

GENERAL WRITTEN SOP-Bloodborne Pathogens

Policy:

The Citadel Department of Chemistry will make every effort to comply with the U.S. Department of Labor Occupational Safety and Health Administration Bloodborne Pathogen Standard (29 CFR 1910.1030) as outlined in The Citadel's Bloodborne Pathogen Exposure Control Plan.

This Standard can be found:

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=10051&p_table=STANDARDS

The purpose of this standard is to eliminate or minimize occupational exposure to the hepatitis B virus (HBV), hepatitis C virus (HCV), human immunodeficiency virus (HIV), and other Bloodborne pathogens.

It has been well documented that employees with occupational exposure to blood and other potentially infectious materials (OPIM) containing bloodborne pathogens face a significant health risk. This risk can be minimized or eliminated using a combination of engineering and work practice controls, personal protective clothing and equipment, training, medical surveillance, hepatitis B vaccination, warning signs or labels, and other provisions described in this plan.

Universal precautions must be utilized to prevent contact with human blood or OPIM. Under the Universal Precautions concept, all human blood, blood products and OPIM are considered to be contaminated with bloodborne pathogens (BBP). Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids shall be considered potentially infectious materials.

Scope and Application:

This SOP serves as a broad-based Exposure Control Plan (ECP) for the Department of Chemistry (employees, including faculty, staff, student employees, contractors, volunteers etc.) whose occupational tasks or responsibilities include reasonable anticipated risk of occupational exposure to human blood or OPIM of human origin.

The ECP will be reviewed and updated at least annually and whenever necessary, to reflect: 1) new or modified tasks and procedures which affect occupational exposure and 2) new or revised positions with occupational exposure. The ECP provides a means by which to minimize or eliminate occupational exposure to bloodborne pathogens.

Responsibilities:

The Citadel and all personnel have a joint responsibility to be well informed regarding the hazards associated with bloodborne pathogens. Delineation of responsibilities is described below.

1. Management

Senior management is supportive of this BBP ECP and all safety programs by providing facilities, proper equipment, personal protective equipment (PPE), and oversight.

2. Managers/Principal Investigators (PI)/ Area Supervisors

Managers/ Principal Investigators (PI)/ Area Supervisors are responsible for their laboratory or areas' compliance with The Citadel Chemistry Department BBP ECP and specifically for:

- a) Identifying those employment positions within each Department/Laboratory/Office/Work Area that fit the definition of "occupational exposure" described in section IV of this Plan and specify those tasks or procedures in which occupational exposure is likely to occur (in consultation with the Laboratory Safety Manager and EHS).
- b) Ensuring that all personnel are informed of the hazards associated with the work performed.
- c) Identifying and informing personnel on proper control measures, including available vaccinations/immunizations, safe work practices, standard operating procedures specific to the laboratory or other work areas and proper use of engineering controls and PPE.

NOTE: *Where the scope of hazards is not adequately addressed by this document, the PI/ Supervisors must develop specific Standard Operating Procedures (SOPs) to be appended to this plan.*

- d) Ensuring that all existing and new personnel under their direction are properly informed and trained (initial and recurrent annual training) in all elements of this Plan, and have a means to determine when an employee demonstrates proficiency.
- e) Establishing (where applicable) a program for evaluating sharps with safety devices designed to eliminate or minimize occupational exposure. This program should include an identification process, an evaluation process, and a selection process.
- f) Enforcing all safety rules and policies within the work setting and initiate progressive disciplinary proceedings, when necessary, as outlined by the The Citadel's Office of Human Resources.
- g) Ensuring the most up to date ECP is readily available to all personnel in their work area through their Manager/ PI/ Area Supervisor, The Laboratory Safety Manager or EHS.

3. Personnel

- a) All personnel working with bloodborne pathogens must accept a shared responsibility for conducting their work in a safe manner.
- b) Personnel shall not engage in work for which they are not trained.
- c) Personnel shall report to their PI, area supervisor, management, the Laboratory Safety Manager or EHS potentially unsafe work conditions or practices.
- d) All personnel are also responsible for:
 - Knowing which of their tasks have a potential occupational exposure to bloodborne pathogens;
 - Following guidance provided in the ECP;
 - Following Universal Precautions and standard microbiological practices;
 - Planning and conducting all operations in accordance with exposure control procedures and specific departmental, work area or laboratory safety procedures;

- Completing the appropriate Bloodborne Pathogens Training (initial and annual retraining) depending on job functions;
- Reporting hazardous conditions to the PI/area supervisor the Laboratory Safety Manager and EHS;
- Reporting job-related injuries or illnesses to the PI, supervisor, Office of Human Resources and EH&S and seeking medical treatment immediately (see Office of Human Resources website for applicable forms)
- Requesting information and training when unsure how to work with bloodborne pathogens;
- Wearing and properly maintaining the personal protective equipment (PPE) necessary to perform each task to which he/she is assigned; and
- Using engineering controls, including safe sharps technology and safety equipment properly.

4. Environmental Health & Safety Office and Human Resources Office

EHS is responsible for overseeing compliance with the OSHA Bloodborne Pathogens Standard and the BBP ECP required therein and will develop the provisions of the BBP ECP.

The Director of EHS, the Laboratory Safety Manager and Departmental Safety Committee will work with management to assign areas of responsibility to principal investigators, laboratory supervisors, and other individuals as necessary, to implement and carry out the provisions of the BBP ECP.

The Department shall be responsible for managing the HBV Vaccination Program, if necessary, in consultation with EHS and the Laboratory Safety Manager.

Human Resources shall be responsible for working with EHS in order to facilitate appropriate identification of treatment provider and counseling provider in cases of personnel exposure to bloodborne pathogens in the workplace.

EHS and the Laboratory Safety Manager will maintain the Sharps Injury Log and EHS will maintain appropriate medical records. Medical records as they relate to BBP ECP will be kept confidential and will not be disclosed or reported without the personnel's express written consent to any person within or outside the workplace except as required or permitted by law.

Definitions:

Assistant Secretary: The Assistant Secretary of Labor for Occupational Safety and Health, or designated representative.

Blood: human blood, blood components, and products made from human blood

Bloodborne Pathogens (BBP): Pathogenic microorganisms that are present in human blood and can cause disease in humans. These disease causing organisms can be found in all body fluids, unfixed tissue, cell lines, and in situations where it is difficult or impossible to differentiate between body fluids and other materials.

Contamination: The presence, or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

Contaminated laundry: Laundry that has been soiled with blood or OPIM (might contain sharps)

Contaminated Sharps: Any contaminated object that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, Pasteur pipettes and exposed ends of dental wires.

Decontamination: The use of physical or chemical means to remove, inactivate, or

destroy bloodborne pathogens 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.

Director: The Director of the National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services, or designated representative.

Engineering Controls: Controls (e.g., sharps disposal containers, self-sheathing needles) that isolate or remove the bloodborne pathogens hazard from the workplace.

Exposure Incident: A specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of any personnel duties. This definition excludes incidental exposures that might take place on the job, and that are neither reasonably nor routinely expected and that the worker is not expected to incur in the normal course of employment.

HBV: Hepatitis B Virus.

HCV: Hepatitis C Virus

HIV: Human Immunodeficiency Virus.

Occupational Exposure: Reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of personnel duties. **Important!** Each Laboratory/Area should append to this definition any specifics that would apply to its personnel.

Other Potentially Infectious Material (OPIM): Any of the following: semen, vaginal secretions, amniotic fluid, cerebrospinal fluid, peritoneal fluid, pleural fluid, pericardial fluid, synovial fluid, and saliva in dental procedures; any bodily fluid that is visibly contaminated with blood; all body fluids in situations where it is difficult or impossible to differentiate between body fluids; any unfixed tissue or organ, other than intact skin, from a living or dead human; cell or tissue cultures that contain HIV, organ cultures, and culture medium or other solutions that contain HIV or HBV; blood, organs or other tissues from experimental animals infected with HIV, HBV or other bloodborne pathogen(s).

Parenteral: Piercing mucous membranes or the skin barrier, such as exposure through subcutaneous, intramuscular, intravenous, or arterial routes resulting through such events as needle sticks, human bites, cuts, and abrasions.

Personal Protective Equipment (PPE): Specialized clothing or equipment worn by an employee for protection against a hazard. General work clothes (e.g., uniforms, pants, shirts or blouses) not intended to function as protection against a hazard are not considered to be personal protective equipment.

Regulated Waste: 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.

Sharps with Engineered Sharps Injury Protections: A non-needle sharp or a needle device used for withdrawing body fluids, accessing a vein or artery, or administering medications or other fluids, with a built-in safety feature or mechanism that effectively reduces the risk of an exposure incident.

Source Individual: Any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee.

Universal Precautions: Is an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

Work Practice Controls: Controls that reduce the likelihood of exposure to BBP by

altering the manner in which a task is performed (e.g., prohibiting recapping of needles by a two-handed technique).

Methods of Compliance:

A. Communication of Hazards to Employees (Biohazard Warning Label)

Biohazard warning labels will be affixed to containers of blood or regulated waste, refrigerators and freezers containing blood or other potentially infectious material and other containers used to store, transport or ship these materials. Biohazard labels will be fluorescent orange or orange-red or predominantly so, with lettering and symbols in a contrasting color: These labels will be affixed as close as feasible to the container by string, wire, adhesive, or other method that prevents their loss or unintentional removal. Individual containers of blood or other potentially infectious materials that are placed in a labeled container during storage, transport, shipment or disposal are exempted from the labeling requirement. Regulated waste that has been decontaminated need not be labeled.

Biohazard Warning Label



B. Engineering and Work Practice Controls

Engineering and work practice controls will be used to eliminate or minimize employee exposure. Engineering controls include all measures designed to reduce the potential for contact between workers and potentially infectious materials by either removing the hazard or isolating the worker from exposure. Engineering controls must be examined and maintained or replaced to ensure their effectiveness on a regular schedule. Each Manager/ PI/ Area Supervisor is responsible for ensuring the engineering controls in their area are evaluated and maintained.

Personal protective equipment will also be used if there is exposure potential. The Citadel Chemistry Department will provide readily accessible hand washing facilities for employees use. When hand washing facilities are not possible, appropriate antiseptic hand cleanser or antiseptic towelettes will be provided. When these alternatives are used, employees shall wash their hands with soap and water as soon as feasible. Employees must be trained to wash their hands and any other exposed skin surfaces with soap and running water, and mucous membranes flushed with water as soon as possible after contact with blood, body fluids or other potentially infectious material. Personnel must be trained to wash their hands with soap and running water after removing personal protective equipment.

Contaminated needles and other contaminated sharps will not be bent, recapped or removed unless no alternative is feasible or that such action is required by a specific medical or dental procedure. Such bending, recapping or needle removal must be accomplished through the use of a mechanical device or a one-handed technique.

Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in work areas where there is a reasonable likelihood of occupational exposure.

Food and drink will not be kept in refrigerators, freezers, shelves, cabinets or on countertops or bench tops where blood or other potentially infectious materials are present.

All procedures involving blood or other potentially infectious materials will be performed in such a manner as to minimize splashing, spraying, spattering, and generation of droplets of these substances. Mouth pipetting/suctioning of blood or other potentially infectious materials is prohibited.

Specimens of blood or other potentially infectious materials will be placed in a container which prevents leakage during collection, handling, processing, storage, transport, or shipping. Containers used for storage, transport, or shipping will be biohazard labeled and closed prior to being stored, transported, or shipped.

The primary container will be placed within a biohazard labeled second container to prevent puncture and leakage during handling, processing, storage, transport, or shipping.

Equipment which may become contaminated with blood or other potentially infectious materials will be decontaminated prior to servicing or shipping. A readily observable biohazard label will be attached to the equipment stating which portions remain contaminated.

The Citadel Chemistry Department will ensure that this information is conveyed to all affected employees, the servicing representative, and/or the manufacturer, as appropriate, and prior to handling, servicing, or shipping so that appropriate precautions will be taken.

C. Sharps Injury Protection Program

Managers/ PI/ Area Supervisors who have employees with occupational exposure to bloodborne pathogens must consider and, where appropriate, use effective engineering controls, including safer medical devices, in order to reduce the risk of injury from needle sticks and from other sharp medical instruments.

They must implement the safer medical devices that are appropriate, commercially available, and effective. An appropriate safer medical device includes only devices whose use, based on reasonable judgment in individual cases, will not jeopardize patient or employee safety or be medically contraindicated.

Identification Process: All sharp devices that have available products with safer engineering features shall be identified, evaluated and selected.

Evaluation Process:

1. Evaluation of the safer sharp devices must be documented.
2. Supervisors alone cannot identify, evaluate and select the safer sharps devices; supervisors must choose members of non-managerial employees who perform tasks with sharps exposure risks to be involved in this process.

3. Managers/ Supervisors/ PI/ Safety Committees must determine which products are to be evaluated and provide at least four or more test samples for each individual evaluating the product.
 4. Supervisors will ensure that visual instructions and a demonstration of the proper use of each device are provided.
 5. Supervisors will review the instructions and rating system on the evaluation form with each evaluator.
 6. Supervisors should encourage each evaluator to comment on the forms. This will provide a useful decision making tool.
 7. Supervisors will send (or fax) one copy of the completed evaluation forms to the EHS office, the Laboratory Safety Manager, and retain the original forms for their records.
- Once the evaluation process is complete and the safer sharp device has been chosen, supervisors must implement use of the safer sharps devices as soon as possible. If safer sharps devices are currently in use, the evaluation process must still be completed.

D. Personal Protective Equipment

When there is occupational exposure, The Citadel Chemistry Department will provide, at no cost to the employee, appropriate personal protective equipment such as gloves, gowns, laboratory coats, face shields, eye protection, masks, mouthpieces, resuscitation bags, pocket masks, or other ventilation devices. Personal protective equipment will be considered "appropriate" only if it does not permit blood or other potentially infectious materials to pass through to or reach the employee's clothes, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used.

Personal protective equipment will be repaired or replaced as needed to maintain its effectiveness, at no cost to the employee. All personal protective equipment will be removed prior to leaving the work area and/or if the protective clothing is contaminated with blood, body fluids or OPIM.

When personal protective equipment is removed it will be placed in designated areas or containers for storage, washing, decontamination or disposal.

Gloves will be worn when there is potential for hand contact with blood or other potentially infectious materials and when handling or touching contaminated items or surfaces. Hypoallergenic gloves, glove liners, powerless gloves, or other similar alternatives will be readily accessible to those employees who are allergic to the gloves normally provided. Disposable (single use) gloves will be replaced as soon as practical when contaminated or damaged. Disposable (single use) gloves will not be washed or decontaminated for re-use. Utility gloves may be decontaminated for re-use if the integrity of the glove is not compromised. However, they must be discarded if they are cracked, peeling, torn, punctured, or exhibiting other signs of deterioration or when their ability to function as a barrier is compromised.

Masks in combination with eye protection devices, such as goggles or glasses with solid side shields, or chin-length face shields, will be worn whenever splashes, spray, spatter, or droplets of blood or other potentially infectious materials may be generated.

Appropriate protective clothing such as gowns, aprons, lab coats, clinic jackets, or similar outer garments will be worn in occupational exposure situations. Surgical caps or hoods and/or shoe covers or boots will be worn in instances when gross contamination can reasonably be anticipated (e.g. necropsies, sawing, or otherwise aerosolizing human tissue or fluids).

E. Housekeeping

The Citadel Department of Chemistry will ensure that the worksite is maintained in a clean and sanitary condition.

The Chemistry Department will determine and implement an appropriate written schedule for cleaning and method of decontamination based upon the location within the facility, type of surface to be cleaned, type of soil present, and tasks or procedures being performed in the area.

1. All contaminated equipment and work surfaces will be decontaminated immediately or as soon as feasible with an appropriate disinfectant after completion of procedures and at the end of the work shift if the surface may have become contaminated since the last cleaning.
2. Protective coverings, such as plastic wrap, aluminum foil, or imperviously-backed absorbent paper used to cover equipment and environmental surfaces will be removed and replaced when they become contaminated.
3. All bins, pails, cans, and similar receptacles intended for reuse will be decontaminated immediately if they are contaminated with blood or other potentially infectious materials.
4. Broken glassware which may be contaminated will not be picked up directly with the hands. Mechanical means, such as a brush and dust pan, tongs, or forceps will be utilized for cleaning.
5. Reusable sharps that are contaminated with blood or other potentially infectious materials will not be stored or processed in a manner that requires employees to reach by hand into the containers where these sharps have been placed

F. Containing and Handling Regulated Waste

Disposal of all regulated waste will be in accordance with The Citadel policy as well as applicable federal, state, and local regulations. Contaminated sharps and other regulated waste will be discarded immediately or as soon as feasible in biohazard labeled containers that are closable, puncture resistant, and leak-proof. Containers for contaminated sharps will be maintained upright throughout use, easily accessible to personnel, replaced routinely, and not be allowed to overfill.

When moving contaminated sharps or other regulated wastes the containers will be biohazard labeled and closed to prevent spillage or protrusion during handling, storage, transport, or shipping. Secondary containers will be used if leakage is possible. The second container will also be biohazard labeled, closable and constructed to contain all contents and prevent leakage.

G. Laundry

Contaminated laundry, when applicable, will be handled as little as possible while being placed in biohazard labeled transport bags or containers. Contaminated laundry will not be sorted or rinsed in the location of use. Wet contaminated laundry will be placed in appropriate leak proof bags or containers. The Chemistry Department will provide employees who have contact with contaminated laundry protective gloves and other appropriate personal protective equipment.

TRAINING

If an employee has occupational exposure or potential exposure to human blood, body fluids and OPIM they must take part in the Bloodborne Pathogen Exposure Control Plan training to control exposure. Training will be provided at the time of initial assignment to tasks where occupational exposure may take place and annually thereafter. The person conducting the training will be knowledgeable in the subject matter covered by the elements contained in the training program as it relates to The Citadel Chemistry Department.

The Chemistry Department will provide additional training when changes such as modification of tasks or procedures or institution of new tasks or procedures affect the employee' occupational exposure. The additional training may be limited to addressing the new exposures created.

A. Training Requirements

- Training must take place within 10 days of employment and before there is any potential occupational exposure.
- Training must be conducted by an approved designated trainer (contact EHS or the Laboratory Safety Manager for more information) or during periodically scheduled training sessions.
- Recurrent training must be conducted annually.
- Training must contain elements as prescribed below in section B.
- Training documentation, Hepatitis B vaccination rosters, and health release authorization forms must be kept on file with the Laboratory Safety Manager and sent to EHS, as instructed in the BBP ECP.

B. Training Program Elements

- An accessible copy of the regulatory text of the OSHA Bloodborne Pathogen Standard (29 CFR 1910.1030) and an explanation of its contents;
- A general explanation of how widespread bloodborne diseases are among the general population and what the symptoms of bloodborne diseases are;
- An explanation of the ways bloodborne diseases are transmitted;
- An explanation of The Citadel Exposure Control Plan and the means by which you can obtain a copy (contact EHS);
- An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood, body fluids and OPIM;
- 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, proper use, location, removal, handling, decontamination and disposal of personal protective equipment;
- An explanation of how personal protective equipment is selected for particular jobs;
- Information on the hepatitis B vaccine, including information on how well it works, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination policies of The Citadel;
- Information on the appropriate actions to take and persons to contact in an emergency involving blood, body fluids or OPIM;
- 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;
- Information on the post-exposure evaluation and follow-up that The Citadel is required to provide for the employee following an exposure incident;

- An explanation of the signs and labels and/or color coding required by the Exposure Control Plan; and
- An opportunity for interactive questions and answers with the person conducting the training session.

Records and Recordkeeping:

A. Records Availability

The Citadel will ensure that all records required to be maintained will be made available upon request to the Assistant Secretary and the Director for examination and copying. If The Citadel ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer will notify the Director, at least three months prior to their disposal and transmit them to the Director, if required by the Director to do so, within that three-month period.

B. Medical Records

The Citadel will establish and maintain an accurate medical record for each personnel with occupational exposure. This record will include:

- The name and CWID # of the affected person
- A copy of the employee's hepatitis B vaccination status including the dates of all the hepatitis B vaccinations and any medical records relative to the employee's ability to receive vaccination.
- A copy of all results of examinations, medical testing, and follow-up procedures
- The employer's copy of the healthcare professional's written opinion
- A copy of the information provided to the healthcare professional

The Citadel will ensure that employee medical records are kept confidential and not disclosed or reported without the employee's express written consent to any person within or outside The Citadel, except as may be required or permitted by law. The Citadel will maintain the records for at least the duration of employment plus 30 years. Employee records will be maintained within The Citadel's Office of Human Resources. The Mary Bennett Murray Infirmary will maintain records of treatment for students.

C. Training Records

Training records will be maintained within the Chemistry Department for 3 years from the date on which the training occurred. Training records will include the following information:

- The dates of the training sessions
- The contents or a summary of the training sessions
- The names and qualifications of persons conducting the training
- The names and job titles of all persons attending the training sessions

D. Sharps Injury Log

The Citadel Department of Chemistry along with the School of Science and Mathematics and EHS will establish and maintain a Sharps Injury Log (SIL) for the recording of percutaneous injuries from contaminated sharps. The SIL will be maintained in The Citadel's EHS Office. The information in the Sharps Injury Log will be recorded and maintained in such manner as to protect the confidentiality of the injured employee. The Citadel will maintain the records at least the duration of employment plus 30 years. The SIL will contain, at a minimum:

- The type and brand of device involved in the incident,
- The department or work area where the exposure incident occurred
- An explanation of how the incident occurred.

References/Resources

OSHA Bloodborne Pathogens Standard (1910.1030):

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051

OSHA Bloodborne Pathogens and Needlestick Prevention:

<https://www.osha.gov/SLTC/bloodbornepathogens/standards.html>

Information for Employers Complying with OSHA's Bloodborne Pathogens Standard:

<http://www.cdc.gov/niosh/docs/2009-111/>

OSHA Fact Sheet on Bloodborne Pathogens:

<https://www.osha.gov/pls/publications/publication.athruz?pType=Types&pID=2>

Centers for Disease Control and Prevention: Bloodborne Infectious Diseases - HIV/AIDS, Hepatitis B, Hepatitis C:

<http://www.cdc.gov/niosh/topics/bbp/>