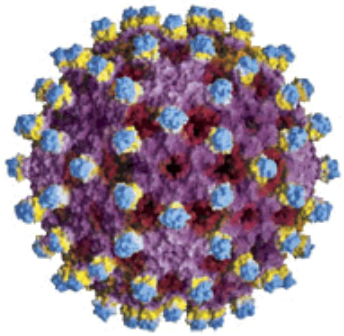
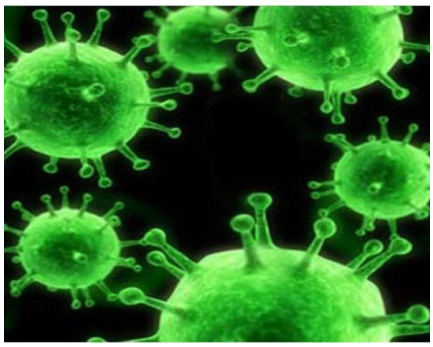
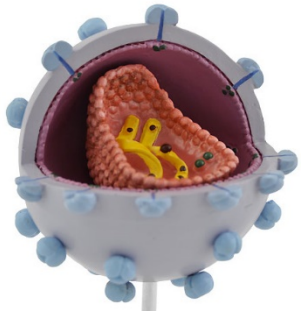
EXPOSURE CONTROL PLAN



Revision 09.2017

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Contents

Policy

A. Purpose

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

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

- Methods of compliance (e.g., engineering controls, work practices, decontamination procedures, and personal protective equipment used to minimize exposures);
- Faculty/employee/student post-exposure procedures;
- Communication of hazards to faculty/employees/students;
- 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 sections below. The Exposure Control Plan will be reviewed and updated annually by the University of Utah Biosafety Officer to reflect new or modified tasks or procedures that affect potential occupational exposure situations, as well as changes in the Federal Guidelines.

While this document serves as the Campus-wide Exposure Control Plan (ECP) for the University Of Utah, the Department of Occupational and Environmental Health and Safety (OEHS) has developed ECP templates that can be adapted and customized for individual laboratories or other settings or facilities, which can be found here: https://oehs.utah.edu/resource-center/forms. These should identify risks, work and engineering controls, PPE requirements and waste disposal procedures specific to the facility or workplace environment.

B. Scope

This written program applies to all University of Utah research and academic activities performed on the Academic Campus, at the University Hospital and School of Medicine, the

Huntsman Cancer Institute, or at off-campus facilities where there is the potential for exposure to bloodborne pathogens, blood or other potentially infectious material (OPIM). Students are covered as well as part and full time employees. The University of Utah Health Care System have developed their own Bloodborne Pathogen Exposure Control plan that applies to all Hospital and Clinic employees who are at risk of an occupational exposure to blood or OPIM, which can be accessed through Pulse.

C. Roles and Responsibilities

1. Department of Occupational and Environmental Health and Safety (OEHS):

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

- **a.** Designate the Biological Safety Officer (BSO) as the individual to oversee the University of Utah Exposure Control Plan.
- **b.** Develop, implement, evaluate and periodically update the Exposure Control Plan for the University.
- **c.** Assist departments with hazard assessments to determine jobs or tasks where exposure to blood or OPIM is possible.
- **d.** Promote practices, procedures, and methods that conform to the concept of universal precautions.
- **e.** Ensure that universal precautions are observed by employees/students with potential exposure to bloodborne pathogens.
- **f.** Determine, in conjunction with the affected department, applicable engineering controls, safe work practices, housekeeping methods, and personal protective equipment (PPE) to prevent blood and/or OPIM exposure to campus community members.
- **g.** Provide consultation and technical information on the safe handling of blood or OPIM.
- **h.** Provide guidance and technical assistance to laboratories engaged in HIV, HBV, and HCV research.
- **i.** Assist departments in the identification of employees/students that have potential exposures to bloodborne pathogens.
- **j.** Provide direction on approved medical facilities capable of providing the confidential post exposure evaluation and follow-up.
- **k.** Create training opportunities as deemed necessary and appropriate for each affected department.
- **l.** Ensure that individual departments are compiling and maintaining (for a minimum of

three years) all training records relative to the Exposure Control Plan.

m. Coordinate the proper management and disposal of regulated waste; appropriate disposal bags and containers can be obtained from OEHS through the lab management system (https://oehs.utah.edu/topics/lab-management-system) or can be procured by each department/facility/laboratory.

n. Assist departments in communicating the Exposure Control Plan to third-party vendors who perform tasks on campus that potentially implicate exposure control issues.

o. Assist departments with Bloodborne Pathogens and exposure control issues upon request.

p. Conduct periodic inspections of University of Utah facilities to ensure compliance with the Exposure Control Plan.

q. Review and recommend purchases of biological safety cabinets and other related safety equipment.

r. Advise in the disinfection of facilities and equipment.

s. Assist in the development of laboratory/facility-specific safety and exposure control plans and training programs.

t. Serve as university liaison to regulatory authorities.

u. Provide a means for suggestions, complaints, and concerns regarding the Exposure Control Plan.

v. OEHS can be contacted by telephone at 801-581-6590 or by e mail at biosafety@oehs.utah.edu.

2. Principal Investigators and/or Supervisors:

Supervisors (including Principal Investigators) have a key role in the successful development, implementation and monitoring of the University of Utah 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:

a. Ensure full compliance with the OSHA Bloodborne pathogen standard in the facility under their direction, as well as to other local, state and federal regulations that apply to their work environment.

b. Principal Investigators of research laboratories must register their work with the Institutional Biosafety Committee (IBC) providing copies of training documentation and laboratory-specific ECPs or Biosafety Manuals. Registration is conducted using an online system, BioRAFT.

c. Clearly identify the use of blood, products made from human blood, plasma, products

made from plasma, human or non-human primate cell lines or OPIM when registering or amending a protocol with the IBC.

d. Conduct a risk assessment to identify potentially hazardous procedures involving blood or OPIM, develop facility-specific Exposure Control Plans/Biosafety Manuals, develop Standard Operating Procedures (SOPs), instruct and train all personnel and students working in the lab on safe work practices, keep the lab space clean and up-to-date, and follow regulations for disposal of infectious waste.

e. Provide all affected personnel with access to the Exposure Control Plan.

f. Ensure all affected personnel undertake initial and annual refresher bloodborne pathogen training. OEHS provides training through the Research Administration Training Series (RATS). Compile and retain employee/student training records for a minimum of three years: attach all training records to the BioRAFT registration (when applicable).

g. Ensure that universal precautions are understood and executed by employees/students with possible exposure to bloodborne pathogens.

h. Promote practices, procedures, and methods that conform to the concept of universal precautions.

i. Design and implement engineering controls and institute work-practice control procedures which will eliminate or minimize potential exposure to blood and OPIM.

j. Provide appropriate PPE to employees/students that have potential exposure to bloodborne pathogens.

k. Maintain a clean and sanitary workplace environment.

l. Develop and implement cleaning schedules as deemed appropriate for the types of activities and facilities involved.

m. Comply with additional criteria established for HIV, HBV, and HCV laboratories.

n. Maintain hepatitis B virus declination statements and provide copies to OEHS.

o. Make confidential medical evaluation and follow-up immediately available to an exposed individual, following an exposure incident.

p. Report exposure incidents to the Biological Safety Officer.

q. Encourage employees to report any changes in their health status.

r. Maintain needlestick logs and provide copies to OEHS.

s. Coordinate facility-specific training required by the Exposure Control Plan.

t. 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.

u. 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 University of Utah Biosafety Manual to determine the appropriate Biological Safety Level.

v. Ensure waste is labeled and disposed properly.

w. Provide, at no cost to the employee, all supplies, PPE, and vaccinations that are necessary for compliance with the Exposure Control Plan.

x. Conduct periodic surveillance of activities within their respective areas to ensure compliance with the Exposure Control Plan.

y. Comply with shipping requirements for blood or OPIM.

z. Comply with all applicable requirements established in the OSHA Bloodborne Pathogens Standard and the Exposure Control Plan.

3. 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:

a. Read, understand, and comply with the requirements of the Exposure Control Plan.

b. Adhere to the established policies, Standard Operating Procedures (SOPs) and guidelines for biological safety as trained and following the supervisor's instructions.

c. Notify supervisor and OEHS if job tasks and responsibilities present occupational exposure concerns that have not been previously identified.

d. Alert others in the work area, before work begins, of activities that may expose themselves or others to bloodborne pathogens or OPIM.

e. Follow universal precautions when handling blood or OPIM.

f. Follow established work practice controls to eliminate of minimize occupational exposure.

g. Be aware of engineering controls in the work place and the proper use of those controls.

h. Be aware of the proper use, limitations, and location of PPE.

i. Use appropriate work practice and engineering controls and PPE to eliminate or minimize exposure.

j. Be aware of and observe established housekeeping procedures (e.g., use mechanical devices to clean up broken glass and not bare hands).

k. Maintain work area in a clean and sanitary manner.
l. Understand the additional requirements and protection for personnel working with HIV, HBV, HCV, or OPIM and follow established procedures.
m. Complete and submit the Hepatitis B vaccination form in **Appendix A** (regardless of whether you are accepting the vaccine) to your supervisor.
n. Immediately report all exposure incidents to your supervisor and OEHS.
o. Report all suspected exposure incidents.
p. Inform your immediate supervisor of any unsafe practices or conditions in the work area.
q. Report any change in health status to your supervisor if there is a possibility it may be work related.
r. Attend initial or refresher biosafety and bloodborne pathogens training. OEHS provides training through the Research Administration Training Series (RATS).
s. Make certain that labels are appropriately affixed.
t. Notify supervisor to report labeling problems.
u. Ensure waste is labeled with the words "Biohazardous Waste" and the universal biohazard symbol; dispose of waste properly.
v. Comply with all applicable requirements established in the OSHA Bloodborne Pathogens Standard and the Exposure Control Plan.

4. Institutional Biosafety Committee (IBC):

The IBC is authorized by the Vice President for Research to formulate policy and procedures related to the use of biohazardous agents, including: human pathogens, oncogenic viruses, other infectious agents, human gene transfer, and recombinant and synthetic DNA (rsDNA), as well as samples that may harbor pathogenic organisms, such as human blood or OPIM.

Work with blood or OPIM must be registered with the IBC using the online system, BioRAFT. As part of the registration process the PI/supervisor must submit copies of training documentation and laboratory-specific ECPs or Biosafety Manuals.

The IBC will:

a. For work with blood or OPIM not known to harbor infectious agents, conduct an administrative review by the IBC Chair, Vice Chair and Administrator (the Biosafety Officer). Approval will be granted for up to 5 years.
b. For work with blood or tissue known to harbor infectious agents, or work with the pathogenic organism themselves (such as HBV, HCV and HIV), conduct a full review by the convened IBC. Approval will be granted for up to 3 years.

c. Set containment levels in accordance with NIH and Centers for Disease Control and Prevention (CDC) guidelines, and adopts emergency plans and procedures covering accidental spills and personnel contamination.

d. The IBC shall determine the necessity for health surveillance and prophylaxis for research projects.

Procedures

A. Introduction

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), Hepatitis C Virus (HCV), 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. Visit the Centers for Disease Control and Prevention (CDC) website for more information.

- 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. Due to increases in injection drug use over the past 5 years the incidence of HCV has increased dramatically. Visit the CDC website for more information.

- 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. Visit the CDC website for

more information.

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	*Babesia microti*
Brucellosis	*Brucella* species
Creutzfeldt-Jakob Disease (CJD)	Prion
Leptospirosis	*Leptospira interrogans*
Malaria	*Plasmodium* species
Relapsing Fever	*Borrelia duttoni, Borrelia hermsii, Borrelia parkerii, Borrelia recurrentis*
SIV Infection	Simian Immunodeficiency Virus
Syphilis	*Treponema pallidum*
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

It is estimated that approximately 2% of US citizens are infected with a bloodborne pathogen. Rates may be significantly higher in samples from other countries.

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.
- Established human cell lines that have not been tested for human pathogens.

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.

B. Overview

The University of Utah 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 University of Utah 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. The OEHS Biosafety Office 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 University of Utah 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:

- Athletics
- Center for Comparative Medicine
- College of Engineering
- College of Medicine
- College of Nursing
- College of Pharmacy
- College of Science
- Custodial Services
- Department of Anesthesiology
- Department of Biochemistry
- Department of Bioengineering
- Department of Biology
- Department of Chemical Engineering
- Department of Chemistry
- Department of Dental Engineering
- Department of Dermatology
- Department of Exercise and Sports Medicine
- Department of Family and Preventive Medicine
- Department of Health, Kinesiology and Recreation
- Department of Health Promotion and Education
- Department of Human Genetics
- Department of Internal Medicine
- Department of Materials Science and Engineering
- Department of Mechanical Engineering
- Department of Medical Laboratory Sciences
- Department of Medicinal Chemistry
- Department of Neurobiology and Anatomy
- Department of Neurology

- Department of Neurosurgery
- Department of Nursing
- Department of Nutrition and Integrative Physiology
- Department of Obstetrics and Gynecology
- Department of Occupational Therapy
- Department of Oncological Sciences
- Department of Ophthalmology
- Department of Orthopedics
- Department of Pathology
- Department of Pediatrics
- Department of Pharmaceutics and Pharmaceutical Chemistry
- Department of Pharmacology and Toxicology
- Department of Pharmacotherapy
- Department of Physical Medicine and Rehabilitation
- Department of Physical Therapy
- Department of Physiology
- Department of Radiation Oncology
- Department of Radiology
- Department of Surgery
- Facility Operations
- Housing and Residential Education
- Lassonde Entrepreneur Institute
- Utah Museum of Natural History
- Olpin Union
- Occupational and Environmental Health and Safety (OEHS)
- Public Safety Department
- School of Medicine
- School of Dentistry
- Student Life Center
- University Student Apartments

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.
- Culturing untested established human cell lines.

- 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).
- Cleaning up spills of blood or body fluids from unknown sources. For some jobs and activities, such as custodians, athletic trainers, housing staff, etc., the most likely exposure to blood or OPIM will arise from cleaning spilled blood or body fluids. Clean up procedures specific to these activities are described in **Appendix B.**

C. 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 OPIM 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. 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.

D. Exposure Determination

University of Utah 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 or most university employees** in the specific job classification have occupational exposure pursuant to 29 CFR 1910.1030 include:

Job Description	CODE
Assistant Biosafety Specialist	0604
Assistant Professor (Clinical)	9140
Associate Professor (Clinical)	9126
Associate Professor, Clinical	0019
Biosafety Specialist	0515
Blood Gas Technician	0196
Body Donor Program Coord.	0586
Cardiac Device Technician	1239
Cell Therapy Tech I	0023
Cell Therapy Tech II	1192
Cell Therapy Tech III	1193
Certified Nurse Midwife	2445
Certified Ophthalmic Assistant	1195
Certified RN Anesthetist	2447
Clinical Assistant Professor	9141
Clinical Associate Professor	9144
Clinical Attending	9198
Clinical Audiologist	0043
Clinical Care Spec	2947
Clinical Instructor	9142
Clinical Nurse	0048
Clinical Nurse Coordinator	0049
Clinical Nurse PRN	0598
Clinical Nurse Specialist	0014
Clinical Professor	9143
Credentialed Med Asst Advanced	1205
Credentialed Medical Assistan	1203
Dental Assistant	1180

Job Description	CODE
Dialysis Technician	0068
Eye Bank Technical Coordinator	2502
Eye Bank Technician	0543
Health Care Assistant	0088
Health Care Asst - CPOE Author	1225
Histology Technician	2515
Immunogenetics Specialist	0114
Licensed Practical Nurse	0123
Medical Assistant	0135
Medical Assistant Advanced	1184
Medical Assistant Certified	1202
Medical Asst Adv Certified	1204
Medical Laboratory Technician	0542
Medical Practice Assistant	0538
Medical Technologist	0139
Nurse Manager	2428
Nurse Practitioner	0147
Phlebotomist	0473
Physician Assistant	0184
Professor (Clinical)	9177
Spv, Cell Therapy Lab	0276
Spv, Clinic	2452
Spv, Clinical Laboratory	0288
Spv, Histopathology Lab	2514
Spv, Nursing	0283
Sr Research Nurse	2427
Staff Physician	3014
Surgical First Assistant	0663

Dental Equipment Technician	1235
Dental Hygienist	1236
Dental Laboratory Specialist	1197
Dentist	0439

Surgical Technician	0235
Tissue Allocation Coordinator	0620
Tissue Processing Technologist	1163
Umbilical Cord Blood Phlebotomist	0562

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 Description	CODE
Academic/Research Staff	9101
Adjunct Assistant Professor	6004
Adjunct Assistant Professor	9104
Adjunct Assoc Professor (Ext)	6103
Adjunct Associate Professor	9102
Adjunct Associate Professor	6003
Adjunct Asst Professor (Ext)	6104
Adjunct Instructor	6005
Adjunct Instructor	9105
Adjunct Instructor (Ext)	6105
Adjunct Professor	9106
Adjunct Professor	6002
Adjunct Professor (Ext)	6102
Analytical Chemist	9312
Animal Support Technician	0013
Animal Technician	2475
Animal Technologist, Certified	0331

Job Description	CODE
Health Physicist	0456
Hrly Graduate Student	9201
Hrly Research Assistant	2966
IACUC Administrator	3004
Industrial Hygiene Tchn	2407
Industrial Hygienist	0460
Instructional/Research Staff	0041
Instructor	9170
Instructor (Lecturer)	9193
Instructor, (Clinical)	9171
Integration Engineer	1104
Integration Engineer Sr	1133
Lab Aide	0120
Lab Assistant	2490
Lab Specialist	0464
Lab Technician	0465
Laborer	2907

Animal Transport Specialist	2477
Assistant Animal Technician	0403
Assistant Athletic Trainer	0413
Assistant Coach, Athletics	1255
Assistant Professor	9139
Assistant Professor (Lecturer)	9194
Assistant RSO	1086
Assistant Toxicologist	0045
Assoc Dir, Healthcare/Clinical	1026
Assoc Dir, Molec Imaging Prog	1073
Assoc Dir, Research & Science	1030
Assoc Dir, Safety	1022
Assoc. Director, Public Safety	1161
Associate Coach, Athletics	1254
Associate Curator	0503
Associate Engineer	9329
Associate Instructor	9124
Associate Instructor - Hourly	9203
Associate Instructor, DCE	9204
Associate Professor	9125
Associate Professor (Lecturer)	9195
Associate Toxicologist	0412
Athletic Trainer	0418
Building Automation Programmer	0664
Building Maintenance Coordinator	2656
Building Operator	2614
Cardiac Coordinator	0044
Certified Tumor Registrar	0035
Certified Tumor Registrar, Sr	0619
Classroom Assistant	0426
Clinical Compliance Officer	1177
Clinical Contracting Associate	0510
Clinical Data Manager I	1080

Landscape Gardener	0466
Landscape Gardener Crewleader	2626
Landscape Irrigation Technician	0485
Lead Carpenter	2973
Lecture Lab Demonstration Spec	2591
Machinist	0126
Mail Handler	0127
Maint & Set-Up Worker	2641
Maint Spv, U Housing Facility	2636
Maintenance Helper	2640
Maintenance Mechanic	2638
Maintenance Specialist	0129
Manager	0008
Manager, Body Donor Program	2468
Manager, Clinical Research	1034
Manager, Clinical Resrch/Prog	2123
Manager, Laboratory	1043
Manager, Research	1047
Massage Therapist	0134
Master Esthetician	0545
Mechanical Engineer	9309
Medical Outreach Case Manager	0174
Medical Photographer	2467
Medical Physics Assistant	0203
Medical Storekeeper	0284
MRI Technologist	0142
Occupational Safety Specialist	2405
Occupational Therapist	0153
Occupational Therapy Assistant	1175
Ophthalmic Medical Spec	0156
Optician	0516
Orthoptist	1178
Pharmacist Intern	0176

Clinical Data Manager II	1081
Clinical Data Manager III	1082
Clinical Data Manager IV	1083
Clinical Dietitian	0050
Clinical Document Coding Spec	0565
Clinical Document Revenue Spec	1075
Clinical Exercise Physiologist	1215
Clinical Exercise Program Asst	0683
Clinical Research Comp Officer	0608
Clinical Research Coord - CPOE	1226
Clinical Research Coord, Cert	1209
Clinical Research Coordinator	0351
Clinical Site Monitor	1200
Clinical Staff Rsch Ast - CPOE	1224
Clinical Study Assistant	0561
Clinical Support Specialist	0658
Coach, Athletics	1252
Coach, Sport	9324
Construction Crew Ldr	2721
Construction Manager	2662
Coordinator, Dialysis Facility	2554
Coordinator, Transplant	0251
Crew Leader, Special Events	2620
Curator	0434
Custodial Crew Leader	2617
Custodian	0091
Cutter/Draper -PTC	2844
Dialysis Field Engineer	9308
Donor Svc Crd-Fertility Clinic	1229
Early Chldhood Spec	0442
Early Chldhood Tchr	0443
Electrical Engineer	9303
Electrical GIS Technician	9501
Electrician	0075
Electrician Apprentice	2686
Electronic Audio Tchnician	0445

Pharmacist, Clinical	0117
Pharmacy Technician	0180
Physical Therapist	0181
Physical Therapy Assistant	0183
Plumber	0185
Police Lieutenant	0168
Police Officer	0474
Police Sergeant	0483
Post Doc Fellow w/Ret	9213
Post Doc Fellow-Pd Dir, BenElg	9207
Post Doc Fellow-Pd Dir, NonBen	9208
Post Doc Res Assoc	9210
Post Doc Res Assoc w/Ret	9211
Post Doctoral Fellow	9205
Post Doctoral Research Assoc	9206
Practice & Patient Care Coord	0679
Professional Medical Staff	0107
Professor	9176
Research Analyst	2611
Research Assistant Hrly (BEBR)	2563
Research Assistant Professor	9180
Research Associate	9178
Research Associate Professor	9179
Research Coordinator	0350
Research Device Spec	0479
Research Engineer	9310
Research Fellow	9181
Research Instructor	9182
Research Nurse	2433
Research Professor	9183
Research Scientist	0310
Research Specialist	2481
Research Technician	2482
Research Toxicologist	2531
Respiratory Care Aide	0220
Scientist 1	9316

Electronic Engineer	9307
Electronic Technician	0446
Engineer 1	9304
Engineer 2	9305
Engineering Assistant	2918
Enivronmental Monitoring Technician	0583
Environmental Compliance Coordinator	1194
Environmental Engineer	1166
Environmental Monitoring Specialist	0582
Environmental Monitoring Super	0581
Environmental Specialist	2986
Environmental Technician	2402
Environmental/Linen Service Tr	0078
Equipment Mechanic	2643
Equipment Mechanic Appren	2644
Equipment Room Attendant	2385
Eye Bank Donor Coordinator	1183
Facility Manager	2953
Facility Systems Technician	1065
Faculty	9255
Faculty Emeriti, ERI	9229
Faculty, E R I	9233
Faculty, L T D	9235
Food Service Worker	0448
Foreman, Facilities Maintenance	2635
Functional Skills Coach	0090
Gardener	0449
General Maintenance Worker	0130
Genetic Counselor	0450
Graduate Assistant (E)	9330
Graduate Assistant (NE)	9331
Graduate Research Assistant	9314
Graduate Teaching Asst (E)	9416

Scientist 2	9317
Scientist 3	9318
Security Corporal	0431
Security Officer	0480
Security Officer - Hospital	1234
Security Sergeant	0481
Spv, Custodial	1059
Spv, Custodial Services	2616
Spv, Dialysis Nursing	2556
Spv, Dialysis Nursing	2556
Spv, Food Services	1060
Spv, Grounds	2624
Spv, HVAC Systems	2676
Spv, Nursing	0283
Spv, Pharmacy	0289
Spv, Plumbing Shop	2674
Spv. Clinical Staff Education	0637
Sr Industrial Hygienist	3026
Sr Laboratory Specialist	0486
Sr Research Analyst	2562
Staff Research Assistant	2497
Study Coordinator	2465
Study Coordinator - CPOE	1231
Study Coordinator, Certified	1210
Ultrasonographer	1186
Undergrad Student Research	0571
UU Student - Research	0672
Veterinarian	0495
Veterinary Technician	0518
Visiting Assoc Professor	9186
Visiting Asst Professor	9188
Visiting Professor	9191
Visiting Scientist	9200

Graduate Teaching Asst (NE)	9424
Head Dresser - PTC	2845
Head Rsc Nutritionist	2365

Volunteer Faculty	6001
Washroom Operator/Sorter	0254
Water System Distr Spec	0486

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. The University of Utah 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.*

E. General Laboratory Practices

1. Eating, drinking, smoking, applying cosmetics and contact lenses, or storage of foods is not permitted in the laboratory.
2. Personnel must wash their hands and wrists after handling infectious material, removal of gloves, and before leaving the laboratory.
3. Control the biohazard area:
    a. Keep laboratory doors and windows closed while work is in progress.
    b. Post a warning sign, such as the universal biohazard symbol, when blood or OPIM is present in the area.
    c. Limit access to the laboratory during procedures involving blood or OPIM. Make sure doors to laboratory are secured and locked at the end of each day.

F. Exposure Minimization

1. Aerosols

Aerosols refer to liquid droplets or solid particulates dispersed in air. Aerosols are too small to be seen by the unaided eye and remain suspended in air for a period of time. The production of aerosols while handling infectious agents historically accounted for the greatest source of laboratory-acquired infections.

Aerosols may be generated during the use of centrifuges, blenders, shakers, magnetic stirrers, sonicators, serological pipets, pipetmen, vortex mixers, syringes and needles, freeze-dried samples, vacuum sealed samples, mortar and pestles, culture tubes, inoculating loops, and

separatory funnels.

a. Perform activities in a biological safety cabinet; or chemical fume hood when appropriate.
b. Keep tubes stoppered when vortexing or centrifuging.
c. Allow aerosols to settle prior to opening centrifuges, blenders, or mixed tubes.
d. Place cloth soaked with disinfectant over work surface to deactivate possible spills or droplets of biohazard agents. Soaked gauze can be wrapped around ampoules while breaking, needles while being removed from a vial or stoppers being removed from tubes.
e. When reconstituting or diluting contents of an ampoule do so slowly and carefully.
f. Mix solutions by discharging the secondary fluid down the side of the container or as close as possible to the surface of the primary solution.
g. Allow inoculating needle to cool before touching biological specimens.

2. **Pipetting**
   a. Mouth pipetting is not permitted.
   b. No infectious mixture should be prepared by bubbling air through the liquid with the pipet.
   c. No infectious materials should be forcibly discharged from pipets.

3. **Syringes and needles**
   a. Avoid the use of syringes and needles if possible. Use the needle-locking type or a disposable syringe needle unit.
   b. Needles should not be re-sheathed, bent, broken or removed from disposable syringes. Needles and syringes should be discarded in biosafety labeled sharps containers. Do not discard needles into disinfectant pans containing pipets or other glassware.

G. 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.

1. 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:

a. An overview of the University of Utah Exposure Control Plan.
b. A general explanation of the epidemiology and symptoms of bloodborne diseases and a review of modes of transmission.
c. Information on how to access the current OSHA Bloodborne Pathogen Standard.
d. An accessible copy of the University of Utah Exposure Control Plan.
e. An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and OPIM.
f. 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.
g. Annual refresher training within one year of previous training.
h. 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.
i. 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.
j. Information on proper procedures following an environmental exposure or spill including contamination of PPE.

2. 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:

a. At a minimum, employees shall be informed of the applicable details of the University

of Utah 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.

b. 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.

3. Training for HIV/HBV/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:

a. 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.
b. 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.
c. 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.

4. Training Records

OEHS Biosafety provides bloodborne pathogens training and serves as the custodian of all bloodborne pathogens standard training records taken through University of Utah RATS (https:/education.research.utah.edu/). 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:

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

The University of Utah must comply with the requirements involving transfer of records set forth in 29 CFR 1910.20(h). Should the University of Utah 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.

H. 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 used for work with 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, OEHS will provide all required

labels to individual departments upon request. Each department is responsible for purchasing their own biohazard bags. Some waste containers, including sharps containers can be obtained from OEHS through the Lab Management System (LMS), or can be purchased.

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.

I. 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 OEHS.

Always wash hands and wrists immediately, or as soon as feasible, after removing gloves or other PPE. Hands and wrists should be washed with warm water and soap for at least 20 seconds. Never reuse disposable gloves. Remove PPE after it becomes contaminated and before leaving the work area. PPE, including lab coats and gloves, 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 and when cleaning up spills. 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 and wrists 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) 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. Face shields may also be worn, but safety glasses or goggles must also be worn. 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.
Respiratory Protection	Any use of respiratory protection (e.g., N95, half-mask, full-face respirators) requires a medical clearance, written respiratory protection plan and fit test, which is conducted by OEHS.

J. 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 and wrists should be washed with soap and running water for at least 20 seconds after removing gloves and before leaving the work area. If a sink is not available, hands and wrists should be cleaned with disinfectant wipes or alcohol-based sanitizer 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/ Containers	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, pipets and pipet tips 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. Non-contaminated broken glassware, pipets and pipet tips must be disposed into broken glass containers. Containers must be located where sharps can be disposed of immediately after use.
Work Area Restrictions	Eating, drinking, smoking, applying cosmetics, and handling contact lenses are prohibited in areas where blood and OPIM are handled or stored. Phones and headphones should not be used 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.
Specimen Handling/ 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. Containers for shipping specimens must meet the Department of Transportation and United States Postal Service requirements. Shipping of biological materials should only be performed by personnel trained by OEHS. International shipping may require permits or authorization from the United States Department of Agriculture or Centers for Disease Control. Contact OEHS 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: biological safety cabinets must be decontaminated by an NSF-certified technician (contact OEHS for assistance). Any parts of the equipment that cannot be decontaminated should be labeled with the biohazard symbol and the information communicated to all affected people.

K. 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 a freshly prepared 1:10 dilution of 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)	1:10 dilution of commercial bleach solution (0.5% sodium hypochlorite). Should be freshly prepared.	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 OEHS for more information about chemical disinfectants. Refer to the Environmental Protection Agency (EPA) website for a list of approved chemical disinfectants.

L. 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. Non-diluted bleach should be replaced 6 months after purchase
- 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

M. 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. Spill clean-up procedures should be posted in a location that is easily accessible prior to beginning work.
2. Evacuate the area and wait 30 minutes for aerosols to settle. Post signs prohibiting unauthorized entry.
3. Wear proper PPE, including lab coat, two pairs of gloves, shoe covers, and eye protection: other specialized clothing, such as disposable Tyvek™ suits, sleeve covers, N95 respirators may be required depending on the nature of the work.
4. If possible, isolate the spill and cover it with towels or absorbent pads.
5. Pour a freshly prepared 1:10 solution of Clorox bleach and water (1 part bleach to 9 parts water: 0.5% sodium hypochlorite) 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.

6. 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.
7. Remove the towels and rinse with water or a mild soap solution.
8. Clean non-disposable tools with an appropriate disinfectant.
9. Dispose of disposable waste products in the biohazard waste containers.
10. Wash hands and wrists with soap and water. Inform colleagues that it is safe to enter the facility.

N. Post Exposure Procedures

Exposure includes:

1. Direct skin, eye or mucosal membrane exposure to blood or OPIM, such as tissue culture media or cells, bodily fluids from humans or infected animals.
2. Parenteral inoculation by a syringe needle or other contaminated sharp (needlestick),
3. Ingestion of liquid suspension of an infected material or by contaminated hand to mouth exposure, or
4. Inhalation of infectious aerosols.

In the event of an exposure follow these steps immediately:

1. Remove exposed PPE taking care to avoid contact of unexposed areas to infectious agents on the PPE.
2. Inform others in area about any biohazardous materials out of containment to prevent further exposure. If possible, contain with absorbent pads, decontaminate with bleach, and/or seal off the site. **ALL exposed individuals should leave the area.**
3. Immediately wash affected areas with soap and water, or if exposure to eyes or mucous membranes occurred, immediately flush affected area with water for 10-15 minutes.
4. After washing, Notify lab supervisor or Principal Investigator of the exposure.
5. Go immediately to the RedMed Employee Health Clinic at the University Union Building or the Occupational Medical Clinic at the Redwood Health Center (Employees), or the Student Health Center at the Madsen Clinic (Students), for medical evaluation and follow-up; contact information is below. After 5pm you will be seen by an Urgent Care Physician. After 8pm, or if the injury is serious/life threatening, go to the University of Utah Hospital Emergency Department or call an ambulance (911).

6. Ensure that the physician is aware of all materials that were being used at the time of exposure (e.g., human blood, virus, bacteria, human tissue, animal tissue, other potentially infectious material).
7. Follow up with the physician at Occupational Medicine, as requested.

RedMed Employee Health Clinic
200 Central Campus Dr.
Salt Lake City, UT 84112
Phone: (801) 213-3303
Hours: M-TH: 8:00AM – 5:00PM, Friday: 9:00AM – 3:30PM

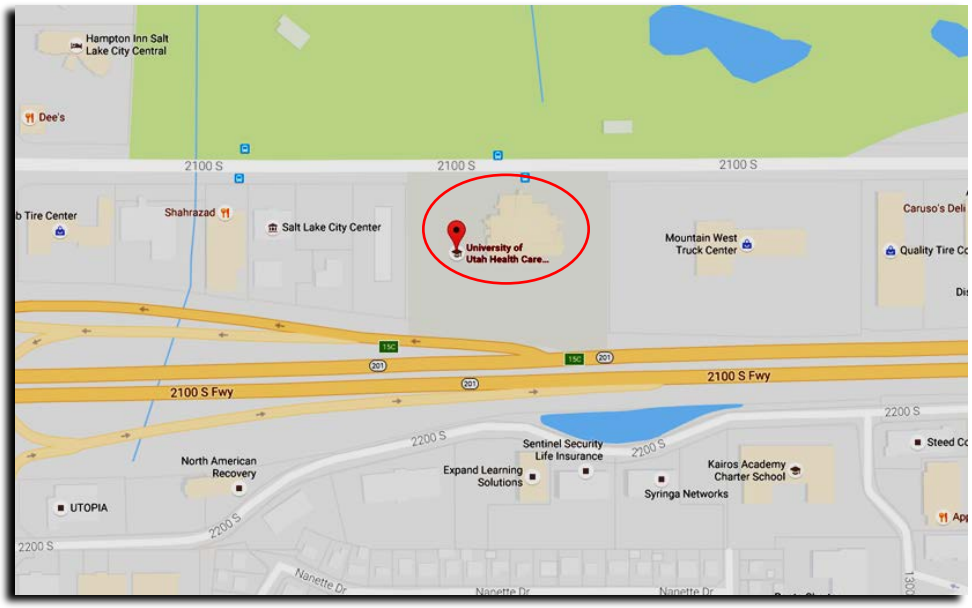
Redwood Health Center
Occupational Medicine Clinic
1525 West 2100 South
Salt Lake City, UT 84119
Phone: (801) 213-9777
Hours: M-F 8:00AM – 5:00PM

After Hours

Redwood Urgent Care
1525 West 2100 South
Salt Lake City, UT 84119
M-F 5:00PM – 8:00PM
Sat.-Sun.: 9:00AM – 8:00PM
(801) 213-9700

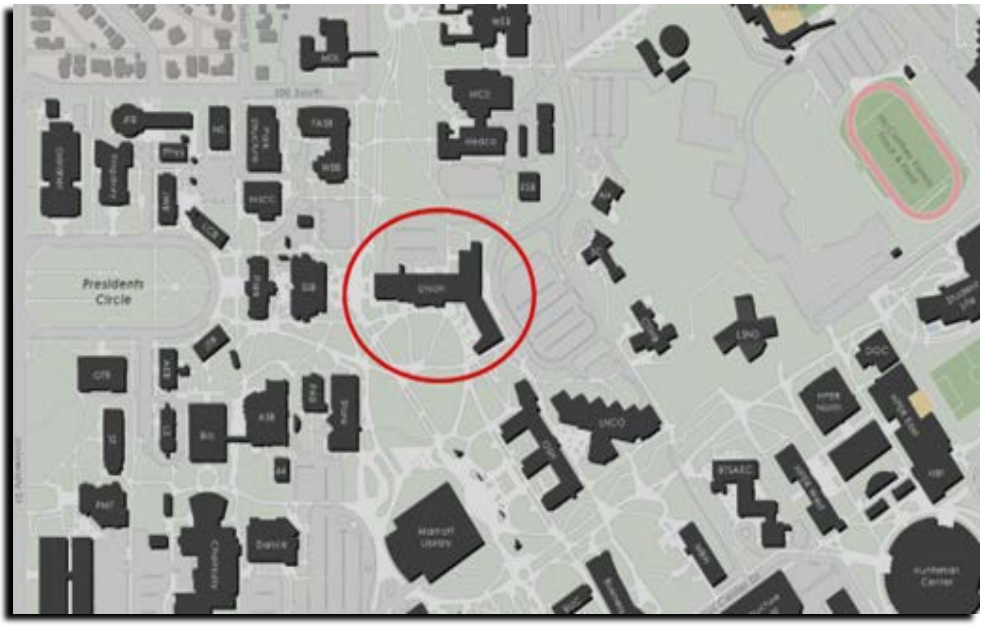
After 8 PM
Emergency Department at University Hospital
(main floor, northeast side of the hospital)
50 N. Medical Drive
Salt Lake City, UT 84132
(801) 581-2292

Maps of Occupational Medicine Clinics



UNIVERSITY OF UTAH REDWOOD HEALTH CENTER OCCUPATIONAL MEDICINE

1525 W. 2100 S. Salt Lake City UT, 84119

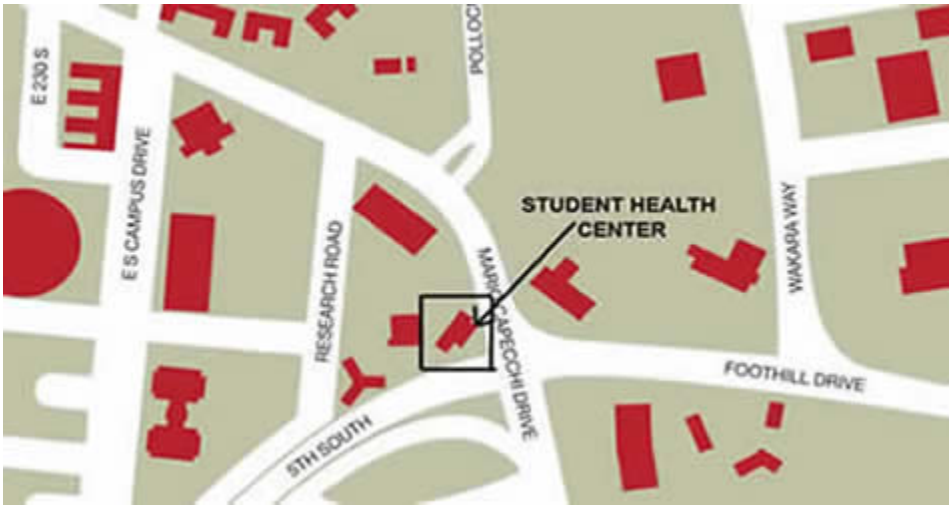


REDMED EMPLOYEE HEALTH CLINIC

200 Central Campus Dr. Salt Lake City, UT 84112

8. **Post exposure prophylaxis must be initiated as soon as possible after exposure.**
9. Inform the Healthcare Provider of any medical conditions, such as pregnancy or immunosuppression, or drug treatment that you currently have or take. The Healthcare Provider must have this information to evaluate and develop a proper post treatment evaluation.
10. Upon returning to work, fill out the Employers First Report of Injury E1 Form. This form can be downloaded from the human resources website under "Forms" (https://www.hr.utah.edu/forms/index.php).
11. After medical care, ensure that the incident is immediately reported to the Biosafety Officer (801-581-6590).
12. Have the PI/Supervisor contact the Biosafety Officer (801-581-6590) as soon as possible. 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.

NOTE Students who do not receive compensation from the University should go to the Student Health Center at the Madsen Clinic



555 Foothill Dr. Level 1
Salt Lake City, UT 84112
Phone: 801-581-6431
Fax: 801-585-5294

Hours

- Operating Hours: Monday-Friday, 7:30 am to 5 pm
- Appointment Hours: Monday-Friday, 8 am to 4 pm
- Walk-in (vaccines, lab tests) Hours: Monday-Friday, 9 am to 4 pm

Note: Clinic is closed on Wednesdays, 12-2pm.

Extended Hours

- Tuesdays, evening appointments to 6:30 pm
- Saturdays, appointments from 9 am to 11:30 am
- Fall and Spring Semesters only
  - Tuesday, 7:30 am to 7:30 pm
  - Saturday, 9:00 am to 12:00 pm

Note: Extended hours do not apply to Tuesdays or Saturdays during or near breaks/holidays.

Collegiate Assistance Program

If you need to speak to a nurse when the Student Health Center is closed, call 1-877-643-5139 for the Collegiate Assistance Program. You need to be enrolled in the university's Student Health Insurance Plan through United HealthCare. You will also need the PIN number on the back of your insurance card for the call.

General and After-Hours Care
Student Health Insurance Plan Preferred Provider Network

University of Utah Health Care Urgent Care centers provide extended hours for general care (http://healthcare.utah.edu/primarycare/urgent.php). Or call 801-581-6431 for recorded directory information.

Upon returning to work, contact Risk Management at 801-581-5590.

O. 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. The University of Utah will provide this evaluation and follow-up through the University of Utah Occupational

Medicine Clinic or contracted health care providers at no cost to the employee.

1. Documentation of the Source Individual

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

a. 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.
b. 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.
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.
d. If an aliquot of the sample that was the cause of the exposure is still available it may be possible to test directly for HBC, HCV and HIV. However, if there is any means by which the sample can be linked to a person, such as a sample that is not de-identified or it is coded in such a way that it is feasible to still identify the source (for example, through a database linking the code with the person), then consent must be obtained prior to testing.

2. 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.

3. Information Provided to the Health Care Provider

The health care professional responsible for the employee's hepatitis B vaccination will be provided access of the OSHA Bloodborne Pathogens Standard. The health care professional evaluating an employee after an exposure incident will be provided the following information:

- 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.

4. 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.

5. 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 the University of Utah Occupational Medicine and/or the employee's health care provider. Site-specific procedures should be reevaluated and revised as necessary to prevent recurrences of similar incidents. OEHS is available to assist you with evaluating the following:

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

P. Documentation and Recordkeeping

1. Medical Recordkeeping

The University of Utah Occupational Medicine Clinic will establish and maintain an accurate record for each employee with occupational exposure, in accordance with 29 CFR 1910.20. The record shall include:

1. The name and employee identification 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 employee's ability to receive vaccination.
3. A copy of all results of examinations, medical testing, and follow-up procedures required.
4. The copy of the healthcare professional's written opinion as required.
5. A copy of the information provided to the healthcare professional as required.

The University of Utah Occupational Medicine Clinic 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. The University of Utah Occupational Medicine Clinic will maintain the records required for at least the duration of employment plus thirty years in accordance with 29 CFR 1910.20.

2. Employee Records

The University of Utah is required to establish and maintain an accurate record for each employee with an occupational exposure, in accordance with 29 CFR 1910.1020. This record is maintained by the University of Utah Occupational Medicine Clinic 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.

3. Sharps Injury Log

The University of Utah is required to establish and maintain a sharps injury log (see **Appendix C**) 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 annually to OEHS Biosafety. The sharps injury log must contain the following information:

a. The type and brand of device involved in the incident.
b. The laboratory in which the exposure occurred.
c. An explanation of how the incident occurred and personnel involved.

4. 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.

5. OSHA Recordkeeping

Human resources will evaluate all incident reports to determine if cases meet OSHA's Recordkeeping Requirements (29 CFR 1904). All percutaneous injuries from contaminated sharps are also recorded in the Sharps Injury Log (**Appendix C**).

Q. Laboratory Biological Waste Disposal

This section describes procedures for the proper handling and disposal of biological waste from research, instructional, and clinical laboratories at the University of Utah. 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.

1. Biowaste Disposal – Solids

a. The Department of Occupational and Environmental Health and Safety (OEHS) Lab Management System (LMS) allows research investigators to request hazardous material pickups by OEHS staff and request empty containers. Please visit the LMS website for information.
b. Waste containers obtained from OEHS are solid sided, leak proof, lined with red

biohazard bags, and labeled with a biohazard symbol. Keep the container lid closed unless someone is working nearby and regularly adding waste to the container.

c. When the red bag is ¾ full, loosely tie or tape the bag closed. Secure the lid on the waste container and move it to a convenient storage location or transport it to a biohazardous waste storage room, if available. Biohazardous waste must be moved or transported inside a rigid, leak- resistant, labeled container with the lid closed. Request a pickup from your lab using the LMS.

d. If you have an autoclave available for disinfection of biohazardous waste, place a red biohazard bag in a solid puncture resistant container. Place a Ziploc bag or balloon containing water in the bag when it is about half full to generate steam during autoclaving. When the red bag is full, tie or tape the bag closed. Secure the lid on the waste container and move it to the autoclave room.

e. The bag should be removed and placed in a solid autoclave resistant tray: the bag should **NEVER** be placed directly on the floor. After the cycle, the bag may be disposed of as regular trash: indicators that the contents have been autoclaved must be present.

2. Biowaste Disposal – Liquids

a. Blood, aspirated tissue culture media, or other liquid waste generated from BSL-2 enhanced experiments must be disinfected and then disposed. Bleach is typically used to disinfect liquids, but other agents, such as Wescodyne, may be used if effective.

b. If you use bleach:

- Ensure the final concentration exceeds 0.5% sodium hypochlorite (no less than one part bleach to 9 parts liquid).
- Ensure the bleach is fresh: in tissue culture media traps change at least twice weekly. Undiluted bleach should be replaced every 6 months.
- Ensure the media is exposed to disinfectant for at least 20 minutes prior to disposal.
- Dispose down the sink

c. If you use Wescodyne:

- Ensure the final concentration exceeds 1% (no less than one part Wescodyne to 99 parts liquid).
- In tissue culture media traps change at least every 3 months (indicate the date of the last change on the flask). Check the expiration date on the disinfectant stock bottle.
- Ensure the media is exposed to disinfectant for at least 20 minutes prior to disposal.
- Collect waste into containers marked “Unwanted Materials” and date when you

start collecting. When full or 6 months after your start date (whichever happens first), arrange pickup by OEHS through the LMS website. **NO DRAIN DISPOSAL.**

- If the container will be unattended (outside of your immediate control) then label it with the date, time and the words "Biohazardous liquid" and keep it in a secondary container (for example, a plastic tub) while it is disinfecting.

d. If you use other agents to decontaminate liquid cultures follow the instructions on the packaging. Contact the Biosafety Officer (801-581-6590) for advice on appropriate disinfectants and procedures for disposal of treated waste.

e. Mixed liquid and solid waste should be separated in a biosafety cabinet (decant the liquid from the solid). Manage the liquids and solids separately as detailed above.

3. Use and Disposal of Sharps

- Do not recap needles by hand. RECAPPING OF NEEDLES IS PROBHIBETED.
- Do not remove needles from syringes by hand.
- Do not bend, break, or otherwise manipulate needles by hand.
- Avoid using needles whenever possible.
- Replace glass materials with plastic (such as Pasteur pipettes)
- Immediately after use, discard needle and syringe (whether contaminated or not) into puncture resistant sharps containers. RECAPPING OF NEEDLES IS PROHIBITED.
- Use a Food and Drug Administration (FDA)-cleared sharps container if you generate sharps waste (pictured below). A description of FDA-Cleared Sharps containers can be found here. FDA-cleared sharps disposal containers are made from rigid plastic, come marked with a line that indicates when the container should be considered full, which means it's time to dispose of the container, and have the Universal Biohazard symbol.

- Never discard sharps into regular trash.

- Never discard sharps into bags of biological waste.
- Use care and caution when cleaning up after procedures that require the use of syringes and needles.
- Do not overfill sharps containers. Close completely when 3/4 full, request pickup from the OEHS through the Lab Management System (LMS) webpage.
- Locate sharps containers in areas in which needles are commonly used. Make containers easily accessible.
- Replacement sharps containers may be obtained through the LMS or can be from laboratory supply distributors, such as VWR and ThermoFisher. Be sure to select sharps containers that withstand autoclaving.

4. Contaminated Serological Pipets and Pipet Tips

Serological pipets (glass and plastic) and disposable pipet tips are considered puncture hazards and should be disposed of as sharps. Contaminated pipets and tips should be discarded in approved sharps containers, as described above.

Due to the large size of serological pipets, investigators disposing of large numbers of these can request 20 gallon hard-sided biohazard waste containers (pictured below) from OEHS through the LMS. These will be picked up by OEHS staff as for other biohazardous waste.

20 Gallon Waste Container

5. Decontaminated Serological Pipets and Pipet Tips

It is possible to decontaminate serological pipets and tips prior to disposal. Ensure that both the inside and outside of the pipets or tips are exposed to the approved disinfectant (e.g. a freshly prepared 1:10 dilution of bleach) for at least 20 minutes. However, serological pipets and disposable tips are still considered puncture hazards. Therefore, after removing the disinfectant, they can be disposed of in a Broken Glass box (rigid puncture resistant boxes lined with a plastic bag and labeled “Broken Glass”: pictured below), which can be obtained from your custodial staff or from OEHS. Once they are 2/3 full they should closed with tape and disposed as regular trash by your custodians.

Broken Glass Box

R. Laundry

The University of Utah School of Medicine can be used to clean contaminated clothing and other articles that require laundering. Linen Services can be found in the AA120 level of the School of Medicine, 801-581-2200. Alternatively, there are laundry services that can clean contaminated lab coats, such as Cintas and Aramark.

The following laundering requirements must be met:

- Handle contaminated laundry as little as possible, with minimal agitation.
- Place wet contaminated laundry in leak-proof, labeled or color-coded containers before transport to the University Hospital Laundry.
- Contact outside providers for information on their transport requirements.

S. Definitions

Blood: Human blood, or non-human primate blood, blood components, and products made from human or non-human primate blood.

Bloodborne Pathogens: Pathogenic microorganisms that are present in human or non-human primate blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) hepatitis C (HCV), 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, pipets and pipet tips, 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 the

University of Utah as responsible for rendering medical assistance as part of his/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.

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.

OEHS: Abbreviation for the University of Utah Department of Occupational and Environmental Health and Safety. The telephone number is 801-581-6590.

Other Potentially Infectious Material or 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); (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; and (4) All primary human and non-human primate cell explants from tissues and subsequent in vitro passages of human or primate tissue explant cultures (including established cell lines), unless characterized by documented, reasonable laboratory testing to be free of HIV, HBV, HCV, and other bloodborne pathogens..

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

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

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 University of Utah student participating in academic programs or University-sponsored activities (e.g., athletics) that have been identified by OEHS as subject to exposure risk, and/or 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. It does not apply to feces, nasal secretions, sputum, sweat, tears, urine or vomitus unless they contain visible blood.

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).

T. References

29 CFR 1910.1030 – OSHA Bloodborne Pathogen Standard

University of Utah Biosafety FAQs

CDC Biosafety in Microbiology and BioMedical Laboratories, 5th Edition

CDC / NIH, Primary Containment for Biohazards (Biological Safety Cabinets)

CDC Hepatitis B Fact Sheet

CDC Hepatitis C Fact Sheet

CDC Bloodborne Infectious Diseases

OSHA - Applicability of Bloodborne Pathogen Standard to Established Human Cell Lines

OSHA - Bloodborne Pathogen 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: Pathogen Safety Data Sheets and Risk Assessment

ACKNOWLEDGEMENTS

This document has been developed from earlier University of Utah ECPs and Standard Operating Procedures (SOP) documents, as well as Exposure Control Plans, Safety Manuals and SOPs developed at other Universities, including Arizona State University, University of California Los Angeles, University of California Berkeley, and templates provided by the American Biological Safety Association.

Appendix A: Hepatitis B Vaccination Form

Hepatitis B Virus Consent / 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 would like to receive the hepatitis B vaccination series.** My employer has provided me with information on how to receive the vaccination free-of-charge through the University of Utah Student 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. Contact OEHS at 801-581-6590 to arrange vaccination.

☐ **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 / Year)
2nd dose:_____(Month / Year)
3rd dose:_____(Month / Year)
Booster:_____(Month / 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 OEHS
* Pursuant to 29 CFR 1910.1030(f)(2)(iv)

Appendix B: Cleaning up Spills of Blood or OPIM outside of the laboratory.

All equipment and environmental and working surfaces shall be cleaned and decontaminated immediately after contact with blood or other potentially infectious materials.

1. If an exposure incident has occurred follow the proper procedure for any exposed personnel – exposed personnel should not be performing cleanup activities – they should be following the exposure incident procedure

2. Secure area of the spill. Use barricades, tape, cones, etc. to keep unauthorized persons out of the spill area. Make sure to identify all contaminated areas – look for tracking, splatter, etc.

3. Get organized. Identify a "hot" (contaminated) and "cold" (clean) zone. Stage cleanup materials in the cold zone just outside the hot zone. Get the disposal bag ready by turning the top edge downward. This will provide a degree of rigidity for the bag and will keep the exterior of the bag from becoming contaminated. Remember you will have to decontaminate any non-disposable equipment used during the cleanup procedure.

4. Don appropriate Personal Protective Equipment (PPE).

5. Remove any broken glass or other sharps using forceps – DO NOT use your hands!!! Place sharps in a biohazard sharps container for disposal.

6. Apply an absorbent material such as paper towels over the blood or other potentially infected material (identified as "blood" from this point forward in the procedure).

7. Apply a disinfectant solution such as a freshly made solution of 1 part bleach in 10 parts water – saturate the absorbent material such that the solution penetrates the material and soaks into the blood underneath.

8. Allow the saturated absorbent material to sit on the spill for at least 20 minutes.

9. Remove the absorbent material and as much absorbed blood as possible. Place all materials in the disposal bag.

10. Inspect the area for any missed contamination – repeat the cleaning step as many times as needed to completely clean the area.

11. Thoroughly clean the area with up the disinfectant solution and paper towels or other absorbent wipes. Place all materials in the disposal bag.

12. Decontaminate all non-disposable equipment, dispose of contaminated disposable equipment in the disposal bag leaving the gloves for last.

13. Close and secure the disposal bag and place in a secure location.

14. Remove barricades etc. used to secure the spill area.

15. Initiate a hazardous materials disposal request via the OEHS website www.oehs.utah.edu

Procedimiento de respuesta a derrames de patógenos transmitidos por la sangre

1. Si se ha producido un incidente de exposición, siga el procedimiento apropiado para cualquier personal expuesto; el personal expuesto no debe realizar actividades de limpieza; deben seguir el procedimiento de exposición de incidentes

2. Asegure el área del derrame. Use barricadas, cinta adhesiva, conos, etc. para mantener a personas no autorizadas fuera del área del derrame. Asegúrese de identificar todas las áreas contaminadas - busque el rastreo, salpicaduras, etc.

3. Organícese. Identifique una zona "caliente" (contaminada) y "fría" (limpia). Etapa de los materiales de limpieza en la zona fría justo fuera de la zona caliente. Obtener la bolsa de eliminación de listo girando el borde superior hacia abajo. Esto proporcionará un grado de rigidez para la bolsa y evitará que el exterior de la bolsa se contamine. Recuerde que tendrá que descontaminar cualquier equipo no desechable utilizado durante el procedimiento de limpieza.

4. Ponga el equipo de protección personal adecuado (EPP).

5. Retire cualquier vidrio roto u otros objetos punzantes usando una pinza - NO use las manos !!! Coloque los objetos punzocortantes en un contenedor de objetos cortantes de riesgo biológico

para su eliminación.

6. Aplique un material absorbente tal como toallas de papel sobre la sangre u otro material potencialmente infectado (identificado como "sangre" de este punto adelante en el procedimiento).

7. Aplique una solución desinfectante tal como una solución recién hecha de 1 parte de lejía en 10 partes de agua - sature el material absorbente de tal manera que la solución penetra en el material y se sumerge en la sangre por debajo.

8. Deje que el material absorbente saturado se siente sobre el derrame durante al menos 20 minutos.

9. Retire el material absorbente y la mayor cantidad posible de sangre absorbida. Coloque todos los materiales en la bolsa de desecho.

10. Inspeccione el área para detectar cualquier contaminación perdida - repita el paso de limpieza tantas veces como sea necesario para limpiar completamente el área.

11. Limpie completamente el área con la solución desinfectante y las toallas de papel u otras toallitas absorbentes. Coloque todos los materiales en la bolsa de desecho.

12. Descontaminar todo el equipo no desechable, desechar el equipo desechable contaminado en la bolsa de eliminación dejando los guantes para el final.

13. Cierre y asegure la bolsa de desecho y colóquela en un lugar seguro.

14. Retire las barricadas, etc., usadas para asegurar el área del derrame.

15. Inicie una solicitud de eliminación de materiales peligrosos a través del sitio web de OEHS www.oehs.utah.edu

Appendix C: Cleaning up Spills of Blood or OPIM in a laboratory

All spills or breaks involving Recombinant DNA or Synthetic Nucleic Acid Molecules and hazardous biological materials should be cleaned up using appropriate biosafety procedures, described below. If there is any doubt about what to do, call the PI, or the Biosafety Officer 1-6590, or the University's internal emergency number: 5-2677. Identify a disinfectant that is appropriate for the material that is to be cleaned up.

A. Spills inside of a Biosafety Cabinet
    a. Stop work.
    b. If you are splashed by the material, change PPE. Always change gloves.
    c. Keep the biosafety cabinet running.
    d. Contain the spill by covering with paper towels (to avoid splashes or aerosols).
    e. Saturate spill with disinfectant. Let sit for 20 minute exposure time.
        i. In the event of a spill into the drip pan/catch basin, add an equal volume of disinfectant and wait for 20 minutes to clean up the disinfected material.
    f. Wipe up spill, disposing of towels in biohazard bag.
    g. Wipe spill area with disinfectant.
    h. Disinfect all materials used in the biosafety cabinet by wiping the surface with disinfectant. Do not attempt to disinfect contaminated cardboard or other paper items that absorb liquid: contaminated items should be disposed of.
    i. If bleach or other corrosive disinfectant used, wipe spill area and disinfected equipment with water.
    j. Place all towels or absorbent materials into a designated container for biohazardous waste.
    k. Remove PPE, discard disposable PPE as biohazardous waste and wash hands.
    l. Run the biosafety cabinet for 10 minutes to purge the air before re-starting work.

B. Spills outside of a Biosafety Cabinet
    a. Stop work.
    b. If you are splashed by the material, dispose of PPE and wash hands.
    c. Ensure that any other people in the vicinity are notified that a spill has occurred and that the room should be evacuated. Post a "Do Not Enter" notice on the door. Notify the PI or lab supervisor.
    d. If you need assistance with the spill clean-up, call OEHS (1-6590).
    e. Wait 30 minutes before re-entering the room to allow aerosols to settle.

f. Assemble Spill cleanup materials and don PPE, including lab coat, eye protection and/or face shield, 2 pair of gloves, shoe covers. If the lab coat does not have cuffed sleeves, disposable sleeve covers should be worn.
g. Contain the spill by covering with paper towels (to avoid splashes or aerosols)
h. Saturate spill with disinfectant pouring from the outside in. Avoid splashing or generating aerosols. Do not use alcohol for large spills.
    i. Wipe areas around the spill that may have splatter and any reusable equipment with disinfectant.
i. Let sit for 20 minute exposure time.
j. Wipe up spill, disposing of towels in biohazard bag: if sharps may be present use tongs or a brush and pan and dispose in biohazard sharps container.
    i. Work concentrically to clean up the absorbent material. Always work from the outer edge of the spill toward the center.
k. Wipe spill area with disinfectant.
l. Place all towels or absorbent materials into a designated container for biohazardous waste.
m. Remove PPE, discard disposable PPE as biohazardous waste and wash hands.
n. Remove the "Do Not Enter" sign and inform others that it is safe to re-enter the room.
o. Once the spill has been contained, complete the "**SPILLS OR EXPOSURE EVENT REPORTING PROCEDURE"** form and have the PI send to OEHS.

C. Spills Inside of a Centrifuge Contained Within a Closed Cup, Bucket, or Rotor
    a. Put on lab coat, gloves, and proper eye protection prior to opening centrifuge. Open carefully to assess the damage.
    b. If the spill is contained within a closed cup, bucket, or rotor, spray the exterior with disinfectant and allow at least 20 minutes of contact time. Remove the carrier to the nearest biosafety cabinet (BSC).
        i. *Note, if possible, avoid using bleach on centrifuge rotors and buckets to avoid damaging the equipment. If ethanol is not an effective disinfectant investigate alternative options.*
    c. Gather supplies needed, such as a sharps container for broken glass and bins filled with disinfectant and place into the BSC.
    d. Open the centrifuge rotor or bucket inside of the BSC. Use a mechanical device (forceps, tongs, etc.) to remove broken glass and place directly into sharps container. Carefully remove any unbroken tubes and place into a bin filled with for at least 20 minutes. Wipe carrier/bucket with disinfectant.
    e. After disinfection, carrier, bucket, or rotor should be washed with a mild soap and water.

f. Spray the interior of the centrifuge chamber with, let sit for at least 20 minutes and then wipe down.
g. Dispose of all clean-up materials (except sharps) in an appropriate biohazardous waste container. Dispose of sharps in a biohazard sharps container.
h. Remove PPE, discard disposable PPE as biohazardous waste and wash hands.

If you are concerned that the spill is not contained within the rotor or bucket:

i. Ensure that any other people in the vicinity are notified that a spill has occurred and the room should be evacuated. Post a "Do Not Enter" notice on the door. Notify the PI or lab supervisor.
ii. If you need assistance with the spill clean-up, call OEHS (801-581-6590)
iii. Wait 30 minutes before re-entering the room to allow aerosols to settle.
iv. Proceed with clean up as described above.

D. Exposure to skin or clothing
   a. Stop work.
   b. Take off contaminated clothing and wash affected area thoroughly with soap and water, but not so hard the skin is abraded.
   c. If necessary, exit lab area and immediately take a shower. Wash thoroughly with soap and water, but not so hard the skin is abraded.
   d. Notify the lab supervisor or PI.
   e. If exposed to BSL-2/RG2 (or above) agent, notify the Biosafety Officer.

E. Penetrating wound
   a. Stop Work.
   b. Wash immediately with soap and water.
   c. Notify lab supervisor or PI, who must notify the Biosafety Officer.
   d. Proceed directly to Redwood Occupational Medicine Clinic, RedMed Clinic or the University of Utah Hospital emergency Room (if after 8pm).

F. Eyes, or mucous membrane exposure
   a. Stop work.
   b. Immediately flush eyes or mucous membrane with water for 10-15 minutes.
   c. Notify lab supervisor or PI, who must notify the Biosafety Officer.
   d. Proceed directly to Redwood Occupational Medicine Clinic, RedMed Clinic or the University of Utah Hospital emergency Room (if after 8pm).

G. Emergency Spills: Environmental Risk

a. Stop work.
b. Ensure that any other people in the vicinity are notified that a spill has occurred and that the room should be evacuated. Post a “Do Not Enter” notice on the door. Notify the PI or lab supervisor.
c. Call OEHS (801-581-6590)
d. Take appropriate precautions to limit exposure or spread of spill to other areas.

Appendix D: Sharps Injury Log

A sharps injury log must be maintained by each supervisor for 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. A new log should be created each calendar year.

Laboratory/Facility Name:_____ Year 2_____

Date	Case/ Report #	Type of Device (e.g. syringe, suture needle)	Brand Name of Device	Work Area where injury occurred (e.g. Geriatrics, Lab)	Brief description of how incident occurred (i.e., procedure being done, action being performed (disposal, injection, etc.), body part injured)

29 CRF 1910.1030, OSHA's Bloodborne Pathogens Standard, in paragraph (h)(5), requires an employer to establish and maintain a Sharps Injury Log for recording all percutaneous injuries in a facility occurring from contaminated sharps. The purpose of the Log is to aid in the evaluations of devices being used in healthcare and other facilities and to identify problem devices or procedures requiring additional attention or review. This log must be kept in addition to the injury and illness log required by 29 CFR 1904. The Sharps Injury Log should include all sharps injuries occurring in a calendar year. The Log must be retained for five years following the end of the year to which it relates. The Log must be kept in a manner that preserves the confidentiality of the affected employee.

Appendix E: 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	OEHS	Employee/ 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.	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 OEHS.	Assist departments with hazard assessments to determine jobs or tasks where exposure to bloodborne pathogens is possible.	Notify supervisor OEHS 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/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/students with potential exposure to bloodborne pathogens.	Observe universal precautions when handling blood or OPIM.

Responsibility	Supervisors	OEHS	Employee/ 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 of 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, HBV or HCV 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, HBV or HCV and follow established procedures.
Hepatitis B Vaccination / Medical Testing	Maintain hepatitis B virus declination statements and provide copies to OEHS.	Assist departments in the identification of employees / students that have potential exposure to bloodborne pathogens.	Complete and submit the Hepatitis B vaccination form (regardless of whether you are accepting the vaccine), and any additional vaccination

Responsibility	Supervisors	OEHS	Employee/ Student
			forms as may be requested by the University of Utah.
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 OEHS Biosafety.	Provide direction on approved medical facilities capable of providing the confidential post exposure evaluation and follow-up.	Immediately seek treatment and as soon as feasible report all exposure incidents to your supervisors and OEHS. Report all suspected exposure incidents.
Informing and Training	Coordinate annual training required by the Exposure Control Plan. Contact OEHS for instructions for how to register for training.	Create training opportunities as deemed necessary and appropriate for each affected department.	Attend initial and annual refresher biosafety and bloodborne pathogens training.
Training Records	Compile and retain employee/student training records for a minimum of three years. Submit copies to OEHS through BioRAFT.	Compile and retain all training records (for a minimum of three years) relative to the Exposure Control Plan.	
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	Provide labels to requesting department.	Make certain that labels are appropriately affixed. Notify supervisor to report labeling problems.

Responsibility	Supervisors	OEHS	Employee/ Student
	entrance of HIV, HBV or HCV research laboratories.		
Waste	Ensure waste is labeled and disposed properly.	Coordinate the proper management and disposal of regulated waste; disposal bags, containers, etc. must be obtained through the LMS or procured by each department/facility.	Ensure waste is labeled and disposed properly.
Regulatory Compliance	Clearly identify the use of blood, products made from human blood, plasma, products made from plasma, or OPIM when registering or amending a protocol with the IBC. Provide, at no cost, all supplies, and PPE, 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.	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. Arrange for vaccinations through the Student Health Center or Occupational medicine, at no cost to the employee. Serve as university liaison to regulatory authorities. Provide a means for suggestions, complaints, and concerns regarding the Exposure Control	Comply with all applicable requirements established in the OSHA Bloodborne Pathogens Standard and the Exposure Control Plan. Obtain or decline HBV vaccination.

Responsibility	Supervisors	OEHS	Employee/ Student
		Plan.	

Appendix F: Guidelines for Working in a Type II Biological Safety Cabinet

Type II Biological Safety Cabinets (BSCs) are available for use in many laboratories at the University of Utah. 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 on the blower in the cabinet at least 10 minutes before placing infectious materials into the hood.

2. Check the certification sticker and all biosafety cabinet monitors to verify that the biosafety cabinet is working properly. Biosafety cabinets must be certified prior to use. A qualified outside contractor must certify these cabinets annually. Check the certification sticker on the front of the unit to verify your biosafety cabinet's condition. If the re-certification date has passed contact OEHS.

3. The biosafety cabinet air flow monitor should be checked to assure proper operation of the cabinet before placing any materials into it. Readings indicate relative pressure drop across the HEPA filter. Higher readings may, therefore, indicate filter clogging. Zero readings may indicate loss of filter integrity. In either of these cases, notify the Laboratory Manager or PI and OEHS. University of Utah Facilities Management do not perform maintenance on biological safety cabinets. If the BSC needs to be serviced, contact OEHS.

4. Gloves must be worn at all times.

5. Prior to beginning work, the BSC should be decontaminated. Don appropriate PPE (rear closing, fluid resistant lab coat, gloves, eye protection). Clean the inside surfaces of the BSC with *(name of disinfectant)* and follow with water (if using bleach). DO NOT put head inside the cabinet. To reach the back of the cabinet use an extension, such as a Swiffer handle.

6. Let blower run for 10 min to filter the cabinet air of any particulates.

7. DO NOT disrupt the airflow through the hood by placing ANY item on the grills or by opening the door to the corridor. Disrupting the airflow into the front grill allows contaminated air from inside the cabinet to blow into the lab or directly at the person sitting at the cabinet. It also allows non-sterile air from the room to blow into the biosafety cabinet over the experiments.

8. Organize the work surface for a clean-to-dirty work flow. Place clean pipets, flasks, and sterile media bottles at one side of the cabinet; place discard or kill pans containing disinfectant, biohazard waste containers, used flasks, spent cultures, and other wastes on the other side.

9. While working, keep all material and perform work at least 4 inches back from the front opening of the cabinet, and minimize rapid movements or activity.

10. In general, the interior of the hood should be considered to be a contaminated zone, even though every effort is made to keep the surfaces clean, as is consistent with accepted good microbiological practice and sterile technique.

11. After manipulating infectious agents, make sure all containers are tightly closed.

12. Plastic pipettes with a cotton plug shall be used for pipetting liquids containing viral particles. The electric pipettor shall be fitted with a 0.2 μm filter to prevent aerosol-based contamination.

13. A beaker or discard pan, containing a freshly prepared 1:10 solution of commercial bleach, shall be placed inside the biosafety cabinet during the cell culture work.

14. After pipetting liquid containing viral particles, the dilute bleach solution in the beaker shall be pipetted up and down the full length of the pipette or left in the pan. Serological pipettes and tips should be placed in a in a puncture resistant sharps container or other approved receptacle.

15. After decontamination, pipette tips shall be removed from the pipettor and temporarily left in the beaker containing bleach in the biosafety cabinet.

16. At the completion of the work, all materials to be removed from the biosafety cabinet must be decontaminated. *Describe methods for decontamination.*

17. At the completion of the work, the beaker containing the plastic tip pipettes shall be removed from the biosafety cabinet. Pipettes tips shall be lifted out of the beaker, the bleach solution allowed to drain back into the beaker, and the pipette tips placed in a puncture resistant sharps container or other approved receptacle. NOTE plastic pipette tips and serological pipettes are treated as sharps.

18. Small volumes of liquid waste containing viral particles shall be collected in a beaker containing undiluted bleach inside the biosafety cabinet. The final concentration of bleach should be at

least 10% of the final volume. After completing work, wait at least 30 minutes before disposing down the drain.

19. Large volumes should be collected by vacuum aspiration into a flask containing an appropriate disinfectant, such as Wescodyne or bleach, up to 1 or 10% of the volume of the flask, respectively. **NOTE: No untreated or non-disinfected biological agent-containing material should be allowed into any drain connected to the sanitary sewer system (e.g., from a sink).**

    i. Bleach in the vacuum traps must be changed at least twice per week or when the flask is half full. Wait at least 20 minutes after finishing work to discard waste.

    ii. Wescodyne is more stable and can be used for up to 3 months before it is discarded. Wescodyne-treated waste must be transferred to a sealed container marked "Unwanted materials". When full or 6 months after your start date (whichever happens first), arrange pickup by OEHS through the LMS website. **NO DRAIN DISPOSAL.**

    iii. *The flask should be placed in a secondary container to prevent it from tipping over, be labeled with a biohazard sticker and the vacuum line should be protected by a hydrophobic (HEPA) filter. The vacuum filters must be replaced if clogged or if liquid makes contact with the filter. Examples include Whatman Vacu-guard and Pall Gelman Vacushield in-line disk filters. Used filters should be placed in the biohazard waste.*

20. Turn off the house vacuum when not in use.

21. Clean the inside surfaces of the BSC with *(name of disinfectant)* after completion of work, and follow with water (if using bleach).

22. Allow the blower to run for at least 10 minutes following use.

23. The UV light is turned on between procedures (at least 30 minutes). UV lights must be turned off before work begins in the hood. **Do not look directly at UV lights as this can cause eye damage**.

    During decontamination, a sign shall be placed stating that the biosafety cabinet is being decontaminated and shall not be used. Also, it shall be stated that the user (with contact information) shall be contacted if there are any questions or concerns.

    UV light is effective only for decontaminating clean, solid surfaces with which it comes in contact. It is not effective in decontaminating the cabinet air flow. UV light is not

effective against bacterial spores. UV germicidal light tubes should be replaced frequently (at least every 6 months for biosafety cabinets in use on a daily basis) to assure that they are emitting light at 254 nm and at an intensity appropriate for decontamination. ***Due to concerns over the effectiveness of these lights and the risks to individuals in the room, some Institutions, such as the NIH, have banned their use in BSCs.***

NOTE: Any use of volatile solvents, such as absolute ethanol, should be kept to a minimum or done elsewhere. **Dangerously high levels of volatile vapors can accumulate inside the cabinet and pose a threat of fire or explosion.**

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 and decontamination are arranged through OEHS and provided by an outside vendor. A sticker on the BSC will list when certification is due. If certification is past due, please contact OEHS.

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.
- By an NSF-certified technician.

BSC decontamination (e.g., using a peroxide gas 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.
- By an NSF-certified technician.

Note: all maintenance work inside of the biosafety cabinet must be performed by an NSF-certified technician. Work on the exterior of the cabinet, such as connecting vacuum or gas lines can be performed by University of Utah Facilities. Please contact OEHS (801-581-6590) prior to having any work performed on the BSC.

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 G: 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]

Appendix H: Contact Information and OEHS Guidance

Occupational and Environmental Health and Safety Mainline: 801-581-6590

E Mail: Biosafety@oehs.utah.edu

OEHS Website: https://oehs.utah.edu/

OEHS Topics: https://oehs.utah.edu/topics

OEHS Resources: https://oehs.utah.edu/resources

OEHS Forms: https://oehs.utah.edu/resource-center/forms

OEHS Biosafety FAQs: https://oehs.utah.edu/topics/biosafety-faq