Bloodborne Pathogens Exposure Control Plan

Approval:

Signature on file 9/23/2015

Chair, Institutional Biosafety Committee Date

Signature on file 9/21/2015

Director of Environmental Health & Safety Date
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1.0 PURPOSE AND SCOPE
In accordance with federal regulations (OSHA’s 29CFR1910.1030), Woods Hole Oceanographic Institution (WHOI) has established work practice controls/precautions, engineering controls, and employee training programs to minimize occupational exposure to bloodborne pathogens (BBP). This plan applies to all WHOI personnel who are potentially exposed to blood or other potentially infectious materials during work activities.

2.0 ROLES AND RESPONSIBILITIES
2.1 Principal Investigators (PIs)/Supervisors
PIs/Supervisors are responsible for ensuring that the provisions of this plan are followed by all employees with potential occupational exposure to BBP. This includes making a copy of this Bloodborne Pathogens Exposure Control Plan (ECP) available to employees, ensuring compliance with this plan, ensuring that employees are properly trained, and performing follow-up procedures for all exposure incidents. The PI/Supervisor is responsible for ensuring that employees are trained in safe work practices, use of personal protective equipment, and handling and storage of BBP. The PI/Supervisor is responsible for determining the exposure potential for their work space and employees (see section 5.0).

2.2 Employees
Employees are responsible for performing tasks and procedures in a manner that minimizes or eliminates employee exposure and complying with this ECP.

2.3 Environmental, Health & Safety Office (EH&S)
EH&S is responsible for maintaining the ECP, for providing assistance with ECP implementation, and for providing annual BBP training. EH&S will review the ECP yearly and update as necessary.

2.4 Institutional Biosafety Committee (IBC)
The IBC is responsible for overseeing the implementation of the ECP. As necessary or requested, the IBC will review exposure determinations completed by the PI/supervisor.

3.0 DEFINITIONS
Blood means human blood, human blood components, and products made from human blood.
Bloodborne Pathogens means 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) and human immunodeficiency virus (HIV).
Broken glass containers are rigid cardboard boxes with plastic liners designed for the safe disposal of broken laboratory glassware (this does not include chemical bottles which are disposed in the large yellow containers in lab areas). These should be used for disposal of broken glass not contaminated with chemical, bio-hazardous or radioactive materials. Broken glass containers are available through the WHOI stockroom.
Decontamination means the use of physical or chemical means to remove, inactivate, or destroy BBP on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use or disposal.
Engineering Controls means controls that isolate or remove the BBP hazard from the workplace.
Exposure Incident means a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious material that result from the performance of an employee’s duties.
Hepatitis B Vaccination (HBV) is the vaccination to help prevent the hepatitis B virus from infecting an exposed person.

Occupational Exposure means reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee’s duties.

Other Potentially Infectious Materials means (1) the following body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal 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 (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

Regulated Waste means liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.

• Sharp classes: Classification of sharps based on whether they are contaminated with chemical, biohazardous, radioactive materials, or a mixture of more than one class of contaminant.
  • Bio-hazardous contaminated sharps: Sharps contaminated with bio-hazardous materials. Items such as Pasteur pipettes, microscope slides or cover slips, and broken glassware should be disposed of as bio-hazardous sharps if they have been in contact with any agent of biological origin that has the capacity to produce deleterious effects on humans.
  • Radioactive contaminated sharps: Sharps contaminated with radioactive materials.
  • Mixed contaminated sharps: Sharps contaminated with more than one class of waste material (e.g., chemical, biohazard, and/or radioactive)
  • Non-contaminated sharps: Sharps free of chemical, biological, or radioactive materials or sharps with only residual chemical contamination.

Sharps containers are rigid plastic container with fitted lid designed for safe handling and storage of sharps waste. A sharps container must be leak resistant, puncture-resistant, and break-resistant. Sharps containers are available through the WHOI stockroom.

Sterilize means the use of a physical or chemical procedure to destroy all microbial life including highly resistant bacterial endospores.

Universal precautions are infection control guidelines designed to protect workers from exposure to diseases spread by blood and certain body fluids.

Work Practice Controls means controls that reduce the likelihood of exposure by altering the manner in which a task is performed.

4.0 ANNUAL REVIEW AND UPDATE
The ECP shall be reviewed annually and updated as necessary.
5.0 EXPOSURE DETERMINATION
The OSHA Standard (29 CFR 1910.1030) requires that WHOI assess whether or not employees are subject to occupational exposure to blood associated pathogenic microorganisms, without regard to personal protective clothing and equipment.

In general, the exposure determination is made by reviewing job classifications within the work environment and identifying the exposure groups, such as researchers who work with human blood and blood cells and First Aid Response Team. The specific tasks and procedures causing the highest exposure potential should be listed.

The PI/Supervisor is responsible for determining exposure potential in the work space. Use the Exposure Determination Form (Attachment C) or document the necessary information on an equivalent form, keep a copy with the ECP in the laboratory or work space, and provide a copy of the completed form to EH&S and the IBC.

6.0 EXPOSURE CONTROLS
6.1 Engineering Controls
When feasible, engineering controls are preferred over other types of controls, such as personal protective equipment, and may include: puncture resistant sharps disposal containers, engineered medical safety devices, laboratory hoods, etc.

6.2 Universal Precautions and Safe Work Practices
The Centers for Disease Control and OSHA have published recommendations promoting the use of universal precautions.

- Eating, drinking, smoking, applying cosmetics or lip balm and handling contact lenses are prohibited in work areas where there is potential for exposure to BBP.
- Barrier protection should be used at all times to prevent skin and mucous membrane contamination with blood, body fluids containing visible blood, or other body fluids. Examples of barrier protection include disposable lab coats, gloves, and eye and face protection.
- The type of barrier protection used should be appropriate for the type of procedures being performed and the type of exposure anticipated.
- Gloves are to be worn when there is potential for hand or skin contact with blood, other potentially infectious material, or contact with items and surfaces contaminated with these materials.
- Wear face protection (face shield) during procedures that are likely to generate droplets of blood or body fluid that could contact the mucous membranes of the mouth, nose and eyes.
- Wear protective body clothing (disposable laboratory coats (Tyvek)) when there is a potential for splashing of blood or body fluids.
- Wash hands or other skin surfaces thoroughly and immediately if contaminated with blood, body fluids containing visible blood, or other body fluids to which universal precautions apply.
- Wash hands immediately after gloves are removed.
- Used needles, disposable syringes, scalpels blades, pipettes, and other sharp items are to be placed in the properly designated puncture resistant containers marked with a biohazard symbol for disposal. Refer to WHOI’s Sharps Handling and Disposal Procedure (http://ehs.whoi.edu/ehs/occupational/whoi.sharps.pdf). Use caution when working with sharps. Contaminated needles and other contaminated sharps should not be bent, recapped or removed.
- Mouth pipetting/suctioning of blood or other infectious materials is prohibited.
- Splashing, spraying or other actions generating droplets of blood or other infectious materials should be minimized.
6.3 Personal Protective Equipment

Personal protective equipment (PPE) will be used when occupational exposure to BBP and other potentially infectious materials are expected in the work area.

- **Gloves**: Nitrile gloves are available in the stockroom and are the minimum protection for hands for use with BBP and other potentially infectious materials.

- **Masks, eye protection and face shields**: Masks (surgical style or masks rated N95) in combination with eye protection (such as goggles or safety glasses with side shields, or chin-length face shields) are to be worn when exposed to potential splashes, spray, or droplets of blood or other potentially infectious materials.

- **Protective clothing**: The need for protective clothing (coveralls, aprons, gowns, etc.) will depend upon the task and exposure potential.

7.0 SHARPS WASTE DISPOSAL

Please refer to the Sharps Handling and Disposal Procedure ([http://ehs.whoi.edu/ehs/occsafety/sharps.pdf](http://ehs.whoi.edu/ehs/occsafety/sharps.pdf)). All sharps and regulated waste should be segregated by class, as there are differences in disposal methods and costs. Employees should follow these recommendations when handling sharps:

- Minimize handling (do not attempt to bend or break needles).
- Dispose of sharps as a single unit immediately after use (do not separate needles from syringes or blades from handles).
- Do not recap needles or re-sheath blades by hand.
- Do not pick up contaminated broken glass by hand - use brush and dustpan, tongs, forceps, etc.
- No container should be opened, emptied, manually cleaned, or handled in any other manner that could expose employees to the risk of injury.
- Sharps containers are available through the WHOI stockroom.

7.1 Non-contaminated sharps: Sharps (excluding hypodermic needles) with residual chemical on them may be considered non-contaminated. Non-contaminated sharps should be placed in a rigid, plastic sharps container and labeled "Non-contaminated Sharps". When the container is ¾ full, discard in the regular trash. It is important that no sharps be protruding from the container and that no other contamination or hazard warning labels be present.

7.2 Chemical contaminated sharps: All chemical contaminated sharps (i.e., more than residual chemical contamination) should be placed in a rigid, plastic sharps container and labeled according to their hazard. When the container is ¾ full, request a waste pickup by e-mailing wastepickup@whoi.edu or submit a sharps waste pickup request on the EH&S website ([http://ehs.whoi.edu](http://ehs.whoi.edu)).

7.3 Biohazard Sharps: Place biological contaminated sharps in a red, rigid, plastic sharps container large enough to safely secure the item. The container must display the biohazard symbol and should have a fixed top so that sharps can not be removed after placed in the container. Follow applicable requirements in the Biosafety Manual (BSM).

7.4 Radioactive Sharps: Label the sharps container "Radioactive Sharps Waste" and attach a radioactive warning label. Note on the container the identity of the isotope, the activity, the date, the laboratory location, and the PI/Supervisor. Follow applicable requirements in the Radiation Safety
7.5 **Mixed Contaminant Sharps**: If sharps waste is contaminated with more than one class of hazardous material, contact EH&S for assistance (x3347). In general, mixed sharps waste will need to be labeled for each specific hazard.

8.0 **BIOHAZARDOUS WASTE**

8.1 Biohazardous Materials Rendered Noninfectious
Biological materials and items should be decontaminated to destroy or inactivate the biological agent. This can be done using different methods including, but not limited to, chemical or steam sterilization. Follow applicable requirements in the BSM.

8.2 Biological Materials Not Rendered Noninfectious
Biological waste that is not or cannot be decontaminated to destroy the infectious characteristics must be handled in the following manner:
- Placed in a red bag,
- Marked with the biohazard symbol,
- Placed into a rigid, leak resistant container,
- Sealed and labeled with generator’s name, department and WHOI address, and
- Contact wastepickup@whoi.edu to request waste pickup or contact EH&S, x3347.

9.0 **HAZARD COMMUNICATION**

9.1 Space Hazard Placard
The door to each space using biological materials that meet the definition of a bloodborne pathogen or other potentially infectious material must have a Space Hazard Placard identifying the specific biological hazard. The Space Hazard Placard template and guideline is located on the EH&S website (http://ehs.whoi.edu/ehs/DesktopDefault.aspx?tabindex=2&tabid=3&itemID=47).

9.2 Labels
All biological materials that meet the definition of a bloodborne pathogen or other potentially infectious material must be labeled with the biohazard symbol. This includes bottles, boxes, sharps containers, or other device that contains a BBP. EH&S can supply these labels.

9.3 Training
Employees who handle biological materials as part of their work responsibilities must be trained on this ECP and annually thereafter. EH&S provides this training.

10.0 **SPILL RESPONSE TO BLOOD**
For any type of spill of blood, body fluids contaminated with blood, or other infectious materials, follow these steps:
- Wear nitrile gloves, eye protection, and lab coat/coverall.
- Keep unauthorized personnel away from the area.
- Allow for aerosols to settle.
- Absorb blood with paper towels or sorbent pads and place in a double-layered biohazard bag.
- Collect any sharp objects with forceps or other method to avoid using hands and place in a sharps container.
• Spray the spill area with a 10% bleach solution (1 part bleach: 9 parts water) and allow disinfecting by air-drying for 25 minutes.
• After the 25 minute contact time, wipe the area down with disinfectant-soaked paper towels or pads.
• Discard all disposable materials used to clean the spill site and any contaminated personal protective equipment into a biohazard bag.
• Wash hands and any exposed skin areas with disinfectant or antiseptic soap and water.
• For large blood spills, call x2911 for assistance.

11.0 POST EXPOSURE EVALUATION
All occupational exposures to BBP or other infectious materials will be regarded as serious and must be immediately reported to the PI/supervisor and EH&S for evaluation. Exposure assessment guidelines may include the following:
• Carefully preserve the exposure source and any associated biological material.
  • Assess the situation and determine if the incident constitutes an occupational exposure to a biological material. Complete an accident/incident form on the EH&S website (http://ehs.whoi.edu/ehs/DesktopDefault.aspx?tabindex=0&tabid=1&itemID=15).
• As appropriate, the employee will be evaluated by a physician.

12.0 RECORDKEEPING
12.1 Medical Records: The occupational medical physician/center will maintain records for each employee with occupational exposure.

12.2 Training Records: Training records will be maintained by EH&S.

12.3 Vaccination Records: The occupational medical physician/center will maintain vaccination records. Vaccination consent and declination forms will be maintained by EH&S.

13.0 HEPATITIS B VACCINATION (HBV)
A vaccine is available for protection from Hepatitis B. While WHOI makes the vaccination available to employees that have potential exposure, accepting vaccination is not a condition of employment. Immunization requires a series of injections of vaccine over a period of time. This vaccine is available at no cost to employees with potential for exposure to BBP and other infectious materials.

The PI/supervisor will ensure that all personnel with potential for occupational exposure to BBP are offered the HBV vaccination in a timely manner. The HBV vaccination will be offered to personnel as a prophylactic treatment or made available post-exposure. To schedule a vaccination or a medical consult concerning exposure risk, contact EH&S at x3347 and complete the consent form (Attachment A). If you decide not to be vaccinated but later change your mind, you may still receive the vaccination at no cost. Each employee who declines the HBV vaccination series is required to sign a declination form (Attachment B), which is retained by EH&S. Copies of consent and declination forms must be sent to the EH&S office.
ATTACHMENT A

HEPATITIS B VACCINATION CONSENT FORM

Employees covered by the OSHA Bloodborne Pathogens Standard (29 CFR 1010.1030)

INSTRUCTIONS: Every employee covered by the OSHA Bloodborne Pathogens Standard must complete either this form or the Hepatitis B Vaccination Declination Form. ONLY ONE OF THESE TWO FORMS SHOULD BE COMPLETED.

I understand that due to my potential occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I agree to be vaccinated with hepatitis B vaccine, at no charge to myself. I understand that I will receive the complete series of injections required for immunization to HBV. I understand the nature of HBV infection which may cause death. Most people with HBV recover completely, but they may become chronic carriers of the virus. Most of these people have no symptoms, but can continue to transmit the disease to others. Some may develop chronic active hepatitis and cirrhosis. HBV also appears to be a causative factor in the development of liver cancer. I understand that there are contraindications to HBV vaccination which include, but are not limited to: 1) hypersensitivity to any component of the vaccine (where recombinant HBV vaccine is used, hypersensitivity to yeast is a contraindication), and 2) pregnancy or lactation. I understand that additional information regarding the HBV vaccination will be provided to me by the healthcare provider at the time of vaccination.

______________________________________________________________________________
Employee Name (print), Employee Number

______________________________________________________________________________
Employee Signature, Date

______________________________________________________________________________
Supervisor Name (print), Signature and Date

______________________________________________________________________________
Healthcare Provider Name (print), Signature and Date

Copy to Employee's Departmental File
ATTACHMENT B

HEPATITIS B VACCINATION DECLINATION FORM
(MANDATORY)

Employees covered by the OSHA Bloodborne Pathogens Standard (29 CFR 1010.1030)

INSTRUCTIONS: Every employee covered by the OSHA Bloodborne Pathogens Standard must complete either this form or the Hepatitis B Vaccination Consent Form. ONLY ONE OF THESE TWO FORMS SHOULD BE COMPLETED.

I understand that due to my potential occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be immunized with hepatitis B vaccine, at no charge to myself. However, I decline hepatitis B immunization 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 want to be immunized with hepatitis B vaccine, I can receive the immunization series at no charge to me at that time.

______________________________________________________________________________
Employee Name (print), Employee Number

______________________________________________________________________________
Employee Signature, Date

______________________________________________________________________________
Supervisor Name (print), Signature and Date
ATTACHMENT C

Exposure Determination Form

The PI/supervisor completes this form. Use a separate form for each person. Attach additional pages if necessary. Contact EH&S for assistance, x3347.

PI/supervisor: ____________________________________________
Employee Name: __________________________________________
Employee classification (e.g., technical staff, graded staff, Post-Doctoral researcher, graduate student, guest student, first aid responder): __________________________________________

Tasks and Procedures: Identify the work activity with a potential for BBP exposure and list possible exposure controls.

☐ __________________________________________
☐ __________________________________________
☐ __________________________________________
☐ __________________________________________
☐ __________________________________________
☐ __________________________________________
☐ __________________________________________
☐ __________________________________________

Training Provided: List the specific training provided by EH&S and the PI/Supervisor to the individual listed above.

______________________________________________________________________________
______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

Employee Signature                      Date

PI/Supervisor Signature                  Date