known, shall be handled at Biosafety Level 2, using Universal Precautions.

### APPENDIX B- Consent to Vaccinate with Recombinant Hepatitis B Vaccine

For: [Print Name] \_\_\_\_\_

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of becoming infected with the hepatitis B virus (HBV). I have been given the opportunity to be vaccinated with recombinant hepatitis B vaccine, at no charge to myself. At this time, I would like to:

\_\_\_ consent to receive the HBV vaccine

\_\_\_ attest to prior HBV immunity and will complete core antibody testing if needed

\_\_\_ decline the recombinant 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 wish to be vaccinated with the hepatitis B vaccine, I can receive the vaccination series at no charge to me.

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Printed Name

Signature

Date

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Witness's Printed Name

Witness's Signature

Date

### APPENDIX C- Post-Bloodborne Pathogen Exposure Incident Report

An individual who has a parenteral, cutaneous or mucous membrane exposure to blood or any other potentially infectious material must immediately notify his or her supervisor. The exposed individual must assist his/her supervisor in the completion of the following report. The supervisor shall submit the report to the Department of Environmental Health and Safety within 24 hours of the exposure incident.

Name: \_\_\_\_\_

Date incident occurred: \_\_\_\_\_ Time: \_\_\_\_\_

Route(s) of exposure: \_\_\_\_\_

List the activity(s) in which the exposed individual was involved at the time of the exposure.

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

Was the exposed individual wearing protective clothing/gear? \_\_\_\_\_

Describe: \_\_\_\_\_  
\_\_\_\_\_

What other precautionary measures in the work practice were employed? \_\_\_\_\_

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

Provide a brief description as to how the exposure occurred: \_\_\_\_\_

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

Is the source known? \_\_\_\_\_

Has the exposed individual been vaccinated against Hepatitis B? \_\_\_\_\_

If yes, give date of last core antibody test: \_\_\_\_\_

Signature of exposed individual: \_\_\_\_\_

Signature of exposed individual's supervisor: \_\_\_\_\_

Date that this incident report was received by the Department of Environmental Health and Safety: \_\_\_\_\_

Has the exposed individual accepted post-exposure treatment and follow-up counseling? \_\_\_\_\_

If no, has the individual completed the *Post-Exposure Evaluation and Follow-up Declination*, BBP Form 4? \_\_\_\_\_

If yes, has blood been drawn from the exposed individual? \_\_\_\_\_ List the date of the blood draw. \_\_\_\_\_

If yes, has consent been obtained from the exposed individual for his/her blood to be tested for human pathogens? \_\_\_\_\_

Has the source material been collected for testing of human pathogens? \_\_\_\_\_

If the source was human, has consent been obtained from the source individual? \_\_\_\_\_

If the source was human and consent has been obtained from the source individual, have all privacy laws been reviewed with the exposed individual? \_\_\_\_\_

List all follow-up actions taken on behalf of the exposed individual.

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

### APPENDIX D- Sharps Injury Report

Please complete all applicable fields. Some fields are required to be completed. These are marked with an asterisk (\*).

Employee Last Name\*: \_\_\_\_\_

Employee First Name\*: \_\_\_\_\_

Social Security Number or Carnegie Mellon ID\*: \_\_\_\_\_

Date of Incident\*: \_\_\_\_\_

Occupation: \_\_\_\_\_

Department: \_\_\_\_\_

Building\*: \_\_\_\_\_

Type and/or Brand of Device\*: \_\_\_\_\_

Please provide a brief description of how the injury occurred, including the task which was being performed as well as any protective equipment worn or utilized\*:

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Was an animal or human involved? Yes or No

Was immediate treatment sought? If so, where: \_\_\_\_\_

Recommendation for preventing recurrence:

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Supervisor's Name: \_\_\_\_\_

### APPENIDX E-Post-Exposure Evaluation and Follow-up Declination

I understand that due to the occupational incident in which I was exposed to blood or other potentially infectious material, I may have been exposed to HBV and/ or HIV. A confidential medical evaluation, blood tests for HBV and HIV and a vaccination for HBV have been recommended to me and would be provided to me by my employer free of charge.

At this time, I would like to decline:

- the confidential medical evaluation
- the blood tests for HIV
- the blood tests for HBV
- the vaccination for HBV

I understand that by declining the Hepatitis B vaccine, I continue to be at risk for acquiring HBV.

---

Printed Name

Signature

Date

---

Witness's Printed Name

Witness Signature

Date