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| University of Pittsburgh Safety Manual | EH&S Guideline Number: 05-001 | |
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I. INTRODUCTION

In accordance with the OSHA Bloodborne Pathogens Standard, *29 CFR 1910.1030*, the following Exposure Control Plan (ECP) has been developed for the University of Pittsburgh. The ECP is designed to minimize exposure to bloodborne pathogens, which are defined as: *Pathogenic microorganisms that are present in human blood, human body fluids, human tissues or other potentially infectious material.*

The ECP covers faculty, staff and students that may reasonably anticipate skin, eye, mucous membrane, or parenteral (under the skin) contact with human blood or other potentially infectious materials during the performance of their job duties at the University of Pittsburgh.

In addition to human blood, other potentially infectious materials (OPIM) are:

- All human body fluids;
- Any unfixed tissue or organ other than intact skin from a human (living or dead);
- Human cell lines or cultures, human tissue cultures, human organ cultures;
- Non-human primate blood, body fluids or other tissues;
- Blood, body fluids or other tissues from experimental animals infected with bloodborne pathogens
- Liquid or solid culture medium or other materials containing biological agents capable of causing disease in healthy adults (i.e. equivalent to agents handled at Biosafety level 2 or above, visit <http://www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm>.)
- Liquid or solid culture medium or other materials containing or potentially contaminated with recombinant or synthetic nucleic acid molecules.

The ECP will be reviewed and updated annually by the University of Pittsburgh. Implementation of the ECP is monitored and coordinated by the University Department of Environmental Health and Safety (EH&S.) The University Biosafety Officer manages and oversees compliance of the University's Bloodborne Pathogens program. Additional information can be found in the University Safety Manual and the webpage of the University Department of Environmental Health & Safety (www.ehs.pitt.edu.) Questions or concerns can be addressed to the University Department of Environmental Health and Safety at 412-624-9505.

II. BLOODBORNE PATHOGEN EXPOSURE DETERMINATION

A **Bloodborne Pathogen Exposure Determination** is made without regard to the use of personal protective equipment. Employees whose expected job functions include occupational exposure to blood or OPIM are considered to be exposed even if they wear personal protective equipment. The purpose of an exposure determination is to identify the University job classifications that are required to comply with this ECP.

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Each University unit must maintain a list of **job classifications** and/or job descriptions under their supervision that may have occupational exposure to bloodborne pathogens. Supervisors are responsible to enforce compliance with this Exposure Control Plan for all applicable employees.

Employees that provide first aid as a collateral duty, such as police officers, athletic trainers or those on AED (Automated External Defibrillators) emergency response teams, may have exposure to bloodborne pathogens and are covered by the Exposure Control Plan.

III. COMPLIANCE METHODOLOGY

A. Universal Precautions: Universal Precautions will be observed at the University of Pittsburgh in order to prevent contact with blood or other potentially infectious materials. All blood or other potentially infectious materials will be considered infectious.

B. Exposure Control Plan: Employees covered under this Exposure Control Plan receive an explanation of this Exposure Control Plan during their initial training session. It will also be reviewed in annual refresher training. All employees have the opportunity to review this plan at any time during their work shifts by visiting <http://www.ehs.pitt.edu/assets/docs/ecp.pdf> or by calling 412-624-9505. If requested by an employee, a copy of the Exposure Control Plan will be provided free of charge. The University of Pittsburgh Department of Environmental Health and Safety is responsible for reviewing and updating the Exposure Control Plan annually or more frequently if necessary to reflect new or modified tasks and procedures that affect occupational exposure.

C. Engineering Controls and Equipment: Engineering controls and equipment will be utilized to eliminate or minimize exposure to employees. Where potential for occupational exposure still exists after implementation of these controls, personal protective equipment shall also be utilized. The University of Pittsburgh will identify the need for changes in engineering controls and work practices through reviews of the Sharps Injury Log with follow-up exposure investigation and through discussion with the University Biohazards Committee of available safety procedures.

1. Sharps Containers: The person generating a contaminated sharp is responsible to dispose it promptly in a sharps collector, and is responsible for monitoring the container and disposing of the container when it is two-thirds full. The container is to be open when in use to allow unobstructed access and securely closed for disposal in a waste stream designated for biohazardous waste (such as biohazard bags and boxes labeled "Sharps.") Only approved sharps containers as determined by Environmental Health and Safety are to be utilized.

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2. Biosafety Cabinets: An individual working in a biosafety cabinet shall disinfect the work surface of the biosafety cabinet after each use. If the cabinet has a front drain, it will be checked monthly, disinfected, and drained if required. The cabinet will have an annual performance certification that the Principal Investigator is responsible for arranging. This certification is also required prior to initial cabinet user or prior to use after any cabinet relocation. See the University Safety Manual for more information on biosafety cabinets.

3. Sharps with Engineered Sharps Injury Protection: These devices are needle-less or otherwise altered with a built-in feature or mechanism that effectively reduces the risk of an exposure incident.

Implementation or active evaluation of engineered sharps devices is **mandated** in the following instances:

- 1. University employees with human subject research or direct patient contact duties.** Examples include drawing blood or administering injections.
- 2. University employees working at ABSL-2 and for whom Environmental Health and Safety has determined through risk assessment present a high risk of significant exposure to dangerous pathogens via sharps injury.** Examples include rabies virus or Plasmodium species being injected into animals.
- 3. University employees working with non-human primates.**
- 4. University employees using sharps with biosafety level 2 agents.** Examples include dissecting human and non-human primate tissues, using sharp needles to homogenize or shear human cells, and preparing batches of recombinant adenovirus using sharp needles.

It is recommended that engineered sharps devices be utilized in all applications at the University when there is potential for occupational exposure to any other potentially infectious materials involving sharps.

It is the responsibility of those with supervisory or managerial duties at the University of Pittsburgh to ensure that employees in these categories are utilizing engineered sharps devices. It is also the responsibility of the supervisor to include non-managerial staff in the evaluation 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:

<http://www.healthsystem.virginia.edu/internet/epinet/new/safetydevice.html>

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Supervisors may visit the Environmental Health and Safety Website at www.ehs.pitt.edu (Biosafety page) to download evaluation forms for various classes of safety devices or contact EH&S to develop a lab specific or protocol specific evaluation form. Supervisors should utilize these forms to solicit input from the non-managerial employees with respect to the selection of safety devices.

If a supervisor does not believe that utilizing an engineered sharps device is possible or warranted for a specific application, they must:

- Document which devices have been evaluated, the extent of the evaluation, and identify which employees performed the evaluations
- Document the rationale for not utilizing an engineered sharps device. This rationale is only acceptable if it demonstrates the device is medically contraindicated for the human or animal research subject, is unreliable in operation, or is incompatible with another essential component of the research.
- Increased cost is not an acceptable rationale for continued use of a non-safety device.

This information must be sent to the Department of Environmental Health and Safety:

Department of Environmental Health and Safety (EH&S)
Public Safety Building, Fourth Floor, 3412 Forbes Avenue
624-8524 (fax)
Email biosafe@ehs.pitt.edu

4. Hand Washing Facilities are available to the employees with potential exposure to blood or other potentially infectious materials.

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. If employees incur exposure to their skin or mucous membranes, those areas shall be washed or flushed with water as appropriate as soon as feasible following contact.

D. Work Area Controls and Procedures: Work Area Controls and Procedures will be utilized to eliminate or minimize exposure to employees. Where potential for occupational exposure still exists after implementation of these controls and procedures, personal protective equipment shall also be utilized.

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1. Work Area Restrictions - General: In work areas where there is a reasonable likelihood of exposure to blood or other potentially infectious materials, employees should comply with the following work area restrictions:

- No eating, drinking, chewing gum, applying cosmetics or lip balm, smoking, or handling contact lenses;
- Food and beverages are not to be kept in refrigerators, freezers, shelves, cabinets, or on counter tops or bench tops where blood or other potentially infectious materials are present;
- Mouth pipetting is prohibited; automatic or manual pipetting devices should be provided.
- All procedures will be conducted in a manner that will minimize splashing, spraying, splattering, and generation of droplets of blood or other potentially infectious materials.

2. Work Area Restrictions for Research Facilities: This section applies to research laboratories engaged in the culture, concentration, experimentation, and manipulation of potentially infectious materials. In addition to the restrictions listed above:

- Laboratory doors shall be kept closed when work with potentially infectious material is in progress;
- 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;
- Vacuum lines shall be protected with liquid disinfectant traps and HEPA/0.2 micron filters that are checked twice a year and replaced as necessary;
- Each laboratory shall contain a facility for hand washing and an eye wash station.

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.

4. Containers for Reusable Sharps: Contaminated sharps that are reusable are to be placed immediately or as soon as feasible after use, into appropriate containers. At the University of Pittsburgh these containers are puncture resistant, labeled with a biohazard symbol, and are leak proof on the sides and bottom.

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5. Specimen Containers: Specimens of blood or other potentially infectious materials will be placed in a container that prevents leakage during the collection, handling, processing, storage, and transport of the specimens. The container used for this purpose will be labeled or color-coded in accordance with the requirements of the OSHA standard. 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, transport, or shipping of the specimen.

6. Contaminated Equipment: Equipment that has become potentially contaminated with blood or other potentially infectious materials shall be decontaminated as necessary unless the decontamination of the equipment is not feasible. If decontamination of equipment or portions there of is not feasible, then readily observable labels shall be attached to equipment which remains contaminated. The labels shall state which portions remain contaminated. The equipment should also be wrapped or contained to prevent exposure to contaminants.

7. Personal Protective Equipment (PPE): All personal protective equipment used at this facility will be provided without cost to employees. Personal protective equipment will be chosen based on the anticipated exposure to blood or other potentially infectious materials. The University of Pittsburgh Safety Manual and Environmental Health and Safety staff are available for consultation on selection of appropriate personal protective equipment. The protective equipment will be considered appropriate only if it does not permit blood or other potentially infectious materials to pass through or reach the employees' clothing, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time that the protective equipment will be used. All personal protective equipment will be cleaned, laundered, and disposed of by the employer at no cost to employees. The employer, at no cost to the employee, will make all repairs and replacements to personal protective equipment.

All garments that are penetrated by blood shall be removed immediately or as soon as feasible. All personal protective equipment shall be removed prior to leaving the work area involved. 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 other potentially infectious materials. Employees shall wash their hands immediately or as soon as feasible after removal of gloves or other PPE

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8. Housekeeping: All contaminated work surfaces will be decontaminated after completion of procedures and immediately or as soon as feasible after any spill of blood or other potentially infectious materials, as well as at the end of the work shift if the surface may have become contaminated since the last cleaning.

The disinfecting agent should be selected based on the area or substance to be decontaminated as well as the suspected agents to be destroyed. Information concerning the utility and selection of disinfectants may be obtained by visiting the EPA Antimicrobial Information Network at <http://www.epa.gov/oppad001/>.

All bins, pails, and similar receptacles shall be inspected and decontaminated on a routine basis. Any broken glassware that may be contaminated will not be picked up directly with the hands. Large pieces are to be picked up with forceps and the small pieces swept into a dustpan with a dust broom designated for this use only.

9. Regulated Waste includes liquid or semi-liquid blood or other potentially infectious materials, contaminated items that would release blood or other potentially infectious materials if compressed, items caked with dried blood or other potentially infectious materials and are capable of releasing these infectious agents during handling, and sharps.

All sharps shall be discarded as soon as feasible in sharps containers that are located in the facility. The sharps containers will be labeled with the biohazards symbol. Containers must be puncture-resistant and leak resistant.

Regulated solid wastes shall be placed in red polyethylene biohazard bags that are at least 3-mil thick. All solid wastes suitable for autoclaving (121 Degrees C, 60 -90 minutes) should be treated in this manner prior to removal from the premises.

Disposal of biological waste is accomplished by placing the red biohazard bags in a labeled biohazard box. Seal the box with tape, and place the sealed box in the designated area for pickup. The box must be labeled with the University of Pittsburgh Bio-Hazardous Waste Label. Sharps must be disposed in sharps container prior to disposal in biohazard boxes labeled "Sharps." Sharps must never be discarded directly in trash bags or biohazard boxes.

Regulated liquid wastes should be carefully poured into the appropriate disinfectant to inactivate the biohazardous agent. Following sufficient contact time, the disinfected liquid may be disposed in the sanitary sewer. This should be done carefully to avoid aerosol generation and splashing.

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10. Laundry Procedures: Laundry contaminated with blood or other potentially infectious materials will be handled as little as possible. Such laundry will be placed in appropriately marked 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 other potentially infectious materials.

Note: More information on compliance methods can be found in the University of Pittsburgh Safety Manual (www.ehs.pitt.edu.)

IV. HEPATITIS B VACCINATION PROGRAM

It is highly recommended that all personnel with occupational exposure to bloodborne pathogens and other potentially infectious materials receive the Hepatitis B vaccination.

All University personnel (staff, students, faculty), who have been identified as having exposure to blood or other potentially infectious materials, must sign a *University of Pittsburgh Consent to Vaccinate with Recombinant Hepatitis B Vaccine* form within 10 working days of their initial assignment to work. This form verifies that personnel were informed of the potential health hazards that Hepatitis B virus represents in their work environment. In addition, the form records the individual's choice to either consent to receive Hepatitis B vaccine, to decline, or to attest to prior Hepatitis B immunization.

Employees (students, faculty and staff) consenting to vaccination will receive the Hepatitis B vaccine (HBV) at no cost. Vaccinations are provided through Employee Health Services. Employees who initially decline the HBV vaccine may have the vaccine provided at no cost at any future time of their employment so long as they continue to have occupational exposure to bloodborne pathogens.

V. PROCEDURE FOLLOWING EXPOSURE TO BLOODBORNE PATHOGENS

A bloodborne pathogen exposure incident occurs when potentially infectious material comes into contact with the eyes, mouth, other mucous membrane, or damaged skin, or penetrates the skin (parenteral or under the skin) during the performance of an employee's duties.

A. In the Event of Exposure to Bloodborne Pathogens:

1. Immediately wash the exposed area with soap and water. For eye and mucous membrane exposure, rinse with water for 15 minutes.

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2. Notify the supervisor immediately after the bloodborne pathogen exposure incident and provide detailed information about the incident. If a supervisor is not immediately available, proceed promptly to medical evaluation in the next step.
3. Immediately following washing, employees should contact the following medical providers for post-bloodborne pathogens exposure evaluation and/or medical treatment:

Monday through Friday (7:00 AM to 3:30 PM)

Employee Health Services-Oakland
(412) 647-4949
Medical Arts Building, 3708 Fifth Avenue, Fifth Floor, suite 500.59.

All Other Times and Holidays

Presbyterian University Hospital Emergency Department
(412) 647-3333
200 Lothrop Street

Specialized clinicians are available to conduct post-bloodborne pathogens exposure evaluations, provide medical treatment, and maintain medical records for University of Pittsburgh employees at these locations.

4. Other Post-Exposure Information:
 - Exposed employees will be offered the option of having blood collected for testing of the employees HIV/HBV/HCV serological status.
 - If necessary, the identification of the source and, if possible, the status of the source will be determined. The blood of the source subject will be tested (after consent is obtained) for HIV/HBV/HCV infectivity;
 - Results of testing of the source subject will be made available to the exposed employee but the applicable laws and regulations concerning disclosure of the source individual will be strictly followed.
 - The employee will be offered post-exposure prophylaxis at no cost and in accordance with the current recommendations of the U.S. Department of Health and Human Services.
 - 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.

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- If the exposure involves a non-human primate or non-human primate tissue, the Standard Operating Procedures for Management of Herpes B Virus exposure or SIV exposure developed by Employee Health Services will be followed.

B. Procedures for Evaluating the Circumstances of a Bloodborne Pathogen Exposure Incident

Employees should notify their supervisor as soon as possible after the exposure incident. The supervisor records the details of the exposure incident including the route and source of potential exposure.

After receiving treatment, the employee should report the injury to the University's Workers' Compensation department within one business day of an accident to preserve the right to benefits.

Employees that have been injured as a result of performing their work duties must call **1-800-633-1197** to report the injury (phone answers 24/7).

The Department of Environmental Health and Safety compiles a “Sharps Injury Log” for the recording of percutaneous injuries from contaminated sharps. The Department of Environmental Health and Safety will annually review the Sharps Injury Log to determine if changes are necessary to the procedures outlined in the Exposure Control Plan and to ensure that appropriate changes are implemented.

VI. TRAINING PROGRAM

Training for all employees will be conducted for employees prior to initial assignment to tasks where occupational exposure to bloodborne pathogens may occur. The Environmental Health and Safety Department conducts BBP training twice monthly. Dates and times may be obtained by calling 412-624-9505 or visiting the EH&S webpage at www.ehs.pitt.edu (training page). On-line bloodborne pathogen training is also available through the Internet-Based Studies in Education and Research website at <http://cme.hs.pitt.edu/>.

All employees covered by this Exposure Control Plan must receive refresher training every 12 months.

Training for employees includes the following:

- Overview of bloodborne pathogens;
- Epidemiology, symptoms, and routes of transmission of bloodborne pathogens;
- Prevention techniques;
- Explanation of the use of and limitations of engineering controls, work practices and personal protective equipment;

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- Spill cleanup procedures;
- Accident and Exposure follow-up procedures;
- Elements of *29 CFR 1910.1030*;
- Exposure Control Plan;
- Hepatitis B virus vaccinations; and,
- Methods of compliance.

VII. RECORDKEEPING PROGRAM

University Employee Training records, Sharps Injury Log, and HBV inoculation records are maintained by the Department of Environmental Health and Safety, Public Safety Building, Fourth Floor, 3412 Forbes Avenue, telephone (412) 624-9505.

University Employee Medical Records are maintained by Employee Health Services - (412) 647-4949.