



OCCUPATIONAL EXPOSURE TO BLOODBORNE PATHOGENS

EXPOSURE CONTROL PLAN

_____ (Department/ Group)

_____ (Date)

Table of Contents

- I. Introduction**
- II. Determination of Exposure**
- III. Definitions**
- IV. Methods of Exposure Control**
 - A. Universal Precautions
 - B. Work Practice and Engineering Controls
 - C. Engineered Sharps Injury Protection
 - D. Personal Protective Equipment
 - E. Housekeeping/Waste/Laundry
- V. Employee Healthcare Procedures**
 - A. Hepatitis B Vaccination
 - B. Exposure Incident, Post-Exposure Evaluation, and Follow-up
- VI. Communication of Hazards to Employees**
 - A. Labels and Signs
 - B. Information and Training
- VII. Recordkeeping**
 - A. Medical Records
 - B. Training Records
- VIII. Administrative Responsibilities**
- IX. Review of Exposure Control Plan**

Approved by: Frank Cantone
Last revised by: Dennis Shaw
Revision date: 09/17/2012

ECP_RevisedFormat
Page 1 of 11

I. Introduction

Description

To help protect workers from the health hazards associated with occupational exposure to pathogenic organisms present in blood and other body fluids, the Occupational Safety and Health Administration (OSHA) implemented the regulation, "Occupational Exposure to Bloodborne Pathogens", contained in rule 29 Part 1910.1030 of the Code of Federal Regulations (CFR).

Purpose

The major intent of this regulation was to minimize or prevent the transmission of bloodborne diseases including, but not limited to, Human Immunodeficiency Virus (HIV), Hepatitis B virus (HBV), and Hepatitis C virus (HCV). As part of this effort, the **(Group/Department)** has completed this Exposure Control Plan to address responsibilities, exposure determination, and methods of compliance.

II. Determination of Exposure

Each department/unit/group at Cornell University must determine if there are certain work tasks or job classifications that can result in occupational exposure to bloodborne pathogens. *This exposure determination must be made without regard to the use of personal protective equipment.*

Categories of exposure include:

- Job related tasks or procedures that have the potential to involve contact or mucous membrane exposure with blood or other potentially infectious materials, or the potential for spills or splashes. This can include research, teaching, and clinical activities that involve the use of human blood, any unfixed tissue or organ, mammalian cell lines, human cell lines, green monkey cells, other primate cell lines or other potentially infectious materials.
 - Some relevant job categories include physicians, nurses, emergency responders, police officers, athletic trainers, laboratory workers, and researchers.
- Tasks that do not normally involve planned exposure to human blood, or other potentially infectious materials, but potential exposure may result from unplanned tasks, and be a condition of employment.
 - Some relevant job categories include custodial staff, plumbers, and environmental health and safety staff.
- Tasks that do not involve exposure to human blood, or other potentially infectious materials.
 - The list can include office staff, grounds personnel, and maintenance staff
However, occupational exposure in this category, may result from "Good Samaritan Acts", such as helping a coworker with managing a cut or nosebleed. This is not considered official duties and is not covered under this plan.

Specify job classifications, tasks/procedures and the frequency of exposure for the individuals(s) in each Department/Unit/Group. (e.g., Laboratory Assistant (routine), Custodian (Occasional))

- | | |
|----------|-----------|
| 1) _____ | 6) _____ |
| 2) _____ | 7) _____ |
| 3) _____ | 8) _____ |
| 4) _____ | 9) _____ |
| 5) _____ | 10) _____ |

III. Definitions

Approved by: Frank Cantone Last revised by: Dennis Shaw Revision date:09/17/2012	ECP_RevisedFormat Page 2 of 11
--	-----------------------------------

Blood: Human blood and its components, and products that are derived from blood.

Bloodborne Pathogens: Pathogenic microorganisms including, but not limited to, Hepatitis B and C viruses, and Human Immunodeficiency virus, that are present in human blood and that can cause disease in humans.

Engineering Controls: Physical changes to work stations, equipment, materials, production facilities, or any other relevant aspect of the work environment that reduce or prevent exposure to risk factors.

Exposure Determination: An employee, who during the course of his or her job duties, may be exposed to blood or other potentially infectious materials.

Occupational Exposure: Described as reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials (body fluids, unfixed tissues and organs, cell lines, etc) that results from the performance of an employee's duties.

Other Potentially Infectious Materials (OPIM): Body cavity fluids such as cerebrospinal, synovial, pericardial, pleural, amniotic, semen and vaginal secretions, saliva and blood from injuries to the mouth or dental procedures, other body fluids, and any body fluid that is visibly contaminated with blood. Unfixed human (living or dead) tissue or organs (other than intact skin); cell, tissue or organ cultures; and blood, organs, and tissues from experimental animals infected with HIV or HBV or human cells.

Universal Precautions: Safeguards or barriers used to minimize or prevent contact with blood or other potentially infectious materials. All blood or other potentially infectious material will be considered infectious for HIV, HBV, HCV, and other bloodborne pathogens regardless of the perceived status of the source individual.

IV. Methods of Compliance or Exposure Control

Supervisors and Principal Investigators must ensure compliance with the Exposure Control Plan. Specific areas to be addressed are the application of universal precautions; appropriate work practices, engineering controls and housekeeping; personal protective equipment; the hepatitis B vaccination; and exposure incidents and post-exposure evaluation.

A. Universal precautions

All blood and other potentially infectious materials (OPIM) must be treated as if they are infectious, and any individuals coming into direct contact with blood or OPIM must take the necessary precautions to protect themselves.

B. Work Practice and Engineering Controls

Work practices and engineering controls are the preferred means to eliminate or minimize exposure to bloodborne pathogens in the workplace. Examine and maintain or replace these controls on a regular schedule to ensure their effectiveness. (e.g., Keep SOPs updated, maintain equipment in good condition, and ensure biosafety cabinets or other mechanical devices as certified as appropriate.)

Approved by: Frank Cantone Last revised by: Dennis Shaw Revision date:09/17/2012	ECP_RevisedFormat Page 3 of 11
--	-----------------------------------

Adequate hand washing facilities with soap and water are available. Employees should wash their hands immediately or as soon as practical after removal of gloves and other protective equipment, after contamination of hands, or contact of unprotected body areas with blood or OPIM. Use a soap that produces a good lather and wash for at least 20-30 sec.

Employees shall use appropriate sanitizing hand cleaner or sanitizing towelettes if soap and water are not available, though they should seek a hand washing facility as soon as possible. (Sanitizers include Purell, and other materials that contain between 60%-70% Ethyl alcohol).

Indicate the location of hand washing facilities and/or the use of hand sanitizers.

Use emergency showers and eyewashes for full body exposures or exposures to the face or mucous membranes.

Indicate the nearest location(s) for the emergency showers and eyewashes.

Do not eat, drink, smoke, apply cosmetics or lip balm, and handle contact lenses in work areas where there is a reasonable likelihood of exposure to blood. Do not keep food and drink in refrigerators, freezers, shelves, or benchtops where blood or OPIM are present.

Minimize splashing, spraying, spattering, and generation of droplets when performing all procedures involving blood or other potentially infectious materials. Use a biological safety cabinet, if necessary, for these laboratory procedures.

Indicate if a biosafety cabinet will be used and identify its location

Do not mouth pipette or suction blood or other potentially infectious materials. Use mechanical devices instead.

Clean and decontaminate surfaces and equipment that have been contaminated with blood or other potentially infectious materials, with a suitable disinfectant.

Immediately, or as soon as possible after use, place contaminated hypodermic syringes, needles, scalpel blades, razor blades, and other items capable of causing puncture wounds, in sharps containers. Contaminated needles and other contaminated sharps must not be bent, sheared, broken, or recapped. However, if recapping of any needle is necessary, for example, as part of a medical procedure or protocol, or if a sharps container is not available, you must use either:

- a) a mechanical device such as forceps to replace the cap on the needle, or
- b) a one-handed "scoop" technique as follows:
 1. Place the cap on a flat surface, and then remove your hand from the cap.
 2. With one hand, hold the syringe and use the needle to "scoop up" the cap.
 3. Once the needle is covered, tighten the cap onto the needle hub by pushing the tip of the cap against an inanimate object, or by pulling the base of the cap onto the hub with the same hand holding the syringe/hub.

Approved by: Frank Cantone Last revised by: Dennis Shaw Revision date:09/17/2012	ECP_RevisedFormat Page 4 of 11
--	-----------------------------------

Please indicate the procedures that would require recapping or removing needles from syringes, and indicate the method used for recapping.

Place items such as gloves, paper towels, bench paper, plasticware, etc. contaminated with blood or other potentially infectious material in red biohazard bags.

Place all specimens of blood and body fluids into well-constructed, appropriately labeled, containers to prevent leaking during collection, handling, processing, storage, and transport.

C. Engineered Sharps Injury Protection

In addition to engineering controls, such as sharps containers, OSHA mandates the use of needleless and engineered sharps injury protection (ESIP) systems to further isolate or remove the bloodborne pathogens hazards. You must consider these systems when using a device to access a vein or artery to withdraw blood or body fluids, or administer medications, for example. Additionally, examine the use of ESIP in other applications where you may desire extra protection.

Evaluate procedures and products (e.g., needleless systems) that would eliminate the need for and use of sharps. If sharps use is unavoidable, consider the use of ESIP systems. ESIP systems include mechanisms that create a barrier, encapsulate, or withdraw the hazard.

Responsible employees should establish a process to identify and select appropriate engineering controls. Define and prioritize the needs of the program. Gather information on products designed to reduce occupational exposures.

Establish screening criteria, tools, and protocols to evaluate the products. Employees who perform the exposure-related tasks must be involved in the testing. Prior to testing, provide training on the safe and proper use of the devices. Suspend testing immediately if the new products cause any injury.

After an adequate testing period, review evaluation forms, select, and purchase the new products.

Use the new products and routinely evaluate the new devices on their effectiveness and appropriateness in the workplace.

If engineered sharps will be used, please identify the process that was used to select the devices.

D. Personal Protective Equipment

Employees should choose the appropriate personal protective equipment based on the anticipated exposure. At a minimum, wear gloves, made of latex, nitrile, or vinyl, when you have the potential to

Approved by: Frank Cantone Last revised by: Dennis Shaw Revision date:09/17/2012	ECP_RevisedFormat Page 5 of 11
--	-----------------------------------

contact blood or OPIM, and when handling or touching contaminated items or surfaces. Personnel with latex sensitivities should consider using gloves made of nitrile or vinyl. Do not wash and reuse disposable gloves. You may decontaminate heavy-duty vinyl or rubber gloves for reuse if they remain in good condition. Replace any gloves if they are torn, punctured, or exhibit other signs of deterioration.

Wear lab coats, gowns, or aprons to protect clothing from potential contamination. If blood or OPIM penetrate a garment, remove the garment immediately or as soon as feasible.

Wear appropriate face and eye protection, such as splash-proof goggles or safety glasses, and a face mask, to cover the mouth and nose, whenever work procedures or splashes pose a hazard to the eye, nose, or mouth.

Remove all personal protective equipment before leaving the work area, and properly secure these materials for storage, washing, decontamination, or disposal.

Define the type of personal protective equipment that will be used during specific at-risk procedures.

- | | | |
|--|---|--------------------------------------|
| <input type="checkbox"/> Hair Bonnet | <input type="checkbox"/> N95 Respirator | <input type="checkbox"/> Coveralls |
| <input type="checkbox"/> Face Mask | <input type="checkbox"/> Gown | <input type="checkbox"/> Boots |
| <input type="checkbox"/> Laboratory Coat | <input type="checkbox"/> Shoe Covers | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Gloves | <input type="checkbox"/> Goggles | |
| <input type="checkbox"/> Safety Glasses | <input type="checkbox"/> Face Shield | |

E. Housekeeping/Waste/Laundry

Decontaminate work surfaces with an appropriate disinfectant after completion of procedures, immediately when overtly contaminated, after any spill of blood or OPIM and at the end of the work day when surfaces have become contaminated.

List the type of disinfectants to be used.

- | | |
|--|--|
| <input type="checkbox"/> 1:10 dilution of bleach | <input type="checkbox"/> Quaternary ammonium |
| <input type="checkbox"/> Rely On | <input type="checkbox"/> MB-10 |
| <input type="checkbox"/> 70% alcohol | <input type="checkbox"/> Spor-Klenz |
| <input type="checkbox"/> Other _____ | |

Inspect and decontaminate, on a regular basis, reusable biohazard waste receptacles such as bins, pails, and cans.

Use a mechanical device such as tongs, forceps, a brush and dust pan, or even two pieces of cardboard, to pick up contaminated broken glassware; do not pick up sharps items with your hands, even if wearing gloves. Store or process any reusable sharps in a way that ensures safe handling.

Sharps (e.g., needles, syringes, scalpels, razor blades, glass pipettes, glass blood vials, glass slides and cover slips, broken glass) and non-sharps (e.g., gloves, paper, disposable gowns, culture dishes, and devices) items contaminated with blood or OPIM are regulated medical waste. Properly segregate all regulated medical waste in either sharps containers or red biohazard bags. Each container or bag must have an attached medical waste tracking tag.

Approved by: Frank Cantone Last revised by: Dennis Shaw Revision date:09/17/2012	ECP_RevisedFormat Page 6 of 11
--	-----------------------------------

Regulated medical waste is either self-transported, within the College of Veterinary Medicine, or picked up by Environmental Health & Safety staff elsewhere on campus and in certain off campus locations. Regulated medical waste must not enter the regular solid waste stream.

Isolate contaminated laundry in an appropriate bag or container, and handle as little as possible.

List the procedure for handling and processing contaminated laundry, and if sent offsite, how you will communicate the hazard to the laundry facility.

V. Employee Healthcare Procedures

A. Hepatitis B Vaccination

Hepatitis B vaccination is provided at no cost to all Cornell University employees who are determined to be at risk of occupational exposure. Employees should ask their supervisor to arrange for the vaccination at Gannett Health Center. Employees who have occupational exposure will be offered hepatitis B vaccine after they have received the required training and within 10 working days of initial assignment, unless the employee has previously received the complete hepatitis B vaccination series, antibody testing shows immunity, or the vaccine is contraindicated for medical reasons.

If the employee declines the vaccine, he or she must sign the declination statement (See Appendix). If the employee initially declines, but later decides to accept the vaccine, and is still covered by the standard, the vaccination series will be provided.

If the Centers for Disease Control and Prevention (CDC) recommend a routine booster dose of hepatitis B vaccine at a future date, such booster dose(s) will be made available.

B. Exposure Incident, Post-Exposure Evaluation, and Follow-up

Following an exposure to blood or other potentially infectious material, the employee should thoroughly wash the exposed skin area well with soap and water, or flush mucous membranes with copious amounts of water, for example, in a nearby eyewash.

Employees should report their exposure to the supervisor, and report to the Gannett Health Center for a confidential medical evaluation by or under the supervision of a licensed physician. This evaluation will include at least the following:

- Documentation of the route(s) of exposure
- Circumstances under which the exposure incident occurred
- Status of the source individual, if known, and unless prohibited by state or local law
- Immunization status of the exposed individual

The supervisor should complete a Cornell University Accident Report Form (<https://cfp-rmps.hosting.cornell.edu/accinj/>) as soon as feasible.

Approved by: Frank Cantone Last revised by: Dennis Shaw Revision date:09/17/2012	ECP_RevisedFormat Page 7 of 11
--	-----------------------------------

The exposed employee's blood will be collected and tested, after consent is obtained. If the employee consents to baseline blood collection after an exposure incident, but does not give consent at that time for HIV serologic testing, the sample will be frozen for at least 90 days. If, within 90 days of the exposure incident, the employee elects to have the baseline sample tested, such testing will be done. Otherwise, the blood sample will be discarded.

The employee will receive post-exposure prophylaxis, when medically indicated, and as recommended by the CDC; counseling concerning precautions to take; and information of potential illnesses of which to be aware.

Every attempt will be made to determine the serological status (for HBV/HCV/HIV) of the source individual. Results of the source individual's testing will be made available to the exposed employee, and the employee will be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.

The employee's supervisor will ensure that the healthcare professional evaluating an employee after an exposure incident receives the following information:

- A description of the employee's job duties relevant to the exposure incident
- Documentation of the route(s) of exposure
- Circumstances under which exposure occurred
- Results of the source individual's blood test, if available
- Relevant employee medical records, including vaccination status

Gannett Health Center will provide the employee with a copy of the evaluating healthcare professional's written opinion (whether from Gannett or an outside source) within 15 days after the evaluation is complete. Information to be included:

- Whether the hepatitis B vaccination is indicated for the employee, and if the employee has received such vaccination
- That the employee has been informed of the results of the evaluation
- That the employee has been told of any medical conditions resulting from exposure to blood or other potentially infectious materials that require further evaluation or treatment

Environmental Health & Safety will conduct an accident investigation, as necessary.

VI. Communication of Hazards to Employees

A. Labels and Signs

Warning labels, that include the word "BIOHAZARD", and the universal biohazard symbol, will be affixed to doors leading to areas where work is conducted with blood or other potentially infectious materials, and to containers of regulated waste, refrigerators, freezers, incubators, etc. used for storage or transport of blood or other potentially infectious material.



Indicate those areas or items that require labeling.

Approved by: Frank Cantone Last revised by: Dennis Shaw Revision date:09/17/2012	ECP_RevisedFormat Page 8 of 11
--	-----------------------------------

Containers of blood or OPIM placed in labeled containers for storage or transport need not be individually labeled.

B. Information and Training

All employees who are determined at risk of occupational exposure will participate in a training program. An individual who is knowledgeable in the subject matter (e.g., from EH&S) will conduct the training classes which are also available online, to employees at flexible hours and at no cost.

Initial training will be provided to all employees at the time of assignment to tasks where occupational exposure may take place. Annual training is provided within one year of previous training. The department of supervisor will provide task-specific training.

Indicate who is responsible for providing task-specific training and supervision (e.g., John Doe, Position title, Contact information)

The training program will contain the following elements:

- A discussion of the exposure control plan
- An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood
- A general explanation of the epidemiology and symptoms of bloodborne diseases and the modes of transmission
- An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices, and personal protective equipment
- Information on the types and basis for selection of personal protective equipment, their proper use, and disposal
- Information on the efficacy, safety, and benefits of the hepatitis B vaccine
- Who to contact and procedures to follow after an exposure incident
- Information on the post exposure evaluation and available medical follow-up
- An opportunity for a question and answer period with the trainer

VII. Recordkeeping

A. Medical Records

The medical records for an exposed individual will be maintained at Gannett Health Center, and will include:

- The name and social security number of the employee
- A copy of the employee’s hepatitis B vaccination status
- A copy of all results of examinations, medical testing, and follow-up procedures after an exposure incident
- A copy of the health-care professional’s written opinion
- A copy of the information provided to the healthcare professional

If an employee is treated at any medical center, other than the Gannett Health Center, in regard to any aspect of this standard, it is the responsibility of the employee to see that the appropriate medical records are transferred to the Gannett Health Center.

Approved by: Frank Cantone Last revised by: Dennis Shaw Revision date:09/17/2012	ECP_RevisedFormat Page 9 of 11
--	-----------------------------------

The Gannett Health Center will ensure that employee medical records are kept confidential, and are not disclosed or reported without the employee's express written consent, to any person within or outside the workplace except as required by law. The Gannett Health Center will maintain the records for the employee's duration of employment, plus 30 years.

B. Training Records

Training records will be maintained for 3 years by the *Group/Department* and by EH&S, and will include the following:

- Dates of training sessions
- Names, departments, and netID's of all persons attending the session
- Name of person conducting the training

Employee training records will be provided upon request for examination to the employee, a representative of that employee, and to OSHA.

VIII. Administrative Responsibilities

Group/Department

- Determine which job classifications and tasks/procedures are at risk of exposure
- Complete Exposure Control Plan and revise annually, as necessary
- Ensure that personnel with occupational exposure receive the appropriate training
- Provide adequate and appropriate engineering controls and personal protective equipment
- Offer the hepatitis B vaccination

Supervisor

- Ensure that personnel with occupational exposure receive training
- Provide task-specific training
- Ensure that personnel utilize engineering controls, personal protective equipment, and follow Universal Precautions
- Complete Cornell University Accident Report Form after an exposure

Individual

- Attend required training
- Apply Universal Precautions, and utilize the appropriate engineering controls, work practices, and personal protective equipment
- Consider the hepatitis B vaccination
- Report any exposures to the supervisor

Environmental Health & Safety

- Provide initial and annual training
- Maintain training records
- As necessary, investigate exposure incidents

Gannett: University Health Services

- Provide medical surveillance, including the hepatitis B vaccination and any medical treatment and follow up for exposures
- Provide exposed individual with health care professional's written opinion

Approved by: Frank Cantone Last revised by: Dennis Shaw Revision date:09/17/2012	ECP_RevisedFormat Page 10 of 11
--	------------------------------------

- Provide treating health care professional with information regarding patient and exposure incident

IX. Review of Exposure Control Plan

The *Group/Department* is responsible for reviewing this Exposure Control Plan at least annually, when new or amended tasks may affect occupational exposures of personnel, or when updated regulations require changes. The plan must be readily available and accessible for individuals with occupational exposures.

Date of Preparation/Revision _____

Prepared By _____

Preferred Secondary Contact (e.g., Lab Manager/Director) _____

Approved by: Frank Cantone Last revised by: Dennis Shaw Revision date:09/17/2012	ECP_ RevisedFormat Page 11 of 11
--	-------------------------------------