



UNIVERSITY OF
TEXAS
ARLINGTON

ENVIRONMENTAL
HEALTH & SAFETY

Exposure Control Plan for Bloodborne Pathogens



THE UNIVERSITY OF TEXAS AT ARLINGTON

Exposure Control Plan for Bloodborne Pathogens

Developed in accordance with Texas Department of State Health Services (TDSHS), Bloodborne Pathogens Exposure Control Plan, Health and Safety Code, §81.304 to be analogous with the Occupational Safety and Health Administration (OSHA) Bloodborne Pathogens Standard, Title 29 Code of Federal Regulation §1910.1030

Environmental Health & Safety Office
500 Summit Avenue • Box 19257
Arlington, TX 76019
Phone 817.272.2185 • Fax 817.272.2144

Revised: December 2022

Table of Contents

1. INTRODUCTION & SCOPE	1
2. APPLICABILITY & RESPONSIBILITIES	2
3. EXPOSURE CONTROL.....	3
3.1 Exposure Control Plan for Bloodborne Pathogens	4
4. METHODS OF COMPLIANCE.....	5
4.1 Universal Precautions	5
4.2 Engineering and Work Practice Controls	5
4.2.1 Engineering Controls.....	6
4.2.2 Work Practice Controls	6
4.3 Personal Protective Equipment (PPE)	8
4.3.1 Gloves.....	9
4.3.2 Masks, Eye Protection, and Face Shields.....	10
4.3.3 Gowns, Aprons, and Other Protective Body Clothing	10
4.3.4 Laundry	10
4.4 Containment of Sharps and Other Regulated Waste.....	10
4.5 Housekeeping.....	12
4.6 Human Immunodeficiency Virus (HIV) & Hepatitis B Virus (HBV) Research Laboratories, Research Laboratories Handling Human Blood/OPIM/Cells/Tissues	13
4.6.1 Special Practices.....	13
4.6.2 Containment Equipment.....	14
4.7 Hepatitis B Vaccination, Post-Exposure Evaluation and Follow-Up(s).....	15
4.7.1 Hepatitis B Vaccination	15
4.7.2 Post-Exposure Evaluation and Follow-Up(s).....	16
4.7.3 Reporting.....	17
4.7.4 Information Provided to the Healthcare Professional.....	17
4.7.5 Healthcare Professional’s Written Opinion	17

4.8 Communication of Hazards to Employees	18
4.8.1 Training	18
4.8.2 Labels	19
4.8.3 Signs	20
4.9 Employee Training Records.....	21
5. DEFINITIONS.....	21
6. EMERGENCY PROCEDURES	25
6.1 General.....	25
6.2 Blood Spills	25
6.3 Biological Hazards Spill Kit	26
6.4 Emergency Numbers.....	27
7. ABBREVIATIONS	27
8. REGULATIONS/RESOURCES.....	28
9. POLICIES/FORMS.....	29

1. INTRODUCTION & SCOPE

On December 6, 1991, the Occupational Safety and Health Administration (OSHA) promulgated the final rule for occupational exposure to bloodborne pathogens ([29CFR1910.1030](#)). The rule, commonly referred to as the bloodborne pathogens standard, was designed to eliminate or minimize occupational exposure to hepatitis B virus (HBV), human immunodeficiency virus (HIV), and other bloodborne pathogens.

The rule making effort was based on an OSHA determination that employees face a significant health risk from occupational exposure to blood and other potentially infectious materials (OPIM) (e.g., semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visible contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids, human unfixed tissue or organ, and cell/tissue/organ cultures) considering that these materials may contain bloodborne pathogens, including HBV that causes hepatitis B, a serious liver disease, and HIV, which causes acquired immunodeficiency syndrome (AIDS), a disease of the human immune system. HBV is the only bloodborne pathogen that has an approved vaccine. Both HBV and HIV are transmittable through blood, semen, and vaginal secretions. In an effort to eliminate or minimize exposure to bloodborne pathogens, the bloodborne pathogens standard requires employers to institute a program of engineering and work practice controls, personal protective clothing and equipment, informational training, hepatitis B vaccination, post exposure evaluation and follow-up(s), sign and label programs, and other provisions for employees who may be reasonably anticipated to come into contact with blood or OPIM during the performance of their duties.

The preamble to the final rule for occupational exposure to bloodborne pathogens, published in the Federal Register ([# 56:64004](#)), describes the rationale behind the standard and discusses provisions of the standard.

The [Texas Department of State Health Services \(TDSHS\)](#) adopted the OSHA standard for occupational exposure of governmental employees to minimize the risk of bloodborne pathogens. The [TDSHS Bloodborne Pathogens Exposure Control Plan](#) became effective September 1, 2000.

New sections were adopted to extend the protections provided to employees of private entities by OSHA rules, to employees of state and local governments, and for related purposes. The new sections are required by [Health and Safety Code, Chapter 81, Subchapter H](#), which was added by Chapter 1411 (House Bill 2085), §§26.01-26.03, 76th Legislature.

These new sections decrease the risk of exposure to bloodborne pathogens for employees who work in governmental units by increased training and education, increased use of vaccination for employees, and increased use of personal protective equipment (PPE). The recommendation for the use of needleless systems and sharps with engineered sharps injury protection will reduce the risk of injury and transmission of bloodborne pathogens to governmental unit employees.

2. APPLICABILITY & RESPONSIBILITIES

OSHA has identified occupational settings where individuals are reasonably anticipated to come into contact with blood or OPIM during the performance of their duties. These include, in part: health care facilities, health clinics, research laboratories, linen services, law enforcement, fire and rescue, schools, lifesaving, and regulated waste removal. Considering the scope of applicability of the standard and the fact that the University of Texas at Arlington (UTA) conducts activities utilizing or involving blood and OPIM and employs individuals identified as employees who may be reasonably anticipated to come into contact with blood or OPIM during the performance of their duties, UTA is required to comply with the requirements established in the standard.

Environmental Health and Safety Office (EH&S) is charged with the overall responsibility for the development and implementation of a bloodborne pathogens compliance program at UTA. The program is designed to provide and achieve regulatory compliance and, most importantly, will provide a means in which UTA employees will be better informed and protected from exposures to blood and OPIM during the performance of their duties. EH&S will provide technical assistance to individual University departments in their efforts to ensure that the provisions of the UTA Exposure Control Plan for Bloodborne Pathogens and the mandates of the bloodborne pathogens standard are carried out.

University departments/research centers located at UTA that have been identified as having employees with occupational exposure include, but are not necessarily limited to:

- Athletics
- Biology
- Biomedical Engineering
- Campus Recreation
- College of Nursing
- Chemistry and Biochemistry
- Environmental Health and Safety
- Kinesiology
- North Texas Genome Center
- Nursing
- Office of Facilities Management
- Physics
- Police Department
- Psychology
- Student Health Services
- Shimadzu Institute for Research Technology

Job classifications in which all UTA employees in the specific job classification have occupational exposure pursuant to [29 CFR § 1910.1030](#):

Athletic Trainers
Custodial/Housekeeping Personnel
EH&S Personnel
Lifeguards
Nurse Practitioners/Registered Nurses
Medical Assistants
Patrol Officers
Physicians
Physician Assistants
Plumbers
Police Guards

Job classifications in which some UTA employees in the specific job classification have occupational exposure pursuant to [29 CFR § 1910.1030](#):

Grounds Personnel
Laboratory Assistants
Laboratory Technicians
Locker-room Attendants
Research Assistants
Research Associates
Research Professors
Research Technicians
Residential Assistants

3. EXPOSURE CONTROL

Employees incur risk each time they are exposed to blood or OPIM. Any exposure incident may result in infection and subsequent illness. Considering the possibility of becoming infected from a single exposure incident, exposure incidents must be prevented whenever possible. The goal of the bloodborne pathogens standard is to reduce the risk of infection significantly by:

- Eliminating or minimizing occupational exposure to blood and OPIM
- Providing the hepatitis B vaccine
- Providing post-exposure medical evaluation and follow-up(s)

Identifying the tasks and procedures where occupational exposure may occur and the positions whose duties include those tasks and procedures are a critical element of exposure control. By identifying those job classifications with occupational exposure, identification can be made of those employees who are entitled to the provisions of the standard. All personnel who hold positions determined to have occupational exposure are entitled to the protection afforded by the standard.

3.1 Exposure Control Plan for Bloodborne Pathogens

The key provision of the bloodborne pathogens standard is the written Exposure Control Plan for Bloodborne Pathogens. This plan provides the means for identifying individuals who will need to receive training, protective equipment, vaccinations, and other provisions of the standard. Exposure Control Plan for Bloodborne Pathogens is designed to eliminate or minimize employee exposure and:

- Provide a means in which employees can find out what provisions are in place in their workplace
- Provide a document for regulatory officials to evaluate the University's compliance status
- Be used for employee training efforts

Based on the requirements established by the standard, the UTA Exposure Control Plan for Bloodborne Pathogens has been developed and designed to eliminate or minimize (University employees) occupational exposure to bloodborne pathogens during the performance of their duties, and to achieve regulatory compliance with the OSHA Bloodborne Pathogens Standard.

The UTA Exposure Control Plan for Bloodborne Pathogens contains the following Methods of Compliance:

- Universal precautions
- Engineering and work practice controls
- Personal protective equipment (PPE)
- Containment of sharps and other regulated waste
- Housekeeping
- HIV and HBV research laboratories, research laboratories handling human blood/OPIM/cells/tissue
- Hepatitis B vaccination, post-exposure evaluation and follow-up(s)
- Communication of hazards to employees
- Record keeping

The plan will be reviewed and updated annually and whenever necessary to reflect new or modified tasks and procedures which affect occupational exposure and to reflect new or revised employee positions with occupational exposure. EH&S is the custodian of the document, and any questions concerning the document can be made by contacting EH&S at 817-272-2185.

4. METHODS OF COMPLIANCE

4.1 *Universal Precautions*

Universal Precautions will be observed by all UTA employees at this campus to prevent contact with blood or OPIM. All blood and body fluids will be considered potentially infectious regardless of the perceived status of the source individual.

Universal Precautions are methods of preventing disease by preventing transfer of blood and OPIM. The underlying concept of Universal Precautions is that all human blood, certain body fluids, and cells/tissue are considered to be infectious materials placing workers at risk for infection from bloodborne pathogens. An employee needs to handle above mentioned materials as though they were contaminated with bloodborne pathogens and will accomplish this through a variety of measures including, but not necessarily limited to:

- Engineering controls
- Work practice controls
- Containment of sharps and other regulated waste
- PPE
- Housekeeping

The only exception to the use of Universal Precautions is in rare instances, such as unexpected medical emergency, where employees may not be able to put on gloves, don a gown, or tie on a facemask immediately. In those situations where leeway must be accorded, the employees (e.g., the provider of health care or public safety services) must not ignore the underlying concept of Universal Precautions. Only under unexpected, extraordinary circumstances will employees have the option of deciding not to use PPE, e.g., if they feel such equipment will prevent the proper delivery of health care or public safety services or will create a greater hazard to their personal safety if they used such equipment. The Universal Precautions exemption provided in the standard applies not to the general concept of Universal Precautions, but only to the use of PPE under rare and relatively limited circumstances.

4.2 *Engineering and Work Practice Controls*

UTA facilities and employees will use engineering and work practice controls to eliminate or minimize employee exposure. Engineering and work practice controls serve to reduce employee's exposure in the workplace by either removing the hazard or isolating the worker from exposure. In fact, these control measures are viewed as the primary means of eliminating or minimizing employee exposure.

These two control methodologies frequently work in tandem because it is often necessary to employ work practice controls to assure effective operation of engineering controls. Where occupational exposure remains after institution of these controls, UTA departments must provide and assure employees use PPE.

Primary reliance on engineering controls and work practices for controlling exposure is consistent with good industrial hygiene practice and with the [TDSHS](#) adherence to a hierarchy of controls.

4.2.1 Engineering Controls

Engineering controls may include process or equipment redesign, e.g., self-sheathing needles, process or equipment enclosure, biological safety cabinets (BSCs), and employee isolation. In general, engineering controls act on the source of the hazard and eliminate or reduce employee exposure without reliance on the employee to take self-protective action. Engineering controls will be examined and maintained or replaced on a regular schedule to ensure their effectiveness.

4.2.2 Work Practice Controls

Work practice controls reduce the likelihood of exposure through alteration of the way a task is performed. While work practice controls also act on the source of the hazard, the protection they provide is based upon the behavior of the employer and employee rather than installation of a physical device such as a protective shield.

The following work practice controls shall be used to minimize employee exposure:

- Employees shall wash their hands immediately or as soon as feasible after removal of gloves or other PPE.
- Employees shall wash their hands and any other exposed skin with soap and water, or flush mucous membranes with water immediately or as soon as feasible following contact of such body areas with blood or OPIM.
- Contaminated needles and other contaminated sharps shall not be bent, recapped, or removed from syringes. Shearing or breaking of contaminated needles is prohibited.
- Immediately or as soon as possible after use, contaminated sharps shall be placed in appropriate containers (see pictures below). These containers shall be:
 - ❖ Puncture resistant
 - ❖ Appropriately labeled or color coded
 - ❖ Leak proof on the sides and bottom



- Eating, smoking, drinking, applying cosmetics or lip balm, and handling contact lenses is prohibited in work areas where there is reasonable likelihood of occupational exposure to blood or OPIM.
- Food and drink shall not be stored in refrigerators, freezers, shelves, cabinets, or on cabinet tops or bench tops where blood or OPIM are present.
- All procedures involving blood or OPIM shall be performed in a manner that minimizes splashing, spraying, spattering, and generation of droplets of these substances.
- Mouth pipetting /suctioning of blood or OPIM is strictly prohibited.
- Specimens of blood or OPIM, cell/tissue cultures, and bloodborne pathogen cultures shall be placed in a leak proof container in secondary containment during collection, handling, processing, storage, transport, or shipping (see picture below on left). Stericycle boxes with red plastic liners (marked with biohazard sign) shall only be used to collect solid materials that have been contaminated with above mentioned specimens/cultures (see picture below on right). Appropriate labeling/color coding is required when such specimen containers are stored or when they are transported or shipped from the facility.



- If the specimen could puncture the primary container, the primary container shall be placed within a secondary container which is puncture resistant. The secondary container, which prevents leakage during handling, processing, storage, transport, or shipping, shall be appropriately labeled.
- Equipment that may become contaminated with blood or OPIM shall be decontaminated as necessary unless decontamination of such equipment or portions of such equipment is not feasible. If decontamination is not feasible:
 - ❖ A readily observable label shall be attached to the equipment stating which portions remain contaminated.
 - ❖ The appropriate administrator shall inform all affected employees, the servicing representative, and/or manufacturer, in writing, prior to handling, servicing, or shipping so that appropriate precautions can be taken.

4.3 Personal Protective Equipment (PPE)

PPE shall be provided by UTA departments at no cost to the employees.



Appropriate PPE prohibits blood or OPIM to pass through to or reach the employee's work clothes, street clothes, undergarments, 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.

Employee shall use appropriate PPE unless it can be demonstrated that the employee temporarily and briefly declined to use PPE when, under rare and extraordinary circumstances, it was the employee's professional judgment that in the specific instance its use would have prevented the delivery of health care or public safety services or would have posed an increased hazard to the safety of the worker or co-worker. When the employee makes this judgment, the circumstances shall be investigated and documented to determine whether changes can be instituted to prevent such occurrences in the future.

All PPE shall be removed prior to leaving the work area. If a garment is penetrated by blood or OPIM, the garment shall be removed immediately or as soon as feasible.

When PPE is removed it shall be placed in an appropriately designated area or container for storage, decontamination, washing, or disposal.

4.3.1 Gloves

Gloves shall be worn when it can be reasonably anticipated that the employee may have hand contact with blood, OPIM, mucous membranes, or non-intact skin.

Disposable, single-use gloves shall be replaced as soon as practical when contaminated or as soon as feasible if they are torn, punctured, or when their ability to function as a barrier is compromised.

Disposable, single-use gloves shall not be washed or decontaminated for reuse. Latex gloves used in a wet procedure shall be replaced after one hour of use.

Utility gloves may be decontaminated for reuse if the integrity of the gloves is not compromised. However, they must be discarded if they are cracked, peeling, torn, punctured, or exhibit other signs of deterioration or when their ability to function as a barrier is compromised.

4.3.2 Masks, Eye Protection, and Face Shields

Masks in combination with eye protection devices, such as goggles or safety glasses with solid side shields, or chin-length face shields, shall be worn whenever splashes, spray, spatter, or droplets of blood or OPIM may be generated and eye, nose, or mouth contamination can be reasonably anticipated.

4.3.3 Gowns, Aprons, and Other Protective Body Clothing

Appropriate protective clothing shall be worn in occupational situations where normal clothing may become contaminated with blood/OPIM.

4.3.4 Laundry

Contaminated laundry shall be handled as little as possible with a minimum of agitation, bagged in red bags or containerized, and not sorted or rinsed in the location of use.

If contaminated laundry is sent to a facility which does not utilize Universal Precautions in the handling of all laundry, the UTA department shall ensure that the red bags/containers are labeled with the universal biohazard symbol and the word "Biohazard".

Whenever contaminated laundry is wet and presents a reasonable likelihood of soak-through or of leakage from the bag or container, the laundry shall be placed and transported in bags or containers which prevent soak-through and/or leakage of fluids to the exterior. The UTA department shall provide employees who have contact with contaminated laundry protective gloves and other appropriate PPE.

If contaminated laundry is taken home to be washed by the user, it needs first to be decontaminated by autoclaving.

4.4 Containment of Sharps and Other Regulated Waste

Sharps that are considered special waste mean any device having acute ridged corners or edges capable of cutting or piercing.

Contaminated sharps shall be discarded immediately or as soon as feasible in containers that are:

- Closable
- Puncture resistant
- Leak proof on sides and bottom
- Appropriately labeled or color coded

Reusable containers shall not be used.

The containers for contaminated sharps shall be:

- Easily accessible to personnel and located as close as is feasible to the immediate area where sharps are used or can be reasonably anticipated to be found
- Maintained upright throughout use
- Replaced routinely and not be allowed to overfill

When moving containers of contaminated sharps from the area of use, the containers shall be:

- Closed immediately prior to removal or replacement to prevent spillage or protrusion of contents during handling, storage, transport, or shipping
- Placed in containers located in the designated medical waste accumulation area

All human blood and blood products including waste bulk human blood, serum, plasma, and other blood components, pathological waste such as tissues and body parts, and other potentially infectious materials such as semen, vaginal secretions, saliva, and any body fluid that is visibly contaminated with blood are considered hazardous and thus regulated waste.

Above mentioned regulated waste shall be placed in containers which are:

- Closable
- Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport, or shipping
- Appropriately labeled or color coded
- Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping

- Placed in containers located in the designated waste accumulation area

If outside contamination of the regulated waste container occurs, it shall be placed in a second container. The second container shall be:

- Closable
- Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport, or shipping
- Appropriately labeled or color coded
- Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping

The biological (or special) waste is regulated by the Texas Commission on Environmental Quality ([TCEQ](#)) and the [TDSHS](#) rules.

4.5 Housekeeping

All equipment and surfaces where work has been performed shall be cleaned and decontaminated after contact with blood or OPIM.

UTA departments shall maintain worksites clean and in sanitary condition. The departments shall determine and implement an appropriate written schedule for cleaning and method of decontamination.

Contaminated work surfaces shall be decontaminated with an appropriate disinfectant after completion of procedures, immediately or as soon as feasible when surfaces are contaminated or after any spill of blood or OPIM, and at the end of the work shift if the surface may have become contaminated following the last cleaning.

Protective coverings, e.g., plastic wrap, aluminum foil, or imperviously backed absorbent paper, used to cover equipment and environmental surfaces, shall be removed, and replaced as soon as feasible when they become contaminated or at the end of the work shift if they may have become contaminated during the shift.

All bins, pails, cans, and similar receptacles intended for reuse which have a reasonable likelihood for becoming contaminated with blood or OPIM shall be inspected and decontaminated on a regular schedule and cleaned and decontaminated immediately or as soon as feasible upon visible contamination.

Broken glassware, which may be contaminated, shall not be picked up directly with hands. The spill and/or debris shall be cleaned up using mechanical means such as a brush and dustpan, tongs, or forceps.

Reusable sharps that are contaminated with blood or OPIM shall not be stored or processed in a manner that requires employees to reach by hand into the containers where these sharps have been placed.

4.6 Human Immunodeficiency Virus (HIV) & Hepatitis B Virus (HBV) Research Laboratories, Research Laboratories Handling Human Blood/OPIM/Cells/Tissues

HIV and HBV research laboratories engaged in culturing, production, concentration, experimentation, and manipulation of HIV and HBV are required to comply with the special provisions outlined in this section in addition to the other requirements contained in this plan and guidelines established by the [National Institutes for Health \(NIH\)](#) and the [Centers for Disease Control and Prevention \(CDC\)](#). The guidelines also need to be followed when research involves human blood/OPIM/cells/tissue. These special provisions do not apply to clinical or diagnostic laboratories engaged solely in the analysis of blood, tissue, or organs.

4.6.1 Special Practices

The following special practices shall be followed when research work involves handling HIV, HBV, or human blood/OPIM/cells/tissue:

- Work area(s) shall have card-reader(s) to limit access only to persons who have completed the appropriate requirements. Written policies and procedures shall be established whereby only persons who have been advised of the potential biohazard(s), who meet specific entry requirements, and who comply with all entry and exit procedures shall be allowed to enter the work areas/animal rooms.
- Laboratory has lockable doors that shall be kept closed when work involving HIV, HBV or any other bloodborne pathogens, and human blood/OPIM/cells/tissue is in progress.
- When bloodborne pathogen cultures, infected animals, or human blood/OPIM/cells/tissue are present in the work area or containment module, a hazard warning sign incorporating the universal biohazard symbol shall be posted on all access doors. The hazard warning sign will comply with established requirements (refer to the “Signs” section of this plan).
- It is advisable that all activities involving bloodborne pathogens should be conducted in BSCs or other physical containment devices within the containment module.
- Laboratory coats, gowns, smocks, uniforms, or other appropriate personal protective clothing shall be used in the work area/animal rooms. Personal protective clothing shall not be worn outside of the work area and shall be decontaminated before being laundered.
- Special care shall be taken to avoid skin contact with bloodborne pathogen cultures/animals infected with bloodborne pathogens, and human blood/OPIM/cells/tissues. Gloves shall be worn when handling infectious materials or animals.

- Laboratories shall contain a facility for hand washing and preferably also an eye wash facility, which is readily available within the work area.
- Contaminated materials that are to be decontaminated at a site away from the work area shall be placed in a durable, leak proof, labeled or color-coded container that is closed before being removed from the work area.
- Before disposal, all regulated waste shall either be incinerated, autoclaved, or decontaminated by a method known to effectively destroy bloodborne pathogens.
- Vacuum lines shall be protected with liquid disinfectant traps and high-efficiency particulate air (HEPA) filters or filters of equivalent or superior efficiency. Vacuum lines shall be checked routinely and maintained or replaced as necessary.
- Hypodermic needles and syringes shall be used only for parenteral injection and aspiration of fluids from laboratory animals and diaphragm bottles. Only needle-locking syringes or disposable syringe-needle units, i.e., where the needle is integral to the syringe, shall be used for the injection or aspiration of bloodborne pathogen cultures.
- Extreme caution shall be used when handling needles and syringes. A needle shall not be bent, sheared, replaced in the sheath or guard, or removed from the syringe following use. The needle and syringe shall be promptly placed in a puncture-resistant container.
- All spills shall immediately be contained and cleaned up by appropriate professional staff or others properly trained and equipped to work with potentially infectious materials.
- A spill or accident that results in an exposure incident shall immediately be reported to the Principal Investigator (PI) or the person in charge of the research laboratory. EH&S shall also be notified.
- A biosafety manual shall be prepared or adopted and periodically reviewed and updated at least annually or more often if necessary. Personnel shall be advised of potential hazards, be required to read instructions on practices and procedures, and be required to follow them.

4.6.2 Containment Equipment

Certified BSCs or other appropriate combinations of personal protection, such as special protective clothing, respirators, and physical containment devices, such as centrifuge safety cups, sealed centrifuge rotors, and containment caging for animals should be used for all activities with bloodborne pathogens or human blood/OPIM/cells/tissue that pose a threat of exposure via droplets, splashes, spills, or aerosols.

BSCs shall be certified when installed, whenever they are moved, and at least annually thereafter.

4.7 Hepatitis B Vaccination, Post-Exposure Evaluation and Follow-Up(s)

The UTA departments shall make available the hepatitis B vaccine and vaccination series to all employees who are occupationally exposed to bloodborne pathogens. The UTA departments shall also make available post-exposure evaluation and follow-up(s) to all employees who have had an exposure incident.

The UTA departments shall ensure that all medical evaluations and procedures including the hepatitis B vaccine and vaccination series, post-exposure evaluation, and follow-up(s), including prophylaxis are:

- Made available at no cost to the employee
- Made available to the employee at a reasonable time and place
- Performed by or under the supervision of a licensed physician/licensed healthcare professional
- Conducted by an accredited laboratory
- Provided according to the [U.S. Public Health Service guidelines](#)

4.7.1 Hepatitis B Vaccination

Hepatitis B vaccination shall be offered free of charge to employees who have occupational exposure to bloodborne pathogens and have received the required training. Vaccinations will be administered in amounts and at times prescribed by standard medical practice. Each identified employee will receive information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, and the benefits of being vaccinated. The employee will be offered the hepatitis B vaccine within 10 working days of appointment or assignment unless the employee previously has received the complete hepatitis B vaccination series, antibody testing shows that the employee is immune, or the vaccine is contraindicated for medical reasons. UTA shall not make participation in a prescreening program a prerequisite for receiving hepatitis B vaccination.

An employee declining a hepatitis B vaccination shall sign a [Hepatitis B Vaccine Waiver](#). The original signed statement can be scanned and shall be sent to UTA EH&S (ehsafety@uta.edu).

If an employee initially declines hepatitis B vaccination, but later while still covered under the standard decides to accept the vaccination, the UTA department shall make the hepatitis B vaccination available at that time.

If the [U.S. Public Health Service](#) recommends a routine booster dose(s) of hepatitis B vaccine at a future date, such booster dose(s) shall be made available.

4.7.2 Post-Exposure Evaluation and Follow-Up(s)

An employee who has experienced a potential exposure incident to bloodborne pathogens must report it immediately to his/her supervisor or PI and EH&S (see Section 9. POLICIES/FORMS, UTA Employee Blood and Body Fluid Exposure). Arrangements have been made with Concentra Medical Center to provide post-exposure treatment that may include: Initial counseling/baseline blood collection and testing, prophylaxis treatment, blood testing for HIV and HBV, follow-up testing for HIV, and a confidential reply from the attending healthcare professional. Concentra Medical Center is an approved provider within the UT System Workers' Compensation IMO Med-Select Network. When checking in at the clinic, the individual should indicate that they are an employee of UTA and present the [Notification of a Work-Related Injury or Occupational Disease](#) form along with the [Workers' Compensation Pharmacy Information](#).

The following elements must be included in the post-exposure evaluation:

- Documentation of the route(s) of exposure, and the circumstances under which the exposure incident occurred.
- If possible, the identification of the source individual and, if possible, the status of the source individual. The blood of the source individual will be tested (after consent is obtained) for HBV/HIV.
- If consent is not obtained, the UTA department shall establish that legally required consent cannot be obtained. When law does not require the source individual's consent, the source individual's blood, if available, shall be tested and the results documented. When the source individual is already known to be infected with HBV or HIV, testing for the source individual's known HBV or HIV status is not needed.
- Results of the source individual's testing shall be made available to the exposed employee, and the employee shall be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.
- The exposed employee shall be offered the option of having his/her blood collected for testing of HBV/HIV serological status after consent is obtained. If the employee consents to baseline blood collection but does not give consent at that time for serologic testing, the sample shall be preserved for at least 90 days. If, within 90 days of the exposure incident, the employee elects to have the baseline sample tested, such testing shall be done as soon as feasible, and the blood sample discarded.
- The employee will be offered post-exposure prophylaxis in accordance with the current recommendations of the [U.S. Public Health Service](#).

- The employee will be given appropriate counseling concerning precautions to take during 48-hour period after the exposure incident. The employee will also be given information on potential illnesses to be alert for and is advised to report any related experiences to appropriate personnel.

Please see Section 9. POLICIES/FORMS for additional information about student blood and body fluid exposure.

4.7.3 Reporting

The affected employee is required to complete the [Employee's Report of Work-Related Injury or Occupational Disease](#) and the [Workers' Compensation Network Acknowledgement](#). The affected employee's supervisor must complete the [Supervisor's Report of Employee Work-Related Injury or Occupational Disease](#) and give a copy of the [Notice of Network Requirements](#) to the employee. These forms must be submitted within 24 hours of reporting the incident exposure to EH&S via fax at 817-272-0273 or the supervisor and employee can scan and email the documents to workerscompensation@uta.edu.

Please see Section 9. POLICIES/FORMS, UTA Student Blood and Body Fluid Exposure.

4.7.4 Information Provided to the Healthcare Professional

The UTA department shall provide the healthcare professional evaluating an employee after an exposure incident with the following information:

- A copy of Exposure Control Plan of UTA
- A description of the exposed employee's duties as they relate to the exposure incident
- Documentation of the route(s) of exposure and circumstances under which exposure occurred

4.7.5 Healthcare Professional's Written Opinion

The UTA department shall obtain and provide the employee with a copy of the evaluating healthcare professional's written opinion within 15 days of the completion of the evaluation. The healthcare professional's written opinion for HBV vaccination, post-exposure evaluation, and follow-up(s) shall be limited to the following information:

- Whether the hepatitis B vaccine is indicated for an employee, and if the employee has received such vaccination
- A statement that the employee has been informed of the results of the evaluation
- A statement that the employee has been told about any medical conditions resulting from exposure to blood or OPIM which require further evaluation or treatment

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

4.8 Communication of Hazards to Employees

Efforts directed at communicating hazards of bloodborne pathogens to UTA employees through training and the use of labels and signs are intended to provide employees with adequate warning to eliminate or minimize their exposure.

4.8.1 Training

All UTA employees with occupational exposure to blood or OPIM shall complete Bloodborne Pathogen Training. Bloodborne Pathogen Training is online training and shall be taken at the time of initial assignment to tasks where occupational exposure may take place and at least annually thereafter.

EH&S Online Training site (<https://cems.uta.edu/CEMS/Login>) has two Bloodborne Pathogen Trainings available:

- Bloodborne Pathogens for Laboratory Research Personnel - course # BIOL200
- Bloodborne Pathogens (Non-Research Personnel) - course # OCC700

The training program shall contain the following elements:

- An accessible copy of the regulatory text of the bloodborne pathogens standard and an explanation of its contents
- A general explanation of the epidemiology and symptoms of bloodborne diseases
- An explanation of the modes of transmission of bloodborne pathogens
- An explanation of UTA's Exposure Control Plan and website address to the document
- An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood or OPIM
- An explanation of the use and limitations of methods that will prevent or reduce exposure, including appropriate engineering controls, work practices, and PPE
- Information on the types, proper use, location, removal, handling, decontamination, and disposal of PPE
- An explanation of the basis for selection of PPE

- Information on the hepatitis B vaccine, including information on its efficiency, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge for employees
- Information on appropriate actions to take and persons to contact in an emergency involving blood or OPIM exposure
- 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 of the post-exposure evaluation and follow-up(s) that the UTA department 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 bloodborne pathogens standard

4.8.2 Labels

Labels shall be affixed to refrigerators/freezers containing bloodborne pathogens, blood, or OPIM, equipment that is used to work with these materials, and regulated waste containers and other containers used to store, transport, or ship blood or OPIM.

The labels shall include the universal biohazard symbol and the word “biohazard”. In the case of regulated waste, the words “biohazard waste” may be substituted. The label shall be fluorescent orange or orange red with lettering or symbols in a contrasting color (see below).



There are several exemptions to the labeling requirement:

- Containers of blood, blood components, or blood products that are labeled as to their contents and have been released for transfusion or other clinical use do not need to be labeled in accordance with the provisions outlined in this section

- Individual containers of blood or OPIM that are placed in a labeled container during storage, transport, shipment, or disposal do not need to be labeled in accordance with the provisions outlined in this section
- Regulated waste that has been decontaminated does not need to be labeled
- Red bags and red containers may be substituted for labels

4.8.3 Signs

Signs shall be posted at the entrance of research laboratories when work involves HIV, HBV or any other bloodborne pathogens, or human blood/OPIM/cells/tissue. These signs shall bear the following legend and information:

- Name of infectious agent / potentially infectious material
- Special requirements for entering the area
- Name and telephone number of the PI
- Emergency contact information

Signs shall be fluorescent orange or orange red with lettering or symbols in a contrasting color (see below).



4.9 Employee Training Records

EH&S maintains the Bloodborne Pathogen Training records. These records shall be maintained for three years from the date of training. The following information is documented:

- The names of persons taking the online training
- The email addresses of persons taking the online training
- Employee's department
- The date(s) when the online training was taken

5. DEFINITIONS

Amniotic fluid: The fluid surrounding the embryo in the mother's womb.

Biohazard label: A label affixed to containers of regulated waste, refrigerators/freezers, equipment, and other containers used to store, transport, or ship blood and other potentially infectious materials (OPIM). The label must be fluorescent orange or orange red in color with the biohazard symbol and the word biohazard on the lower part of the label.

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

Bloodborne Pathogens: Pathogenic (disease producing) microorganisms can be present in human blood or OPIM and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV).

Cerebrospinal Fluid: A clear, colorless fluid surrounding the brain and spinal cord. It can be withdrawn by performing a spinal puncture.

Clinical Laboratory: A workplace where diagnostic or other screening procedures are performed on blood or OPIM.

Contaminated: The presence or the reasonably anticipated presence of blood or OPIM on an item or surface.

Contaminated Laundry: Laundry which has been soiled with blood or OPIM.

Contaminated Sharp: Any contaminated object that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, capillary tubes, and the 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.

Employee: An individual who works for a governmental unit or on premises owned or operated by a governmental unit whether he or she is directly compensated by the governmental unit.

Employer: Engages the services of employees.

Engineering Controls: Include all control measures that isolate or remove a bloodborne pathogens hazard from the workplace, such as sharps disposal containers, self-sheathing needles, and needleless systems.

Exposure Control Plan: A written program developed and implemented by the employer which sets forth procedures, engineering controls, personal protective equipment, work practices, and other methods that can protect employees from exposure to bloodborne pathogens and meets the requirements spelled out by the OSHA Bloodborne Pathogens Standard.

Exposure Incident: A specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or OPIM that results from the performance of an employee's duties.

HBV: Hepatitis B virus.

HCV: Hepatitis C virus.

HIV: Human immunodeficiency virus.

Human Tissue: Recognizable human tissue. It must be buried, incinerated, or rendered completely unrecognizable. Nonhuman tissues are only considered infectious if they are known or suspected to contain pathogens with sufficient virulence and quantity so that exposure to the waste by a susceptible human host could result in an infectious disease.

Mucous Membranes: A surface membrane composed of cells that secrete various forms of mucus, as in the lining of the respiratory tract and the gastrointestinal tract.

Licensed Healthcare Professional: A person whose legally permitted scope of practice allows him or her to independently evaluate an employee of a governmental unit, administer hepatitis B vaccinations, and

determine the appropriate interventions after an exposure incident (post-exposure evaluation) and follow-up(s).

Needleless Systems: Devices which provide an alternative to needles for various procedures to reduce the risk of injury involving contaminated sharps. Examples include IV medication systems which administer medication or fluids through a catheter port using non-needle connections and jet injection systems which deliver liquid medication beneath the skin or through a muscle.

Occupational Exposure: A reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or OPIM that may result from the performance of an employee's duties.

Other Potentially Infectious Materials (OPIM): (1)The following human body fluids: semen, vaginal secretions, menstrual blood, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, any bodily fluid that is visibly contaminated with blood such as saliva or vomit, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids; (2) Any unfixed tissue, cells, 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 (4) Blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Parenteral: Piercing mucous membranes or the skin barrier through such events as needle sticks, human bites, cuts, and abrasions.

Pathogen: A microorganism capable of causing infection or disease.

Pericardial Fluid: Fluid from around the heart.

Peritoneal Fluid: The clear straw-colored serous fluid secreted by the cells of the peritoneum.

Personal Protective Equipment (PPE): Specialized clothing or equipment worn by an employee for protection against a hazard. PPE may include, but is not limited to gloves, gowns, laboratory coats, face shields or masks and eye protection equipment, mouthpieces, resuscitation bags, pocket masks, or other ventilation devices. PPE can be considered "appropriate" only if it does not permit blood or OPIM to pass through or reach the employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membrane under normal conditions of use and for the duration of time which the protective equipment is used. General work clothes (e.g., uniforms, pants, shirts, or blouses) not intended to function as protection against a hazard are not considered to be PPE.

Pleural Fluid: Fluid from the pleural cavity.

Prophylaxis: The measure carried out to prevent diseases.

Regulated Waste: Liquid or semi-liquid blood or OPIM, contaminated items that would release blood or OPIM in a liquid or semi-liquid state if compressed, items that are caked with dried blood or OPIM and

can release these materials during handling, contaminated sharps, and pathological and microbiological wastes containing blood or OPIM.

Regulated Waste/Special Waste from Health Care-Related Facilities: Solid waste which if improperly treated or handled may serve to transmit an infectious disease and which is composed of the following: (1) animal waste, (2) bulk blood, bulk human blood products, or bulk human body fluids, (3) microbiological waste, (4) pathological waste, or (5) sharps.

Research Laboratory: A laboratory producing or using research-laboratory-scale amounts of HIV or HBV. Research laboratories may produce high concentrations of HIV or HBV but not in the volume found in production facilities. A laboratory where research work is conducted with human blood/OPIM/cells/tissue.

Sharps: Objects used or encountered in a health care setting/laboratory that can be reasonably anticipated to penetrate the skin or any other part of the body and to result in an exposure incident. Examples include, but are not limited to needle devices, Pasteur pipettes, scalpel blades, lancets, a piece of broken glass, a broken capillary tube, an exposed end of a dental wire, or a dental knife, drill, or bur.

Sharps Injury: Any injury caused by a sharp, including a cut, abrasion, or needle stick.

Sharps with Engineered Sharps Injury Protections: Include non-needle sharps or needle devices containing built-in safety features that are used for collecting fluids or administering medications or other fluids, as well as other procedures involving a risk of sharps injury.

Source Individual: Any individual, living or dead, whose blood or OPIM may be a source of occupational exposure to an employee. Examples include, but are not limited to, hospital and clinic patients; clients in institutions for the developmentally disabled; trauma victims; clients of drug and alcohol treatment facilities; residents of hospices and nursing homes; human remains; and individuals who donate or sell blood or blood components.

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

Synovial Fluid: The clear amber fluid usually present in small quantities in a joint of the body (for example, the knee or elbow).

Universal Precautions: An approach to infection control. According to the concept of Universal Precautions, all human blood and OPIM are treated as if known to be infectious for HIV, HBV, HCV, and other bloodborne pathogens.

Work Practice Controls: Controls that reduce the likelihood of exposure by altering the way a task is performed, e.g., prohibiting recapping of needles by a two-handed technique.

6. EMERGENCY PROCEDURES

6.1 General

If there is an emergency or if anyone is in danger, immediately call the UTA Police Department for assistance. Explain the nature and the extent of the emergency, being as specific and detailed as possible. Emergency personnel will be dispatched to help you.

- Call UTA police dispatch at **817-272-3003** for help if there is an emergency
- Notify EH&S, 817-272-2185 and your PI

6.2 Blood Spills

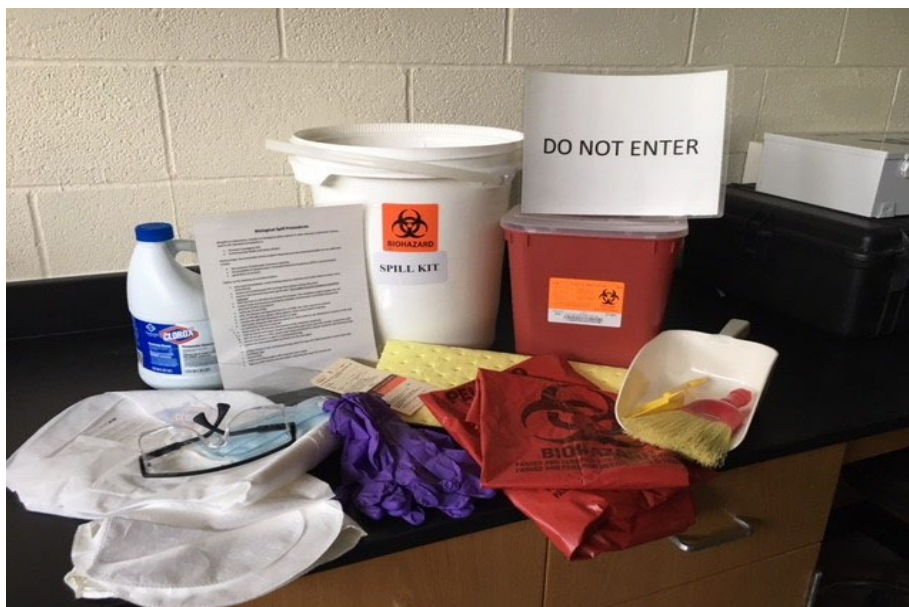
The following lists the procedure for blood spills clean-up and decontamination. Decontamination is defined as: the use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal. If you need assistance and are not in an emergency, consult with the EH&S Biological Safety Specialist at 817-272-2185.

- Wear gloves, eye protection, and a lab coat
- Absorb blood with paper towels and place the contaminated towels in plastic bags marked with biohazard sign
- Collect any sharp objects with forceps or other mechanical device and place in a biosharps container
- Add 10% bleach solution over the spill spot and let stand approximately 30 minutes to ensure adequate germicidal action
- Blot up bleach solution with disposable towels
- Soak the area with additional 10% bleach, if needed, and let stand as indicated above before soaking up with disposable towels
- All contaminated towels and gloves should be gathered in biohazardous waste disposal bags
- See [SOP: Proper Use of Bleach \(Sodium Hypochlorite\) as a Chemical Disinfectant in Biolaboratories](#)

6.3 Biological Hazards Spill Kit

A well-designed biological hazards spill kit is highly recommended. The following items would be excellent choices for a kit:

- A “DO NOT ENTER” sign to be posted on the laboratory door.
- An appropriate chemical decontaminant(s). In most cases a 10% household bleach solution is a good choice, but keep in mind that bleach will corrode stainless steel if left in contact with it for 30 minutes or more. Whenever you use bleach to clean up spills of an infectious agent, always prepare a fresh solution. Over time, a bleach and water solution will lose its effectiveness for decontamination. See [SOP: Proper Use of Bleach \(Sodium Hypochlorite\) as a Chemical Disinfectant in Biolaboratories](#). For human blood and body fluids, iodophors or 70% alcohol is also appropriate.
- Materials to absorb liquids after decontamination. This could include paper towels, absorbent lab pads, or special materials designed to absorb large volumes of liquid. Keep in mind the volumes of liquid typically used in the laboratory area when selecting an absorbent.
- Appropriate PPE to wear during cleanup. Gloves and a long-sleeved laboratory coat or gown are always necessary. Use eye and/or facial protection.
- A mechanical means for handling broken glass. Broken glass represents a high cutting danger. Do not touch it directly, especially if it is contaminated with a biohazardous agent. Mechanical means could include tongs, forceps, small disposable scoops, and sponges, autoclavable dustpans, or any other method that prevents direct contact with the broken glass.
- Biohazard bags, sharps containers, and/or other containers to place the material in for further treatment and disposal.



A well-designed biological hazards spill kit is highly recommended.

6.4 Emergency Numbers

A list of emergency numbers that should be posted in the laboratory:

Department or Agency	Phone Number
UTA EH&S	817-272-2185
UTA Police Department, Emergency	817-272-3003
UTA Police Department, Non-Emergency	817-272-3381
UTA Health Services	817-272-2771
City of Arlington Fire Department	817-459-5500
Arlington Memorial Hospital	817-548-6100

7. ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
BSCs	Biological Safety Cabinets
CDC	Centers for Disease Control and Prevention
CFR	Code of Federal Regulations
EH&S	Environmental Health and Safety Office
HBV	Hepatitis B virus
HEPA Filter	High Efficiency Particulate Air Filter
HCV	Hepatitis C virus
HIV	Human Immunodeficiency Virus
NIH	National Institute of Health
OPIM	Other Potentially Infectious Materials
OSHA	Occupational Safety and Health Administration
PI	Principal Investigator
PPE	Personal Protective Equipment
TCEQ	Texas Commission on Environmental Quality
TDSHS	Texas Department of State Health Services
UTA	The University of Texas at Arlington

8. REGULATIONS/RESOURCES

8.1 Regulations

OSHA Bloodborne Pathogens and Needlestick Prevention Web Site

- ❖ <https://www.osha.gov/SLTC/bloodbornepathogens/>

OSHA Bloodborne Pathogens Standard

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

OSHA. Occupational Exposure to Bloodborne Pathogens; Needlestick and Other Sharps Injuries; Final Rule

- ❖ https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=16265&p_table=FEDERAL_REGISTER

Needlestick Safety and Prevention Act (H.R.5178). Public Law 106-430 - Signed 11/6/2000

- ❖ <https://www.govinfo.gov/app/details/PLAW-106publ430>

Bloodborne Pathogen Disease Information

Information about HIV/AIDS

- ❖ <http://www.cdc.gov/hiv/basics/>

Information about Hepatitis B

- ❖ <http://www.cdc.gov/hepatitis/hbv/>

Information about Hepatitis C

- ❖ <http://www.cdc.gov/hepatitis/hcv/>

Latex Allergies Information

- ❖ <https://www.cdc.gov/niosh/docs/97-135/>

Safer Sharps Devices Information

Preventing Needlestick Injuries in Health Care Settings (National Institute of Occupational Safety and Health Alert)

- ❖ <https://www.cdc.gov/niosh/docs/2000-108/pdfs/2000-108.pdf>

9. POLICIES/FORMS

- [UTA Employee Blood and Body Fluid Exposure](#)
- [UTA Student Blood and Body Fluid Exposure](#)
- [Hepatitis-B Vaccination Waiver Exemption](#)
- [Employee's Report of Work-Related Injury or Occupational Disease](#)
- [Workers' Compensation Network Acknowledgement](#)
- [Supervisor's Report of Employee Work-Related Injury or Occupational Disease](#)
- [Notice of Network Requirements](#)
- [Notification of a Work-Related Injury or Occupational Disease](#)
- [Workers' Compensation Pharmacy Information](#)
- [SOP: Proper Use of Bleach \(Sodium Hypochlorite\) as a Chemical Disinfectant in Biolaboratories](#)