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SAFETY AND HEALTH PROGRAM

Bloodborne Pathogens Exposure Control Plan

1.0 PURPOSE

This Exposure Control Plan (ECP) was developed for Penn State University as required by the OSHA Bloodborne Pathogen Standard, **29 CFR 1910.1030**. This document is intended to provide information on bloodborne pathogens, what they are, the University's policy regarding them, determining exposures, methods of compliance, infectious waste disposal, Hepatitis B immunization, post exposure follow up, and training.

It is the practice of the Pennsylvania State University to limit or prevent occupational exposure to blood or other potentially infectious materials by strict adherence to the Universal Precautions, by providing suitable personal protective equipment, training, and where appropriate, Hepatitis B immunization. This Exposure Control Plan describes the procedures necessary to comply with the Occupational Safety and Health Administration's (OSHA) Bloodborne Pathogen Standard (29CFR1910.1030) and PA Act 148.

2.0 SCOPE

This policy applies to OPP Custodial Services Employees who could reasonably anticipate occupational exposure to blood or other potentially infectious materials in the performance of their duties.

3.0 DEFINITIONS

BLOODBORNE PATHOGENS - 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).

BODY SUBSTANCE ISOLATION - An alternative set of work practices to Universal Precautions in which all moist body fluids (blood, feces, urine, sputum, saliva, wound drainage, and other body fluids) from all patients are considered to be infectious.

OCCUPATIONAL EXPOSURE - Reasonably anticipated skin, eye, mucous membrane, or other parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

OTHER POTENTIALLY INFECTIOUS MATERIALS (OPIM) -

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 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 (living or dead); and

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3. HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

UNIVERSAL PRECAUTIONS - An approach to infection control in which all human blood and certain human body fluids, including but not limited to semen, vaginal secretions, and any body fluid that is visibly contaminated with blood, are treated as if known to be infectious for human immunodeficiency virus (HIV), hepatitis B (HBV), hepatitis C virus (HBC), and other bloodborne pathogens.

4.0 EXPOSURE DETERMINATION

Bloodborne Pathogen Exposure Determination is made without regard to the use of personal protective equipment (PPE). Employees who can be reasonably expected to have exposure to human blood or OPIM are considered to have occupational exposure risk even if personal protective equipment is worn.

Grade 9 and 10 custodial staff who are required to work in facilities with moderate and/or high risk for exposure to blood or OPIM as outlined in Appendix A are required to participate in and comply with the Bloodborne Pathogens Program. The OPP Safety Office will provide guidance in determining what jobs and tasks put employees at risk, but supervisors are ultimately responsible for assessing the risks to their employees.

5.0 METHODS OF COMPLIANCE

5.1 UNIVERSAL PRECAUTIONS

Strict adherence to the Universal Precautions is required for this exposure control program to be effective. The cornerstone of the Universal Precautions is that all blood, regardless of the source, be treated as if it is infectious. Appropriate personal protective equipment (including gloves, breathing masks and eye protection) and work practices (minimize splashing, care in handling sharps, waste segregation) must be observed to reduce the possibility of skin and/or mucous membrane exposure to blood and other potentially infectious materials.

5.2 PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) including but not limited to gloves, breathing masks for rescue breathing/CPR, and eye protection shall be available and worn by all persons who can reasonably anticipate exposure to blood and other potentially infectious materials during the course of their duties. Such PPE is provided, cleaned and/or replaced as required by law by the University unit where the exposed employee works at no cost to the employee.

Employees are required to use appropriate PPE whenever contact with blood or other potentially infectious material is anticipated. PPE is considered to be appropriate only if it prevents contact of blood and/or other potentially infectious materials from coming into contact with skin/mucous membranes.

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For blood or OPIM cleanup procedures, employees are to wear at a minimum:

- Safety goggles
- Nitrile gloves

For spills larger than 500 mL, or where splash in the face or on the skin is feasible, employees are to wear in addition to the above PPE, the following:

- Face shield
- Apron
- Shoe covers

5.3 SPILL KITS

The following items may be needed in handling the spill:

- EPA reg. Tuberculocidal
- Absorbent pads and booms
- Nitrile gloves
- Safety goggles
- face shield
- apron
- shoe covers
- red biohazard bags
- biohazard labels
- paper towels
- mop and bucket (for large spills)
- leak-proof sharps containers
- brush & dustpan, or tongs or forceps for picking up sharps
- disinfectant wipes

5.4 WORK PRACTICE CONTROLS

5.4.1 Blood Cleanup Procedures

5.4.1.1 Don all necessary PPE.

5.4.1.2 Cover the spill area with a paper towel and then slowly pour disinfectant over the entire contaminated area, taking special care not to cause splash. All cleanup procedures are conducted in a manner that will minimize splashing, spraying, splattering, and creation of droplets of blood or OPIM.

5.4.1.3 Allow solution to soak into the contaminated material for 10 minutes.

5.4.1.4 Work from the outside edges of the spill inward when applying the bleach solution.

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- 5.4.1.5** Any glass, needles, or other sharp objects that may puncture the skin will not be picked up by hand. Only mechanical means such as a brush and dustpan, tongs, or forceps are allowed.
- 5.4.1.6** Wipe up bleached material with paper towels or absorbent pads.
- 5.4.1.7** It may be necessary to use a scrub brush to remove the material if it impacted a hard porous surface such as concrete.
- 5.4.1.8** Spray down area once again and allow solution to work for 10 minutes. Wipe with paper towels.
- 5.4.1.9** If porous surfaces, such as a carpet have been contaminated, an outside vendor may be needed to clean the area depending on the size and nature of the spill. Contact the Environmental Health and Safety Office for further guidance.
- 5.4.1.10** All potentially contaminated re-useable tools or protective equipment used in the cleanup are able to be decontaminated. This includes dustpans, brooms, forceps, buckets, etc. Soak mopheads, dust pans, brooms, etc in disinfectant for no less than 10 minutes, or as indicated by manufacturer.
- 5.4.1.11** Anything that cannot be effectively cleaned (bleach solution must be able to make contact with all surfaces) must be disposed as waste. Place disinfected material, gloves and other disposable materials into a red biohazard bag and place into either another labeled biohazard bag or labeled container. Contact Environmental Health and Safety (ext. 5-6391) for pickup.
- 5.4.1.12** Keep biohazard waste container in a secured area until received by Environmental Health and Safety.
- 5.4.1.13** Wash hands immediately after completion of cleanup.

5.4.2 WORK AREA RESTRICTIONS

Laboratories, medical facilities, and other areas that handle human blood or OPIM have specific requirements. There shall be no eating, drinking, chewing gum, applying cosmetics or lip balm or handling of contact lenses in any of these areas. Be mindful and alert of work that is being performed. Proper housekeeping standards should be met in all University areas.

5.5 ENGINEERING AND OTHER CONTROLS - Devices to limit exposure. These include:

- 5.5.1 Sharps Containers** – All sharps (i.e., needles, syringes, lancets, razor and scalpel blades, Pasteur pipettes, glass capillary tubes), especially those contaminated with human blood or OPIM, must be collected in a rigid, leakproof sharps container. This container should be kept as close as possible to where sharps are handled. It should be sealed, autoclaved and disposed of as Infectious Waste when it is 2/3 full
- 5.5.2 Biological Safety Cabinets** – When procedures are conducted that have the potential for generating aerosols with blood or OPIM, they should be done in a

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biological safety cabinet (hood). The hood should be disinfected before and after use. Hoods use for pathogens, blood or OPIM should be tested and certified annually; hoods must also be recertified after they are moved.

5.5.3 Handwashing Facilities – Proper, timely handwashing is critical to preventing the spread of bloodborne pathogens. Handwashing facilities (consisting of hot and cold running water, soap and towels) are required wherever bloodborne pathogens are handled. Employees should wash their hands and any other potentially contaminated skin area after removing gloves or other personal protective equipment (PPE).

5.5.4 Needlestick Prevention - Devices that are capable of reducing or eliminating the potential for needlestick and other sharp instrument injuries are now available. Examples of such technology include needle-less delivery systems, self-sheathing needles and catheters, retractable hypodermic needles, and needle guards and shields. It is vitally important that the use of these devices becomes a standard practice in clinical and research laboratories. They should be used wherever and whenever possible. Those employees who use these devices the most (for example, nurses and phlebotomists) should be consulted for input in the type of needlestick prevention equipment purchased.

5.5.5 Specimen Containers – Containers used for holding, processing or transporting blood or OPIM shall be labeled as biohazards. Transport containers shall be of sufficient size to hold twice the volume of material being transported in them. Containers should be constructed of materials that can be easily cleaned, and should be cleaned and disinfected if contamination is noted.

6.0 INFECTIOUS WASTE DISPOSAL

Infectious Waste is the term used by Penn State University and the State Department of Environmental Protection (DEP) to describe waste materials that are contaminated with human or animal pathogens, or with human blood or OPIM. It is sometimes referred to as medical waste or “red bag” waste. Penn State University Policy SY-29 provides information regarding the proper storage, treatment and disposal of infectious waste, and is summarized below:

Solid Waste – non-sharp solid waste material, such as pipettes, Petri dishes, multiwell plates, tissue culture flasks, tubes, cuvettes, pipette tips, gloves and bench paper should be collected in biohazard bags, sealed, autoclaved and placed in the large white infectious waste barrels located in various autoclave rooms. Loose material will not be accepted.

Liquid Waste - All tissue culture media and broth cultures should be autoclaved and poured down the drain when cool. Alternatively, sodium hypochlorite (household bleach) may be used. A sufficient amount of Surebet should be added to bring the final concentration to 10% of the total volume (i.e., 10 mls bleach to 100 mls aqueous waste). The mixture is then incubated at room temperature for 1 hour and then may be poured down the drain.

Agar – Agar plates and tubes should be collected in a biohazard bag, sealed, autoclaved, allowed to resolidify, and then placed in the white infectious waste barrel.

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Sharps - ALL sharps (i.e., hypodermic needles, syringes, razor and scalpel blades) should be disposed of in a puncture-resistant sharps container. In addition to these items, all pasteur pipettes, broken glass and microscope slides which have been in contact with viable infectious materials should be disposed of in a sharps container, which should be autoclaved before disposal.

7.0 **HEPATITIS B VACCINATION**

7.1 Each employee whose duties may reasonably be anticipated to involve exposure to blood or other potentially infectious materials will be offered Hepatitis B vaccine by the University at no cost to the employee

7.2 Information about the vaccine, its efficacy, safety, method of administration, the benefits of being vaccinated will be provided to the employee during a bloodborne pathogen training program. The vaccine is provided in accordance with current CDC recommendations

7.2.1 An employee may choose to take the vaccine or decline. If the employee declines the vaccine, a waiver stating that fact must be signed by the employee.

7.2.2 If at any time, a potentially exposed employee who initially declined to receive the vaccine wishes to receive the vaccine, the University will provide the vaccine at no cost to the employee.

7.2.3 Occupational Medicine is responsible for maintaining vaccination records. All PSU employees not vaccinated at Occupational Medicine should make every effort to obtain their vaccination records and forward a copy to Occupational Medicine, 1850 East Park Avenue, Centre Medical Sciences Bldg., Suite 310, State College, PA 16803.

7.3 To begin the process to receive Hepatitis B vaccination, contact the OPP Safety Office to arrange for training. Once training has been completed, the employee may then begin the Hepatitis B immunization series

8.0 **POST EXPOSURE EVALUATION AND FOLLOW-UP**

8.1 All work-related exposures to blood or other potentially infectious materials (such as needlesticks or sharp instrument injuries, splashes of blood to the skin, eyes, nose or mouth area, cuts with blood-contaminated objects, human bites or other direct physical contact with blood or OPIM) are to be reported to the employee's immediate supervisor. A "[Report of Occupational Injury or Disease](#)" should be filled out by the supervisor. Following the report of an exposure incident, confidential medical evaluation, treatment and follow-up shall be made available immediately to the employee who experienced such exposure. For treatment to be effective, it must begin within 2-6 hours after the exposure occurred. Such services shall be provided at no cost to the employee.

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8.2 Occupational Medicine will determine the required follow-up or treatment to be taken based on the exposure, applicable CDC guidelines, and University Health Service policies. Occupational Medicine will provide guidelines regarding appropriate medical treatment for PSU employees

- 8.2.1** Occupational Medicine, in conjunction with the Office of Human Resources, is responsible for documenting all exposures and medical actions taken.
- 8.2.2** Occupational Medicine is responsible for maintaining and retaining medical records of such evaluations, treatment and follow-up. These records are maintained in accordance with PA Act 148.
- 8.2.3** Environmental Health and Safety or the OPP Safety Office is responsible for evaluating the circumstances surrounding an exposure incident, and shall recommend appropriate safety equipment and/or changes in procedure to prevent further exposures of this type.

8.3 Medical Evaluation - following the report of an exposure incident, the University shall make immediately available to an exposed employee a confidential medical evaluation and follow-up, which shall include the following elements:

- Documentation of the route(s) of exposure, and the circumstances under which the exposure occurred
- Identification and documentation of the source individual, unless the employer can establish that identification is infeasible or prohibited by state or local law.
- The source individual's blood if known shall be tested as soon as feasible and after consent is obtained in order to determine HBV, HCV and HIV infectivity. If consent is not obtained, the employer shall establish that legally required consent cannot be obtained. When the source individual's consent is not required by law, the source individual's blood, if available, shall be tested and the results documented.
- When the source individual is already known to be infected with HBV or HIV, testing for the source individual's known HBV or HIV status need not be repeated.
- Results of the source individual's testing shall be made available to the exposed employee, and the employee shall be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual within the confines of PA Act 148.
- Collection and testing of the exposed individuals blood for HBV and HIV status.
- The exposed employee's blood shall be collected as soon as feasible and tested after consent is obtained.
- If the employee consents to baseline blood collection, but does not give consent at that time for HIV serologic testing, the sample shall be preserved for at least 90 days. If, within 90 days of the exposure incident, the employee elects to have the baseline sample tested, such testing shall be done as soon as feasible.
- Post-exposure prophylaxis, when medically indicated, as recommended by the U.S. Public Health Service.
- Counseling - done prior to collection of blood.

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- Evaluation of reported illnesses

8.4 Information provided to the Healthcare Provider - the University shall ensure that the healthcare professional responsible for the employee's Hepatitis B vaccination is provided with a copy of this regulation.

The University shall ensure that the healthcare professional evaluating an employee after and exposure incident is provided with the following information:

- 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 exposure occurred
- Results of the source individual's blood testing, if and when available
- Medical records relevant to the appropriate treatment of the employee including vaccination status, which are the University's responsibility to maintain.

8.5 Healthcare Professional's Written Opinion - The employer shall obtain and provide the employee with a copy of the evaluating healthcare professional's written opinion within 15 days of the completion of the evaluation.

8.5.1 The healthcare professional's written opinion for Hepatitis B vaccination shall be limited to whether Hepatitis B vaccination is indicated for the employee, and if the employee has received such vaccination.

8.5.2 The healthcare professional's written opinion for post-exposure evaluation and follow-up shall be limited to the following information:

- That the employee has been informed of the results of the evaluation
- That the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.

8.5.3 All other findings or diagnoses shall remain confidential and shall not be included in the written report.

8.6 Recordkeeping

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9.0 COMMUNICATION OF HAZARDS

The universal biohazard symbol shall be used throughout the University to indicate the presence of blood or other potentially infectious materials and shall be affixed to containers of infectious waste, refrigerators and freezers containing these materials, containers used to transport these materials, contaminated equipment and at the entrances of areas where these materials are used or stored.

10.0 INFORMATION AND TRAINING

- 10.1 All custodial services employees shall attend a training program which explains the hazards of working with blood and other potentially infectious materials and the methods of compliance used by the University to minimize this exposure. It shall be the responsibility of the Heads of each Administrative unit to ensure that their at-risk employees attend the training
- 10.2 Initial training shall be provided to all at-risk employees before they begin activities that could expose them to blood or OPIM. Refresher training is to be provided annually or, in the event of employee reassignment, training on new tasks or procedures shall be provided at the time of such reassignment. This training may be presented in a variety of ways.
- 10.3 Training shall focus on Universal Precautions for the clean-up of blood and OPIM.
- 10.4 The training shall also include, but not be limited to the following:
 - A copy of the OSHA Bloodborne Pathogen standard and an explanation of its contents.
 - A general explanation of the epidemiology and symptoms of bloodborne diseases.
 - An explanation of the modes of transmission of bloodborne pathogens.
 - An explanation of the University's exposure control plan and the means by which an employee can obtain a copy of the plan.
 - An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials.
 - An explanation of the use and limitations of the method that will prevent or reduce exposure, including appropriate work practices and personal protective equipment.
 - Information on the types, proper use, location, removal, handling, decontamination and disposal of personal protective equipment.
 - Information on the basis for selection of personal protective equipment.
 - Information on the Hepatitis B vaccine as described in section VI of this document.

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- Information on the appropriate actions to be taken and persons to contact in an emergency involving blood or other potentially infectious materials.
- An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available.
- An explanation of pertinent signs and warning labels in use at the University.
- An opportunity for questions and answers.

10.5 Training records shall be maintained by the OPP Safety Office and Environmental Health and Safety. Such records shall be retained for a minimum of three years.

11.0 ANNUAL REVIEW

This Exposure Control Plan is reviewed by the OPP Safety Office on an annual basis and updated as needed to reflect changes in University policies and procedures.

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Appendix A

Some Grade 9 and 10 custodial services employees who work in the following buildings has been determined to have an occupational exposure to bloodborne pathogens:

Moderate Risk

Recreation Hall

White Building

Lasch Building

High Risk

Centre Medical Science

Noll Lab

Student Health Center