
# BLOODBORNE PATHOGENS EXPOSURE CONTROL PLAN

# FOR

# SOUTHEAST MISSOURI STATE UNIVERSITY CAPE GIRARDEAU, MISSOURI

***Prepared by***

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Southeast Missouri State University's Bloodborne Pathogens *Exposure Control Plan (BLOODBORNE PATHOGENS PLAN)* has been prepared utilizing 29 CFR 1910.1030 as a guide.

The university maintains a list of job classifications in which some employees may have occupational exposure. Since not all the employees in these categories would be expected to incur exposure to blood or other potentially infectious materials, tasks or procedures that would cause these employees to have occupational exposure are also required to be listed in order to clearly understand which employees in these categories are considered to have occupational exposure. The job classifications at the University include, but may not be limited to:

- *Nursing professionals employed by Southeast Missouri State University*
- *Plumbers*
- *Custodial staff*
- *Athletic Department Staff*
- *Child Care Staff*
- *Other University employees (faculty and staff) and students involved in either classroom and/or research/work activity that involve potential contact with Bloodborne Pathogens*

In general, all students and/or employees shall take necessary precautions to avoid direct contact with body fluids. Except when absolutely necessary, everyone is expected to avoid activities that will require them to come into contact with body fluids, needles or other instruments or surfaces that are contaminated with blood or other potentially infectious materials (OPIM).

In addition to human blood, other potentially infectious materials (OPIM) are:

- All human body fluids;
- Any unfixed tissue or organ other than intact skin from a human (living or dead);
- Human cell lines or cultures, human tissue cultures, human organ cultures;
- Non-human primate blood, body fluids or other tissues;
- Blood, body fluids or other tissues from experimental animals infected with bloodborne pathogens;
- Liquid or solid culture medium or other materials containing biological agents capable of causing disease in healthy adults (i.e. equivalent to agents handled at Biosafety Level 2 or above, visit http://www.cdc.gov/od/ohs/biosfty/bmbl5/bmbl5toc.htm.

*Southeast Missouri Hospital Campus Health Clinic, whose employees engage in clinical tasks such as drawing blood or other patient care, maintains an exposure control plan and is responsible for ensuring compliance with their plan. Academic departments that require clinical internships are responsible for compliance with the Blood Pathogens standard and other requirements specified by the affiliated institution.*

## I. BLOODBORNE PATHOGENS OF CONCERN IN OCCUPATIONAL EXPOSURE

Hepatitis B virus (HBV) and human immunodeficiency virus (HIV) are the two-bloodborne pathogens of greatest concern for occupational exposure. The elements of this BLOODBORNE PATHOGENS PLAN provide protection methods for other bloodborne diseases such as hepatitis C. In the United States, approximately 100,000 people are infected with HBV annually. Of these cases, some are fatal. There is yet no cure or specific treatment for either HBV or HIV.

### A. Hepatitis B Virus (HBV)

Hepatitis B virus infection is a major bloodborne occupational hazard to health care workers. Symptoms of the acute form of the disease may range from none, to mild flu-like symptoms, or to more severe symptoms including jaundice, extreme fatigue, anorexia, nausea, and abdominal pain. Outcomes of acute forms of the infection may include hospitalization, weeks to months of work loss, and, in severe cases, death.

An estimated 6% to 10% of adults infected with hepatitis B virus become chronic HBV carriers, capable of infecting other individuals. HBV carriers are at high risk of developing chronic persistent hepatitis, chronic active hepatitis, cirrhosis of the liver, and primary liver cancer.

There are several ways in which the virus can be transmitted. The most efficient and common means of occupational transmission is parenteral, or the direct inoculation of infectious material by piercing through the skin barrier. In the workplace this might occur as a result of needle stick or other accidental injury with a sharp contaminated object that is capable of penetrating the skin. Direct inoculation is also possible when preexisting lesions on hands from other injuries, provide a route of entry for the virus to enter the body.

A second mode of transmission is for infected blood to contact mucous membranes of the eye, nose, or mouth. Therefore, a splash of blood or serum into an individual’s unprotected eyes or mouth poses a risk of transmission of infection. Hepatitis B can also be transmitted sexually, and perinatally (from infected mother to newborn infant). These modes of transfer indicate that occupational exposure to this pathogen can also have serious implications for the spouses, sexual partners, and families of infected individuals.

B. Human Immunodeficiency Virus (HIV)

HIV affects the immune system, leading to a wide range of clinical disorders, including AIDS, which usually leads to the death of the HIV infected patient. HIV is known to be transmitted through blood, semen, vaginal secretions and breast milk. Documented modes of transmission include:

- Engaging in sexual intercourse with an infected person
- Using contaminated needles
- Having parenteral, mucous membrane or non-intact skin contact with HIV-infected blood, blood components or blood products
- Receiving transplants of HIV-infected organs or tissues, through blood transfusions through semen used for artificial insemination perinatal transmission

Exposure to HIV may occur through the physical contact described above with an infected individual or with specimens from infected individuals, from parenteral exposure (accidents involving a needle, scalpel, or other sharp instrument or object which has been contaminated with blood or body fluids from an HIV-infected individual), or by splashes of infected blood or other body fluids to the mucous membranes of the mouth, nose, or eyes.

HIV is not transmitted by casual contact such as: shaking hands, talking, sharing of food, eating utensils, plates, drinking glasses, or towels, sharing the same household facilities, hugging, or casual kissing on the cheek or lips.

C. Hepatitis C Virus (HCV)

Hepatitis C virus (HCV) is transmitted from person to person in the same manner as hepatitis B virus, though at considerably less efficiency. HCV causes a form of hepatitis called hepatitis C. Though hepatitis C is more difficult to acquire than HIV or other forms of hepatitis, the disease has a greater tendency to evolve into a chronic infection than hepatitis B. This long-term infection can lead to liver cancer after many years.

HCV can produce symptoms of illness (fatigue, fever, decreased appetite, nausea and jaundice) after an average of six weeks of incubation, but up to half of the cases may have no symptoms. As neither the acute nor chronic HCV infection respond reliably to any known treatment, prevention of the infection remains the most important control for this disease. Laboratory tests are available which can fairly reliably establish the presence or absence of HCV in the body.

D. Hepatitis A

Hepatitis A virus (HAV) is highly contagious and transmitted by fecal-oral contact. HAV causes a form of hepatitis called hepatitis A. Hepatitis A is the most common type of hepatitis reported in the United States.

Hepatitis A does not result in a chronic infection. Hepatitis A is a viral infection of the liver spread by fecal-oral route through close person-to-person contact or ingestion of contaminated food or water.

HAV can produce symptoms of illness (fatigue, fever, headache, nausea, decreased appetite, and jaundice) after an average of four weeks of incubation. The hepatitis A vaccine is highly effective combined with immune globulin for maximum protection. Laboratory tests are available to diagnose the presence or absence of HAV in the body.

In most cases hepatitis A goes away on its own without medical treatment.

## II. PURPOSE

The purpose of this bloodborne pathogens plan is to eliminate or minimize employee occupational exposure to blood or other infectious body fluids.

## III. RESPONSIBILITY AND COMPLIANCE

A. Compliance

*At-risk faculty members, students, and other University employees shall be informed of and comply with the OSHA regulations (29 CFR 1910.1030). The University will educate employees and affected students on the proper use of protective measures, waste management practices, and the State Employee Workers' Compensation reporting requirements.*

B. Responsibility

Office of Environmental Health and Safety

- Provide overall administrative guidance and supervision for the Bloodborne Pathogens Plan.
- Aid departments or sub-units in determining those employment positions or tasks that qualify for reasonable anticipation of exposure to bloodborne pathogens.
- Schedule training to all non-Health Center employees who have potential occupational exposure to bloodborne pathogens.

- Aid departments or sub-units in determining appropriate personal protective equipment, work practices, engineering controls, and housekeeping schedules.
- Maintain a master file of employees trained in this program.
- Review and update the campus Bloodborne Pathogens Plan annually and as new information becomes available.

Department Heads, Managers, & Supervisors

- Identify those employment positions within each department or appropriate sub-unit that fits the definition of "occupational exposure" described at the beginning of this document and specifies those tasks or procedures in which occupational exposure is likely to occur.
- Customize the Bloodborne Pathogens Plan for specific areas by adding appropriate information for each department or sub-unit in separate sections of this Bloodborne Pathogens Plan.
- Enforce all elements of the Bloodborne Pathogens Plan within the work setting.
- Ensure that all existing and new employees are informed and trained in all elements of the Bloodborne Pathogens Plan.
- Provide ongoing evaluation of the elements provided in this Bloodborne Pathogens Plan and update or modify them as needed to reflect current knowledge on effective infection control procedures, work practice controls, personal protective equipment and engineering controls which are likely to reduce the frequency of exposure incidents.

Employees

- Attend training sessions on controlling exposure to bloodborne pathogens in the workplace.

- Comply with all elements of the Bloodborne Pathogens Plan that apply to work-related tasks and procedures with potential exposure including the use of personal protective equipment and appropriate work practice controls.

- Report all exposure incidents to their work supervisor or other responsible individual immediately, or as soon as feasible, after they occur.

C. Compliance Methods

Universal precautions will be observed at this University in order to eliminate potential for exposure with blood or other potentially infectious materials. All blood or other potentially infectious material will be considered infectious regardless of the perceived status of the source individual.

Engineering and work practice controls will be utilized to eliminate or minimize exposure to employees at this facility. Where occupational exposure remains after institution of these controls, personal protective equipment shall also be utilized. (See Section VII: Engineering and Work Practice Controls)

The above-mentioned controls should be examined and maintained on a regular schedule. The schedule for reviewing the effectiveness of the controls is the responsibility of department heads, supervisors, managers, as well as employees.

## IV. EXPOSURE DETERMINATION

The Bloodborne Pathogens Plan applies to all employees and students of Southeast Missouri State University with potential occupational exposure to bloodborne pathogens. Each department shall list employment positions and tasks that create potential exposure. Each department shall then identify their staff members (academic and non-academic, as well as student workers) who are a part of the employment positions listed or are required to complete any listed tasks. All at-risk employees must be notified by their supervisor concerning their occupational exposure status.

Procedures and tasks where students and employees could have reasonably anticipated skin, eye, mouth, mucous membrane, non-intact skin, or other contact with blood or other potentially infectious materials (including, but not limited to):

- Vascular access procedures
- Injections
- Dressing changes
- Handling contaminated sharps
- Mouth to mouth resuscitation
- Handling specimens of body fluids
- Assisting with minor procedures where sharps are involved
- Picking up trash or linens contaminated with body fluid or blood
- Blood sugar monitoring or other finger stick procedures
- Changing diapers

## V. UNIVERSAL PRECAUTIONS

Universal precautions refer to approaches to infection control in which all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, or other blood borne pathogens. These approaches recognize that there is no practical way to determine the health status of all persons who may be sources of bloodborne pathogens. Using this assumption when dealing with

infectious materials eliminates the need for decision-making and to determine the extent of actual or potential disease hazards and establishes minimum standards for contamination control that will effectively control bloodborne pathogens if they are present.

Universal precautions shall be observed in order to prevent contact with blood or other potentially infectious materials. In situations where differentiation between body fluid types is difficult or impossible (e.g. poor lighting, uncontrolled or emergency situations), all body fluids shall be considered potentially infectious materials. Individuals with acute gastrointestinal illness (defined as vomiting, diarrhea, or both, with or without associated symptoms such as fever, nausea, and abdominal pain) are likely to have high concentrations of the infecting agent in their feces (bacteria, viruses, and parasites) or vomitus (viruses and parasites).

## VI. REGULATED WASTE

Regulated “infectious waste” represents any liquid or semi-liquid blood or other potentially infectious materials, contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed, items that are caked with dried blood or other potentially infectious materials that are capable of releasing these materials during handling contaminated sharps, and pathological and microbiological wastes containing blood or other potentially infectious materials. This description of infectious waste is consistent with the Missouri Division of Environmental Quality, Solid Waste Management Program.

Regulated waste shall be placed in containers that are closable, constructed to contain all contents and prevent leakage of fluids during handling, storage, transportation or shipping. The waste containers must be closed before transport to prevent spillage or protrusion of contents. Waste will be autoclaved in Rhodes Hall Room 314 prior to disposal.

Non-regulated waste (i.e. does not fit the definition of regulated “infectious waste” provided above) may be disposed of in regular plastic trash bags if it has been decontaminated or autoclaved prior to disposal.

Infectious Waste

The following items are considered to be infectious waste:

- Sharps (needles, skin staples, broken glass, razors, scalpels, etc.);
- Lab specimens (of any body fluid or tissue) if discarded;
- Broken glass with blood;
- Bandages that are saturated with blood, blood products, body fluids; and
- Equipment or objects contaminated with blood or body fluids

*(NOTE: Broken glass is not picked up with the hands, but must be cleaned up using mechanical means (i.e., a brush and dustpan, forceps, etc.).*

With the exception of the Southeast Missouri Hospital, infectious waste containers are to be disposed of by the Office of Environmental Health and Safety. All containers should be closed prior to pickup, designed to prevent leakage of fluids during handling, storage, transport, and shipping, and have the biohazard symbol prominently displayed on the outside. If the outside of the bag becomes contaminated, it is placed in a secondary container that fulfills the same requirements.

The Southeast Missouri Hospital Occupational Health Clinic will maintain their current disposal procedures that have been established by their department.

## VII. ENGINEERING AND WORK PRACTICE CONTROLS

Engineering and work practice controls refer to items designed to isolate or remove bloodborne pathogens from the workplace, and to practices that reduce the likelihood of exposure. If the potential for exposure remains after these controls have been instituted, personal protective equipment (special clothing or equipment worn by employees for protection against a hazard, i.e., gloves, masks, gowns, goggles, etc.) shall also be used.

Engineering and work practice controls will be utilized to eliminate or minimize exposure to University employees and students. Universal precautions will be observed by all University employees and students in order to prevent contact with blood or other potentially infectious materials. All blood or other potentially infectious materials will be considered infectious regardless of the perceived status of the source individual.

It is the responsibility of the Southeast Missouri State University to maintain the items used for engineering controls (i.e., point-of-use rigid sharps containers, safety needle devices, etc.) and PPE, and to replace them as necessary to ensure their effectiveness.

The Office of Environmental Health and Safety will be responsible for verifying that all bags containing contaminated materials are labeled, signed, and dated and that the materials have been decontaminated according to acceptable procedures and pose no health threat. Custodians and housekeepers will not remove bags containing any form of blood (human or animal), vials containing blood, bloody towels, rags, biohazardous waste, etc. from laboratories or other university facility.

## A. Sharps

Far too frequently, housekeepers, custodians and others are punctured or cut by improperly disposed needles and broken glass. This, of course, exposes them to whatever infectious material may have been on the broken glass or needle. For this reason, it is especially important to handle and dispose of all sharps carefully in order to protect yourself as well as others.

Each sharps container must either be labeled with the universal biohazard symbol and the word "biohazard" or be color-coded red. Sharps containers should be constructed to contain all contents and prevent leakage during handling, storage, and transport. Sharps containers must also be closable, puncture resistant, and labeled or color-coded. Containers must be easily accessible to employees and located as close as possible to the immediate area where sharps are used or can be reasonably anticipated to be found. They shall be maintained upright throughout use, replaced routinely, and not be allowed to overfill. Sharps containers must be disposed of promptly when full.

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

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

- Placed in a leak resistant secondary container if leakage from the primary container is possible.

Custodial staff or other employees who encounter improperly disposed needles shall notify their supervisor and the Office of Environmental Health and Safety of the location and nature of the sharp(s). Additionally, the appropriate authorities at the location shall be notified (i.e. lab manager, etc.).

### 1. Needles

Contaminated needles and other contaminated sharps will not be bent, recapped, removed, sheared or purposely broken. OSHA allows an exception to this if the procedure would require that the contaminated needle be recapped or removed and no alternative is feasible. If such action is required then the recapping or removal of the needle must be done by the use of a mechanical device or a one-handed technique. Contaminated needles should be moved only by using a mechanical device or tool such as forceps, pliers, or broom and dustpan. Contaminated needles shall be disposed of in labeled sharps containers only.

2. Broken Glassware

Broken glassware that has been visibly contaminated with blood must be sterilized with an approved disinfectant solution before it is disturbed or cleaned up. Any broken glassware that may be contaminated should not be picked up directly with the hands. Broken glassware that has been decontaminated may be disposed of in an appropriate sharps container: i.e. closable, puncture-resistant, leak-proof on sides and bottom, with appropriate labels. Broken glassware should not be picked up directly with the hands. Sweep or brush the material into a dustpan. Uncontaminated broken glassware may be disposed of in a closable, puncture resistant container.

B. Biosafety Cabinets

An individual working in a biosafety cabinet shall disinfect the work surface of the biosafety cabinet after each use. If the cabinet has a front drain, it will be checked monthly, disinfected, and drained if required. The cabinet will have an annual performance certification that the Principal Investigator is responsible for arranging. This certification is also required prior to initial cabinet user or prior to use after any cabinet relocation.

C. Sharps with Engineered Sharps Injury Protection

These devices are needle-less or otherwise altered with a built-in feature or mechanism that effectively reduces the risk of an exposure incident.

Implementation or active evaluation of engineered sharps devices is **mandated** in the following instances:

1. University employees with human subject research or direct patient contact duties. Examples include drawing blood or administering injections.
2. University employees working with experimental animals at animal biosafety level 2+ (ABSL-2+) or above. Examples include injection of lentiviral agents into animals or blood draws from animal exposed to lentiviral agents,.
3. University employees working at ABSL-2. Examples include injecting human cells, rabies virus or Plasmodium species into animals.
4. University employees working with non-human primates.
5. University employees using sharps with biosafety level 2 agents. Examples include dissecting human and non-human primate tissues, using sharp needles to homogenize or shear human cells, and preparing batches of recombinant adenovirus using sharp needles.

It is recommended that engineered sharps devices be utilized in al applications at the University when there is potential for occupational exposure to any other potentially infectious materials involving sharps.

D. Specimen Containers

Specimens of blood and other potentially infectious materials are to be placed in Biohazard containers that prevent leakage and are closed before storage and/or transport. If the outside of the specimen container becomes contaminated, the container must be placed in a secondary container that prevents leakage and fulfills the same requirements as the first container.

If the specimen could puncture the primary container, the primary container must be placed within a secondary container that is puncture-resistant, in addition to having the requirements listed above.

E. Contaminated Equipment

In order to prevent occupational exposure to laboratory personnel, equipment and sampling media that may become contaminated with blood or other potentially infectious materials are to be decontaminated (e.g., wiped off with bleach or other disinfectant) as necessary. Contaminated equipment or other contaminated items are not to be placed or stored in areas where food is kept, and decontamination should be accomplished as soon as possible following the inspection or incident where contamination occurred. Decontamination of *removable equipment* is not to take place in any area where food or drink is consumed.

F. Restricted Practices

Eating, drinking, smoking, applying cosmetics or lip balm, or handling contact lenses are prohibited in work areas where there is a reasonable likelihood of exposure. Food and drink should not be kept in areas where blood or other potentially infectious materials are present.

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

G. Labeling

Warning labels need to be affixed to containers of regulated waste, refrigerators and freezers containing blood or other potentially infectious material; and other containers used to store, transport, or ship blood or other potentially infectious materials. These labels are fluorescent orange, red, or orange-red, and they are

available from the Office of Environmental Health and Safety. Bags used to dispose of regulated waste must be red or orange red and they, too, must have the biohazard symbol readily visible upon them. Regulated waste should be double-bagged to guard against the possibility of leakage if the first bag is punctured.

H. Hygiene Practices

Hand washing is one of the most important (and easiest) practices used to prevent transmission of bloodborne pathogens. Hands or other exposed skin should be thoroughly washed as soon as possible following an exposure incident. Soft, antibacterial soap should be used if possible. Harsh, abrasive soaps should be avoided as these may open fragile scabs or other sores.

Hands should also be washed immediately (or as soon as feasible) after removal of gloves or other personal protective equipment. Employees shall familiarize themselves with the nearest hand washing facilities for the buildings in which they work. Because most University buildings are public access, they will have available hand washing facilities in public restrooms and custodial/janitorial closets.

I. Decontamination and Sterilization

All surfaces, tools, equipment and other objects that come in contact with blood must be decontaminated and sterilized as soon as possible.

Decontamination should be accomplished by using a solution of 5.25% sodium hypochlorite (household bleach / Clorox) diluted between 1:10 and 1:100 with water or a University approved biocide. The standard recommendation is to use at least a quarter cup of bleach per one gallon of water. Check the label of all disinfectants to make sure they meet this requirement.

If you are cleaning up a spill of blood don gloves, carefully cover the spill with paper towels or rags, & gently pour the bleach solution over the towels or rags, and leave it for at least 10 minutes. This will help ensure that the blood borne pathogens are destroyed before cleaning or wiping the material up. By covering the spill with paper towels or rags, you decrease the chances of causing a splash when you pour the bleach solution. Remove gloves and place in the biohazard bag. Lastly, the bag is to be closed securely and hands washed.

If decontaminating equipment or other objects (be it scalpels, microscope slides, broken glass, saw blades, tweezers, mechanical equipment upon which someone has been cut, first aid boxes, or whatever) leave disinfectant in place for at least 10 minutes before continuing the cleaning process. Any materials used to clean up a spill of blood or potentially infectious materials must be

decontaminated immediately, with the bleach solution. This would include mops, sponges, re-usable gloves, buckets, pails, etc.

J. Specimens

Specimens of blood or other potentially infectious materials will be placed in a container that prevents leakage during the collection, handling, processing, storage, and transport of the specimens. The container used for this purpose will be labeled or color-coded in accordance with the requirements of the OSHA standard. The OSHA standard provides for an exemption for specimens from the labeling/color-coding requirement provided that they utilize universal precautions in the handling of all specimens and the containers are recognizable as containing specimens. This exemption applies only while the specimens remain in the facility.

Any specimens that could puncture a primary container will be placed within a secondary container that is puncture resistant. If outside contamination of the primary container occurs, the primary container shall be placed within a secondary container that prevents leakage during the handling, processing, storage, transport, or shipping of the specimen.

K. Personal Protective Equipment (PPE)

The first action to take, in any situation where exposure to bloodborne pathogens can occur, is to ensure that you are wearing the appropriate personal protective equipment (PPE). This is a simple precaution taken in order to prevent blood or potentially infectious body fluids from coming in contact with their skin. To protect yourself, it is essential to have a barrier between you and the potentially infectious material.

PPE is readily accessible and all employees are required to use it. Repair, replacement, and disposal of PPE is the responsibility of the university and will be done at no cost to the employees.

PPE must not allow blood or other potentially infectious materials to pass through to or reach the employees' work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use for the duration of time which it will be used. If a garment is penetrated by blood or other potentially infectious materials, it must be removed immediately or as soon as possible.

Where occupational exposure remains after institution of engineering and work controls, personal protective equipment shall be utilized. Personal protective equipment will be chosen based on the anticipated exposure to blood or other potentially infectious materials. The protective equipment will be considered appropriate only if it does not permit blood or other potentially infectious materials

to pass through or reach the employees' clothing, 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.

**Guidelines to follow:**

- Always wear personal protective equipment in exposure situations.
- Remove PPE that is torn or punctured, or has lost its ability to function as a barrier to bloodborne pathogens.
- Replace PPE that is torn or punctured.
- Remove PPE before leaving the work area.
- Remove garments that become penetrated by blood or other potentially infectious material immediately or as soon as feasible.
- Place all garments in the appropriate designated area or container for storage, cleaning, decontamination, or disposal.

*General information on determination of appropriate responses to potential incidents is provided in Appendix F.* If working in an area with routine exposure to blood or potentially infectious materials, the necessary PPE should be readily accessible. Contaminated gloves, clothing, PPE, or other materials should be placed in appropriately labeled bags or containers until it is disposed of, decontaminated, or laundered. It is important to find out where these bags or containers are located in your area before beginning work.

1. Gloves

The University will provide appropriate gloves of proper size for the student or employee where possible contamination activities, tasks, or procedures are likely to take place. Gloves are to be replaced as soon as possible when contaminated or as soon as feasible if they become torn, punctured, or when their ability to function as a barrier appears to be compromised. These gloves are not to be washed or decontaminated for reuse.

The employee is to determine the extent of contamination of gloves prior to their removal. If gloves can be considered regulated waste as defined in the Standard (a very rare circumstance), they are to be placed in a regulated waste container.

Gloves are worn for anticipated hand contact with blood, other potentially infectious materials, mucous membranes, non-intact skin, for vascular access procedures, and touching contaminated surfaces.

Utility gloves may be decontaminated and reused only if their integrity is not compromised by decontamination. Utility gloves should be discarded if they are cracked, peeling, torn, or punctured, or they exhibit other signs of deterioration or when their ability to function as a barrier is compromised.

Gloves should be made of latex, nitrile, rubber, or other water impervious materials. If glove material is thin or flimsy, double gloving can provide an additional layer of protection. Also, if employees know of cuts or sores on their hands, they should cover these with a bandage or similar protection as an additional precaution before donning gloves. Always inspect gloves for tears or punctures before putting them on. When taking contaminated gloves off, do so carefully. The outside of the gloves should shield contaminants from any bare skin. Gloves should be disposed of in a proper container as to prevent others from coming in contact with them.

2. Goggles

Anytime there is a risk of splashing or vaporization of contaminated fluids, goggles and/or other eye protection should be used to protect your eyes. Again, bloodborne pathogens can be transmitted through the thin membranes of the eyes so it is important to protect them. Splashing could occur while cleaning up a spill, during laboratory procedures, or while providing first aid or medical assistance.

3. Face Shields

Masks in combination with eye protection devices, such as goggles or glasses with solid side shield, or chin length face shields, are required to be worn whenever splashes, spray, splatter, or droplets of blood or other potentially infectious materials may be generated and eye, nose, or mouth contamination can reasonable be anticipated.

4. Protective Clothing

The OSHA standard also requires appropriate protective clothing to be used, such as lab coats, gowns, aprons, clinic jackets, or similar outer garments. Lab coats are provided for situations where clothing might be splashed or soiled with blood or other potentially infectious materials.

Normal clothing that becomes contaminated with blood should be removed as soon as possible because fluids can seep through the cloth to come into contact with skin. Contaminated laundry should be handled as little as possible, and it should be placed in an appropriately labeled bag or container until it is decontaminated, disposed of, or laundered.

L. Work Area Controls and Procedures

Work Area Controls and Procedures will be utilized to eliminate or minimize exposure to employees. Where potential for occupational exposure still exists after implementation of these controls and procedures, personal protective equipment shall also be utilized.

1. Work Area Restrictions – General: In work areas where there is a reasonable likelihood of exposure to blood or other potentially infectious material, employees should comply with the following work area restrictions:
    a. No eating, drinking, chewing gum, applying cosmetics or lip balm, smoking, or handling contact lenses.
    b. Food and beverages are not to be kept in refrigerators, freezers, shelves, cabinets, or counter tops or bench tops where blood or other potentially infectious materials are present.
    c. Mouth pipetting is prohibited; automatic or manual pipetting devices should be provided.
    d. All procedures will be conducted in a manner that will minimize splashing, spraying, splattering, and generation of droplets of blood or other potentially infectious material.
2. Work Area Restrictions for Research Facilities: This section applies to research laboratories engaged in the culture, concentration, experimentation, and manipulation of potentially infectious materials. In addition to the restrictions listed below:
    a. Laboratory doors shall be kept closed when working with potentially infectious material is in progress.
    b. Access to the work area shall be restricted to authorized personnel. Only personnel trained on the potential hazards of BBP who comply with the entry and exit procedures shall be allowed to enter.
    c. Vacuum lines shall be protected with liquid disinfectant traps and HEPA/.02 micron filters that are checked twice a year and replaced as necessary.
    d. Each laboratory shall contain a facility for hand washing and an eye wash station.

## VIII. GENERAL HOUSEKEEPING GUIDANCE

EPA registered tuberculocidal disinfectants are appropriate for the cleaning of blood or OPIM. A solution of 5.25 percent sodium hypochlorite, (household bleach), diluted between 1:10 and 1:100 with water, is also acceptable for cleaning contaminated surfaces.

Quaternary ammonium products are appropriate for use in general housekeeping procedures that do not involve the cleanup of contaminated items or surfaces.

The particular disinfectant used, as well as the frequency with which it is used, will depend upon the circumstances in which a given housekeeping task occurs (i.e., location within the facility, type of surface to be cleaned, type of soil present, and tasks and procedures being performed). The supervisor's written schedule

for cleaning and decontamination should identify such specifics on a task-by-task basis.

1. All contaminated work surfaces, tools, objects, etc. will be decontaminated immediately or as soon as possible after any spill of blood or other potentially infectious materials. The bleach solution or disinfectant must be left in contact with contaminated work surfaces, tools, objects, or potentially infectious materials for at least 10 minutes before cleaning.

2. Equipment that may become contaminated with blood or other potentially infectious materials will be examined and decontaminated before servicing or use.

3. Broken glassware will not be picked up directly with the hands. Material will be swept or brushed into a dustpan.

4. Known or suspected contaminated sharps shall be discarded immediately or as soon as feasible into containers which are closable, puncture-resistant, leak-proof on sides and bottom, and marked with an appropriate biohazard label. If sharps container is not pre-labeled, biohazard labels are available through Facilities Management.

5. When containers of contaminated sharps are being moved from the area of use or discovery, the containers shall be closed immediately before removal or replacement to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

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

7. Commodes should be cleaned with commercial disinfectant. Walls are to be wiped down with disinfectant if visibly soiled.

8. OSHA does not generally consider discarded feminine hygiene products, used to absorb menstrual flow, to fall within the definition of regulated waste. The intended function of products such as sanitary napkins is to absorb and contain blood. The absorbent material of which they are composed would, under most circumstances, prevent the release of liquid or semi-liquid blood or the flaking off of dried blood. OSHA expects these products to be discarded into waste containers that are properly lined with plastic or wax paper bags. Such bags should protect the employees from physical contact with the contents.

9. Laundry contaminated with blood or other potentially infectious material should be handled as little as possible with minimum agitation. Such laundry will be placed in biohazard bags at the location where it was used. Such laundry will not

be sorted or rinsed in the area of use. For reasonably anticipated exposures, employees are instructed to wear personal protective clothing.

## IX. Biohazard Waste Disposal

A. Disposal of Sterilized or Treated Biohazard Waste

Infectious waste will be managed according to the regulations of the State of Missouri Division of Environmental Quality. All biohazardous material must be autoclaved before disposal. Devices that have punctured skin, such as hypodermic needles, should be steam sterilized by autoclave before reuse or safely discarded. Whenever possible, disposable needles and equipment should be used. Biohazard waste that has been sterilized or rendered innocuous and does not contain hazardous or radioactive materials may be disposed of directly into a sanitary landfill by placing it in the normal trash.

All sterilized or treated biowaste must be placed in black bags prior to disposal. Red bags or any materials marked as a biohazard will not be disposed of by custodial staff and will be reported to the Office of Environmental Health and Safety. It is the responsibility of the instructor, lab coordinator, and/or health professional to make certain that the biohazard waste has been sterilized or rendered innocuous or is placed in proper biohazard bags for sterilization. Once sterilization has been completed, the materials may be placed in a black bag for disposal.
For pickup or disposal, sterilized materials and/or regulated waste shall be placed in containers that are:

- Closable
- Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport.
- Labeled or color-coded (contaminated waste)
- Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, or transport.

Secondary containers or bags are only required if the primary container is contaminated on the outside. Also, if the specimen could puncture the primary container, a secondary puncture-resistant container is required. All specimen containers, primary and secondary, must be closed, properly labeled or color-coded (except as described above) and must prevent leakage.

**The Office of Environmental Health and Safety will coordinate with the department to provide appropriate Packaging and Labels for employee to use in the event of an incident.**

Articles that could puncture bags or boxes ("sharps") must be placed in puncture-proof containers available from commercial sources. The containers can then be picked up separately if liquid-free, or placed in the bags and/or boxes.

Transporting Biohazards -- Transportation or contained biohazardous waste from individual laboratories can be arranged by contacting the Office of Environmental Health and Safety at (651-2581) or by submitting a work request through the FM Service Desk. The bio-waste must be properly labeled and containerized.

## X. ACCIDENTS

In the event of an exposure incident employees are to

- Immediately wash any skin with soap and water and flush mucous membranes with water when such areas have had contact with blood or OPIM. The employee should then seek medical attention. It must be realized that any exposure incident is an event for which immediate attention must be sought, as the effectiveness of prophylaxis depends on the immediacy of its delivery.
- Report such incident to his or her supervisor as soon as possible. The supervisor will contact Human Resources for a referral to a physician.
- Complete an Exposure Incident Report (see Appendix A). The completion of this report should be done in consultation with the supervisor. In no instance should report completion and physician evaluation be delayed. Report information will include a description of the exposed employee's duties as they relate to the exposure incident; and documentation of route(s) of exposure and circumstances under which exposure occurred. Through direct input by the employee, the evaluating physician is best able to understand exactly what exposure occurred and therefore direct treatment appropriately.
- Obtain medical attention per the University’s Workers Compensation policy and procedures.

## XI. EXPOSURE REPORTING

Following an exposure incident, the supervisor will provide a copy of the Exposure Incident Form to the following departments within 24 hours:

- The Office of Environmental Health and Safety (for accident investigation)
- Human Resources (for Workers Compensation Claim)
- Department of Public Safety

## XII. HEPATITIS B VACCINE

*All employees who have been identified as having exposure to blood or other potentially infectious materials will be offered the opportunity to receive the Hepatitis B vaccine*. The Hepatitis B vaccination is available to University employees through their health insurance. Employees can arrange for the

vaccination during their normal work shift. The employee will be provided the opportunity to receive the vaccine after their training on the *Bloodborne Pathogens Plan* and within 10 working days of initial assignment. It shall be made available to all employees who have potential 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.

Those employees who decline the Hepatitis B vaccine will sign a waiver that uses the wording in the OSHA standard. (See Appendix B of this plan)

Employees who accept a vaccination are to sign the consent form in Appendix D.

General information about the virus and vaccine is provided in Appendix C.

## XIII. RECORD KEEPING

Required record keeping will be maintained by the Office of Environmental Health and Safety, including the following:

- The employee's name
- A copy of the employee's Hepatitis B vaccination status with dates of vaccinations and any medical records relevant to the employee's ability to receive vaccinations;
- A copy of all results of examinations, medical testing, and follow-up procedures;
- The employer's copy of the examining physician's written opinion (see above)
- A copy of the Exposure Incident Form.

These records must be kept for at least for the duration of employment plus 30 years.

Training

The training records shall contain the dates of the training, the contents or a summary of the training sessions, the names and job titles of all persons attending the training, and the names and qualifications of the persons conducting the training. Training records must be retained for 3 years from the training date. Training information is presented in Appendix D.

## GLOSSARY

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

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

Contaminated - the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

Contaminated Sharps - any contaminated object that is sharp or has the potential to be a sharp that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.

Decontamination - the use of physical or chemical means to remove, inactivate, or destroy blood borne pathogens on an item or surface 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.

HBV - Hepatitis B Virus.

HIV - Human Immunodeficiency Virus.

Occupational Exposure - any reasonably anticipated skin, eye, mucous membrane, or parenteral contact (i.e. piercing through the skin or splashing of mucous membrane) with blood or other potentially infectious materials (see below) that may result from the performance of an employee's duties.

OPIM - Other Potentially Infectious Material.

Other Potentially Infectious Material (OPIM) - materials other than blood which pose a potential health risk, including:

- The following human body fluids: semen, vaginal secretions (except menstrual blood), 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;

- Any unfixed tissue or organ (other than intact skin) from a human (living or dead);

- 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;

- Blood or body fluids of animals that have been intentionally or are suspected of having been exposed to human blood borne pathogens in research, in production of biologicals, in the in vivo testing of pharmaceuticals, or other procedures.

PPE Personal Protective Equipment - Specialized clothing or equipment worn by an employee for protection against a hazard.

Regulated Waste - liquid or semi-liquid blood or other potentially infectious material; contaminated items that would release blood or other potentially infectious material in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious material.

Sterilize - the use of a physical or chemical procedure to destroy all microbial life.

## APPENDIX A

**EXPOSURE INCIDENT REPORT**
(Routes and Circumstances of Exposure Incident)
Please Print

Employee's Name _____Date_____

Date of Birth _____SS#_____

Telephone (Business) _____ (Home)_____

Job Title_____

Date of Exposure_____ Time of Exposure _____ AM____PM_____

Hepatitis B Vaccination Status_____

Location of Incident_____

Describe what job duties you were performing when the exposure incident occurred_____

_____

Describe the circumstances under which the exposure incident occurred (what happened that resulted in the incident)_____

_____

_____

What body fluid(s) were you exposed to?_____

_____

What was the route of exposure (e.g., mucosal contact, contact with non-intact skin, percutaneous)?_____

_____

Describe any personal protective equipment in use at time of exposure incident_____

_____

Did PPE fail? _____If yes, how? _____

_____

Identification of source individual(s) (names) _____

_____

Other pertinent information_____

# APPENDIX B

## Hepatitis B Vaccine Declination

I understand that due to my occupational exposure to blood or other infectious materials that I may be at risk of acquiring Hepatitis B virus infection. I have been given the opportunity to be vaccinated with the Hepatitis B vaccine at no charge to myself. However, I decline the Hepatitis B vaccination at this time. I understand that by declining this vaccine, 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 other potentially infectious materials and I want the Hepatitis B vaccine, I can receive the vaccination series at no charge to me.

(print name)_____

(title)_____

(date)_____

(signature)_____

# APPENDIX C

## MODES OF TRANSMISSION OF HIV and HBV

- Parenteral (through-the-skin):
- stick from a contaminated needle
- transfusion of contaminated blood
- splash of contaminated blood or body fluids into your eyes, nose, or mouth
- touching contaminated blood or body fluids with your non-intact skin or mucous membranes

**Symptoms** of Hepatitis B include jaundice, nausea, joint pain, malaise, and anorexia.

## HEPATITIS B VACCINE INFORMATION

Safety- side effects: nausea, sore arm, fatigue

Effectiveness- 90-96% of people vaccinated develop protective titer levels

Benefits- HB can kill you or cause chronic disease, with all the symptoms listed above

HEPTAVAX-B is a non-infectious formalin inactivated sub-unit viral vaccine derived from surface antigen (HBsAg or Australia antigen of Hepatitis B virus).

RECOMBIVAX-HB is a non-infectious sub-unit viral vaccine derived from Hepatitis B surface antigen (HBsAg) produced in yeast cells.

ENGERIX-B is a non-infectious synthetic vaccine derived from HBsAg produced in yeast cells.

1. The three vaccine profiles are similar. More data is available on Heptavax-B because of its longer time in research and its use around the world, and should be available for those allergic to yeast.

2. The drug is recommended for intramuscular injection. The preferred site in adults is the deltoid muscle. Injections given into the buttocks have demonstrated lower conversion rates--primarily because sometimes the drug has been given into fatty tissue.

3. The pharmaceutical firm recommends the consistent use of either Heptavax or Recombivax-HB in the vaccination series given to an individual. However, if an individual has completed the series with one vaccine, the other may be used as a booster. Engerix may be used to complete a series begun with Recombivax.

4. The employee who is pregnant should receive the vaccine only if clearly needed. Refer to a private physician.

5. Persons on immuno-suppressive therapy may require more than the usual vaccine series of three doses.

6. The immunization regimen consists of three doses of vaccine as follows:
a. 1st dose - elected date.
b. 2nd dose - 1 month later.
c. 3rd dose - 6 months after the 1st dose.

7. An accelerated dosing schedule for post-exposure prophylaxis with Engerix may be used. This would be:
a. 1st dose - elected date.
b. 2nd dose - 1 month later.
c. 3rd dose - 2 months after the 1st dose.
d. 4th dose - 12 months after the 1st dose.

If the employee initially declines Hepatitis B vaccination but at a later date decides to accept the vaccination, the vaccination shall then be made available.

All employees who decline the Hepatitis B vaccination offered shall sign the OSHA required waiver (see Appendix B) indicating their refusal. If a routine booster dose of Hepatitis B vaccine is recommended by U.S. Public Health Service at a future date, such booster doses shall be made available at no cost to the employee.

# APPENDIX D

## Consent for Hepatitis B Vaccination

I have read and understand the HEPATITIS B INFORMATION SHEET that describes both the clinical course of the disease and its risks and hazards, and the vaccination and its usual and most frequent risks and hazards. I have discussed any concerns or questions with the OSHA Education Coordinator. To the best of my knowledge I am not pregnant; if I am pregnant I have consulted my private physician and obtained written authorization for vaccination (a copy of which is attached to this consent).

I understand that there is no guarantee that vaccination will be effective or that my vaccination will be free of side effects. I understand that my participation in the hepatitis B vaccination program is entirely voluntary, although recommended for me, because I am in a work environment at Southeast Missouri State University that presents a reasonable anticipation of my exposure to potentially infectious materials.

I have opted to receive the HEPATITIS B VACCINE. I hereby consent to the administration of the HEPATITIS B vaccine to be given by the Southeast Missouri Hospital Occupational Health Clinic over the next 6 months. I understand that I must receive three doses of vaccine.

Employee Signature Department

_____

Employee Name _____Work Phone_____
(Please Print)

Local Address or (ASU Box)_____

Home Phone _____Social Security #_____Date of Birth_____

Signature of Supervisor _____

Date Vaccinated

(1) _____

(2) _____

(3) _____

# APPENDIX E

## Bloodborne Pathogen Training Requirements

1) Activities that may cause exposure to Bloodborne Pathogens (ex. HIV/HBV)
2) Information on the types, proper usage, location, removal, handling, decontamination, and disposal of PPE
3) What to do after an exposure
4) Explanation of signs, labels, and color-coding
5) The OSHA standard for Bloodborne Pathogens 29 CFR 1910.1030
6) Epidemiology and symptoms of bloodborne diseases
7) Modes of transmission of bloodborne pathogens
8) This Bloodborne Pathogens Plan, i.e. points of the plan, lines of responsibility, how the plan will be implemented, etc.
9) Control methods that will be used to control exposure to blood or other potentially infectious materials.
10) Personal protective equipment available at this University and who should be contacted concerning retrieval
11) Hepatitis B vaccine program at the facility
12) HBV vaccine: safety effectiveness benefits

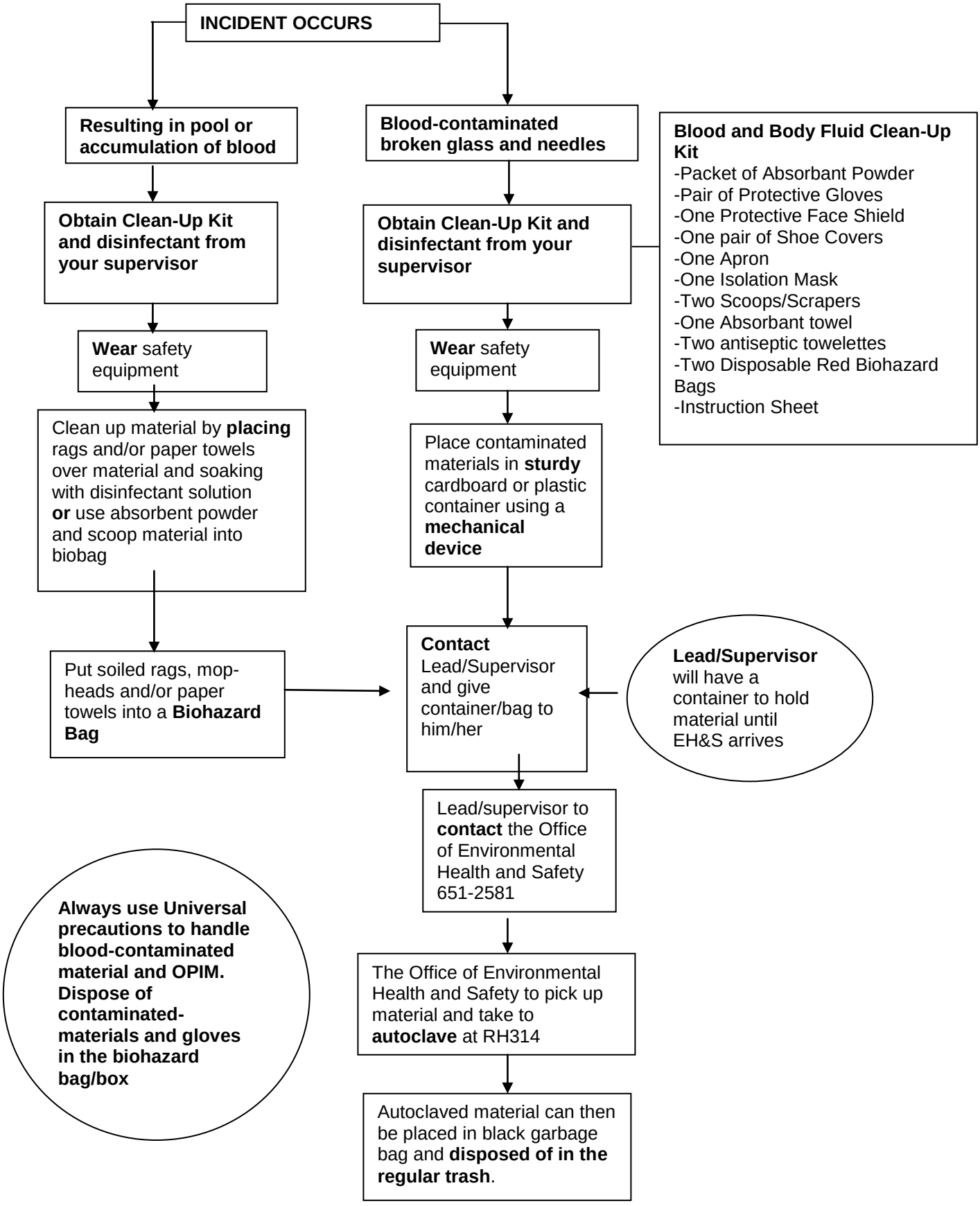
WHEN: New employees are trained prior to employment, or at least within 10 days of beginning work. All employees will be trained annually thereafter.

WHO: All employees with potential for exposure to blood or other potentially infectious materials as listed in Bloodborne Pathogens Plan.

All at-risk employees shall participate in a training program. Training will occur before assignment to a task where occupational exposure may take place and at least annually thereafter. Additional training will be provided when changes such as modification of tasks or procedures affect the employee's occupational exposure. All employees will receive annual refresher training. (Note that this training is to be conducted within one year of the employee's previous training.)

# APPENDIX F

## BLOODBORNE PATHOGEN DISPOSAL DETERMINATION FLOWCHART



# APPENDIX G

## OSHA Standards Bloodborne Pathogens

**1910.1030(a)**
***Scope and Application***. This section applies to all occupational exposure to blood or other potentially infectious materials 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 other potentially infectious materials.

***Contaminated*** means the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

***Contaminated Laundry*** means laundry which has been soiled with blood or other potentially infectious materials 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 other potentially infectious materials 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 hot 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 other potentially infectious materials that may result from the performance of an employee's duties.

***Other Potentially Infectious Materials*** 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 other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.

***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 nonneedle 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 other potentially infectious materials 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 other potentially infectious materials. 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 other potentially infectious materials.

**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 other potentially infectious materials are present.

**1910.1030(d)(2)(xi)**

All procedures involving blood or other potentially infectious materials 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 other potentially infectious materials is prohibited.

**1910.1030(d)(2)(xiii)**

Specimens of blood or other potentially infectious materials 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 other potentially infectious materials 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 other potentially infectious materials 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 judgement, 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 other potentially infectious materials, 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, other potentially infectious materials, 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 other potentially infectious materials 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 other potentially infectious materials.
**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 other potentially infectious materials; 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 other potentially infectious materials 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 other potentially infectious materials 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 other potentially infectious materials 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 other potentially infectious materials shall be conducted in biological safety cabinets or other physical-containment devices within the containment module. No work with these other potentially infectious materials 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 other potentially infectious materials. Gloves shall be worn when handling infected animals and when making hand contact with other potentially infectious materials 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 other potentially infectious materials. 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 other potentially infectious materials 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 other potentially infectious materials 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 other potentially infectious material; and other containers used to store, transport or ship blood or other potentially infectious materials, 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:


**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 other potentially infectious materials 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:


(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 other potentially infectious materials;

**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 other potentially infectious materials;

**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***.

**1910.1030(h)(4)(i)**

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

**1910.1030(h)(4)(ii)**

If the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer shall notify the Director, at least three months prior to their disposal and transmit them to the Director, if required by the Director to do so, within that three month period.

**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 1904.

**1910.1030(h)(5)(iii)**

The sharps injury log shall be maintained for the period required by 29 CFR 1904.6.

**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)**

Paragraph (g)(2) Information and Training and (h) Recordkeeping 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, shall take effect July 6, 1992.

## Bloodborne Pathogens Exposure Control Plan Review Page

A review and evaluation of this Bloodborne Pathogens Exposure Control Plan is conducted at least once every three years. As a result of this review and evaluation, Southeast Missouri State University will amend the Bloodborne Pathogens Exposure Control Plan within six months of the review if it is deemed necessary.

| REVIEW DATE | BLOODBORNE PATHOGENS EXPOSURE CONTROL PLAN REVISION | REVIEWER(S) |
|---|---|---|
| March 2010 | Revision 2 | Autumn Gentry<br>Dr. John Kraemer<br>Bruce Skinner |
| April 2013 | Revision 3 | Autumn Gentry<br>Dr. John Kraemer<br>Bruce Skinner |
| September 2013 | Revision 4 | Autumn Gentry<br>Dr. John Kraemer<br>Dr. Walt Lilly |