



Exposure Control Plan Training Material



This material includes only the training material. More information can be found in the Exposure Control Plan Manual, a copy of which is located in each office.

Exposure Control Plan Training Program

Outline

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Other Educational Materials

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Hepatitis B Fact Sheet
Hepatitis B Vaccine Fact Sheet
Hepatitis B Vaccine: What You Should Know
Preventing Occupational HIV Transmission to Healthcare Personnel
HIV and Its Transmission

I. Bloodborne Pathogens Regulatory Text

A copy of the OSHA Standard 1910.1030- Bloodborne Pathogens Regulatory Text is available in each physician office location. A summary of the key provisions of this standard is located in Appendix A of this training module.

II. General Epidemiology & Symptoms of Bloodborne Diseases

Bloodborne pathogens are microorganisms such as viruses and bacteria that are carried in blood and can cause disease in people. There are many different bloodborne pathogens including malaria, syphilis, and brucellosis, but Hepatitis B (HBV) and the Human Immunodeficiency Virus (HIV) are the two diseases specifically addresses by the OSHA Bloodborne Pathogen Standard. Therefore, this section will focus primarily on HBV and HIV.

A. HEPATITIS B (HBV)

In the United States, approximately 300,000 people are infected with HBV annually. Of these cases, a small percentage is fatal.

“Hepatitis” means “inflammation of the liver,” and, as its name implies, Hepatitis B is caused by a virus that infects the liver. Hepatitis B initially causes inflammation of the liver, but it can lead to more serious conditions such as cirrhosis and liver cancer.

Hepatitis B is spread when people come in contact with infected blood. It is also spread through needle sticks, and sharing of body fluids such as lung, synovial, and cerebrospinal fluid and vaginal secretions. It has an incubation period of 30-180 days.

There is no “cure” or specific treatment for HBV, but many people who contract the disease will develop antibodies which help them get over the infection and protect them from getting it again. It is important to note, however, that there are different types of hepatitis, so infection with HBV will not stop someone from getting another type. Prevention is the best protection.

HBV has been demonstrated to survive in dried blood at room temperature on environmental surfaces for at least one (1) week. Therefore, a health care worker with no history of non-occupational exposure or occupational percutaneous injury might risk infection resulting from direct or indirect blood or body fluid exposures that inoculated HBV into cutaneous scratches, abrasions, burns, other lesions, or on mucosal surfaces.

Symptoms:

Sometimes, the hepatitis B virus may infect the liver without causing any signs or symptoms. A blood test may be the only means to find out if an individual is infected. During acute infection, the most common symptoms include fatigue, low grade fever, poor appetite, nausea, abdominal discomfort and in some cases dark urine and a yellowing of the skin and eyes called jaundice. Most people with chronic hepatitis B infection have no symptoms in the early stages. The most common early symptoms include fatigue and right upper abdominal discomfort. Occasionally, patients may develop flares in hepatitis with symptoms like that of an acute hepatitis. Patients who have developed cirrhosis are more likely to have symptoms. As the liver disease progresses, complications of cirrhosis and liver failure may occur, including jaundice, ascites (accumulation of fluid in the abdomen), variceal bleeding (bleeding from collateral vessels in the esophagus, stomach or intestines secondary to

impedance of blood flow through the liver), leg edema and encephalopathy (mental confusion due to the accumulation of toxic metabolic products that cannot be cleared by the liver).

B. HUMAN IMMUNODEFICIENCY VIRUS (HIV)

AIDS, or acquired deficiency syndrome, is caused by a virus called the human immunodeficiency virus, or HIV. Once a person has been infected with HIV, it may be many years before AIDS actually develops. HIV attacks the body's immune system, weakening it so that it cannot fight other deadly diseases. AIDS is a fatal disease, and while treatment is improving, there is no known cure.

The workers with the greatest risk of becoming infected at work are those with jobs that involve routine exposure to blood and other body fluids. Health care and other workers can be exposed to HIV from needlesticks and cuts and nicks caused by sharp objects. Infection can also occur if workers have contact with blood or infectious body fluids through broken, cut or torn skin. There is a risk of infection if workers are splashed with blood or other body fluids that make contact with naturally wet skin in the eyes, nose or mouth. It is estimated that the chances of contracting HIV in a workplace environment are only 0.4%.

AIDS infection generally occurs in three broad stages. The first stage happens when a person is actually infected with HIV. After the initial infection a person may show few or no signs or illness for many years. Eventually, in the second stage, a person may begin to suffer swollen lymph glands or other lesser diseases which begin to take advantage of the body's weakened immune system. The second stage is believed to eventually lead to AIDS, the third and final stage, in all cases. In this stage, the body becomes completely unable to fight life threatening diseases and infections.

Symptoms

Symptoms of HIV can vary, but often include weakness, fever, sore throat, nausea, headaches, diarrhea, a white coating on the tongue, weight loss, and swollen lymph glands.

III. Modes of Transmission of Bloodborne Pathogens

Bloodborne pathogens such as HBV and HIV can be transmitted through contact with infected human blood or other potentially infectious body fluids such as:

- Semen
- Vaginal secretions
- Cerebrospinal fluid
- Synovial fluid
- Pleural fluid
- Peritoneal fluid
- Amniotic fluid
- Saliva
- Any body fluid visibly contaminated with blood

It is important to know the ways exposure and transmission are most likely to occur in your particular situation, be it performing a procedure or cleaning up blood from an environmental surface.

HBV and HIV are most commonly transmitted through:

- Sexual contact
- Sharing hypodermic needles
- From mothers to their babies at/before birth

- Accidental puncture from contaminated needles, broken glass, or other sharps
- Contact between broken or damaged skin and infected body fluids
- Contact between mucous membranes and infected body fluids

Accidental puncture from contaminated needles and other sharps result in transmission of bloodborne pathogens.

In most occupational situations, transmission is most likely to occur because of accidental puncture from contaminated needles, broken glass, or other sharps; contact between broken or damaged skin and infected body fluids; or contact between mucous membranes and infected body fluids. For example, if someone infected with HBV cut their finger on a piece of glass, and then you cut yourself on the now infected piece of glass, it is possible that you could contract the disease. Anytime there is blood-to-blood contact with infected blood or body fluids, there is a slight potential for transmission.

Unbroken skin forms an impervious barrier against bloodborne pathogens. However, infected blood can enter your system through:

- Open sores
- Cuts
- Abrasions
- Acne
- Any sort of broken or damaged skin such as sunburn or blisters

Bloodborne pathogens may also be transmitted through the mucous membranes of the eyes, nose, and mouth.

IV. Exposure Control Plan

A written Exposure Control Plan has been developed to eliminate or minimize employee occupational exposure to blood or other infectious body fluids. This plan identifies individuals who are at risk for occupational exposure and how they are protected by the Bloodborne Pathogens standards. A copy of the Exposure Control Plan will be located in each physician office location to ensure adequate employee access. If a copy is not available, for any reason, a hard copy of the Plan will be made available to the employee within fifteen days of the employee's request.

V. Recognizing Tasks and Other Activities that may Involve Exposure to Blood and OPIMs

It is important to recognize when a task may involve exposure to blood or other potentially infectious materials to ensure that you take the necessary precautions. Identify the appropriate personal protective equipment, engineering and work practice controls to employ will ensure that risk for exposure is minimized.

Generally, the tasks performed by Medical Assistants and Allergy Nurses are likely to involve exposure to blood and other potentially infectious materials. Employees performing these tasks must employ Universal Precautions to minimize their risk for exposure.

VI. Universal Precautions, Engineering Controls, Work Practices and Personal Protective Equipment

A. Universal Precautions

“Universal Precautions” is the name used to describe a prevention strategy in which all blood and potentially infectious materials are treated as if they are infectious, regardless of the perceived status of the source individual. In other words, whether or not you think the blood/body fluid is infected with bloodborne pathogens, you treat it as if it is. This approach is used in all situations where exposure to blood or potentially infectious materials is possible. This also means that certain engineering and work practice controls shall always be utilized in situations where exposure may occur.

B. Engineering Controls

Needles and Other Sharps:

According to the NIOSH Alert in March 1999, it is estimated that 600,000 to 800,000 needlestick injuries (NSIs) and other percutaneous injuries occur annually among health care workers. Studies show that as many as one-third of all sharps related injuries are reportedly related to the disposal process. It is estimated that 62% - 82% of sharps injuries can potentially be prevented by the use of safer medical devices.

Contaminated disposable sharps shall be discarded immediately, or as soon as feasible, in appropriate sharps disposal containers.

Employees must follow the policy, “Appropriate Handling of Needles and Sharps,” to minimize the risk of exposure to bloodborne pathogens.



Broken Glass:

Broken glassware that has been visibly contaminated with blood must be sterilized with approved disinfectant solution before it is disturbed or cleaned up.

- Glassware that has been decontaminated may be disposed of in an appropriate sharps container.

Broken glassware will 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 such as a cardboard box.

C. Work Practice Controls

Handwashing:

Handwashing with soap and water for at least ten seconds is required immediately after any exposure, and as soon as feasible, after removal of gloves or other personnel protective equipment. Employees must wash their hands and any other skin with soap and water, or flush mucous membranes with water immediately, or as soon as feasible, following contact with such body areas with blood or other potentially infectious materials.



Because handwashing is so important, you should familiarize yourself with the location of handwashing facilities nearest to you. Exam room sinks, public and staff restrooms may be used for handwashing and are supplied with soap. If you are working in an area without access to such facilities, you may use an antiseptic cleanser in conjunction with clean cloth/paper towels or antiseptic towelettes. If these alternative methods are used, hands should be washed with soap and running water as soon as possible.

If you are working in an area where there is a reasonable likelihood of exposure you should never:

- Eat
- Drink
- Smoke
- Apply cosmetics or lip balm
- Handle contact lenses



No food or beverages will be stored in refrigerators, freezers, counters or bench tops where blood or OPIM are present. Try to minimize the amount of splashing, spraying, splattering, and generation of droplets when performing any procedures involving blood or OPIM, and never pipette or suction these materials by mouth.

Decontamination and Sterilization:

All surfaces, tools, equipment and other objects that come in contact with blood or other potentially infectious materials must be decontaminated and sterilized as soon as possible. Equipment and tools must be cleaned and decontaminated before servicing or being put back to use.

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. The standard recommendation is to use at least a quarter cup of bleach per one gallon of water.
- Lysol or some other EPA-registered tuberculoidal disinfectant. Check the label of all disinfectants to make sure they meet this requirement.

Specific guidelines for decontamination and sterilization have been written specific to the appropriate job description (Medical Assistant, Audiologist, and Allergy Nurse). This includes a schedule and the methods for proper cleaning.

If you are cleaning up a spill of blood, you can carefully cover the spill with paper towels or rags, then gently pour the 10% solution of bleach over the towels or rags, and leave it for at

least 10 minutes. This will help ensure that any bloodborne pathogens are killed before you actually begin 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 on it.

If you are decontaminating equipment or other objects (be it scalpels, blades, broken glass, mechanical equipment on which someone has been cut, etc.) you should leave the disinfectant in place for at least 10 minutes before continuing the cleaning process.

Any materials you use to clean up a spill of blood or other potentially infectious materials must be decontaminated immediately as well. This would include mops, sponges, re-usable gloves, buckets, etc.

Do not place your hands into containers whose contents include reusable sharps contaminated with blood or OPIM. These conditions do not allow the contents to be seen and safely handled. For example, employees must not reach into sinks filled with soapy water into which sharp instruments have been placed. Instead appropriate controls such as the use of strainer type baskets to hold the instruments and forceps to remove the items must be utilized.

D. Personal Protective Equipment (PPE)

Probably the first thing to do in any situation where you may be exposed to bloodborne pathogens is to ensure you are wearing the appropriate personal protective equipment (PPE). This is a simple precaution to take in order to prevent blood or potentially infectious body fluids from coming in contact with your skin. To protect yourself, it is essential to have a barrier between you and the potentially infectious material.

Rules 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.

If you work 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 your work.

Gloves:



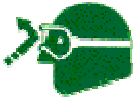
Gloves should be made of latex, nitril, rubber, or other water impervious materials. If glove material is thin or flimsy, double gloving can provide an additional layer of protection. Also, if you know you have cuts or sores on your hands, you should cover these with a bandage or similar protection as an additional precaution before donning your gloves. You should always inspect your gloves for tears or punctures before putting them on. If a glove is damaged, do not use it!

Always check your gloves for damage before using them.



When removing contaminated gloves, do so carefully. Make sure you do not touch the outside of the gloves with any bare skin and be sure to dispose of them in a proper container so that no one else will come into contact with them.

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, performing a procedure or providing medical assistance.

If you are splashed in the eye(s) with blood or other potentially infectious materials you should immediately flush the eye with water or eyewash for 15 minutes. Rinse from the nose outward to avoid contamination of an unaffected eye. Hold eyelids away from the eyeball and rotate so that all surfaces may be washed thoroughly.

Face Shields:



Face shields may be worn in addition to goggles to provide additional face protection. A face shield will protect against splashes to the nose and mouth.

Aprons:



Aprons may be worn to protect your clothing and to keep blood or other contaminated fluids from soaking through to your skin.

Normal clothing that becomes contaminated with blood should be removed as soon as possible because fluids can seep through the cloth and 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.

Remember to use universal precautions and treat all blood or potentially infectious body fluids as if they are contaminated. Avoid contact whenever possible. Wear personal protective equipment. If you find yourself in a situation where you have to come into contact with blood or other potentially infectious body fluids and you do not have any standard personal protective equipment handy, you can improvise. Use a towel, plastic bag, or some other barrier to help avoid direct contact.

By using Universal Precautions and following these simple engineering and work practice controls, you can protect yourself and prevent transmission of bloodborne pathogens.

VII. Hepatitis B Vaccine

Employees who have occupational exposure to bloodborne pathogens will be offered the Hepatitis B vaccination at no cost to themselves unless:

- They have previously received the vaccine series
- Antibody testing has revealed they are immune
- The vaccine is contraindicated for medical reasons

In these cases they need not be offered the vaccine.

Although the vaccine must be offered to you, you do not have to accept that offer. You may opt to decline the vaccination series, in which case you will be asked to sign a declination form. If you decline the initial offer, you may choose to receive the hepatitis B vaccine at anytime during your employment thereafter, particularly if you experience an occupational exposure incident at a later date.

As stated in the Emergency Procedures section, if you are exposed to blood or OPIM on the job, you may request a Hepatitis B vaccination at that time. If the vaccine is administered immediately after exposure it is extremely effective at preventing the disease.

The Hepatitis B vaccine is given in a series of three shots into the deltoid muscle. The second shot is given 1-2 months after the first, and the third shot is given 4-6 months after the first. Health care workers will also be given post-vaccination testing 1-2 months after completion of the series to ensure that the adequate immune response is achieved. If post-vaccination testing indicates no response, the vaccination series may be repeated or test results evaluated to determine if they are positive to the Hepatitis B antigen. Evaluation by a physician may be necessary to determine an individual's hepatitis B status.

The hepatitis B vaccine is extremely safe and most people who get the vaccine do not have any problems with it. Individuals may experience soreness where the shot was given (1 out of 4 adults), lasting a day or two and a mild or moderate fever (1 out of 100 adults). On **very rare** occasions an individual may have a serious allergic reaction within a few minutes to a few hours after the shot. Getting the hepatitis B vaccine is much safer than getting the hepatitis B virus.

Once vaccinated a person does not need to receive the series again. For health care workers with normal immune status who have demonstrated anti-HBs response following vaccination, booster doses of vaccine are not recommended nor is periodic anti-HBs testing (titers). Even though data shows that vaccine-induced hepatitis B surface antibody (anti-HBs) levels may decline over time, immune memory remains intact indefinitely following immunization. Therefore persons with declining antibody levels are still protected against clinical illness and chronic disease.

VIII. Post Exposure Incident Procedures

The "Management of Occupational Blood Exposure" policy should be followed in any emergency situation involving blood or OPIM. Universal Precautions should always be used and try to minimize your exposure by wearing the appropriate PPE.

If you are exposed to blood or OPIM you should:

- Wash the exposed area with soap and running water
- Flush splashes to the nose, mouth or skin with water
- Irrigate eyes with clear water, saline or sterile irrigants.

Following any exposure incident you should make a report to the Office Manager and fill out a Bloodborne Pathogen Exposure Incident Report. If the source individual is known, they will be asked

to get tested for HBV and HIV. You will be provided the opportunity for a confidential medical evaluation at no cost to yourself.

IX. Signs, Labels & Color Coding

Warning labels need to be affixed to containers of regulated waste, refrigerators and freezers containing blood or other potentially infectious materials; and other containers used to store, transport, or ship blood or other potentially infectious materials. These labels are fluorescent orange, red, or orange-red. Bags used to dispose of regulated waste must be red or orange-red, and must have the biohazard symbol readily visible. Regulated waste should be double-bagged to guard against the possibility of leakage if the first bag is punctured.



Labels should display this universal biohazard symbol.

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. Red bags or containers with this symbol pre-printed on them may be substituted for labels. Please refer to the policy and procedure, "Appropriate Handling of Needles and Sharps."

Contaminated equipment that is to be serviced or repaired must be labeled if it is to remain contaminated. The portions of the equipment that remain contaminated must be labeled.

Regulated waste refers to:

- 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 soiled with dried blood or other potentially infectious materials and are capable of releasing these materials during handling
- Contaminated sharps
- Pathological and microbiological wastes containing blood or other potentially infectious materials.

All regulated waste must be disposed of in properly labeled containers or red biohazard bags. These must be disposed of at the approved facility (Steri-Cycle, Health Care Waste Systems, or Flag Container Services). An individual in each office will coordinate the disposal and ensure that the appropriate log is maintained.

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

X. Questions and Answers