

Bloodborne Diseases

Bloodborne pathogens are microorganisms such as viruses or 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 addressed by the OSHA Bloodborne Pathogen Standard.

Hepatitis B (HBV)

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

"Hepatitis" means "*inflammation of the liver*," and, as its name implies, Hepatitis B is a virus that infects the liver. While there are several different types of Hepatitis, Hepatitis B is transmitted primarily through "blood to blood" contact. Hepatitis B initially causes inflammation of the liver, but it can lead to more serious conditions such as cirrhosis and liver cancer.

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 kinds of hepatitis, so infection with HBV will not stop someone from getting another type.

The Hepatitis B virus is very durable, and it can survive in dried blood for up to seven days. For this reason, this virus is the primary concern for employees such as housekeepers, custodians, laundry personnel and other employees who may come in contact with blood or potentially infectious materials in a non first-aid or medical care situation.

Symptoms: The symptoms of HBV are very much like a mild "flu". Initially there is a sense of fatigue, possible stomach pain, loss of appetite, and even nausea. As the disease continues to develop, jaundice (a distinct yellowing of the skin and eyes), and a darkened urine will often occur. However, people who are infected with HBV will often show no symptoms for some time. After exposure it can take **1-9 months** before symptoms become noticeable. Loss of appetite and stomach pain, for example, commonly appear within 1-3 months, but can occur as soon as 2 weeks or as long as 6-9 months after infection.

Human Immunodeficiency Virus (HIV)

Acquired immune deficiency syndrome (AIDS), 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 for it is improving, there is no known cure.

Estimates on the number of people infected with HIV vary, but some estimates suggest that an average of 35,000 people are infected every year in the US (in 2000, 45,000 new infections were reported). It is believed that as of 2000, 920,000 persons were living with HIV/AIDS in the United States. These numbers could be higher, as many people who are infected with HIV may be completely unaware of it.

The HIV virus is very fragile and will not survive very long outside of the human body. It is primarily of concern to employees providing first aid or medical care in situations involving fresh blood or other potentially infectious materials. It is estimated that the chances of contracting HIV in a workplace

environment are only 0.4%. However, because it is such a devastating disease, all precautions must be taken to avoid exposure.

AIDS infection essentially 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 of illness for many years. Eventually, in the **second stage**, an individual 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 off life-threatening diseases and infections.

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

If you believe you have been exposed to HBV or HIV, especially if you have experienced any of the signs or symptoms of these diseases, you should consult a physician, the Client Supervisor, and Top Echelon Contracting's Human Resources Department as soon as possible.

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

- Semen
- Vaginal secretions
- Cerebrospinal fluid
- Synovial fluid
- Pleural fluid
- Peritoneal fluid
- Amniotic fluid
- Saliva (in dental procedures), and
- Any body fluid that is 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 providing first aid to a student in the classroom, handling blood samples in the laboratory, or cleaning up blood from a hallway.

HBV and HIV are most commonly transmitted through:

- Sexual Contact
- Sharing of 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 can result in transmission of bloodborne pathogens.

In most work or laboratory 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 his or her 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 damaged or broken skin such as sunburn or blisters

Bloodborne pathogens may also be transmitted through the **mucous membranes** of the

- Eyes
- Nose
- Mouth

For example, a splash of contaminated blood to your eye, nose, or mouth could result in transmission.

PPE, Work Practices & Engineering Controls

It is extremely important to use personal protective equipment and work practice controls to protect yourself from bloodborne pathogens.

"**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, in fact, 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.

Personal Protective Equipment

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). For example, you may have noticed that emergency medical personnel, doctors, nurses, dentists, dental assistants, and other health care professionals always wear latex or protective gloves. This is a simple precaution they take 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.

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.

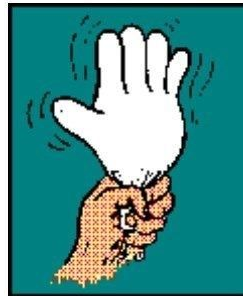
Gloves



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, don't use it!** When taking contaminated gloves off, do so carefully. Make sure you don't 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 in contact with them.

Always check your gloves for damage before using 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, during laboratory procedures, or while providing first aid or medical assistance.

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 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.

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

Hygiene Practices



Handwashing 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. Use soft, antibacterial soap, if possible. Avoid harsh, abrasive soaps, as these may open fragile scabs or other sores.

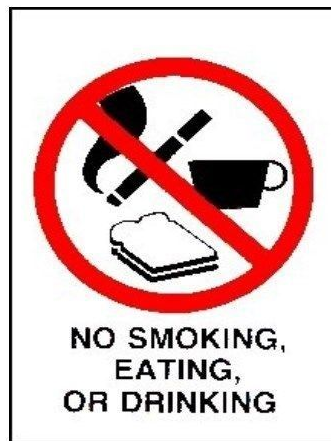
Hands should also be washed immediately (or as soon as feasible) after removal of gloves or other personal protective equipment. Because handwashing is so important, you should familiarize yourself with the location of the handwashing facilities nearest to you. Laboratory sinks, public restrooms, janitor closets, and so forth may be used for handwashing if they are normally 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.

You should also try to minimize the amount of splashing, spraying, splattering, and generation of droplets when performing any procedures involving blood or potentially infectious materials, and you should **NEVER pipette or suction these materials by mouth.**

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

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

No food or drink should be kept in refrigerators, freezers, shelves, cabinets, or on counter tops where blood or potentially infectious materials are present.



Decontamination and Sterilization

All surfaces, tools, equipment and other objects that come in contact with blood or 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 tuberculocidal disinfectant. Check the label of all disinfectants to make sure they meet this requirement.

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, microscope slides, broken glass, saw blades, tweezers, mechanical equipment upon which someone has been cut, first aid boxes, or whatever) you should leave the disinfectant in place for *at least 10 minutes* before continuing the cleaning process.

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

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 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.

Needles must be disposed of in sharps containers.

Improperly disposed needles can injure housekeepers, custodians, and other people.



Needles:

- Needles should never be recapped.
- Needles should be moved only by using a mechanical device or tool such as forceps, pliers, or broom and dustpan.
- Never break or shear needles.

Needles shall be disposed of in labeled sharps containers only.

- Sharps containers shall be closable, puncture-resistant, leak-proof on sides and bottom, and must be labeled or color-coded.
- When sharps containers are being moved from the area of use, the containers should be closed immediately before removal or replacement to prevent spillage or protrusion of contents during handling or transport.

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.
- 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 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 or coffee can.

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

Signs, Labels & Color Coding

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 EHS. 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.



Labels should display this universal biohazard symbol.

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 caked 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 in properly labeled containers or red biohazard bags. These must be disposed at an approved facility. Most departments or facilities that generate regulated waste will have some sort of contract with an outside disposal company that will come pick up their waste and take it to an approved incineration/disposal facility.

Non-regulated waste (i.e., does not fit the definition of regulated waste provided above) that is not generated by a medical facility such as a human health related research laboratory may be disposed in regular plastic trash bags *if it has been decontaminated or autoclaved prior to disposal.*

However, **all bags containing such materials must be labeled, signed, and dated, verifying that the materials inside have been decontaminated according to acceptable procedures and pose no health threat.** Pre-printed labels designed for this purpose are available from EHS, and they must be placed on the bag so that they are readily visible.

The material contained in this bag meets the definition of "Treated Biomedical Waste." The material has undergone steam sterilization or chemical disinfection to render the waste harmless and biologically inert. I further certify by my signature that this container DOES NOT contain sharps, glass, or needles which might puncture this bag or container.

Signed: _____ Date: _____

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 unless the bag has one of these labels on it. They have been given very strict instructions not to handle any non-regulated waste unless it has been properly marked and labeled (including signature).

Emergency Procedures

In an emergency situation involving blood or potentially infectious materials, you should always **use Universal Precautions** and try to minimize your exposure by wearing gloves, splash goggles, pocket mouth-to-mouth resuscitation masks, and other barrier devices.

If you are exposed, however, you should:

1. Wash the exposed area thoroughly with soap and running water. Use non-abrasive, antibacterial soap if possible.

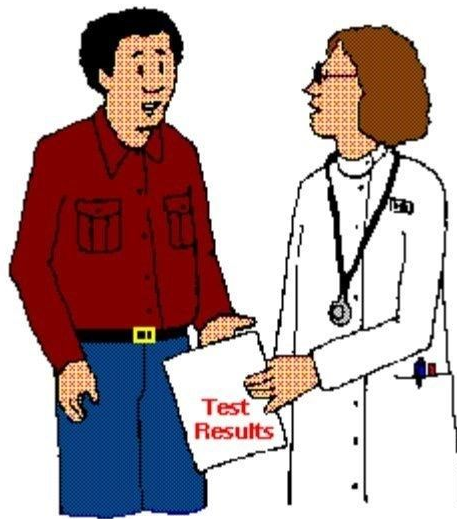
If blood is splashed in the eye or mucous membrane, flush the affected area with running water for at least 15 minutes.

2. Report the exposure to the Client Supervisor and Top Echelon Contracting's Human Resources Department as soon as possible.
3. Fill out an exposure report form, if you desire. This form will be kept in your personnel file for 40 years so that you can document workplace exposure to hazardous substances.
4. You may also request blood testing or the Hepatitis B vaccination if you have not already received it.

Should an exposure incident occur, contact SeAnna Huberty, Top Echelon Contracting's Human Resources Administrator, at 800-627-3678 Ext. 431 during normal business hours or after normal business hours at 330-417-3007. You should also immediately schedule a confidential medical evaluation and follow-up conducted by a physician of your choice.

Top Echelon Contracting has a specific set of procedures we will follow for all post-exposure cases.

- Document the route(s) of exposure and the circumstances under which the exposure incident occurred.
- Identify and document the source individual unless such documentation is impossible or prohibited by law.
- Test the source individual's blood for HBV and HIV as soon as possible after consent is obtained. If the source individual is known to be seropositive for HBV or HIV, testing for that virus need not be done.



- Collect your blood as soon feasible, and test it after your consent is obtained.
- (If you consent to baseline blood collection, but do not give consent at that time for HIV serological testing, your blood sample will be kept for at least 90 days. If, within 90 days of the incident, you decide to consent to have the baseline sample tested, such testing shall be done as soon as possible, and at no cost to you.)

Hepatitis B Vaccinations

Employees who have routine exposure to bloodborne pathogens shall be offered the Hepatitis B vaccine series by Top Echelon Contracting (See Addendum C of Employment Contract) **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 series.

Although the Employer must offer the vaccine 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 on the Addendum C of the Employment Contract. **Even if you decline the initial offer, you may choose to receive the series at anytime during your employment thereafter**, for example, if you are exposed on the job at a later date.

As stated in the Emergency Procedures section, if you are exposed to blood or potentially infectious materials 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 vaccination is given in a series of three shots. The second shot is given one month after the first, and the third shot follows five months after the second. This series gradually builds up the body's immunity to the Hepatitis B virus.

The vaccine itself is made from yeast cultures; there is no danger of contracting the disease from getting the shots, and, once vaccinated, a person does not need to receive the series again. There are booster shots available, however, and in some instances these may be recommended (for example, if there is an outbreak of Hepatitis B at a particular location).

OSHA[®] FactSheet

OSHA's Bloodborne Pathogens Standard

Bloodborne pathogens are infectious microorganisms present in blood that can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV), the virus that causes AIDS. Workers exposed to bloodborne pathogens are at risk for serious or life-threatening illnesses.

Protections Provided by OSHA's Bloodborne Pathogens Standard

All of the requirements of OSHA's Bloodborne Pathogens standard can be found in Title 29 of the Code of Federal Regulations at 29 CFR 1910.1030. The standard's requirements state what employers must do to protect workers who are occupationally exposed to blood or other potentially infectious materials (OPIM), as defined in the standard. That is, the standard protects workers who can reasonably be anticipated to come into contact with blood or OPIM as a result of doing their job duties.

In general, the standard requires employers to:

- **Establish an exposure control plan.** This is a written plan to eliminate or minimize occupational exposures. The employer must prepare an exposure determination that contains a list of job classifications in which all workers have occupational exposure and a list of job classifications in which some workers have occupational exposure, along with a list of the tasks and procedures performed by those workers that result in their exposure.
- **Employers must update the plan annually** to reflect changes in tasks, procedures, and positions that affect occupational exposure, and also technological changes that eliminate or reduce occupational exposure. In addition, employers must annually document in the plan that they have considered and begun using appropriate, commercially-available effective safer medical devices designed to eliminate or minimize occupational exposure. Employers must also document that they have solicited input from frontline workers in identifying, evaluating, and selecting effective engineering and work practice controls.
- **Implement the use of universal precautions** (treating all human blood and OPIM as if known to be infectious for bloodborne pathogens).
- **Identify and use engineering controls.** These are devices that isolate or remove the bloodborne pathogens hazard from the workplace. They include sharps disposal containers, self-sheathing needles, and safer medical devices, such as sharps with engineered sharps-injury protection and needleless systems.
- **Identify and ensure the use of work practice controls.** These are practices that reduce the possibility of exposure by changing the way a task is performed, such as appropriate practices for handling and disposing of contaminated sharps, handling specimens, handling laundry, and cleaning contaminated surfaces and items.
- **Provide personal protective equipment (PPE), such as gloves, gowns, eye protection, and masks.** Employers must clean, repair, and replace this equipment as needed. Provision, maintenance, repair and replacement are at no cost to the worker.
- **Make available hepatitis B vaccinations to all workers with occupational exposure.** This vaccination must be offered after the worker has received the required bloodborne pathogens training and within 10 days of initial assignment to a job with occupational exposure.
- **Make available post-exposure evaluation and follow-up to any occupationally exposed worker who experiences an exposure incident.** An exposure incident is a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or OPIM. This evaluation and follow-up must be at no cost to the worker and includes documenting the route(s) of exposure and the circumstances

under which the exposure incident occurred; identifying and testing the source individual for HBV and HIV infectivity, if the source individual consents or the law does not require consent; collecting and testing the exposed worker's blood, if the worker consents; offering post-exposure prophylaxis; offering counseling; and evaluating reported illnesses. The healthcare professional will provide a limited written opinion to the employer and all diagnoses must remain confidential.

- **Use labels and signs to communicate hazards.** Warning labels must be affixed to containers of regulated waste; containers of contaminated reusable sharps; refrigerators and freezers containing blood or OPIM; other containers used to store, transport, or ship blood or OPIM; contaminated equipment that is being shipped or serviced; and bags or containers of contaminated laundry, except as provided in the standard. Facilities may use red bags or red containers instead of labels. In HIV and HBV research laboratories and production facilities, signs must be posted at all access doors when OPIM or infected animals are present in the work area or containment module.
- **Provide information and training to workers.** Employers must ensure that their workers receive regular training that covers all elements of the standard including, but not limited to: information on bloodborne pathogens and diseases, methods used to control occupational

exposure, hepatitis B vaccine, and medical evaluation and post-exposure follow-up procedures. Employers must offer this training on initial assignment, at least annually thereafter, and when new or modified tasks or procedures affect a worker's occupational exposure. Also, HIV and HBV laboratory and production facility workers must receive specialized initial training, in addition to the training provided to all workers with occupational exposure. Workers must have the opportunity to ask the trainer questions. Also, training must be presented at an educational level and in a language that workers understand.

- **Maintain worker medical and training records.** The employer also must maintain a sharps injury log, unless it is exempt under Part 1904 -- Recording and Reporting Occupational Injuries and Illnesses, in Title 29 of the Code of Federal Regulations.

Additional Information

For more information, go to OSHA's Bloodborne Pathogens and Needlestick Prevention Safety and Health Topics web page at: <https://www.osha.gov/SLTC/bloodbornepathogens/index.html>.

To file a complaint by phone, report an emergency, or get OSHA advice, assistance, or products, contact your nearest OSHA office under the "U.S. Department of Labor" listing in your phone book, or call us toll-free at **(800) 321-OSHA (6742)**.

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; the teletypewriter (TTY) number is (877) 889-5627.

For assistance, contact us. We can help. It's confidential.



OSHA[®] FactSheet

Personal Protective Equipment (PPE) Reduces Exposure to Bloodborne Pathogens

OSHA's Bloodborne Pathogens standard (29 CFR 1910.1030) requires employers to protect workers who are occupationally exposed to blood and other potentially infectious materials (OPIM), as defined in the standard. That is, the standard protects workers who can reasonably be anticipated to come into contact with blood or OPIM as a result of doing their job duties.

One way the employer can protect workers against exposure to bloodborne pathogens, such as hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV), the virus that causes AIDS, is by providing and ensuring they use personal protective equipment, or PPE. Wearing appropriate PPE can significantly reduce risk, since it acts as a barrier against exposure. Employers are required to provide, clean, repair, and replace this equipment as needed, and at no cost to workers.

Selecting Personal Protective Equipment

Personal protective equipment may include gloves, gowns, laboratory coats, face shields or masks, eye protection, pocket masks, and other protective gear. The PPE selected must be appropriate for the task. This means the level and type of protection must fit the expected exposure. For example, gloves may be the only PPE needed for a laboratory technician who is drawing blood. However, a pathologist conducting an autopsy would need much more protective clothing because of the different types of exposure (e.g., splashes, sprays) and the increased amount of blood and OPIM that are encountered. PPE must be readily accessible to workers and available in appropriate sizes.

If it can be reasonably expected that a worker could have hand contact with blood, OPIM, or contaminated surfaces or items, the employer must ensure that the worker wears gloves. Single-use gloves cannot be washed or decontaminated for reuse. Utility gloves may be decontaminated if their ability to provide an effective barrier is not compromised. They should be replaced when

they show signs of cracking, peeling, tearing, puncturing, or deteriorating. Non-latex gloves, glove liners, powderless gloves or similar alternatives must be provided if workers are allergic to the gloves normally provided.

Gloves are required for all phlebotomies outside of volunteer blood donation centers. If an employer in a volunteer blood donation center judges that routine gloving for all phlebotomies is not necessary, then the employer is required to periodically re-evaluate this policy; make gloves available for workers who want to use them; and cannot discourage their use. In addition, employers must ensure that workers in volunteer blood donation centers use gloves (1) when they have cuts, scratches or other breaks in their skin, (2) while they are in training, or (3) when the worker believes that hand contamination might occur.

When splashes, sprays, splatters, or droplets of blood or OPIM pose a hazard to the eyes, nose or mouth, then masks in conjunction with eye protection (such as goggles or glasses with solid side shields) or chin-length face shields must be worn. Protection against exposure to the body is provided by protective clothing, such as gowns, aprons, lab coats, and similar garments. Surgical caps or hoods, and shoe covers or boots are needed when gross contamination is expected, such as during orthopedic surgery or autopsies.

In HIV and HBV research laboratories and production facilities, laboratory coats, gowns, smocks, uniforms, or other appropriate protective clothing must be used in work areas and animal rooms. Also, protective clothing must not be worn outside of the work area and must be decontaminated before being laundered.

Exception to Use of Personal Protective Equipment

A worker may choose, temporarily and briefly, **under rare and extraordinary circumstances**, to forego use of personal protective equipment. It must be the worker's professional judgment that using the personal protective equipment would prevent the delivery of health care or public safety services or would pose an increased hazard to the safety of the worker or coworker. When such a situation occurs, the employer is required to investigate and document the circumstances to determine if there is a way to avoid it from happening again in the future. Employers and workers should be aware that this is not a blanket exemption to the requirement to use PPE. OSHA expects that this will be an extremely rare occurrence.

Decontaminating and Disposing of Personal Protective Equipment

Employers must ensure that workers remove personal protective equipment before leaving the

work area. If a garment is penetrated by blood or OPIM, it must be removed immediately or as soon as feasible. Once PPE is removed, it must be placed in an appropriately designated area or container for storage, washing, decontamination, or disposal. In addition, employers must ensure that workers wash their hands immediately or as soon as feasible after removal of gloves or other personal protective equipment.

Additional Information

For more information, go to OSHA's Bloodborne Pathogens and Needlestick Prevention Safety and Health Topics web page at: <https://www.osha.gov/SLTC/bloodbornepathogens/index.html>.

To file a complaint by phone, report an emergency, or get OSHA advice, assistance, or products, contact your nearest OSHA office under the "U.S. Department of Labor" listing in your phone book, or call us toll-free at (800) 321-OSHA (6742).

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For assistance, contact us. We can help. It's confidential.



**Occupational Safety
and Health Administration
www.osha.gov 1-800-321-6742**

OSHA[®] FactSheet

Bloodborne Pathogen Exposure Incidents

OSHA's Bloodborne Pathogens standard (29 CFR 1910.1030) requires employers to make immediate confidential medical evaluation and follow-up available for workers who have an exposure incident, such as a needlestick. An exposure incident is a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials (OPIM), as defined in the standard that results from the performance of a worker's duties.

Reporting an Exposure Incident

Exposure incidents should be reported immediately to the employer since they can lead to infection with hepatitis B virus (HBV), hepatitis C virus (HCV), human immunodeficiency virus (HIV), or other bloodborne pathogens. When a worker reports an exposure incident right away, the report permits the employer to arrange for immediate medical evaluation of the worker. Early reporting is crucial for beginning immediate intervention to address possible infection of the worker and can also help the worker avoid spreading bloodborne infections to others. Furthermore, the employer is required to perform a timely evaluation of the circumstances surrounding the exposure incident to find ways of preventing such a situation from occurring again.

Reporting is also important because part of the follow-up includes identifying the source individual, unless the employer can establish that identification is infeasible or prohibited by state or local law, and determining the source's HBV and HIV infectivity status. If the status of the source individual is not already known, the employer is required to test the source's blood as soon as feasible, provided the source individual consents. If the individual does not consent, the employer must establish that legally required consent cannot be obtained. If state or local law allows testing without the source individual's consent, the employer must test the individual's blood, if it is available. The results of these tests must be made available to the exposed worker and the worker must be informed of the laws and regulations about disclosing the source's identity and infectious status.

Medical Evaluation and Follow-up

When a worker experiences an exposure incident, the employer must make immediate confidential medical evaluation and follow-up available to the worker. This evaluation and follow-up must be: made available at no cost to the worker and at a reasonable time and place; performed by or under the supervision of a licensed physician or other licensed healthcare professional; and provided according to the recommendations of the U.S. Public Health Service (USPHS) current at the time the procedures take place. In addition, laboratory tests must be conducted by an accredited laboratory and also must be at no cost to the worker. A worker who participates in post-exposure evaluation and follow-up may consent to have his or her blood drawn for determination of a baseline infection status, but has the option to withhold consent for HIV testing at that time. In this instance, the employer must ensure that the worker's blood sample is preserved for at least 90 days in case the worker changes his or her mind about HIV testing.

Post-exposure prophylaxis for HIV, HBV, and HCV, when medically indicated, must be offered to the exposed worker according to the current recommendations of the U.S. Public Health Service. The post-exposure follow-up must include counseling the worker about the possible implications of the exposure and his or her infection status, including the results and interpretation of all tests and how to protect personal contacts. The follow-up must also include evaluation of reported illnesses that may be related to the exposure.

Written Opinion

The employer must obtain and provide the worker with a copy of the evaluating healthcare professional's written opinion within 15 days of completion of the evaluation. According to OSHA's standard, the **written opinion** should only include: whether hepatitis B vaccination was recommended for the exposed worker; whether or not the worker received the vaccination, and that the healthcare provider informed the worker of the results of the evaluation and any medical conditions resulting from exposure to blood or OPIM which require further evaluation or treatment. Any findings other than these are not to be included in the written report.

Additional Information

For more information, go to OSHA's Bloodborne Pathogens and Needlestick Prevention Safety and Health Topics web page at: <https://www.osha.gov/SLTC/bloodborne pathogens/index.html>.

To file a complaint by phone, report an emergency, or get OSHA advice, assistance, or products, contact your nearest OSHA office under the "U.S. Department of Labor" listing in your phone book, or call us toll-free at **(800) 321-OSHA (6742)**.

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For assistance, contact us. We can help. It's confidential.



**Occupational Safety
and Health Administration
www.osha.gov 1-800-321-6742**

OSHA[®] FactSheet

Hepatitis B Vaccination Protection

Hepatitis B virus (HBV) is a pathogenic microorganism that can cause potentially life-threatening disease in humans. HBV infection is transmitted through exposure to blood and other potentially infectious materials (OPIM), as defined in the OSHA Bloodborne Pathogens standard, 29 CFR 1910.1030.

Any workers who have reasonably anticipated contact with blood or OPIM during performance of their jobs are considered to have occupational exposure and to be at risk of being infected. Workers infected with HBV face a risk for liver ailments which can be fatal, including cirrhosis of the liver and primary liver cancer. A small percentage of adults who get hepatitis B never fully recover and remain chronically infected. In addition, infected individuals can spread the virus to others through contact with their blood and other body fluids.

An employer must develop an exposure control plan and implement use of universal precautions and control measures, such as engineering controls, work practice controls, and personal protective equipment to protect all workers with occupational exposure. In addition, employers must make hepatitis B vaccination available to these workers. Hepatitis B vaccination is recognized as an effective defense against HBV infection.

HBV Vaccination

The standard requires employers to offer the vaccination series to all workers who have occupational exposure. Examples of workers who may have occupational exposure include, but are not limited to, healthcare workers, emergency responders, morticians, first-aid personnel, correctional officers and laundry workers in hospitals and commercial laundries that service healthcare or public safety institutions. The vaccine and vaccination must be offered at no cost to the worker and at a reasonable time and place.

The hepatitis B vaccination is a non-infectious, vaccine prepared from recombinant yeast cultures, rather than human blood or plasma. There is no risk of contamination from other bloodborne

pathogens nor is there any chance of developing HBV from the vaccine.

The vaccine must be administered according to the recommendations of the U.S. Public Health Service (USPHS) current at the time the procedure takes place. To ensure immunity, it is important for individuals to complete the entire course of vaccination contained in the USPHS recommendations.

The great majority of those vaccinated will develop immunity to the hepatitis B virus. The vaccine causes no harm to those who are already immune or to those who may be HBV carriers. Although workers may desire to have their blood tested for antibodies to see if vaccination is needed, employers cannot make such screening a condition of receiving vaccination and employers are not required to provide prescreening.

Employers must ensure that all occupationally exposed workers are trained about the vaccine and vaccination, including efficacy, safety, method of administration, and the benefits of vaccination. They also must be informed that the vaccine and vaccination are offered at no cost to the worker. The vaccination must be offered after the worker is trained and within 10 days of initial assignment to a job where there is occupational exposure, unless the worker has previously received the vaccine series, antibody testing has revealed that the worker is immune, or the vaccine is contraindicated for medical reasons. The employer must obtain a written opinion from the licensed health-care professional within 15 days of the completion of the evaluation for vaccination. This written opinion is limited to whether hepatitis B vaccination is indicated for the worker and if the worker has received the vaccination.

Declining the Vaccination

Employers must ensure that workers who decline vaccination sign a declination form. The purpose of this is to encourage greater participation in the vaccination program by stating that a worker declining the vaccination remains at risk of acquiring hepatitis B. The form also states that if a worker initially declines to receive the vaccine, but at a later date decides to accept it, the employer is required to make it available, at no cost, provided the worker is still occupationally exposed.

Additional Information

For more information, go to OSHA's Bloodborne Pathogens and Needlestick Prevention Safety and Health Topics web page at: <https://www.osha.gov/SLTC/bloodbornepathogens/index.html>.

To file a complaint by phone, report an emergency, or get OSHA advice, assistance, or products, contact your nearest OSHA office under the "U.S. Department of Labor" listing in your phone book, or call us toll-free at (800) 321-OSHA (6742).

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For assistance, contact us. We can help. It's confidential.



**Occupational Safety
and Health Administration
www.osha.gov 1-800-321-6742**