POLICY NUMBER: S-003

TITLE: EXPOSURE CONTROL PLAN

1.0 PURPOSE

In accordance with the OSHA Bloodborne Pathogens Standard, 29 CFR 1910.1030, the following Exposure Control Plan (ECP) has been developed for the Research and Development Department of the VA Pittsburgh Healthcare System (VAPHS). The ECP is designed to minimize exposure to bloodborne pathogens. Bloodborne pathogens are defined as *pathogenic microorganisms that are present in human blood, human body fluids, human tissues or other potentially infectious materials.* The ECP covers the Principal Investigators and their staff that may reasonably anticipate skin, eye, other 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 VAPHS.

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

- 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 cell 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; the Biosafety in Microbiological and Biomedical Laboratories [BMBL] 5th edition has additional information).

Implementation of the ECP is monitored and coordinated by the Biosafety Officer for Research. Questions or concerns can be addressed to the Biosafety Officer at 412-360-2842.

2.0 REVISION HISTORY

R&D Committee Approval Date	Revision #	Change	Reference Section(s)	Effective Date
January 23, 2018	1.6	Annual certification for equipment; personnel must trial Safety devices; update name of EPA web page.	Section 5.3.2; Section 5.3.3; Section 5.4.8	January 26, 2018
January 24, 2017	1.5	Minor modifications to wording.	Entire document	January 27, 2017
January 26, 2016	1.4	Minor clarifications to website links and titles of memorandums.	Entire document	January 29, 2016
January 27, 2015	1.3	Minor clarifications to titles of memorandums; rewording on incident information needed in injury database.	Entire document; Section 7.2	January 30, 2015

January 14, 2014	1.2	Minor clarifications to telephone numbers, titles, etc. Titles of memorandums added.	Entire document	January 16, 2014
November 27, 2012	1.1	Minor clarifications to website links, telephone numbers; Information added regarding need for staff to trial sharps devices if they work on BSL-2 agents	Sections 5.2, 5.3.3 and 7.1.3	November 28, 2012
October 25, 2011	1.0	Minor clarifications to website links, telephone numbers, titles, etc.	Entire document	November 1, 2011
November 23, 2010	N/A	New Policy		February 2, 2011

3.0 SCOPE

This policy applies to all research conducted at or under the auspices of the VAPHS.

4.0 BLOODBORNE PATHOGEN EXPOSURE DETERMINATION

A bloodborne pathogen exposure determination is made without regard to the use of personal protective equipment. The purpose of an exposure determination is to identify the VAPHS job classifications that are required to comply with this ECP. Each Principal Investigator must maintain a list of job classifications and/or job descriptions under their supervision that may have occupational exposure to bloodborne pathogens. Principal Investigators are responsible to enforce compliance with this ECP for all applicable employees. VAPHS employees that have patient contact, such as physicians, nurses, physical therapists, etc. are covered by the Medical Center Memorandum (MCM) IC-007 Blood Borne Pathogen Standard (BBPS) Exposure Control Plan.

5.0 COMPLIANCE METHODOLOGIES

5.1 Universal Precautions

Universal Precautions will be observed at the VAPHS in order to prevent contact with blood or OPIM. All blood or OPIM will be considered infectious.

5.2 Exposure Control Plan

Employees covered under this ECP must receive an explanation of this ECP during their initial training session. It must also be reviewed in annual refresher training. All employees have the opportunity to review this plan at any time during their work shifts by contacting the Biosafety Officer for Research 412-360-2842 or viewing it on the Research Office website at http://www.pittsburgh.va.gov/Research/Research_Safety_and_Security.asp. If requested by an

employee, a copy of the ECP will be provided. The Biosafety Officer is responsible for reviewing and updating the ECP annually or more frequently, if necessary, to reflect new or modified tasks and procedures that affect occupational exposure.

5.3 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.

5.3.1 Sharps Containers. The person generating a contaminated sharp is responsible to dispose of 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. Only approved sharps containers are to be utilized.

5.3.2 Biosafety Cabinets. An individual working in a biosafety cabinet shall disinfect the work surface of the biosafety cabinet before and 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 Biosafety Officer is responsible for arranging. This certification is also required prior to initial cabinet use or prior to use after any cabinet relocation.

5.3.3 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** for employees in clinical labs. It is recommended that engineered sharps devices be utilized in all applications at the VAPHS when there is potential for occupational exposure to any OPIM involving sharps. It is the responsibility of those with supervisory or managerial duties at the VAPHS 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 device category is available from the International Healthcare Worker Safety Center at the University of Virginia Health System at http://www.medicalcenter.virginia.edu/epinet/new/safetydevice.html. Increased cost is not an acceptable rationale for continued use of a non-safety device. Samples of engineered sharps devices may be provided to Research personnel when sharps are used with BSL-2 agents, both in the laboratory and in animals. Research personnel must trial the devices. If the device does not work and in fact, creates additional hazards while in use with potentially infectious materials, then documentation of the hazards must be provided to the Biosafety Officer and an exemption may be requested.

5.3.4 Hand Washing Facilities are available to employees with a potential exposure to human blood or OPIM. 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 (see MCM IC-011 Hand Hygiene Guideline). 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**.**

5.4 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.

5.4.1 Work Area Restrictions-General: In work areas where there is a reasonable likelihood of exposure to human blood or OPIM, 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 human blood or OPIM are present;
- Mouth pipetting is prohibited; automatic or manual pipetting devices must be provided.
- All procedures will be conducted in a manner that will minimize splashing, spraying, splattering, and generation of droplets of human blood or OPIM.

5.4.2 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 bloodborne pathogens and who comply with the entry and exit procedures shall be allowed to enter;
- Vacuum lines shall be protected with liquid disinfectant traps and vacuum protection filters that are checked and replaced as necessary;
- Each laboratory shall contain a facility for hand washing and an eye wash station.

5.4.3 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.

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

5.4.5 Specimen Containers: Specimens of human blood or OPIM 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.

5.4.6 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 equipment which remains contaminated. The labels shall state which portions remain contaminated. The equipment should also be wrapped or contained to prevent employee exposure to contaminants.

5.4.7 Personal Protective Equipment (PPE): All PPE used in the VAPHS research laboratories will be provided without cost to employees. PPE will be chosen based on the anticipated exposure to human blood or OPIM. The protective equipment will be considered appropriate only if it does not permit human blood or OPIM 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 PPE 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 PPE. All garments that are penetrated by blood shall be removed immediately or as soon as feasible. All PPE 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 human blood or OPIM. Employees shall wash their hands immediately or as soon as feasible after removal of gloves or other PPE.

5.4.8 Housekeeping: All contaminated work surfaces will be decontaminated before work begins, after completion of procedures, and immediately or as soon as feasible after any spill of human blood or OPIM, as well as at the end of the work shift. The disinfecting agent should be selected based on the area or substance to be decontaminated as well as the biological agents to be inactivated. Information concerning the utility and selection of appropriate disinfectants may be obtained by visiting the EPA Pesticide Registration website at http://www.epa.gov/oppad001/chemregindex.htm. 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.

5.4.9 Regulated Waste includes liquid or semi-liquid human blood or OPIM, contaminated items that would release human blood or OPIM if compressed, and items caked with dried human blood or OPIM and are capable of releasing these infectious agents during handling and with use of sharps. The appropriate disinfectant should be poured carefully into the regulated liquid wastes to inactivate the biohazardous agent. Following sufficient contact time (dictated by type of disinfectant used), the disinfected liquid may be disposed in the sanitary sewer. This should be done carefully to avoid aerosol generation and splashing. 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°C, 60-90 minutes) should be treated in this manner prior to removal from the premises. All sharps shall be discarded as soon as feasible in sharps containers that are located in the facility. As stated earlier, the sharps containers must be labeled with the biohazard symbol and must be puncture-resistant and leak resistant. The sharps container must never be discarded directly in regular trash bags.

5.4.10 Laundry Procedures: Laundry contaminated with blood or OPIM 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 PPE to prevent contact with human blood or OPIM.

6.0 HEPATITIS B VACCINATION PROGRAM

It is highly recommended that all personnel with occupational exposure to bloodborne pathogens and OPIM receive the Hepatitis B vaccination. All VAPHS personnel who have been identified as having a potential exposure to human blood or OPIM, can begin the vaccination series within ten working days of initial assignment unless the employee has already been vaccinated. For those employees that want to decline the Hepatitis B vaccination series, they must sign a ***Hepatitis B Vaccination Acceptance/Refusal*** form. This form verifies that personnel were informed of the potential health hazards that Hepatitis B virus represents in their work environment. Employees consenting to vaccination will receive the Hepatitis B vaccine (HBV) at no cost. Vaccinations are provided through Occupational Health. Employees who initially decline the HBV 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. Additional information on occupational exposures to bloodborne pathogens can be found in MCM IC-006 Occupational Exposure to Bloodborne Pathogens Management and Post-Exposure Prophylaxis for Health-Care Personnel (HCP).

Pre-screening is not necessary for Hepatitis B, however, baseline anti-Hepatitis C virus (HCV) and human immunodeficiency virus (HIV) screens are offered at the time of employment if laboratory employees are assigned to work with these agents.

7.0 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.

7.1 In the Event of Exposure to Bloodborne Pathogens:

7.1.1 Immediately wash the exposed area with soap and water. For eye and mucous membrane exposure, rinse with water for 10 to 15 minutes.

7.1.2 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.

7.1.3 Immediately following washing, employees should contact the following medical providers for post-bloodborne pathogens exposure evaluation and/or medical treatment:

During Business Hours:
VAPHS Occupational Health
University Drive: Building 1, first floor, room 1A246, 412-360-3556

After Hours:
Emergency Department-University Drive, 412-360-6322

7.1.4 Other Post-Exposure Information:

- Exposed employees will be offered the option of having blood collected for testing of the employee's 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 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.

7.1.5 Documentation:
The exposed employee is responsible for reporting the exposure and must initiate a CA-1 through the online Automated Safety Incident Surveillance Tracking System (ASISTS) program as soon as the injury occurs. If the employee is incapacitated, someone acting on his or her behalf can submit the CA-1.

7.2 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 will initiate the incident report and record the details of the bloodborne pathogens exposure incident including the route of exposure, the infective agent, and an estimate of the dosage. Information on the forms needed and detailed reporting procedures are provided in MCM HR-023 On-The-Job Injury Response. The supervisor must also notify a Worker's Compensation Specialist when the employee loses time from work.

If the exposure involves a sharp, the supervisor must ensure that the following sharps exposure information is indicated within the ASISTS database:

1. The type and brand of device involved in the incident.

2. The location of the incident (department or work area).
3. Description of the incident.

The ASISTS injury management program automatically maintains a log of sharps injuries. The program creates this log in a manner that protects the privacy of employees. The data collected in the ASISTS database will be evaluated to decrease future incidences.

8.0 TRAINING PROGRAM

Training for all employees will be conducted prior to initial assignment of tasks where occupational exposure to bloodborne pathogens may occur. Bloodborne pathogens training is available online. Contact the Research Office for additional information (412-360-2386).

****All employees covered by this ECP 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 PPE;
- Spill cleanup procedures;
- Accident and Exposure follow-up procedures;
- Elements of ***29 CFR 1910.1030*** (the Bloodborne Pathogens Standard);
- Review of the Exposure Control Plan;
- Hepatitis B virus vaccinations; and,
- Methods of compliance.

9.0 RECORDKEEPING PROGRAM

VAPHS Research employee training records are maintained by the Research and Development Coordinator/ Program Support Assistant. A Sharps Injury Log is maintained by the ASISTS database. Hepatitis B virus inoculation records and employee medical records are maintained by Occupational Health (412-360-3556).

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Gretchen L. Haas, PhD
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