

Bloodborne Pathogen Exposure Control Plan

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I. Purpose

Arizona State University is committed to reducing the risks to individuals who may be exposed to Bloodborne Pathogens. ASU has developed the Bloodborne Pathogen Exposure Control Plan to meet the requirements of the Occupational Safety and Health Administration Bloodborne Pathogen Standard (codified in 29 CFR § 1910.1030) and to address ASU's concern for personal safety.

The Bloodborne Pathogen Standard requires that specific safety issues be addressed in the Exposure Control Plan including the following topics:

- Communication of hazards to employees and students;
- Employee and student exposure situations;
- Methods of compliance (e.g., engineering controls, work practices, and personal protective equipment used to minimize exposures);
- Procedures for hepatitis B vaccinations, post-exposure vaccinations, and follow-up; and
- Recordkeeping practices.

The specific methods instituted to implement each of these topics are described in the designated section of this document. The ASU Exposure Control Plan will be reviewed and updated annually to reflect new or modified tasks or procedures, which affect potential occupational exposure situations.



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Date

II. Bloodborne Pathogens

This Exposure Control Plan was developed to protect against potential exposures to bloodborne pathogens. According to OSHA, bloodborne pathogens are microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, Hepatitis B Virus (HBV) and Human Immunodeficiency Virus (HIV). Provided below is a brief overview of each of these viruses:

- Hepatitis B viral infection is caused by HBV, and was formerly known as “serum hepatitis.” Of all bloodborne diseases, HBV poses the greatest risk for infection among health care providers and laboratory researchers because it can be easily transmitted through needlesticks and other types of percutaneous exposures. The virus causes inflammation of the liver and can lead to serious and occasionally fatal disease. Following an exposure an unvaccinated person should be offered treatment with HB immune globulin and HBV vaccination. An effective vaccine is available and should be offered to personnel who may be exposed.
- Hepatitis C viral infection is caused by Hepatitis C Virus (HCV). HCV poses a risk for infection among health care providers and laboratory researchers because it is transmitted through needlesticks and other types of percutaneous exposures. Similar to HBV, the virus causes inflammation of the liver and can lead to serious and occasionally fatal disease. Post exposure diagnostic testing should be completed, but at the present time there is no recommended post exposure prophylaxis
- Acquired Immunodeficiency Syndrome (AIDS) is a disease caused by HIV. HIV is a retrovirus which suppresses the immune system leaving the infected individual vulnerable to opportunistic infections and cancers. These infections become increasingly severe and eventually lead to death. No cure for HIV has been found. Protease inhibitors are available, although its efficacy is debated within the medical community. Protease inhibiting drugs are now part of the treatment process and seem to hold some promise according to some medical experts.

In addition to HIV, HBV, and HCV, there are other viruses, bacteria, and parasites that may be present in blood, human body fluids, or tissues. A few of these agents include:

| Disease | Causative Agent |
|---------------------------------|--|
| Babesiosis | <i>Babesia microti</i> |
| Brucellosis | <i>Brucella</i> species |
| Creutzfeldt-Jakob Disease (CJD) | Prion |
| Leptospirosis | <i>Leptospira interrogans</i> |
| Malaria | <i>Plasmodium</i> species |
| Relapsing Fever | <i>Borrelia duttoni</i> , <i>Borrelia hermsii</i> , <i>Borrelia parkerii</i> , <i>Borrelia recurrentis</i> |
| SIV Infection | Simian Immunodeficiency Virus |
| Syphilis | <i>Treponema pallidum</i> |
| T-cell Leukemia | Human T-lymphotropic virus Type 1 |
| Viral Encephalitis | Arboviruses |
| Viral Hemorrhagic Fevers | Ebola, Marburg, Lassa fever viruses |
| Viral Meningitis | Arenaviruses (e.g., Lymphocytic Choriomeningitis Virus) |

Note: The bacterial and parasitic diseases listed above are treatable with antibiotics or other therapy. There are no specific, effective treatments for the viral diseases.

Bloodborne pathogens may also include the following sources of potentially infectious materials of human origin:

- Amniotic fluid
- Body fluids visibly contaminated with blood (or unknown body fluids)
- Cerebrospinal fluid (CSF)
- Pericardial fluids
- Peritoneal fluids
- Pleural fluid
- Saliva in dental procedures
- Semen
- Synovial fluid
- Vaginal secretions

Certain infectious materials handled by university personnel are also regulated under the OSHA Bloodborne Pathogens Standard. These materials should be handled in the same manner as human blood or body fluids:

- Animals that have been experimentally infected with HIV, HBV or HCV.
- Blood and tissues from experimental animals infected with HIV, HBV or HCV.
- Cell lines or tissue cultures containing HIV, HBV or HCV.
- Culture media or other solutions which contain HIV, HBV or HCV.
- Human T-lymphocyte cultures.
- Primary human cell and tissue cultures.

Bloodborne pathogens may be transmitted if human blood or Other Potentially Infectious Material (OPIM) comes in contact with your blood or body fluids. Exposures often occur through needlesticks, direct contact of materials on non-intact skin, or splashes to the eyes, mouth, and nose.

Individuals that may have a reasonable chance of encountering human blood, body fluids, or OPIM while performing their normal job duties are covered by the OSHA Bloodborne Pathogens Standard.

III. Overview

The ASU Exposure Control Plan is designed to allow for timely and accurate identification, evaluation (including exposure), control and monitoring of bloodborne hazards in the laboratory environment. This document forms the basis for effective management of biological hazards in general, and more specifically, pathogens known to be carried in blood or OPIM as defined by the OSHA Bloodborne Pathogen Standard.

The ASU President is the chief administrative officer for the campus and holds ultimate responsibility for implementation of the Exposure Control Plan at all facilities under campus control. EHS Biosafety and Biosecurity is responsible for monitoring compliance with the Exposure Control Plan.

The Biological Safety Officer (BSO) works closely with campus administrators to develop any additional policies and practices needed to support the effective implementation of the Exposure Control Plan, as well as review, revise, or update the Exposure Control Plan as needed. In a coordinated effort with campus administration (e.g., Deans, Directors, Chairs, Supervisors), hazards will be identified, individuals will be trained and vaccinated when needed, and records will be kept to qualify the individuals for periodic retraining.

Individual departments and units are responsible for ensuring that the provisions of the ASU Exposure Control Plan and the mandates of the OSHA Bloodborne Pathogens Standard are carried out. Departments and units which have been identified as potentially having personnel with potential exposure to blood or OPIM include, but are not necessarily limited to:

- Biodesign Institute
- Chemistry and Biochemistry
- College of Nursing and Health Innovation
- College of Technology and Innovation
- Department of Animal Care and Technology (DACT)
- Department of Anthropology
- Engineering
- Environmental Health and Safety (EHS)
- Facilities Management
- Family and Human Development
- Health Services
- Intercollegiate Athletics
- LightWorks
- Mary Lou Fulton Teachers College
- Math and Natural Sciences
- Police Department
- School of Dance
- School Of Earth and Space Exploration
- School of Letters and Sciences
- School of Life Sciences
- School of Nutrition and Health Promotion
- Student Recreation Complex

Some of the job tasks or procedures performed by individuals that present potential exposures to bloodborne pathogens include, but are not necessarily limited to the following:

- Handling human blood, components, or products.
- Handling human-derived materials that may be contaminated with blood.
- Handling unfixed human organs or tissues.
- Culturing primary human cells or cultures known to contain HIV, HBV, or HCV.
- Handling OPIM (e.g., semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, unfixed human tissue or organs, animals and tissues of animals known to be infected with HIV, HBV, or HCV, and all other body fluids in situations where it is difficult or impossible to differentiate between body fluids).

IV. Universal Precautions

Universal Precautions assumes that **all** blood, body fluids (e.g., semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, and saliva in dental procedures), tissues, and OPIM are infectious for HIV, HBV, HCV, and other bloodborne diseases. Because no test method can offer complete assurance for the absence of all bloodborne pathogens, Universal Precautions must always be observed when handling blood and other potentially infectious materials collected from any source.

Universal precautions must be observed by all university personnel to prevent contact with blood and OPIM. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids will be considered potentially infectious.

The only exception to the use of universal precautions is in rare instances, such as unexpected medical emergencies, where employees may not be able to put on appropriate PPE (see [Section X](#)). In those situations where judgment must be afforded by the provider of health care or public safety services, the employees must not ignore the underlying concept of universal precautions nor should he or she decline to use PPE simply because it is not practical to use. Only under unexpected, extraordinary circumstances will employees have the option to not use PPE. An example would be if they feel such equipment would prevent the proper delivery of health care or public safety services or would create a greater hazard to their personal safety if they used such equipment. The exemption provided in the standard applies does not apply to the general concept of universal precautions, but only to the use of PPE under rare and relatively limited circumstances.

V. Responsibilities

A. Department of Environmental Health and Safety (EHS)

The responsibilities of the EHS department include, but may not be limited to, the following:

- Designate the Biological Safety Officer as the individual to oversee the ASU Exposure Control Plan.
- Develop, implement, and evaluate the Exposure Control Plan for the university.
- Assist departments with hazard assessments to determine jobs or tasks where exposure to blood or OPIM is possible.
- Promote practices, procedures, and methods that conform to the concept of universal precautions.
- Ensure that universal precautions are observed by employees and students with potential exposure to bloodborne pathogens.
- Determine, in conjunction with the affected department, applicable engineering controls, safe work practices, housekeeping methods, and personal protective equipment (PPE) to prevent blood and OPIM exposure to campus community members.
- Provide guidance and technical assistance to laboratories engaged in HIV, HBV, and HCV research.
- Assist departments in the identification of employees and students that have potential exposures to bloodborne pathogens.
- Provide direction on approved medical facilities capable of providing the confidential post exposure evaluation and follow-up.
- Create training opportunities as deemed necessary and appropriate for each affected department.
- Ensure that individual departments are compiling and maintaining (for a minimum of three years) all training records relative to the Exposure Control Plan.
- Provide biohazard labels to requesting department.
- Coordinate the proper management and disposal of regulated waste; disposal bags and containers must be procured by each department.
- Assist departments in communicating the Exposure Control Plan to third-party vendors who perform tasks on campus that potentially implicate exposure control issues.
- Assist departments with Bloodborne Pathogens and exposure control issues upon request.
- Conduct periodic inspections of ASU facilities to ensure compliance with the Exposure Control Plan.
- Serve as university liaison to regulatory authorities.
- Provide a means for suggestions, complaints, and concerns regarding the Exposure Control Plan.

B. ASU Health Services

The responsibilities of ASU Health Services include, but may not be limited to, the following:

- Assist in the development and implementation of the Exposure Control Plan.
- Assist in identifying and documenting personnel with possible exposure to bloodborne pathogens and the associated tasks and responsibilities of those positions and provide this information to EHS Biosafety and Biosecurity.
- Make available the hepatitis B vaccination to personnel identified through the process of exposure determination to have a potential exposure to bloodborne pathogens.
- Make available a hepatitis B antibody titer analysis to employees and students identified through the process of exposure determination that believe they have been vaccinated but do not have records documenting the vaccination series.
- Make confidential medical evaluation and follow-up immediately available to an exposed individual, following an exposure incident.
- Coordinate with EHS Biosafety and Biosecurity in the development of bloodborne pathogens training materials.
- Maintain confidential medical records in accordance with OSHA mandates for exposure incidents.
- Maintain all medical records for the duration of employment plus thirty years.
- Maintain declination statements (including vaccination declinations).
- Comply with all applicable requirements established in the OSHA Bloodborne Pathogens Standard and the ASU Exposure Control Plan.

C. Human Resources

The responsibilities of Human Resources include, but may not be limited to, the following:

- Assist in the development and implementation of the ASU Exposure Control Plan.
- Assist in identifying and documenting personnel with possible exposure to bloodborne pathogens and the associated tasks and responsibilities of those positions and provide this information to EHS Biosafety and Biosecurity.
- Ensure job descriptions include bloodborne pathogens requirements if the position involves activities covered by the OSHA Bloodborne Pathogens Standard.
- Comply with all applicable requirements established in the OSHA Bloodborne Pathogens Standard and the Exposure Control Plan.

D. Supervisors

Supervisors (including Principal Investigators) have a key role in the successful development, implementation and monitoring of the ASU Exposure Control Plan. Supervisors support and respect each employee's right to a safe working environment. The responsibilities of each supervisor include, but may not be limited to, the following:

- Provide all affected personnel with access to the Exposure Control Plan.
- Identify and document personnel with potential exposure to bloodborne pathogens and the associated tasks and responsibilities of those positions and provide this information to EHS Biosafety and Biosecurity.
- Ensure that universal precautions are understood and executed by employees and students with possible exposure to bloodborne pathogens.
- Promote practices, procedures, and methods that conform to the concept of universal precautions.
- Design and implement engineering controls and institute work-practice control procedures which will eliminate or minimize potential exposure to blood and OPIM.
- Provide appropriate PPE to employees and students that have potential exposure to bloodborne pathogens.
- Maintain a clean and sanitary workplace environment.
- Develop and implement cleaning schedules as deemed appropriate for the types of activities and facilities involved.
- Comply with additional criteria established for HIV, HBV, and HCV laboratories.
- Maintain hepatitis B virus declination statements and provide copies to EHS Biosafety and Biosecurity.
- Make confidential medical evaluation and follow-up immediately available to an exposed individual, following an exposure incident.
- Report exposure incidents to the Biological Safety Officer.
- Maintain needlestick logs and provide copies to EHS Biosafety and Biosecurity.
- Coordinate annual training required by the Exposure Control Plan.
- Contact EHS Biosafety and Biosecurity for instructions for how to access the online Biosafety and Bloodborne Pathogens training modules.
- Compile and retain employee and student training records for a minimum of three years. Submit copies to EHS Biosafety and Biosecurity.
- Affix appropriate labels to containers of regulated waste, refrigerators, freezers, and other equipment containing blood or OPIM, and other containers of blood or potentially infectious materials.
- Post the universal biohazard symbol and appropriate Biological Safety Level at the entrance of HIV, HBV, and HCV research laboratories. Contact the Biological Safety Officer or refer to the [ASU Biosafety Manual](#) to determine the appropriate Biological Safety Level.
- Ensure waste is labeled and disposed properly.
- Clearly identify the use of blood, products made from human blood, plasma, products made from plasma, or OPIM when applying for a new protocol through the [Institutional Biosafety Committee](#) (IBC).

- Provide, at no cost to the employee, all supplies, PPE, and vaccinations that are necessary for compliance with the Exposure Control Plan.
- Conduct periodic surveillance of activities within their respective areas to ensure compliance with the Exposure Control Plan.
- Comply with all applicable requirements established in the OSHA Bloodborne Pathogens Standard and the Exposure Control Plan.

E. Employees and Students

All employees and students have a basic right to a workplace that is free of recognized hazards that may cause injury or illness. With respect to bloodborne pathogens, individuals have the right to information and training for controlling exposures to bloodborne pathogens, the availability of vaccination for hepatitis B, and post-exposure medical care and post-exposure consultation.

Responsibilities of employees and students include, but may not be limited to, the following:

- Read, understand, and comply with the requirements of the Exposure Control Plan.
- Notify supervisor and EHS Biosafety and Biosecurity if job tasks and responsibilities present occupational exposure concerns that have not been previously identified.
- Alert others in the work area, before work begins, of activities that may expose themselves or others to bloodborne pathogens or OPIM.
- Follow universal precautions when handling blood or OPIM.
- Follow established work practice controls to eliminate or minimize occupational exposure.
- Be aware of engineering controls in the work place and the proper use of those controls.
- Be aware of the proper use, limitations, and location of PPE.
- Use appropriate PPE to eliminate or minimize exposure.
- Be aware of and observe established housekeeping procedures (e.g., use mechanical devices to clean up broken glass and not bare hands).
- Maintain work area in a clean and sanitary manner.
- Understand the additional requirements and protection for personnel working with HIV, HBV, HCV, or OPIM and follow established procedures.
- Complete and submit the Hepatitis B vaccination form in [Appendix A](#) (regardless of whether you are accepting the vaccine) to your supervisor.
- Immediately report all exposure incidents to your supervisor and EHS Biosafety and Biosecurity.
- Report all suspected exposure incidents.
- Attend initial and refresher biosafety and bloodborne pathogens training.
- Make certain that labels are appropriately affixed.
- Notify supervisor to report labeling problems.
- Ensure waste is labeled with the words “Biohazardous Waste” and the universal biohazard symbol; dispose of waste properly.
- Comply with all applicable requirements established in the [OSHA Bloodborne Pathogens Standard](#) and the Exposure Control Plan.

VI. Exposure Determination

ASU has performed an exposure determination to identify which employees, students, and visitors may be more likely at risk of exposure to bloodborne pathogens. This determination was made without regard to the use of PPE and regardless of the frequency of exposure.

Job classifications in which **all university employees** in the specific job classification have occupational exposure pursuant to 29 CFR § 1910.1030 include:

| Job Title | Job Code | Job Title | Job Code |
|--------------------------------------|----------|-----------------------------------|----------|
| Ascc Dir Biosafety/Biosecurity | 691482 | Nursing Assistant | 620240 |
| Ascc Biosafety Officer | 691459 | Nursing Supervisor | 620210 |
| Asst Chief of Police | 190985 | Phlebotomist | 620270 |
| Asst Biosafety Officer | 691435 | Physician, Chief of Medical Sta | 690359 |
| Asst Dir Biosafety | 691490 | Physician | 692860 |
| Asst Director Clinical Services | 491566 | Physician PRN | 692861 |
| Aviation Med Exam, Polytec PRN | 691344 | Physician Intern | 691419 |
| AVP Planning + Programs UTO | 196836 | Physician Lead | 692878 |
| BioDesign Researcher | 192815 | Physician Occup Hlth (CmpHlth) | 691786 |
| BioDesign Researcher (FSC) | 192816 | Physician Section Chief | 692893 |
| Chief Medical Technologist | 620170 | Physician-Research (CampHlth) | 691787 |
| Clinical Laboratory Nurse, CON | 691473 | Police Aide | 170995 |
| Clinical Veterinarian | 591443 | Police Aide Lead | 170997 |
| Community Health Nurse | 691575 | Police Aide Supervisor | 170998 |
| Dir Animal Care Program | 593712 | Police Commander | 191310 |
| Dir Campus Health | 693690 | Police Corporal | 171110 |
| Dir Emergency Preparedness | 691796 | Police Evidence and Property Tech | 170990 |
| Dir NP Healthcare | 198316 | Police Lieutenant | 171130 |
| Dir Wellness Health Promotion | 191504 | Police Officer | 171100 |
| Hazardous Materials Handling Officer | 195372 | Police Officer Events | 117943 |
| Hazardous Waste Specialist | 620730 | Police Officer Recruit | 171000 |
| Hazardous Waste Supervisor | 620733 | Police Sergeant | 171120 |
| Head Athletic Trainer | 498620 | Police Supvr, Non-Traffic Even | 190895 |
| Health & Safety Specialist PRN | 690771 | Refuse Management Supvr | 350350 |
| Health + Safety Officer | 620780 | Registered Nurse | 620190 |
| Health + Safety Specialist | 620770 | Registered Nurse PRN | 690191 |
| Health Sanitarian | 620790 | Registered Nurse Sr | 620200 |
| Laboratory Safety Inspector | 591805 | Research Nurse PRN | 599474 |
| Licensed Practical Nurse | 620100 | Research Nurse Sr | 520320 |
| Lifeguard | 490660 | Sanitation Equipment Operator | 351415 |
| Medical Assistant | 690110 | Security Officer | 191160 |
| Medical Assistant Sr. | 690210 | Security Officer Lead | 171170 |
| Medical Lab Technician | 690135 | Simulation + Lab Nurse Special | 691635 |
| Medical Office Supervisor | 690115 | Simulation and Lab Spec Lead | 691472 |
| Medical Technologist | 620150 | Sr BioDesign Researcher | 892820 |
| Medical Technologist Sr | 620160 | Sr BioDesign Researcher (FSC) | 892821 |
| Mgr Environmental Hlth and Safety | 691720 | Supvr Veterinary + Tech Svcs | 593163 |
| Mgr Food Safety and Health Sanita | 620792 | Swimming Pool Attendant | 440640 |
| Mgr Health Services Clinic | 693687 | Swimming Pool Operations Spec | 440650 |
| Mgr NP Health Clinics | 695381 | Team Physician | 691479 |
| NP Section Chief | 692894 | University Veterinarian | 593713 |
| Nurse Manager | 690625 | University Veterinarian (FSC) | 593714 |
| Nurse Prac-Site Coord CONHI | 691775 | Vivarium Maintenance Spec | 356841 |
| Nurse Practitioner | 692847 | Vivarium Supervisor | 591692 |
| Nurse Practitioner PRN | 692848 | Water Treatment Maint Spec | 390120 |
| Nurse Practitioner Asc Dir NP | 696805 | Water Treatment Maint Spec Ld | 390971 |
| Nurse Practitioner, Mgr Stu HI | 690624 | Wellness Care Section Chief | 695237 |
| Nurse Practitioner Supvr | 620230 | Women's Hlth Nrse Practioner (CH) | 691790 |

Tasks and procedures or groups of closely related tasks and procedures in which occupational exposure occurs in job classifications in which some employees have occupational exposure is somewhat of a difficult task to document accurately. This belief is based, in part, on the specific nature and variety of exposure activities conducted at the university. Therefore, it is the responsibility of each supervisor to identify each individual (e.g., student, employee) with the potential for exposure to bloodborne pathogens or OPIM and keep a current list in the laboratory. This list should contain the tasks and procedures, or groups of closely related tasks and procedures, in which occupational exposure may occur for these individuals.

Job classifications in which **some university employees** in the specific job classifications have occupational exposure pursuant to 29 CFR § 1910.1030 include:

| Job Title | Job Code |
|--------------------------------|----------|
| Animal Care Manager | 530150 |
| Animal Care Supvr | 530140 |
| Animal Caretaker | 530099 |
| Animal Technician | 590100 |
| Animal Technician Sr | 530110 |
| Animal Technologist | 530130 |
| Animal Technologist Lead | 530135 |
| Asbestos + Env Safety Spec | 620715 |
| Asc Resrch Professional (FSC) | 890350 |
| Asc Rsrch Professional RMY FSC | 892113 |
| Asoc Resrch Scientist,MY (FSC) | 892870 |
| Assoc Head Athletic Trainer | 498623 |
| Assoc Research Professional | 890351 |
| Assoc Research Profsl MY (FSC) | 890359 |
| Assoc Research Profsl (FSC) | 890352 |
| Assoc Research Scientist | 892879 |
| Assoc Research Scientist FSC | 892880 |
| Assoc Research Scientist, MY | 892871 |
| Assoc Research Scientist, RMY | 892886 |
| Asst Athletic Trainer | 490450 |
| Asst Nuclear Mngntc Res Spec | 592880 |
| Asst Research Scientist | 892881 |
| Asst Research Scientist (FSC) | 892882 |
| Asst Research Scientist, RMY | 892885 |
| Asst University Fire Marshall | 691810 |
| Center Liaison-Ind Assoc Prgm | 595150 |
| Cheer Coach | 491291 |
| Chemical Applicator | 350210 |
| Chemical Safety Specialist | 693700 |
| Chief of Police | 193730 |
| Custodial Services Asst Supvr | 350250 |
| Custodial Services Supvr | 350260 |
| Custodian | 350220 |
| Custodian Lead | 350230 |
| Envrnmtl Compliance Tech Lead | 620725 |
| Environmental Compliance Techn | 620729 |
| Field Operations Supervisor | 170910 |
| Health Educator | 620750 |
| Health Educator Assistant | 620740 |
| Health Educator Sr | 620760 |

| Job Title | Job Code |
|-----------------------------------|----------|
| Industrial Hygienist | 620795 |
| Health Physicist | 620870 |
| Laboratory Coordinator | 530200 |
| Laboratory Coordinator Sr | 530210 |
| Laboratory Manager | 530211 |
| Laboratory Manager, Eng | 591703 |
| Laboratory Operations Cdr | 530212 |
| Manager Biomass Operations | 596830 |
| Mgr Animal Care | 591622 |
| Mgr Pharmacy | 696542 |
| Pharmacist | 690260 |
| Pharmacy Assistant | 620250 |
| Pharmacy Technician | 620255 |
| Radiation Control Specialist | 620860 |
| Radiation Control Technician | 620830 |
| Radiation Control Technician S | 620840 |
| Radiation Safety Officer | 691457 |
| Radiology Technologist | 620300 |
| Radiology Technologist Sr | 620301 |
| Research Lab Coordinator | 596731 |
| Research Scientist | 892892 |
| Research Scientist (FSC) | 892893 |
| Research Scientist Sr | 892878 |
| Research Scientist Sr (FSC) | 892875 |
| Research Specialist | 530310 |
| Research Specialist Prin | 530330 |
| Research Specialist Sr | 530320 |
| Research Technician | 530300 |
| Research and Lab Aide | 530280 |
| Research and Lab Assistant | 530290 |
| Research and Lab Glassware Attend | 530270 |
| Security Officer | 171160 |
| Security Officer Lead | 171170 |
| Security Officer Super PRN | 171181 |
| Security Officer Supervisor | 171180 |
| Supvr Research Laboratory Svcs | 593481 |
| Supvr Veterinary + Tech Svcs | 593163 |
| Veterinary Technical Crd | 591445 |
| Veterinary Technician | 530155 |
| Water Safety Instructor | 440665 |

Note: Unpaid students may have risk of exposure to bloodborne pathogens or OPIM in the course of participating in their academic program or other University-sponsored activity. ASU is not required to cover the cost for unpaid students to have a hepatitis B vaccine. However, the department is encouraged to adopt a policy that compels affected students to obtain the vaccine privately and show evidence of this to the department prior to incurring the risk of exposure.

VII. Regulatory Matrix

The bloodborne pathogens compliance program responsibility matrix summarizes key provisions of the plan and correspond those responsibilities with the affected department or unit. The matrix should only be used as a quick reference.

| Responsibility | Supervisors | EHS | Health Services | Human Resources | Employee or Student |
|---|--|--|--|--|---|
| Exposure Control Plan for Bloodborne Pathogens | Provide all affected personnel with access to the Exposure Control Plan. | Designate the Biological Safety Officer as the individual to oversee the Exposure Control Plan. Develop, implement, and evaluate the Exposure Control Plan. | Assist in the development and implementation of the Exposure Control Plan. | Assist in the development and implementation of the Exposure Control Plan. | Read, understand, and comply with the requirements of the Exposure Control Plan. |
| Exposure Determination | Identify and document personnel with potential exposure to bloodborne pathogens and the associated tasks and responsibilities of those positions and provide this information to EHS Biosafety. | Assist departments with hazard assessments to determine jobs or tasks where exposure to bloodborne pathogens is possible. | Assist in identifying and documenting personnel with possible exposure to bloodborne pathogens and the associated tasks and responsibilities of those positions and provide this information to EHS Biosafety. | Assist in identifying and documenting personnel with possible exposure to bloodborne pathogens and the associated tasks and responsibilities of those positions and provide this information to EHS Biosafety. | Notify supervisor and EHS Biosafety if job tasks and responsibilities present occupational exposure concerns that have not been previously identified. Alert others in the work area, before work begins, of activities that may expose themselves or others to bloodborne pathogens or OPIM. |
| Universal Precautions | Ensure that universal precautions are understood and executed by employees and students with possible exposure to bloodborne pathogens. Promote practices, procedures, and methods that conform to the concept of universal precautions. | Promote practices, procedures, and methods that conform to the concept of universal precautions. Ensure that universal precautions are observed by employees and students with potential exposure to bloodborne pathogens. | | | Observe universal precautions when handling blood or OPIM. |

| Responsibility | Supervisors | EHS | Health Services | Human Resources | Employee or Student |
|---|--|--|-----------------|-----------------|---|
| Engineering and Work Practice Controls | Design and implement engineering controls and institute work practice control procedures which will eliminate or minimize potential exposure to blood and OPIM | Provide guidance and technical assistance to departments in the design and selection of appropriate engineering and work practice controls. | | | Follow established work practice controls to eliminate or minimize occupational exposure. Be aware of engineering controls in the work place and the proper use of those controls. |
| Personal Protective Equipment | Provide appropriate personal protective equipment to personnel that have potential exposure to bloodborne pathogens. | Provide guidance and technical assistance to departments in the selection of the most appropriate types and quantities of personal protective equipment. | | | Be aware of the proper use, limitations, and location of available personal protective equipment. Use appropriate personal protective equipment to eliminate or minimize occupational exposure. |
| Housekeeping | Maintain a clean and sanitary workplace environment. Develop and implement cleaning schedules as deemed appropriate for the types of activities and facilities involved. | Provide guidance and technical assistance to departments in the development and implementation of appropriate housekeeping methods. | | | Be aware of and observe established housekeeping procedures (e.g., use mechanical devices to clean up broken glass not bare hands). Maintain work area in a clean and sanitary manner. |
| HIV and HBV Laboratories | Comply with additional criteria established for HIV and HBV laboratories. | Provide guidance and technical assistance to laboratories engaged in HIV, HBV, or HCV research. | | | Understand the requirements and protection for personnel working with HIV and HBV and follow established procedures. |

| Responsibility | Supervisors | EHS | Health Services | Human Resources | Employee or Student |
|--|---|--|--|-----------------|--|
| Hepatitis B Vaccination and Medical Testing | Maintain hepatitis B virus declination statements and provide copies to EHS Biosafety. | Assist departments in the identification of employees and students that have potential exposure to bloodborne pathogens. | Make available the hepatitis B vaccination to employees and students identified through the process of exposure determination to have a potential exposure to bloodborne pathogens. Make available a hepatitis B antibody titer analysis to employees and students identified through the process of exposure determination that believe they have been vaccinated but do not have records documenting the vaccination series. | | Complete and submit the Hepatitis B vaccination form (regardless of whether you are accepting the vaccine), and any additional vaccination forms as may be requested by ASU. |
| Post Exposure Evaluation and Follow-up | Make available the hepatitis B vaccination to personnel identified through the process of exposure determination to have a potential exposure to bloodborne pathogens. Report exposure incidents to the Biological Safety Officer. Maintain needlestick logs and provide copies to EHS Biosafety. | Provide direction on approved medical facilities capable of providing the confidential post exposure evaluation and follow-up. | Make available the hepatitis B vaccination to personnel identified through the process of exposure determination to have a potential exposure to bloodborne pathogens. | | Immediately (or as soon as feasible) report all exposure incidents to your supervisors and EHS Biosafety. Report all suspected exposure incidents. |
| Informing and Training | Coordinate annual training required by the Exposure Control Plan. Contact EHS Biosafety for instructions for how to access the online training modules. | Create training opportunities as deemed necessary and appropriate for each affected department. | Coordinate with EHS Biosafety and Biosecurity in the development of bloodborne pathogens training materials. | | Attend initial and annual refresher biosafety and bloodborne pathogens training. |
| Training Records | Compile and retain employee and student training records for a minimum of three years. Submit copies to EHS Biosafety. | Compile and retain all training records (for a minimum of three years) relative to the Exposure Control Plan. | | | |

| Responsibility | Supervisors | EHS | Health Services | Human Resources | Employee or Student |
|-------------------------|--|--|---|-----------------|--|
| Medical Records | | | Maintain confidential medical records for exposure incidents. Maintain medical records for the duration of employment plus thirty years. Maintain declination statements. | | |
| Labels and Signs | Affix appropriate labels to containers of regulated waste, refrigerators, freezers, and equipment containing blood or OPIM, and other containers of blood or OPIM. Post the universal biohazard symbol and appropriate Biological Safety Level at the entrance of HIV and HBV research laboratories. | Provide labels to requesting department. | | | Make certain that labels are appropriately affixed. Notify supervisor to report labeling problems. |
| Waste | Ensure waste is labeled and disposed properly. | Coordinate the proper management and disposal of regulated waste; disposal bags, containers, etc. must be procured by each department. | | | Ensure waste is labeled and disposed properly. |

| Responsibility | Supervisors | EHS | Health Services | Human Resources | Employee or Student |
|-------------------------------------|---|--|---|--|---|
| <p>Regulatory Compliance</p> | <p>Clearly identify the use of blood, products made from human blood, plasma, products made from plasma, or OPIM when applying for a new protocol through the IBC. Provide, at no cost, all supplies, PPE, and vaccinations that are necessary for compliance with the Exposure Control Plan. Conduct periodic surveillance of activities within their respective areas to ensure compliance with the Exposure Control Plan. Comply with all applicable requirements established in the OSHA Bloodborne Pathogens Standard and the Exposure Control Plan.</p> | <p>Assist departments in communicating the Exposure Control Plan to third-party vendors who perform tasks on campus that potentially implicate exposure control issues. Assist departments with Bloodborne Pathogens and exposure control issues upon request. Conduct periodic inspections to ensure compliance with the Exposure Control Plan. Serve as university liaison to regulatory authorities. Provide a means for suggestions, complaints, and concerns regarding the Exposure Control Plan.</p> | <p>Comply with all applicable requirements established in the OSHA Bloodborne Pathogens Standard and the Exposure Control Plan.</p> | <p>Ensure job descriptions include bloodborne pathogens requirements if the position involves activities covered by the OSHA Bloodborne Pathogens Standard. Comply with all applicable requirements established in the OSHA Bloodborne Pathogens Standard and the Exposure Control Plan.</p> | <p>Comply with all applicable requirements established in the OSHA Bloodborne Pathogens Standard and the Exposure Control Plan.</p> |

VIII. Training

All university employees with a potential exposure to blood or OPIM are required to participate in a bloodborne pathogens information and training program which is provided at no cost to the employee and conducted during their normal working hours. Training will be provided at the time of initial assignment and annual training will be provided within one year of their previous training. Additional training will be provided when changes or modifications of tasks or procedures occur or when new tasks or procedures affect an individual's potential for exposure. The additional training will be limited in scope by only addressing the new exposure created.

A. General Bloodborne Pathogens Training

General Bloodborne Pathogens Training will be provided to all individuals whose job classifications have been identified that may have a reasonably anticipated occupation exposure to Bloodborne pathogens or OPIM and will consist of:

1. An overview of ASU Exposure Control Plan.
2. A general explanation of the epidemiology and symptoms of bloodborne diseases and a review of modes of transmission.
3. An accessible copy of the current [OSHA Bloodborne Pathogen Standard](#).
4. An accessible copy of ASU Exposure Control Plan.
5. An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and OPIM.
6. Training in methods to prevent or reduce exposure including: appropriate engineering controls, work practices, proper use of signs, and proper use and limitations of PPE.
7. Annual refresher training within one year of previous training.
8. Information on the hepatitis B vaccine, provided at no cost to the employee, including details on its efficacy, safety, method of administration, and the benefits of being vaccinated.
9. Information on proper procedures following an exposure incident including methods of reporting the incident, medical follow-up that will be made available, and the post-exposure evaluation and follow-up.
10. Information on proper procedures following an environmental exposure or spill including contamination of PPE.

B. Task-Specific Training

Supervisors are required to provide employees with training and information to ensure that employees are apprised of the specific hazards present in their particular area of work. The training requirements include:

1. At a minimum, employees shall be informed of the applicable details of the ASU Exposure Control Plan and the specific hazards of the tasks and procedures which may expose them to bloodborne pathogens and OPIM in their work setting.
2. Employers must provide additional training when changes, such as modification of tasks or procedures or institution of new tasks or procedures,

affect the employee's occupational exposure. The additional training may be limited to addressing the new exposures created.

C. Training for HIV, HBV and HCV Research Laboratories

Laboratory employees in HIV, HBV, or HCV research laboratories will receive specialized initial training in addition to the established bloodborne pathogens training program. Additional elements of the expanded HIV, HBV, and HCV training program will include:

1. Provisions for the supervisor to verify that employees demonstrate proficiency in standard microbiological practices and techniques and in the practices and operations specific to the facility before being allowed to work with HIV, HBV, or HCV.
2. Provisions for the supervisor to verify that employees have prior experience in the handling of human pathogens or tissue cultures before working with HIV, HBV, or HCV.
3. Provisions for the supervisor to provide a training program to employees who have no prior experience in handling human pathogens. Initial work activities shall not include the handling of infectious agents. A progression of work activities shall be assigned as techniques are learned and proficiency is developed. The supervisor will ensure that employees participate in work activities involving infectious agents only after proficiency has been demonstrated.

D. Training Records

EHS Biosafety and Biosecurity provides bloodborne pathogens training and serves as the custodian of all bloodborne pathogens standard training records taken through ASU Blackboard. These training records will be maintained for a minimum of three years from the date on which the training occurred. All training records required by this standard will be provided upon request for examination and copying to all employees, employee representatives, the Director of the National Institute for Occupational Safety and Health (NIOSH), and the Assistant Secretary of the U.S. Department of Labor in accordance with 29 CFR § 1910.20.

Training records will include the following information:

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

ASU must comply with the requirements involving transfer of records set forth in 29 CFR § 1910.20(h). Should ASU cease to do business and there is no successor employer to receive or retain the records for the prescribed period, the university will notify the NIOSH Director at least three months prior to their disposal and transmit them to the NIOSH Director, if required by the Director to do so, within the three-month period.

IX. Labels and Signs

All required labels and signs shall include the international biohazard symbol and the word “biohazard” or “biological hazard.” The color must be predominantly orange or orange-red with the lettering and universal biohazard symbol in a contrasting color (see image).



Warning labels must be affixed to:

- Containers of biohazardous wastes.
- Containers used to store, transport, or ship blood or OPIM.
- Refrigerators and freezers where blood or OPIM are stored.
- Incubators used for primary cell cultures.
- Centrifuges and biosafety cabinets when containing blood or OPIM.

Warnings signs must be placed at the entrance to all spaces that contain bloodborne pathogens or OPIM. The signs must include:

- The biosafety level for the room (e.g., research with human blood must be conducted at BSL-2 or higher).
- The name(s) of the biohazardous material that is present.
- The name and telephone number of the principal investigator, laboratory manager, or other responsible individual.
- The procedures for entering and exiting the room.

In order to maintain consistent labeling throughout the university, EHS Biosafety and Biosecurity will provide all required labels to individual departments upon request. Each department is responsible for purchasing their own biohazard bags and containers.

Contaminated equipment scheduled for maintenance or repair will be labeled in accordance with the provisions in this section and the label will also state which portions of the equipment remain contaminated.

X. Personal Protective Equipment (PPE)

Personal protective equipment is specialized clothing or equipment worn by an employee for protection against a hazard. PPE includes, but is not limited to: gloves, protective laboratory coats or gowns, eye and face protection, and respiratory protection.

Each supervisor must provide the appropriate PPE in the immediate work area for employees to take the necessary precautions to prevent or reduce exposure to bloodborne pathogens or OPIM. PPE should be selected only after a hazard determination has been performed and should not be considered unless other means of controls have been evaluated, including engineering or substitution of less hazardous materials or processes. The supervisor must provide for the cost of obtaining, maintaining, replacing, and disposing of PPE. For assistance with PPE selection, contact EHS Biosafety and Biosecurity.

Always wash hands immediately, or as soon as feasible, after removing gloves or other PPE. Never reuse disposable gloves. Remove PPE after it becomes contaminated and before leaving the work area. Lab coats should not be worn in public areas such as the bathrooms, break rooms or general office areas. All disposable PPE should be discarded in red biohazard trash and all biohazardous waste policies should be followed.

| Personal Protective Equipment | |
|--------------------------------|--|
| Type of PPE | Safety Information |
| Gloves | Gloves must be worn to protect hands from exposure to bloodborne pathogens or OPIM. Gloves should be changed when contaminated, integrity has been compromised, or when otherwise necessary. Double gloving is recommended when working with high concentrations of pathogenic microorganisms. Heavy rubber gloves may be needed when decontaminating equipment or cleaning spills. Utility gloves may be decontaminated and reused but must be discarded when cracked or torn. Gloves should be removed and hands should be washed when work with bloodborne pathogens or OPIM has been completed and before leaving the laboratory. Do not wash or reuse disposable gloves. Dispose of used gloves with other contaminated laboratory waste. |
| Eye and Face Protection | Eye and face protection (goggles, safety glasses with temple and side protection, or face shield) must be used 1) for anticipated splashes or sprays of bloodborne pathogens or OPIM, and 2) when the microorganisms are handled outside the Biological Safety Cabinet (BSC) or physical containment device. Personnel who wear contact lenses should always wear eye protection in laboratories. Eye and face protection should be used in rooms containing infected animals. |
| Laboratory Coats | Protective laboratory coats, gowns, smocks, or uniforms must be worn while working with bloodborne pathogens or OPIM. This protective outerwear protects skin surfaces and street clothing from contamination. Disposable water-resistant gowns should be used when working with materials which may splash or splatter. Contaminated protective outerwear should be removed and replaced as soon as possible. |
| Respiratory Protection | Any use of respiratory protection (e.g., N95, half-mask, full-face respirators) requires a medical clearance and fit test which is approved by EHS. |

XI. Work Practices

Work practices are methods and procedures followed by employees to protect themselves from exposure. The following work practices are derived from the OSHA standard:

| | |
|--|--|
| Handwashing | The number one defense against infection is clean hands. Hands should be washed with soap and running water after removing the gloves and before leaving the work area. If a sink is not available, hands should be cleaned with disinfectant wipes and washed with soap and water as soon as a sink becomes available. Overly vigorous hand washing is not recommended, as it may cause skin breaks and chapped hands. |
| Sharps and Containers | <p>The use of syringes and needles, glass Pasteur pipettes, and other sharps such as scalpels, razors, and suture needles should be minimized. Used sharps and contaminated broken glassware must be disposed into sharps containers as soon as possible. The sharps containers shall be labeled with the universal biohazard symbol, and shall be puncture-resistant, leak-proof, and closable for transport. Containers must be located where sharps can be disposed of immediately after use.</p> <p>Used needles should not be recapped or removed by hand. If recapping needles is necessary for specific procedures, use forceps, hemostats, or a one-handed technique. Reusable sharps must be handled in a manner that reduces the risk of cuts or punctures during decontamination and cleaning. Wear heavy utility gloves and reach into the decontamination pans with tongs to prevent hand injuries.</p> |
| Work Area Restrictions | Eating, drinking, smoking, applying cosmetics, and handling contact lenses are prohibited in areas where blood and OPIM are handled or stored. Food and drinks must not be kept in freezers, refrigerators, and other places used to handle or store OPIM. Areas where blood and OPIM are stored or worked with must be posted with hazard identification (such as the universal biohazard symbol) to ensure all personnel entering the area aware of the potential hazards present. Mouth pipetting practices shall not be allowed. |
| Specimen Handling and Transport | Specimens and other materials to be transported between work sites should be placed in a secondary container that is leak-proof and labeled with the universal biohazard symbol. Labels are available through EHS Biosafety and Biosecurity. Portable "six-pack" coolers are typical for this use. Containers for shipping specimens must meet the Department of Transportation and United States Postal Service requirements. International shipping may require permits or authorization from the United States Department of Agriculture or Centers for Disease Control. Contact EHS Biosafety and Biosecurity for more information. |
| Contaminated Equipment | Equipment used to store or handle blood and OPIM shall be labeled with the universal biohazard symbol. It must be cleaned and decontaminated before being serviced, repaired, or transported from the work area. Any parts of the equipment that cannot be decontaminated should be labeled with the biohazard symbol and the information communicated to all affected people. |

XII. Housekeeping

Bench tops, counters, and all other equipment used to work with blood and OPIM must be disinfected at the end of the work day, when work surfaces are overtly contaminated, or after any spill. Commonly used disinfectants include 10% household bleach or 70-85% ethanol. Other suitable disinfectants are provided in the table below.

Work surfaces and equipment may be covered to prevent contamination with infectious materials. Protective coverings should be removed and replaced at the end of the work, after a spill, or when they are overtly contaminated. Coverings must be discarded as biological waste.

| Chemical Disinfectants* | | |
|--|-------------------------------|---|
| Disinfectant | Working Solution | General Use |
| Bleach (Sodium Hypochlorite) | 10% | Disinfects work areas, floors, walls, glassware. Good general all around disinfectant. Disinfects liquid cultures for disposal. |
| Quaternary Ammonia (Commercial Grade) | 10-100 ppm | Disinfects floors, work surfaces, glassware. |
| Phenolics (Commercial Grade) | 2.8-3.0% Active Ingredient | Disinfects instruments, and work surfaces. |
| Glutaraldehyde | 2-3% | Disinfects instruments, including endoscopic tubes. |
| Isopropyl Alcohol | 70-85% | Disinfects work surfaces, equipment; antiseptic and non-corrosive. |
| Ethyl Alcohol | 70-85% | Disinfects work surfaces, equipment; antiseptic, low toxicity, and non-corrosive. |
| Iodophor | 75-150 ppm | Disinfects instruments and surfaces, non-corrosive. |

* Contact EHS Biosafety and Biosecurity for more information about chemical disinfectants. Refer to the Environmental Protection Agency (EPA) [website](#) for a list of approved chemical disinfectants.

XIII. Biological Spill Kits

Biological spill kits should be available wherever blood or OPIM are used or stored. The contents of the biological spill kit include:

- Bleach or other EPA-registered disinfectant
- Biohazard bag
- Disposable lab coat
- Disposable shoe covers
- Hand sanitizing wipes
- Nitrile gloves (4 pair)
- Mini brush and dustpan (or something to scoop spilled materials)
- Paper towels or other absorbent material
- Safety goggles
- Tong or forceps to pick up broken glass
- Spray bottle (to make fresh bleach solution)
- Rigid, leak-proof container for sharps
- “Biohazard Spill” sign

XIV. Spills

Spills of blood or OPIM must be cleaned up immediately by personnel trained in the hazards associated with bloodborne pathogens (and be familiar with this plan) using the following procedures:

1. Wear proper PPE including gloves, eye protection, and specialized clothing, such as disposable Tyvek™ suits.
2. If possible, isolate the spill and cover it with towels or absorbent pads.
3. Pour a freshly prepared 1:10 solution of Clorox bleach and water (1 part bleach to 9 parts water) or other EPA-approved disinfectant on the spill, working inward toward the center of the spill and let it stand for 20 minutes. This allows the disinfectant time to kill the organisms present.
4. Remove the towels and rinse with a mild soap solution.
5. Use mechanical means such as tongs or a scoop to pick up broken glassware or sharps, and dispose them in a sharps container. Sharps must never be handled with bare hands.
6. Dispose of waste products in the biohazard waste containers.

XV. Accidents and Injuries

In the event of a needlestick, sharps injury, or exposure to human blood or other body fluid, immediately follow these steps:

1. Any contaminated clothing should be removed.
2. Vigorously wash exposed area with soap and water.
3. If there is exposure to the nose, mouth, or mucous membranes, flush with water.
4. If there is exposure is to the eyes, irrigate with clean water, saline, or sterile irrigants.
5. Report the incident to your supervisor.
6. Seek medical treatment.
7. Fill out the [Report of Injury](#). The form should be filled out within 24 hours of an accident or injury. Privacy and confidentiality procedures will be followed.

It is highly recommended that post-exposure treatment, if indicated, be started as soon as possible following an exposure incident. If an exposure occurs, the individual should immediately go to ASU Health Services. If ASU Health Services is closed, emergency care may be obtained at the nearest emergency room and reported to ASU Health Services and EHS Biosafety and Biosecurity the next business day. In addition, whenever someone is injured or becomes ill from work-related incidents, the Arizona Department of Administration (ADOA) requires the following forms to be completed in order to process Worker's Compensation Claims:

- [Employer Report of Injury](#)
- [Supervisor Incident Report](#)
- [EHS Incident Report](#)

Supervisors must report all accidents and injuries to EHS Biosafety and Biosecurity. Federal, state, and local agencies may also need to be notified depending on the nature of the accident or injury. If the project involves recombinant and synthetic nucleic acid molecules, the [IBC](#) will be required to report any significant problems with or violations of the NIH [Guidelines for Research with Recombinant or Synthetic Nucleic Acid Molecules](#) and any significant research-related accidents or illnesses to the NIH within 30 days.

XVI. Post-Exposure Evaluation and Follow-Up

Following a report of an exposure incident, the employee shall be provided a confidential medical evaluation and follow-up. This follow-up must include documentation of the route(s) of exposure and the circumstances under which the exposure incident occurred, identification and testing of the source individual's blood if available, collection and testing of the employee's blood, post-exposure prophylaxis (when medically indicated), evaluation of reported illnesses, and counseling. ASU will provide this evaluation and follow-up through ASU Health Services or contracted health care providers at no cost to the employee.

A. Documentation of the Source Individual

The source individual will be identified if feasible unless prohibited by state or local law:

1. The source individual's blood shall be tested as soon as feasible and after consent is obtained, in order to determine HBC, HCV and HIV infectivity; the results will be documented.
2. When the source individual is already known to be infected with HBV, HIV, or HCV, testing for the source individual's known HBV, HIV, or HCV status need not be repeated.
3. 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.

B. Blood Collection and Testing

The exposed employee's blood must be collected no later than 10 calendar days after the exposure incident. Serological testing for HIV, HBV, and HCV will be performed after consent is obtained; a healthcare professional's written opinion will be made available within 15 days after completion of the evaluation. Testing must be completed no later than 30 calendar days after the exposure incident. No later than 18 months after the date of the exposure incident, the employee will be retested. If an employee chooses not to complete the testing, that employee may jeopardize the availability of worker's compensation benefits from the Arizona Department of Administration, [Risk Management Division](#).

C. Information Provided to the Health Care Provider

The health care professional responsible for the employee's hepatitis B vaccination will be provided a copy of the [OSHA Bloodborne Pathogens Standard](#). The health care professional evaluating an employee after an exposure incident will be provided the following information:

- A copy of the [OSHA Bloodborne Pathogens Standard](#).
- 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.
- Results of the source individual's blood testing, if available.

D. Health Care Professionals Written Opinion

The supervisor will obtain and provide the employee with a copy of the evaluating health care professional's written opinion within 15 days of the completion of the evaluation. The health care professional's written opinion for hepatitis B vaccination will be limited to whether hepatitis B vaccination is indicated for an employee, and if the employee has received such vaccination.

The health care professional's written opinion for post-exposure evaluation and follow-up will be limited to the following information:

- That the employee has been informed of the results of the evaluation.
- 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 will remain confidential and will not be included in the written report.

E. Evaluation of Incident

The circumstances surrounding the exposure incident must be investigated immediately by the supervisor. Information regarding the exposure incident, source material, and employee vaccination status should be provided to ASU Health Services and the employee's health care provider. Site-specific procedures should be reevaluated and revised as necessary to prevent recurrences of similar incidents. EHS Biosafety and Biosecurity is available to assist you with evaluating the following:

1. Engineering controls and work practices used at the time of the exposure.
2. A description of any devices being used (e.g., sharps, centrifuge, blender).
3. Protective equipment or clothing worn at the time of the exposure incident.
4. A review of the procedures being performed at the time of the incident.
5. A review of the employee's training record.

XVII. Documentation and Recordkeeping

A. Medical Recordkeeping

ASU Health Services will establish and maintain an accurate record for each employee with occupational exposure, in accordance with 29 CFR § 1910.20. The record shall include:

- The name and employee identification number of the employee.
- 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 required.
- The copy of the healthcare professional's written opinion as required.
- A copy of the information provided to the healthcare professional as required.

ASU Health Services will ensure that employee medical records required are kept confidential and not disclosed or reported without the employee's express written consent to any person within or outside the workplace except as required by the standard or as may be required by law. ASU Health Services will maintain the records required for at least the duration of employment plus thirty years in accordance with 29 CFR § 1910.20.

B. Employee Records

ASU is required to establish and maintain an accurate record for each employee with occupational exposure, in accordance with 29 CFR 1910.1020. This record is maintained by ASU Health Services and includes:

1. The name and social security number of the employee.
2. 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 employer's ability to receive vaccination.
3. All medical records pertaining to an exposure incident and follow-up evaluation. All documentation will be held under strict confidentiality guidelines.

C. Sharps Injury Log

ASU is required to establish and maintain a sharps injury log (see [Appendix B](#)) for the recording of percutaneous injuries from contaminated sharps. The information in the sharps injury log shall be recorded and maintained in such manner as to protect the confidentiality of the injured employee. The sharps injury log is maintained by each supervisor and a copy must be provided monthly to EHS Biosafety and Biosecurity. The sharps injury log must contain the following information:

1. The type and brand of device involved in the incident.
2. The laboratory in which the exposure occurred.
3. An explanation of how the incident occurred and personnel involved.

D. Documentation of Updated Safe Practices

Consideration of changes in technology that reduce or eliminate exposure must be evaluated and documented annually including solicitation of input from non-managerial staff.

XVIII. Biological Waste Disposal

This section describes procedures for the proper handling and disposal of biological waste from research, instructional, and clinical laboratories at ASU. These procedures are based on state and federal law, requirements from the Occupational Safety and Health Administration (OSHA), Centers for Disease Control (CDC) and National Institutes of Health (NIH), and good laboratory practice. Failure to manage biological waste properly could result in personal injury, disruption to research, fines, or criminal prosecution. For purposes of the Exposure Control Plan, biological waste is defined in this document as:

- Discarded cultures and stocks generated in the diagnosis, treatment or immunization of a human being or animal or in any research relating to that diagnosis, treatment or immunization, or in the production or testing of biological materials. (A.R.S. § R18-13-1401)
- Discarded human blood or blood products and materials containing free-flowing blood or free-flowing blood components. (A.R.S. § R18-13-1401)
- Discarded human organs and body parts removed during surgery. (A.R.S. § R18-13-1401)
- Discarded sharps (e.g., hypodermic needles, syringes, pipettes, scalpel blades, blood vials, needles attached to tubing, broken and unbroken glassware, slides, and coverslips) used in animal or human patient care, medical research, or clinical laboratories. (A.R.S. § R18-13-1401)
- Animal carcasses, body parts, and bedding of animals that have been infected with agents that produce, or may produce, human infection. (A.R.S. § R18-13-1401)
- 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 are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or OPIM. ([29 CFR 1910.1030](#)).
- Transgenic plants or animals, genetically modified organisms, or materials containing recombinant or synthetic nucleic acid molecules.

All biological waste must be disposed of in a manner that protects employees, contractors, the community, and the environment from biological hazards.

A. Solid Biological Waste Disposal

Follow these procedures for solid biological waste disposal:

- 1) Solid biological waste must be placed immediately into an appropriately labeled working container with the universal biohazard symbol or the word "Biohazardous Waste." The working container should be within arm's reach of the work. While actively performing work at the bench top, the working container may be a beaker, tin can, plastic box, hanging red bag, or any other leak-proof container.
- 2) When the working container is two-thirds (2/3) full, the contents should be placed inside a closable, secondary container (e.g., bag) that is appropriately labeled with the universal biohazard symbol or the word "Biohazardous Waste."

- 3) The secondary container must be closed when it is two-thirds (2/3) full. Materials to be decontaminated outside the laboratory should be transported in a durable, leak-proof, closed container.

Note: To protect employees who handle waste and to reduce odors, ASU recommends that all biological waste be thermally (e.g., autoclaved) inactivated. However, this treatment does not satisfy the state biological waste treatment standard for disposal into regular trash or dumpsters.

- 4) The bag must then be placed into the red biohazardous waste drum. There is a maximum weight limit of 50 pounds in each red drum.
- 5) When a drum is ready for pick-up, submit a hazardous waste pick-up request [online](#).

B. Liquid Biological Waste Disposal

Follow these procedures for liquid biological waste disposal:

- 1) Liquid biological waste must be disinfected using thermal (e.g., autoclave) or chemical treatment methods.
- 2) Materials to be decontaminated outside the laboratory must be transported in a durable, leak-proof, closed container.
- 3) If EHS has approved the liquid biological waste for drain disposal, ensure all criteria for disposal are met prior to disposal.
- 4) If EHS has not approved the waste for drain disposal, it must be labeled with a hazardous waste tag and treated as a chemical waste for pick up by EHS. Submit a hazardous waste pick-up request [online](#).

C. Sharps Disposal

Used sharps must be discarded immediately or as soon as feasible into sharps containers. These containers must be puncture resistant and the sides and the bottom must be leak proof. They must be appropriately labeled with the word "Sharps" and the universal biohazard symbol or color-coded red to warn everyone that the contents are hazardous. They must be closable (i.e., have a lid, flap, door, or other means of closing the container), and they must be kept upright to keep the sharps and any liquids from spilling out of the container.

During use, containers for used sharps must 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. Sharps containers must be maintained upright throughout use, replaced routinely, and not be allowed to overfill. When moving sharps containers from the area of use, they must be:

- Closed immediately prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping; and
- Placed in a secondary container if leakage is possible. The second container must be:

- Closable;
- Constructed to contain all contents and prevent leakage during handling, storage, transport, or shipping;
- Appropriately labeled with the universal biohazard symbol or color-coded; and
- Disposed of as regulated waste.

Reusable sharps containers must not be opened, emptied, or cleaned manually or in any other manner that would expose individuals to the risk of accident or injury. When full, sharps containers may be autoclaved provided that no hazardous chemicals are present in the container. The sharps container must then be placed into the red biohazardous waste drum. Sharps and sharps containers should never be discarded directly into regular trash receptacles.

Contaminated sharps must never be sheared or broken. Recapping, bending, or removing needles is generally prohibited. However, in rare circumstances, recapping is permissible if it can be demonstrated by a research laboratory that no alternative is feasible or that such action is required by a specific procedure. Procedures that describe the recapping process must be written and included in the laboratory-specific safety plan. If recapping is necessary, individuals must use either a mechanical device or a one-handed technique. The cap must not be held in one hand while guiding the sharp into it or placing it over the sharp. A one-handed “scoop” technique uses the needle itself to pick up the cap, and then the cap is pushed against a hard surface to ensure a tight fit onto the device. The cap may also be held with tongs or forceps and placed over the needle. Immediately (or as soon as possible) after use, these sharps must be placed into appropriate containers until properly reprocessed or disposed.

XIX. Definitions

ASU: Abbreviation for Arizona State University.

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

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

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

Collateral Duty Exposure: Exposure to blood or OPIM during first aid activities rendered by an individual whose primary job assignment is not the rendering of first aid or other medical assistance. Typically individuals with collateral duty exposure to blood or OPIM respond solely to injuries resulting from workplace incidents, generally at the location where the incident occurred.

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 or may contain sharps.

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

CPR: Abbreviation for cardiopulmonary resuscitation. An emergency medical procedure for a victim of cardiac arrest or, in some circumstances, respiratory arrest.

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.

Designated First Aid Responder: An individual who is trained in first aid and identified by ASU as responsible for rendering medical assistance as part of his or her job duties. An individual who routinely provides first aid with the knowledge of the department or supervisor is also considered a designated first aid responder even if providing first aid is not officially in the employee's job description.

EHS: Abbreviation for the ASU Department of Environmental Health and Safety.

Engineering Controls: Controls (e.g., sharps disposal containers, self-sheathing needles, safer medical devices, such as sharps with engineered sharps injury protections and needleless systems) 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 OPIM that results from the performance of an employee's duties.

Handwashing Facilities: A facility providing an adequate supply of running potable water, soap, and single-use towels or air-drying machines.

Licensed Healthcare Professional: A person whose legally permitted scope of practice allows him or her to independently perform Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up.

HBV: Hepatitis B virus.

HCV: Hepatitis C virus.

HIV: Human immunodeficiency virus.

Needleless Systems: A device that does not use needles for: (1) The collection of bodily fluids or withdrawal of body fluids after initial venous or arterial access is established; (2) The administration of medication or fluids; or (3) Any other procedure involving the potential for occupational exposure to bloodborne pathogens due to percutaneous injuries from contaminated sharps.

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

OPIM: (1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids; (2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and (3) HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV, HBV, or HCV.

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

Personal Protective Equipment: 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.

PPE: An abbreviation for Personal Protective Equipment.

Production Facility: A facility engaged in industrial-scale, large-volume or high concentration production of HIV, HBV, or HCV.

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 are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or OPIM.

Research Laboratory: A laboratory producing or using research-laboratory-scale amounts of HIV, HBV, or HCV. Research laboratories may produce high concentrations of HIV, HBV, or HCV but not in the volume found in production facilities.

Sharps: Engineered sharps injury protection means 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 OPIM may be a source of occupational exposure to the 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.

Student: A registered ASU student participating in academic programs or University-sponsored activities (e.g., athletics) that have been identified by EHS as subject to exposure risk, and to the extent that their exposure occurs in the course of such participation.

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

XX. References

[29 CFR 1910.1030 – OSHA Bloodborne Pathogen Standard](#)

[ASU Biosafety and Biosecurity](#)

[CDC and NIH, Biosafety in Microbiological and Biomedical Laboratories, 5th edition](#)

[CDC and NIH, Primary Containment for Biohazards \(BSC's\)](#)

[CDC Hepatitis B Fact Sheet](#)

[OSHA - Applicability of Bloodborne Pathogen Standard to Established Human Cell Lines](#)

[OSHA - Bloodborne Fact Sheets](#)

[OSHA - Enforcement Procedures for the Occupational Exposure to Bloodborne Pathogens](#)

[OSHA - Most Frequently Asked Questions about the Bloodborne Pathogen Standard](#)

[OSHA - Needlestick Prevention Site](#)

[OSHA - Universal Precautions](#)

[Public Health Agency of Canada – MSDS for Infectious Substances](#)

**Appendix A: Vaccination Form
Hepatitis B Virus Consent and Declination Form***

I understand that all employees who are reasonably anticipated to come into contact with human blood or OPIM during their normal duties must complete this form. I acknowledge that I have been provided with a copy of the [CDC Hepatitis B Vaccine Information Statement](#). I have read and understood the information provided to me. Based upon this information, I acknowledge the following (please check only one of the following boxes):

- I have not received the hepatitis B vaccination series.** However, my employer has provided me with information on how to receive the vaccination free-of-charge through ASU Health Services. I understand this includes three injections at prescribed intervals over a 6-month period. I understand that there is no guarantee that I will become immune to hepatitis B and that I might experience an adverse side effect as the result of the vaccination. I acknowledge that I must provide proof of vaccinations to my employer as they are received.

- I have already received the hepatitis B vaccination series.** Please list the date (or approximate date) of each vaccination and provide proof of vaccinations to your employer:

1st dose: _____ (Month and Year)
2nd dose: _____ (Month and Year)
3rd dose: _____ (Month and Year)
Booster: _____ (Month and Year)

- I have received antibody testing to confirm immunity to hepatitis B.** Please provide proof of immunity to your employer.

- I do not wish to receive the hepatitis B vaccine.** I understand that due to my occupational exposure to blood or OPIM I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccination, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or OPIM and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Employee Name (print): _____

Employee's Department (print): _____

Employee Signature: _____

Date: _____

Original: Maintained by Supervisor or Designee
Copy: Employee and EHS Biosafety and Biosecurity
* Pursuant to 29 CFR § 1910.1030(f)(2)(iv)

Appendix B: Sharps Injury Reporting Log

The [online sharps injury reporting log](#) must be completed by each employee after a needlestick injury. The log is used to record percutaneous injuries from contaminated sharps. The information in the sharps injury reporting log is recorded and maintained in such manner as to protect the confidentiality of the injured employee.

The online sharps injury reporting log is available online on the [EHS webpage](#).

Appendix C: Guidelines for Working in a Biological Safety Cabinet

Biological Safety Cabinets (BSCs) are available for use in many laboratories at ASU. Any work or task with a potential for splash or aerosol generation with infectious materials requires the use of a BSC or other appropriate containment device. Proper use of BSC includes:

1. Turn off the ultraviolet lamp if one is in use. Turn on the fluorescent lamp.
2. Inspect the air intake grilles for obstructions and foreign material and remove if necessary.
3. Adjust sash to appropriate height.
4. Turn the cabinet on for at least 10 minutes prior to use, if the cabinet is not already running.
5. Prepare a written checklist of materials necessary for the particular activity (including disinfectant and discard containers).
6. Wash hands and arms with mild soap. Put on a rear-fastening, long-sleeved gown with tight-fitting cuffs. Put on safety glasses and a pair (or two pairs) of high quality nitrile gloves.
7. Disinfect work surface with a suitable disinfectant.
8. Place items into the cabinet so that they can be worked with efficiently without unnecessary disruption of the airflow, working with materials from the clean to the dirty side.
9. Adjust the working height of the stool so that the worker's face is above the front opening.
10. Delay manipulation of materials for approximately one minute after placing hands and arms inside the cabinet.
11. Minimize the frequency of moving hands in and out of the cabinet.
12. Do not disturb the airflow by covering any portion of the grillwork with materials.
13. Work at a moderate pace to prevent the airflow disruption that occurs with rapid movements.
14. Wipe the bottom and side of the hood surfaces with disinfectant when work is completed.

NOTE: *Be very careful when using small pieces of materials in the BSC as they can be blown into the grilles and disrupt the motor operations.*

Annual certification of the BSC confirms that it will provide the user and experimental material the protection for which it is designed. The airflow, filters, and cabinet integrity are checked to ensure that the cabinet meets minimum performance standards. Certification is arranged through each department and provided by an outside vendor.

BSCs intended for research with biohazardous materials must be certified:

- After they are received and installed (before use with infectious materials).
- After filter changes.
- After being moved (even a few feet).
- Annually.

BSC decontamination (e.g., using a formaldehyde gas production process) must be provided and needs to be done:

- Before any maintenance work requiring disassembly of the air plenum, including filter replacement.
- Prior to cabinet recertification.
- Before moving the cabinet to a new laboratory.
- Before discarding or salvaging.

The production of formaldehyde gas is a health concern. Many BSCs at ASU are not ducted to the outside; therefore, extreme caution should be used when having the procedure performed.

Reference: *[Primary Containment for Biohazards: Selection, Installation and Use of Biological Safety Cabinets](#)*, U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health.

Appendix D: OSHA Bloodborne Pathogen Standard

1910.1030(a)

Scope and Application. This section applies to all occupational exposure to blood or OPIM as defined by paragraph (b) of this section.

1910.1030(b)

Definitions. For purposes of this section, the following shall apply:

Assistant Secretary means the Assistant Secretary of Labor for Occupational Safety and Health, or designated representative.

Blood means human blood, human blood components, and products made from human blood.

Bloodborne Pathogens means pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

Clinical Laboratory means a workplace where diagnostic or other screening procedures are performed on blood or OPIM.

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

Contaminated Laundry means laundry which has been soiled with blood or OPIM or may contain sharps.

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

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

Engineering Controls means controls (e.g., sharps disposal containers, self-sheathing needles, safer medical devices, such as sharps with engineered sharps injury protections and needleless systems) that isolate or remove the bloodborne pathogens hazard from the workplace.

Exposure Incident means 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.

Handwashing Facilities means a facility providing an adequate supply of running potable water, soap, and single-use towels or air-drying machines.

Licensed Healthcare Professional is a person whose legally permitted scope of practice allows him or her to independently perform the activities required by paragraph (f) Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up.

HBV means hepatitis B virus.

HIV means human immunodeficiency virus.

Needleless systems means a device that does not use needles for:

- (1) The collection of bodily fluids or withdrawal of body fluids after initial venous or arterial access is established;
- (2) The administration of medication or fluids; or
- (3) Any other procedure involving the potential for occupational exposure to bloodborne pathogens due to percutaneous injuries from contaminated sharps.

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

OPIM means (1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids; (2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and (3) HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Parenteral means piercing mucous membranes or the skin barrier through such events as needlesticks, human bites, cuts, and abrasions.

Personal Protective Equipment is 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.

Production Facility means a facility engaged in industrial-scale, large-volume or high concentration production of HIV or HBV.

Regulated Waste means 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 are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or OPIM.

Research Laboratory means 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.

Sharps with engineered sharps injury protections means 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 means any individual, living or dead, whose blood or OPIM may be a source of occupational exposure to the 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 means the use of a physical or chemical procedure to destroy all microbial life including highly resistant bacterial endospores.

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

1910.1030(c)

Exposure Control --

1910.1030(c)(1)

Exposure Control Plan.

1910.1030(c)(1)(i)

Each employer having an employee(s) with occupational exposure as defined by paragraph (b) of this section shall establish a written Exposure Control Plan designed to eliminate or minimize employee exposure.

1910.1030(c)(1)(ii)

The Exposure Control Plan shall contain at least the following elements:

1910.1030(c)(1)(ii)(A)

The exposure determination required by paragraph (c)(2),

1910.1030(c)(1)(ii)(B)

The schedule and method of implementation for paragraphs (d) Methods of Compliance, (e) HIV and HBV Research Laboratories and Production Facilities, (f) Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-up, (g) Communication of Hazards to Employees, and (h) Recordkeeping, of this standard, and

1910.1030(c)(1)(ii)(C)

The procedure for the evaluation of circumstances surrounding exposure incidents as required by paragraph (f)(3)(i) of this standard.

1910.1030(c)(1)(iii)

Each employer shall ensure that a copy of the Exposure Control Plan is accessible to employees in accordance with 29 CFR 1910.1020(e).

1910.1030(c)(1)(iv)

The Exposure Control Plan shall be reviewed and updated at least 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. The review and update of such plans shall also:

1910.1030(c)(1)(iv)(A)

Reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens; and

1910.1030(c)(1)(iv)(B)

Document annually consideration and implementation of appropriate commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure.

1910.1030(c)(1)(v)

An employer, who is required to establish an Exposure Control Plan shall solicit input from non-managerial employees responsible for direct patient care who are potentially exposed to injuries from contaminated sharps in the identification, evaluation, and selection of effective engineering and work practice controls and shall document the solicitation in the Exposure Control Plan.

1910.1030(c)(1)(vi)

The Exposure Control Plan shall be made available to the Assistant Secretary and the Director upon request for examination and copying.

1910.1030(c)(2)

Exposure Determination.

1910.1030(c)(2)(i)

Each employer who has an employee(s) with occupational exposure as defined by paragraph (b) of this section shall prepare an exposure determination. This exposure determination shall contain the following:

1910.1030(c)(2)(i)(A)

A list of all job classifications in which all employees in those job classifications have occupational exposure;

1910.1030(c)(2)(i)(B)

A list of job classifications in which some employees have occupational exposure, and

1910.1030(c)(2)(i)(C)

A list of all tasks and procedures or groups of closely related task and procedures in which occupational exposure occurs and that are performed by employees in job classifications listed in accordance with the provisions of paragraph (c)(2)(i)(B) of this standard.

1910.1030(c)(2)(ii)

This exposure determination shall be made without regard to the use of personal protective equipment.

1910.1030(d)

Methods of Compliance --

1910.1030(d)(1)

General. Universal precautions shall be observed to prevent contact with blood or OPIM. Under circumstances in which differentiation between body fluid

types is difficult or impossible, all body fluids shall be considered potentially infectious materials.

1910.1030(d)(2)

Engineering and Work Practice Controls.

1910.1030(d)(2)(i)

Engineering and work practice controls shall be used to eliminate or minimize employee exposure. Where occupational exposure remains after institution of these controls, personal protective equipment shall also be used.

1910.1030(d)(2)(ii)

Engineering controls shall be examined and maintained or replaced on a regular schedule to ensure their effectiveness.

1910.1030(d)(2)(iii)

Employers shall provide handwashing facilities which are readily accessible to employees.

1910.1030(d)(2)(iv)

When provision of handwashing facilities is not feasible, the employer shall provide either an appropriate antiseptic hand cleanser in conjunction with clean cloth / paper towels or antiseptic towelettes. When antiseptic hand cleansers or towelettes are used, hands shall be washed with soap and running water as soon as feasible.

1910.1030(d)(2)(v)

Employers shall ensure that employees wash their hands immediately or as soon as feasible after removal of gloves or other personal protective equipment.

1910.1030(d)(2)(vi)

Employers shall ensure that employees wash hands and any other 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.

1910.1030(d)(2)(vii)

Contaminated needles and other contaminated sharps shall not be bent, recapped, or removed except as noted in paragraphs (d)(2)(vii)(A) and (d)(2)(vii)(B) below. Shearing or breaking of contaminated needles is prohibited.

1910.1030(d)(2)(vii)(A)

Contaminated needles and other contaminated sharps shall not be bent, recapped or removed unless the employer can demonstrate that no alternative is feasible or that such action is required by a specific medical or dental procedure.

1910.1030(d)(2)(vii)(B)

Such bending, recapping or needle removal must be accomplished through the use of a mechanical device or a one-handed technique.

1910.1030(d)(2)(viii)

Immediately or as soon as possible after use, contaminated reusable sharps shall be placed in appropriate containers until properly reprocessed. These containers shall be:

1910.1030(d)(2)(viii)(A)

Puncture resistant;

1910.1030(d)(2)(viii)(B)

Labeled or color-coded in accordance with this standard;

1910.1030(d)(2)(viii)(C)

Leakproof on the sides and bottom; and

1910.1030(d)(2)(viii)(D)

In accordance with the requirements set forth in paragraph (d)(4)(ii)(E) for reusable sharps.

1910.1030(d)(2)(ix)

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.

1910.1030(d)(2)(x)

Food and drink shall not be kept in refrigerators, freezers, shelves, cabinets or on countertops or benchtops where blood or OPIM are present.

1910.1030(d)(2)(xi)

All procedures involving blood or OPIM shall be performed in such a manner as to minimize splashing, spraying, spattering, and generation of droplets of these substances.

1910.1030(d)(2)(xii)

Mouth pipetting / suctioning of blood or OPIM is prohibited.

1910.1030(d)(2)(xiii)

Specimens of blood or OPIM shall be placed in a container which prevents leakage during collection, handling, processing, storage, transport, or shipping.

1910.1030(d)(2)(xiii)(A)

The container for storage, transport, or shipping shall be labeled or color-coded according to paragraph (g)(1)(i) and closed prior to being stored, transported, or shipped. When a facility utilizes Universal Precautions in the handling of all specimens, the labeling / color-coding of specimens is not necessary provided containers are recognizable as containing specimens. This exemption only applies while such specimens / containers remain within the facility. Labeling or color-coding in accordance with paragraph (g)(1)(i) is required when such specimens / containers leave the facility.

1910.1030(d)(2)(xiii)(B)

If outside contamination of the primary container occurs, the primary container shall be placed within a second container which prevents leakage during handling, processing, storage, transport, or shipping and is labeled or color-coded according to the requirements of this standard.

1910.1030(d)(2)(xiii)(C)

If the specimen could puncture the primary container, the primary container shall be placed within a secondary container which is puncture-resistant in addition to the above characteristics.

1910.1030(d)(2)(xiv)

Equipment which may become contaminated with blood or OPIM shall be examined prior to servicing or shipping and shall be decontaminated as necessary, unless the employer can demonstrate that decontamination of such equipment or portions of such equipment is not feasible.

1910.1030(d)(2)(xiv)(A)

A readily observable label in accordance with paragraph (g)(1)(i)(H) shall be attached to the equipment stating which portions remain contaminated.

1910.1030(d)(2)(xiv)(B)

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

1910.1030(d)(3)

Personal Protective Equipment --

1910.1030(d)(3)(i)

Provision. When there is occupational exposure, the employer shall provide, at no cost to the employee, appropriate personal protective equipment such as, but not limited to, gloves, gowns, laboratory coats, face shields or masks and eye protection, and mouthpieces, resuscitation bags, pocket masks, or other ventilation devices. Personal protective equipment will be considered "appropriate" only if it does not permit 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.

1910.1030(d)(3)(ii)

Use. The employer shall ensure that the employee uses appropriate personal protective equipment unless the employer shows that the employee temporarily and briefly declined to use personal protective equipment 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 in order to determine whether changes can be instituted to prevent such occurrences in the future.

1910.1030(d)(3)(iii)

Accessibility. The employer shall ensure that appropriate personal protective equipment in the appropriate sizes is readily accessible at the worksite or is issued to employees. Hypoallergenic gloves, glove liners, powderless gloves, or other similar alternatives shall be readily accessible to those employees who are allergic to the gloves normally provided.

1910.1030(d)(3)(iv)

Cleaning, Laundering, and Disposal. The employer shall clean, launder, and dispose of personal protective equipment required by paragraphs (d) and (e) of this standard, at no cost to the employee.

1910.1030(d)(3)(v)

Repair and Replacement. The employer shall repair or replace personal protective equipment as needed to maintain its effectiveness, at no cost to the employee.

1910.1030(d)(3)(vi)

If a garment(s) is penetrated by blood or OPIM, the garment(s) shall be removed immediately or as soon as feasible.

1910.1030(d)(3)(vii)

All personal protective equipment shall be removed prior to leaving the work area.

1910.1030(d)(3)(viii)

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

1910.1030(d)(3)(ix)

Gloves. Gloves shall be worn when it can be reasonably anticipated that the employee may have hand contact with blood, OPIM, mucous membranes, and non-intact skin; when performing vascular access procedures except as specified in paragraph (d)(3)(ix)(D); and when handling or touching contaminated items or surfaces.

1910.1030(d)(3)(ix)(A)

Disposable (single use) gloves such as surgical or examination 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.

1910.1030(d)(3)(ix)(B)

Disposable (single use) gloves shall not be washed or decontaminated for re-use.

1910.1030(d)(3)(ix)(C)

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 exhibit other signs of deterioration or when their ability to function as a barrier is compromised.

1910.1030(d)(3)(ix)(D)

If an employer in a volunteer blood donation center judges that routine gloving for all phlebotomies is not necessary then the employer shall:

1910.1030(d)(3)(ix)(D)(1)

Periodically reevaluate this policy;

1910.1030(d)(3)(ix)(D)(2)

Make gloves available to all employees who wish to use them for phlebotomy;

1910.1030(d)(3)(ix)(D)(3)

Not discourage the use of gloves for phlebotomy; and

1910.1030(d)(3)(ix)(D)(4)

Require that gloves be used for phlebotomy in the following circumstances:

1910.1030(d)(3)(ix)(D)(4)(i)

When the employee has cuts, scratches, or other breaks in his or her skin;

1910.1030(d)(3)(ix)(D)(4)(ii)

When the employee judges that hand contamination with blood may occur, for example, when performing phlebotomy on an uncooperative source individual; and

1910.1030(d)(3)(ix)(D)(4)(iii)

When the employee is receiving training in phlebotomy.

1910.1030(d)(3)(x)

Masks, Eye Protection, and Face Shields. Masks in combination with eye protection devices, such as goggles or 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.

1910.1030(d)(3)(xi)

Gowns, Aprons, and Other Protective Body Clothing. Appropriate protective clothing such as, but not limited to, gowns, aprons, lab coats, clinic jackets, or similar outer garments shall be worn in occupational exposure situations. The type and characteristics will depend upon the task and degree of exposure anticipated.

1910.1030(d)(3)(xii)

Surgical caps or hoods and / or shoe covers or boots shall be worn in instances when gross contamination can reasonably be anticipated (e.g., autopsies, orthopaedic surgery).

1910.1030(d)(4)

Housekeeping --

1910.1030(d)(4)(i)

General. Employers shall ensure that the worksite is maintained in a clean and sanitary condition. The employer shall 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.

1910.1030(d)(4)(ii)

All equipment and environmental and working surfaces shall be cleaned and decontaminated after contact with blood or OPIM.

1910.1030(d)(4)(ii)(A)

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

1910.1030(d)(4)(ii)(B)

Protective coverings, such as 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 overtly contaminated or at the end of the workshift if they may have become contaminated during the shift.

1910.1030(d)(4)(ii)(C)

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 regularly scheduled basis and cleaned and decontaminated immediately or as soon as feasible upon visible contamination.

1910.1030(d)(4)(ii)(D)

Broken glassware which may be contaminated shall not be picked up directly with the hands. It shall be cleaned up using mechanical means, such as a brush and dust pan, tongs, or forceps.

1910.1030(d)(4)(ii)(E)

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.

1910.1030(d)(4)(iii)

Regulated Waste --

1910.1030(d)(4)(iii)(A)

Contaminated Sharps Discarding and Containment.

1910.1030(d)(4)(iii)(A)(1)

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

1910.1030(d)(4)(iii)(A)(1)(i)

Closable;

1910.1030(d)(4)(iii)(A)(1)(ii)

Puncture resistant;

1910.1030(d)(4)(iii)(A)(1)(iii)

Leakproof on sides and bottom; and

1910.1030(d)(4)(iii)(A)(1)(iv)

Labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard.

1910.1030(d)(4)(iii)(A)(2)

During use, containers for contaminated sharps shall be:

1910.1030(d)(4)(iii)(A)(2)(i)

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 (e.g., laundries);

1910.1030(d)(4)(iii)(A)(2)(ii)

Maintained upright throughout use; and

1910.1030(d)(4)(iii)(A)(2)(iii)

Replaced routinely and not be allowed to overfill.

1910.1030(d)(4)(iii)(A)(3)

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

1910.1030(d)(4)(iii)(A)(3)(i)

Closed immediately prior to removal or replacement to prevent spillage or protrusion of contents during handling, storage, transport, or shipping;

1910.1030(d)(4)(iii)(A)(3)(ii)

Placed in a secondary container if leakage is possible. The second container shall be:

1910.1030(d)(4)(iii)(A)(3)(ii)(A)

Closable;

1910.1030(d)(4)(iii)(A)(3)(ii)(B)

Constructed to contain all contents and prevent leakage during handling, storage, transport, or shipping; and

1910.1030(d)(4)(iii)(A)(3)(ii)(C)

Labeled or color-coded according to paragraph (g)(1)(i) of this standard.

1910.1030(d)(4)(iii)(A)(4)

Reusable containers shall not be opened, emptied, or cleaned manually or in any other manner which would expose employees to the risk of percutaneous injury.

1910.1030(d)(4)(iii)(B)

Other Regulated Waste Containment --

1910.1030(d)(4)(iii)(B)(1)

Regulated waste shall be placed in containers which are:

1910.1030(d)(4)(iii)(B)(1)(i)

Closable;

1910.1030(d)(4)(iii)(B)(1)(ii)

Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping;

1910.1030(d)(4)(iii)(B)(1)(iii)

Labeled or color-coded in accordance with paragraph (g)(1)(i) this standard; and

1910.1030(d)(4)(iii)(B)(1)(iv)

Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

1910.1030(d)(4)(iii)(B)(2)

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

1910.1030(d)(4)(iii)(B)(2)(i)

Closable;

1910.1030(d)(4)(iii)(B)(2)(ii)

Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping;

1910.1030(d)(4)(iii)(B)(2)(iii)

Labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard; and

1910.1030(d)(4)(iii)(B)(2)(iv)

Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

1910.1030(d)(4)(iii)(C)

Disposal of all regulated waste shall be in accordance with applicable regulations of the United States, States and Territories, and political subdivisions of States and Territories.

1910.1030(d)(4)(iv)

Laundry.

1910.1030(d)(4)(iv)(A)

Contaminated laundry shall be handled as little as possible with a minimum of agitation.

1910.1030(d)(4)(iv)(A)(1)

Contaminated laundry shall be bagged or containerized at the location where it was used and shall not be sorted or rinsed in the location of use.

1910.1030(d)(4)(iv)(A)(2)

Contaminated laundry shall be placed and transported in bags or containers labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard. When a facility utilizes Universal Precautions in the handling of all soiled laundry, alternative labeling or color-coding is sufficient if it permits all employees to recognize the containers as requiring compliance with Universal Precautions.

1910.1030(d)(4)(iv)(A)(3)

Whenever contaminated laundry is wet and presents a reasonable likelihood of soak-through of or 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.

1910.1030(d)(4)(iv)(B)

The employer shall ensure that employees who have contact with contaminated laundry wear protective gloves and other appropriate personal protective equipment.

1910.1030(d)(4)(iv)(C)

When a facility ships contaminated laundry off-site to a second facility which does not utilize Universal Precautions in the handling of all laundry, the facility generating the contaminated laundry must place such laundry in bags or containers which are labeled or color-coded in accordance with paragraph (g)(1)(i).

1910.1030(e)

HIV and HBV Research Laboratories and Production Facilities.

1910.1030(e)(1)

This paragraph applies to research laboratories and production facilities engaged in the culture, production, concentration, experimentation, and manipulation of HIV and HBV. It does not apply to clinical or diagnostic laboratories engaged solely in the analysis of blood, tissues, or organs. These requirements apply in addition to the other requirements of the standard.

1910.1030(e)(2)

Research laboratories and production facilities shall meet the following criteria:

1910.1030(e)(2)(i)

Standard Microbiological Practices. All regulated waste shall either be incinerated or decontaminated by a method such as autoclaving known to effectively destroy bloodborne pathogens.

1910.1030(e)(2)(ii)

Special Practices.

1910.1030(e)(2)(ii)(A)

Laboratory doors shall be kept closed when work involving HIV or HBV is in progress.

1910.1030(e)(2)(ii)(B)

Contaminated materials that are to be decontaminated at a site away from the work area shall be placed in a durable, leakproof, labeled or color-coded container that is closed before being removed from the work area.

1910.1030(e)(2)(ii)(C)

Access to the work area shall be limited to authorized persons. Written policies and procedures shall be established whereby only persons who have been advised of the potential biohazard, who meet any specific entry requirements, and who comply with all entry and exit procedures shall be allowed to enter the work areas and animal rooms.

1910.1030(e)(2)(ii)(D)

When OPIM or infected animals 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 shall comply with paragraph (g)(1)(ii) of this standard.

1910.1030(e)(2)(ii)(E)

All activities involving OPIM shall be conducted in biological safety cabinets or other physical-containment devices within the containment module. No work with these OPIM shall be conducted on the open bench.

1910.1030(e)(2)(ii)(F)

Laboratory coats, gowns, smocks, uniforms, or other appropriate protective clothing shall be used in the work area and animal rooms. Protective clothing shall not be worn outside of the work area and shall be decontaminated before being laundered.

1910.1030(e)(2)(ii)(G)

Special care shall be taken to avoid skin contact with OPIM. Gloves shall be worn when handling infected animals and when making hand contact with OPIM is unavoidable.

1910.1030(e)(2)(ii)(H)

Before disposal all waste from work areas and from animal rooms shall either be incinerated or decontaminated by a method such as autoclaving known to effectively destroy bloodborne pathogens.

1910.1030(e)(2)(ii)(I)

Vacuum lines shall be protected with liquid disinfectant traps and high-efficiency particulate air (HEPA) filters or filters of equivalent or superior efficiency and which are checked routinely and maintained or replaced as necessary.

1910.1030(e)(2)(ii)(J)

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., the needle is integral to the syringe) shall be used for the injection or aspiration of OPIM. 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 and autoclaved or decontaminated before reuse or disposal.

1910.1030(e)(2)(ii)(K)

All spills shall be immediately contained and cleaned up by appropriate professional staff or others properly trained and equipped to work with potentially concentrated infectious materials.

1910.1030(e)(2)(ii)(L)

A spill or accident that results in an exposure incident shall be immediately reported to the laboratory director or other responsible person.

1910.1030(e)(2)(ii)(M)

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, shall be required to read instructions on practices and procedures, and shall be required to follow them.

1910.1030(e)(2)(iii)

Containment Equipment.

1910.1030(e)(2)(iii)(A)

Certified biological safety cabinets (Class I, II, or III) or other appropriate combinations of personal protection or physical containment devices, such as special protective clothing, respirators, centrifuge safety cups, sealed centrifuge rotors, and containment caging for animals, shall be used for all activities with OPIM that pose a threat of exposure to droplets, splashes, spills, or aerosols.

1910.1030(e)(2)(iii)(B)

Biological safety cabinets shall be certified when installed, whenever they are moved and at least annually.

1910.1030(e)(3)

HIV and HBV research laboratories shall meet the following criteria:

1910.1030(e)(3)(i)

Each laboratory shall contain a facility for hand washing and an eye wash facility which is readily available within the work area.

1910.1030(e)(3)(ii)

An autoclave for decontamination of regulated waste shall be available.

1910.1030(e)(4)

HIV and HBV production facilities shall meet the following criteria:

1910.1030(e)(4)(i)

The work areas shall be separated from areas that are open to unrestricted traffic flow within the building. Passage through two sets of doors shall be the basic requirement for entry into the work area from access corridors or other contiguous areas. Physical separation of the high-containment work area from access corridors or other areas or activities may also be provided by a double-doored clothes-change room (showers may be included), airlock, or other access facility that requires passing through two sets of doors before entering the work area.

1910.1030(e)(4)(ii)

The surfaces of doors, walls, floors and ceilings in the work area shall be water resistant so that they can be easily cleaned. Penetrations in these surfaces shall be sealed or capable of being sealed to facilitate decontamination.

1910.1030(e)(4)(iii)

Each work area shall contain a sink for washing hands and a readily available eye wash facility. The sink shall be foot, elbow, or automatically operated and shall be located near the exit door of the work area.

1910.1030(e)(4)(iv)

Access doors to the work area or containment module shall be self-closing.

1910.1030(e)(4)(v)

An autoclave for decontamination of regulated waste shall be available within or as near as possible to the work area.

1910.1030(e)(4)(vi)

A ducted exhaust-air ventilation system shall be provided. This system shall create directional airflow that draws air into the work area through the entry area. The exhaust air shall not be recirculated to any other area of the building, shall be discharged to the outside, and shall be dispersed away from occupied areas and air intakes. The proper direction of the airflow shall be verified (i.e., into the work area).

1910.1030(e)(5)

Training Requirements. Additional training requirements for employees in HIV and HBV research laboratories and

HIV and HBV production facilities are specified in paragraph (g)(2)(ix).

1910.1030(f)

Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up --

1910.1030(f)(1)

General.

1910.1030(f)(1)(i)

The employer shall make available the hepatitis B vaccine and vaccination series to all employees who have occupational exposure, and post-exposure evaluation and follow-up to all employees who have had an exposure incident.

1910.1030(f)(1)(ii)

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

1910.1030(f)(1)(ii)(A)

Made available at no cost to the employee;

1910.1030(f)(1)(ii)(B)

Made available to the employee at a reasonable time and place;

1910.1030(f)(1)(ii)(C)

Performed by or under the supervision of a licensed physician or by or under the supervision of another licensed healthcare professional; and

1910.1030(f)(1)(ii)(D)

Provided according to recommendations of the U.S. Public Health Service current at the time these evaluations and procedures take place, except as specified by this paragraph (f).

1910.1030(f)(1)(iii)

The employer shall ensure that all laboratory tests are conducted by an accredited laboratory at no cost to the employee.

1910.1030(f)(2)

Hepatitis B Vaccination.

1910.1030(f)(2)(i)

Hepatitis B vaccination shall be made available after the employee has received the training required in paragraph (g)(2)(vii)(I) and within 10 working days of initial assignment to all employees who have occupational exposure unless the employee has previously received the complete hepatitis B vaccination series, antibody testing has revealed that the employee is immune, or the vaccine is contraindicated for medical reasons.

1910.1030(f)(2)(ii)

The employer shall not make participation in a prescreening program a prerequisite for receiving hepatitis B vaccination.

1910.1030(f)(2)(iii)

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

1910.1030(f)(2)(iv)

The employer shall assure that employees who decline to accept hepatitis B vaccination offered by the employer sign the statement in Appendix A.

1910.1030(f)(2)(v)

If a routine booster dose(s) of hepatitis B vaccine is recommended by the U.S. Public Health Service at a future date, such booster dose(s) shall be made available in accordance with section (f)(1)(ii).

1910.1030(f)(3)

Post-exposure Evaluation and Follow-up. Following a report of an exposure incident, the employer shall make immediately available to the exposed employee a confidential medical evaluation and follow-up, including at least the following elements:

1910.1030(f)(3)(i)

Documentation of the route(s) of exposure, and the circumstances under which the exposure incident occurred;

1910.1030(f)(3)(ii)

Identification and documentation of the source individual, unless the employer can establish that identification is infeasible or prohibited by state or local law;

1910.1030(f)(3)(ii)(A)

The source individual's blood shall be tested as soon as feasible and after consent is obtained in order to determine HBV and HIV infectivity. If consent is not obtained, the employer shall establish that legally required consent cannot be obtained. When the source individual's consent is not required by law, the source individual's blood, if available, shall be tested and the results documented.

1910.1030(f)(3)(ii)(B)

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 need not be repeated.

1910.1030(f)(3)(ii)(C)

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.

1910.1030(f)(3)(iii)

Collection and testing of blood for HBV and HIV serological status;

1910.1030(f)(3)(iii)(A)

The exposed employee's blood shall be collected as soon as feasible and tested after consent is obtained.

1910.1030(f)(3)(iii)(B)

If the employee consents to baseline blood collection, but does not give consent at that time for HIV 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.

1910.1030(f)(3)(iv)

Post-exposure prophylaxis, when medically indicated, as recommended by the U.S. Public Health Service;

1910.1030(f)(3)(v)

Counseling; and

1910.1030(f)(3)(vi)

Evaluation of reported illnesses.

1910.1030(f)(4)

Information Provided to the Healthcare Professional.

1910.1030(f)(4)(i)

The employer shall ensure that the healthcare professional responsible for the employee's Hepatitis B vaccination is provided a copy of this regulation.

1910.1030(f)(4)(ii)

The employer shall ensure that the healthcare professional evaluating an employee after an exposure incident is provided the following information:

1910.1030(f)(4)(ii)(A)

A copy of this regulation;

1910.1030(f)(4)(ii)(B)

A description of the exposed employee's duties as they relate to the exposure incident;

1910.1030(f)(4)(ii)(C)

Documentation of the route(s) of exposure and circumstances under which exposure occurred;

1910.1030(f)(4)(ii)(D)

Results of the source individual's blood testing, if available; and

1910.1030(f)(4)(ii)(E)

All medical records relevant to the appropriate treatment of the employee including vaccination status which are the employer's responsibility to maintain.

1910.1030(f)(5)

Healthcare Professional's Written Opinion. The employer 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.

1910.1030(f)(5)(i)

The healthcare professional's written opinion for Hepatitis B vaccination shall be limited to whether Hepatitis B vaccination is indicated for an employee, and if the employee has received such vaccination.

1910.1030(f)(5)(ii)

The healthcare professional's written opinion for post-exposure evaluation and follow-up shall be limited to the following information:

1910.1030(f)(5)(ii)(A)

That the employee has been informed of the results of the evaluation; and

1910.1030(f)(5)(ii)(B)

That the employee has been told about any medical conditions resulting from exposure to blood or OPIM which require further evaluation or treatment.

1910.1030(f)(5)(iii)

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

1910.1030(f)(6)

Medical Recordkeeping. Medical records required by this standard shall be maintained in accordance with paragraph (h)(1) of this section.

1910.1030(g)

Communication of Hazards to Employees --

1910.1030(g)(1)

Labels and Signs --

1910.1030(g)(1)(i)

Labels.

1910.1030(g)(1)(i)(A)

Warning labels shall be affixed to containers of regulated waste, refrigerators and freezers containing blood or OPIM; and other containers used to store, transport or ship blood or OPIM, except as provided in paragraph (g)(1)(i)(E), (F) and (G).

1910.1030(g)(1)(i)(B)

Labels required by this section shall include the following legend:



Sample 2 Biohazard Symbol

1910.1030(g)(1)(i)(C)

These labels shall be fluorescent orange or orange-red or predominantly so, with lettering and symbols in a contrasting color.

1910.1030(g)(1)(i)(D)

Labels shall be affixed as close as feasible to the container by string, wire, adhesive, or other method that prevents their loss or unintentional removal.

1910.1030(g)(1)(i)(E)

Red bags or red containers may be substituted for labels.

1910.1030(g)(1)(i)(F)

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 are exempted from the labeling requirements of paragraph (g).

1910.1030(g)(1)(i)(G)

Individual containers of blood or OPIM that are placed in a labeled container during storage, transport, shipment or disposal are exempted from the labeling requirement.

1910.1030(g)(1)(i)(H)

Labels required for contaminated equipment shall be in accordance with this paragraph and shall also state which portions of the equipment remain contaminated.

1910.1030(g)(1)(i)(I)

Regulated waste that has been decontaminated need not be labeled or color-coded.

1910.1030(g)(1)(ii)

Signs.

1910.1030(g)(1)(ii)(A)

The employer shall post signs at the entrance to work areas specified in paragraph (e), HIV and HBV Research Laboratory and Production Facilities, which shall bear the following legend:



Sample 2 Biohazard Symbol

(Name of the Infectious Agent)
(Special requirements for entering the area)
(Name, telephone number of the laboratory director or other responsible person.)

1910.1030(g)(1)(ii)(B)

These signs shall be fluorescent orange-red or predominantly so, with lettering and symbols in a contrasting color.

1910.1030(g)(2)

Information and Training.

1910.1030(g)(2)(i)

The employer shall train each employee with occupational exposure in accordance with the requirements of this section. Such training must be provided at no cost to the employee and during working hours. The employer shall institute a training program and ensure employee participation in the program.

1910.1030(g)(2)(ii)

Training shall be provided as follows:

1910.1030(g)(2)(ii)(A)

At the time of initial assignment to tasks where occupational exposure may take place;

1910.1030(g)(2)(ii)(B)

At least annually thereafter.

1910.1030(g)(2)(iii)

[Reserved]

1910.1030(g)(2)(iv)

Annual training for all employees shall be provided within one year of their previous training.

1910.1030(g)(2)(v)

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

1910.1030(g)(2)(vi)

Material appropriate in content and vocabulary to educational level, literacy, and language of employees shall be used.

1910.1030(g)(2)(vii)

The training program shall contain at a minimum the following elements:

1910.1030(g)(2)(vii)(A)

An accessible copy of the regulatory text of this standard and an explanation of its contents;

1910.1030(g)(2)(vii)(B)

A general explanation of the epidemiology and symptoms of bloodborne diseases;

1910.1030(g)(2)(vii)(C)

An explanation of the modes of transmission of bloodborne pathogens;

1910.1030(g)(2)(vii)(D)

An explanation of the employer's exposure control plan and the means by which the employee can obtain a copy of the written plan;

1910.1030(g)(2)(vii)(E)

An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and OPIM;

1910.1030(g)(2)(vii)(F)

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;

1910.1030(g)(2)(vii)(G)

Information on the types, proper use, location, removal, handling, decontamination and disposal of personal protective equipment;

1910.1030(g)(2)(vii)(H)

An explanation of the basis for selection of personal protective equipment;

1910.1030(g)(2)(vii)(I)

Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that

the vaccine and vaccination will be offered free of charge;

1910.1030(g)(2)(vii)(J)

Information on the appropriate actions to take and persons to contact in an emergency involving blood or OPIM;

1910.1030(g)(2)(vii)(K)

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;

1910.1030(g)(2)(vii)(L)

Information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident;

1910.1030(g)(2)(vii)(M)

An explanation of the signs and labels and / or color coding required by paragraph (g)(1); and

1910.1030(g)(2)(vii)(N)

An opportunity for interactive questions and answers with the person conducting the training session.

1910.1030(g)(2)(viii)

The person conducting the training shall be knowledgeable in the subject matter covered by the elements contained in the training program as it relates to the workplace that the training will address.

1910.1030(g)(2)(ix)

Additional Initial Training for Employees in HIV and HBV Laboratories and Production Facilities. Employees in HIV or HBV research laboratories and HIV or HBV production facilities shall receive the following initial training in addition to the above training requirements.

1910.1030(g)(2)(ix)(A)

The employer shall assure that employees demonstrate proficiency in standard microbiological practices and techniques and in the practices and operations specific to the facility before being allowed to work with HIV or HBV.

1910.1030(g)(2)(ix)(B)

The employer shall assure that employees have prior experience in the handling of human pathogens or tissue cultures before working with HIV or HBV.

1910.1030(g)(2)(ix)(C)

The employer shall provide a training program to employees who have no prior experience in handling human pathogens. Initial work activities shall not include the handling of infectious agents. A progression of work activities shall be assigned as techniques are learned and proficiency is developed. The employer shall assure that employees participate in work activities involving infectious agents only after proficiency has been demonstrated.

1910.1030(h)

Recordkeeping --

1910.1030(h)(1)

Medical Records.

1910.1030(h)(1)(i)

The employer shall establish and maintain an accurate record for each employee with occupational exposure, in accordance with 29 CFR 1910.1020.

1910.1030(h)(1)(ii)

This record shall include:

1910.1030(h)(1)(ii)(A)

The name and social security number of the employee;

1910.1030(h)(1)(ii)(B)

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 as required by paragraph (f)(2);

1910.1030(h)(1)(ii)(C)

A copy of all results of examinations, medical testing, and follow-up procedures as required by paragraph (f)(3);

1910.1030(h)(1)(ii)(D)

The employer's copy of the healthcare professional's written opinion as required by paragraph (f)(5); and

1910.1030(h)(1)(ii)(E)

A copy of the information provided to the healthcare professional as required by paragraphs (f)(4)(ii)(B)(C) and (D).

1910.1030(h)(1)(iii)

Confidentiality. The employer shall ensure that employee medical records required by paragraph (h)(1) are:

1910.1030(h)(1)(iii)(A)

Kept confidential; and

1910.1030(h)(1)(iii)(B)

Not disclosed or reported without the employee's express written consent to any person within or outside the workplace except as required by this section or as may be required by law.

1910.1030(h)(1)(iv)

The employer shall maintain the records required by paragraph (h) for at least the duration of employment plus 30 years in accordance with 29 CFR 1910.1020.

1910.1030(h)(2)

Training Records.

1910.1030(h)(2)(i)

Training records shall include the following information:

1910.1030(h)(2)(i)(A)

The dates of the training sessions;

1910.1030(h)(2)(i)(B)

The contents or a summary of the training sessions;

1910.1030(h)(2)(i)(C)

The names and qualifications of persons conducting the training; and

1910.1030(h)(2)(i)(D)

The names and job titles of all persons attending the training sessions.

1910.1030(h)(2)(ii)

Training records shall be maintained for 3 years from the date on which the training occurred.

1910.1030(h)(3)

Availability.

1910.1030(h)(3)(i)

The employer shall ensure that all records required to be maintained by this section shall be made available upon

request to the Assistant Secretary and the Director for examination and copying.

1910.1030(h)(3)(ii)

Employee training records required by this paragraph shall be provided upon request for examination and copying to employees, to employee representatives, to the Director, and to the Assistant Secretary.

1910.1030(h)(3)(iii)

Employee medical records required by this paragraph shall be provided upon request for examination and copying to the subject employee, to anyone having written consent of the subject employee, to the Director, and to the Assistant Secretary in accordance with 29 CFR 1910.1020.

1910.1030(h)(4)

Transfer of Records. The employer shall comply with the requirements involving transfer of records set forth in 29 CFR 1910.1020(h).

OSHA recently discovered mistakes made by the Federal Register editors of the CFR in implementing the 2001 OSHA final rule for Bloodborne Pathogens; these mistakes affected 29 CFR 1910.1030(h) and (i). OSHA is in the process of correcting these mistakes in the CFR. In the meantime, OSHA is revising this website to reflect the correct regulations as they will soon appear in eCFR and in the July 1, 2012, edition of the hard copy CFR. We will remove this notice from this website when the Federal Register editors make the necessary corrections in the eCFR.

1910.1030(h)(5)

Sharps injury log.

1910.1030(h)(5)(i)

The employer shall establish and maintain a sharps injury log for the recording of percutaneous injuries from contaminated sharps. The information in the sharps injury log shall be recorded and maintained in such manner as to protect the confidentiality of the injured employee. The sharps injury log shall contain, at a minimum:

1910.1030(h)(5)(i)(A)

The type and brand of device involved in the incident,

1910.1030(h)(5)(i)(B)

The department or work area where the exposure incident occurred, and

1910.1030(h)(5)(i)(C)

An explanation of how the incident occurred.

1910.1030(h)(5)(ii)

The requirement to establish and maintain a sharps injury log shall apply to any employer who is required to maintain a log of occupational injuries and illnesses under 29 CFR part 1904.

1910.1030(h)(5)(iii)

The sharps injury log shall be maintained for the period required by 29 CFR 1904.33.

1910.1030(i)

Dates —

1910.1030(i)(1)

Effective Date. The standard shall become effective on March 6, 1992.

1910.1030(i)(2)

The Exposure Control Plan required by paragraph (c) of this section shall be completed on or before May 5, 1992.

1910.1030(i)(3)

Paragraphs (g)(2) Information and Training and (h) Recordkeeping of this section shall take effect on or before June 4, 1992.

1910.1030(i)(4)

Paragraphs (d)(2) Engineering and Work Practice Controls, (d)(3) Personal Protective Equipment, (d)(4) Housekeeping, (e) HIV and HBV Research Laboratories and Production Facilities, (f) Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-up, and (g)(1) Labels and Signs of this section, shall take effect July 6, 1992.

[56 FR 64004, Dec. 06, 1991, as amended at 57 FR 12717, April 13, 1992; 57 FR 29206, July 1, 1992; 61 FR 5507, Feb. 13, 1996; 66 FR 5325 Jan., 18, 2001; 71 FR 16672 and 16673, April 3, 2006; 73 FR 75586, Dec. 12, 2008; 76 FR 33608, June 8, 2011; 76 FR 80740, Dec. 27, 2011; 77 FR 19934, April 3, 2012]