

# HIV-Aids / Blood Borne Pathogens, Infection Control

## 3.0 CE Hours

[Quiz Button](#)

### **Course Objectives:**

1. Define bloodborne pathogens and be able to give an examples of diseases they can cause.
2. Explain what is meant by the term “Universal Precautions”.
3. Recognize the sign and/or label that indicate a bloodborne pathogen hazard.
4. Explore ways in which bloodborne pathogens can be transmitted in the workplace.
5. Differentiate between an “engineering control” and a “work practice control”.

### **The Occupational Safety and Health Administration**

The Occupational Safety and Health Administration (OSHA) bloodborne pathogens standard (29 CFR part 1910.1030) lists safeguards to protect workers against the health hazards related to bloodborne pathogens. OSHA issued the standard, which went into effect in 1992, because of a significant health risk associated with exposure to blood and other potentially infectious materials (OPIM) because they may contain bloodborne pathogens. Bloodborne pathogens are germs that may be present in human blood and body fluids that can cause disease in humans. Of primary concern are the hepatitis B and hepatitis C viruses (HBV and HCV) and the human

immunodeficiency virus (HIV), which causes acquired immunodeficiency syndrome (AIDS).

The OSHA standard has requirements for employers with workers exposed to blood or other potentially infectious materials. Employers can minimize or eliminate exposure by using a combination of personal hygiene, personal protective equipment, engineering and work practice controls and training. Engineering controls are the primary ways of eliminating or minimizing employee exposure and in health-care settings include the use of safer medical devices, such as needless devices, shielded needle devices, and plastic capillary tubes.

Since the bloodborne pathogens standard was published, many different medical devices have been developed to reduce the risk of needle sticks and other sharps injuries. Despite these advances in technology, needle sticks and other sharps-related injuries continue to be of concern because of the high frequency of their occurrence and the seriousness of their health effects.

In response to these concerns, Congress passed the Needlestick Safety and Prevention Act directing OSHA to revise the bloodborne pathogens standard to establish in greater detail requirements that employers identify and make use of effective and safer medical devices. That revision became effective in April 2001. For more information regarding the Needle Stick Safety and Prevention Act [Paragraph.1030(d)(2)(i)], contact your Exposure Control Officer or visit OSHA's Web site at: <http://www.osha.gov/SLTC/bloodbornepathogens/index.html>.

### **Who Is Covered By This Standard?**

The OSHA bloodborne pathogens standard refers to any employee for whom there is a "reasonable anticipation" of exposure to blood or other materials that could cause infections while on

the job. The hazard of exposure to infectious materials affects employees in many types of jobs. Employees in the following jobs are covered by this standard if they have an on-the-job exposure. Employees that are covered by the OSHA standard include, but are not limited to:

- Employees in health-care facilities
- Employees in clinics, factories, schools and prisons
- Employees assigned to provide emergency first aid
- Employees who handle regulated waste
- Emergency medical technicians, paramedics and others who provide emergency medical services
- Fire fighters, law enforcement officers and correctional officers (employees in the private sector, the federal government or a state or local government in a state that has an OSHA-approved state plan)
- Linen service employees
- Any other job in which workers may be reasonably expected to encounter blood or other potentially infectious materials
- The standard covers any employee who has occupational exposure to blood or other potentially infectious materials (OPIM).

The standard does not cover any Good Samaritan actions that result in exposure to blood or other infectious materials. Employees providing first aid are covered by the standard only if it is part of their job responsibilities.

## **Scenario**

A woman cuts her hand and arm with a knife while opening a box in the mailroom. As the first person on the scene, you find the woman bleeding severely from her hand and arm. Blood is spurting from the wounds. How would you respond? Would you have any concerns about contracting a disease?

Someday, you could be in a similar situation in which you may

be concerned about disease transmission. You may also have concerns about disease transmission that may result from the everyday tasks required by your job. It is important to understand how infections occur, how they are passed from one person to another, and what you can do to protect yourself and others.

Pathogens are germs (bacteria and viruses) that can be carried in the blood and can cause disease. In this program you will learn how to recognize situations that have the potential for bloodborne pathogen transmission and how to protect yourself and others from contracting disease.

### **How Infections Occur: Disease Causing Agents**

The disease process begins when a pathogen (germ) gets into the body. When pathogens enter the body, they can sometimes overpower the body's natural defense systems and cause illness. This illness is called an infection. Most infectious diseases are caused by bacteria and viruses. Bacteria are everywhere. They do not depend on other organisms for life and can live outside the human body. Most bacteria do not infect humans. Those that do may cause serious illness. Bacterial meningitis and tetanus are examples of diseases caused by bacteria. The body may have difficulty fighting infection caused by bacteria.

The body's ability to fight infection depends on its immune system. In people with healthy immune systems, a bacterial infection is often avoided. When an infection is present, doctors may prescribe antibiotic medications that either kill the bacteria or weaken them enough for the body to get rid of them. Commonly used antibiotics include penicillin, erythromycin, and tetracycline.

Unlike bacteria, viruses depend on other organisms to live and reproduce. Viruses cause many diseases, including the common cold (caused by rhinovirus). Once in the body, viruses may be

difficult to eliminate because very few medications are effective against viral infections. While there are some medications that kill or weaken viruses, the body's immune system is the main defense against them.

### **The Body's Natural Defenses**

The body has a series of natural defenses in preventing germs from entering the body. The body depends on intact skin and mucous membranes in the nose, eyes and mouth to keep germs out. The skin is an excellent barrier that keeps most germs from entering the body. But when the skin is damaged, germs can pass through openings, such as cuts or sores. Mucous membranes in the eyes, nose and mouth also work to protect the body from intruding germs by often trapping them and forcing them out through a cough or sneeze. However, mucous membranes are less effective than skin at keeping bloodborne pathogens out of the body. If these barriers fail and a germ enters the body, the body's immune system begins working to fight the disease.

The immune system's basic tools are antibodies and white blood cells. Special white blood cells travel around the body and identify invading pathogens. Once they detect a pathogen, white blood cells gather around it and release antibodies that fight infection. These antibodies attack the pathogens and weaken or destroy them. Antibodies usually can get rid of pathogens. However, once inside the body, some pathogens can thrive and under ideal conditions, overwhelm the immune system.

This combination of trying to keep pathogens out of the body and destroying them once they get inside is necessary for good health. Sometimes the body cannot fight off infection. When this occurs, an invading pathogen can become established in the body and cause infection. Fever and feeling exhausted often signal that the body is fighting off an infection. Other common signals include headache, nausea, and vomiting.

## **Bloodborne Diseases**

Exposures to blood and other body fluids occur across a wide variety of occupations. Health-care workers, emergency response and public safety personnel, and other workers can be exposed to blood through injuries from needles and other sharps, as well as direct and indirect contact to skin and mucous membranes. The bloodborne pathogens of primary concern are the: hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV).

### **Hepatitis B**

Hepatitis B is a liver infection caused by the hepatitis B virus (HBV). Hepatitis B may be severe or even fatal. The disease may be in the body for up to 6 months before signals appear. Symptoms may include flu-like signals such as: fatigue, abdominal pain, loss of appetite, nausea, vomiting, and joint pain. Later-stage symptoms include jaundice (a yellowing of the skin and eyes).

Although prevention of hepatitis B is important, there are medications available to treat chronic hepatitis B infection. These medications work for only some people. The hepatitis B vaccine prevents hepatitis B disease and its possibly serious consequences (such as liver cancer). This vaccine is given in a series of three doses to provide immunity.

The hepatitis B vaccine is a safe and effective way to prevent hepatitis B disease. Scientific data show that the hepatitis B vaccines are very safe for infants, children, and adults. There is no confirmed evidence that indicates that the hepatitis B vaccine causes chronic illnesses.

The hepatitis B vaccination series must be made available to all employees who have occupational exposure. The hepatitis B vaccination must be made available within 10 working days of initial assignment, after appropriate training has been

completed. However, employees may decide not to have the vaccination. If an employee decides not to be vaccinated, he or she must sign a form affirming this decision.

## **Hepatitis C**

Hepatitis C is a liver disease caused by the hepatitis C virus (HCV). It is the most common chronic bloodborne infection in the United States. Its symptoms are similar to hepatitis B infection including: fatigue, abdominal pain, loss of appetite, nausea, vomiting and jaundice. There is no vaccine to prevent hepatitis C and no treatment after an exposure occurs that can prevent infection. It is the leading cause of liver transplants. For these reasons, hepatitis C is more serious than hepatitis B.

## **HIV-The Virus that Causes AIDS**

AIDS (Acquired Immunodeficiency Syndrome) is a condition caused by HIV (Human Immunodeficiency Virus). It is the result of a weakened immune system. HIV attacks white blood cells and destroys the body's ability to fight infection. The infections that strike people whose immune systems are weakened by HIV are called opportunistic infections. Some opportunistic infections include: severe pneumonia, tuberculosis, Kaposi's sarcoma, as well as other unusual cancers.

People infected with HIV may not feel or look sick. A blood test, however, can detect the HIV antibody. When the infected person shows signs of having certain infections or cancers, he or she may be diagnosed as having AIDS. The infections can cause: fever, fatigue, diarrhea, skin rashes, night sweats, loss of appetite, swollen lymph glands, and significant weight loss. In the advanced stages, AIDS is a very serious condition. People with AIDS eventually develop life-threatening infections and can die from these infections.

Unfortunately, there is no vaccine for HIV. A vaccine could either prevent HIV infection or slow the progression of HIV in

people who already have the virus. Most vaccines cause the body to make antibodies to destroy a particular germ if it invades the body. Such an approach has not yet been successful against HIV. Although progress in vaccine research makes some experts hopeful, a great deal more needs to be done. Adopting prevention behavior is still the best tool against HIV.

### **How Bloodborne Pathogens are Spread**

For any disease to be spread, including bloodborne diseases, *all four* of the following conditions must be met:

- A pathogen is present
- There is enough of the pathogen present to cause disease
- The pathogen passes through the correct entry site
- The person is susceptible to the pathogen

Bloodborne pathogens such as HBV, HCV, and HIV can spread from person to person through direct or indirect contact with infected blood or other body fluids. While these diseases can be spread by sexual contact through infected body fluids such as vaginal secretions and semen, these body fluids are not usually involved in occupational transmission. HBV, HCV, and HIV are not spread by food or water or by casual contact such as hugging or shaking hands. The highest risk of transmission is unprotected direct or indirect contact with infected blood.

Most on-the-job exposure to bloodborne pathogens occur through direct contact. Direct contact transmission occurs when infected blood or body fluids from one person enter another person's body. For example, direct transmission can occur through infected blood splashing in the eye or from directly touching body fluids from an infected person.

Some bloodborne pathogens are transmitted by indirect contact. Indirect contact transmission can occur when a person touches an object that contains the blood or another body fluid of an



infected person, and that infected blood or other body fluid enters the other person's body. These objects include soiled dressings, equipment and work surfaces that are contaminated with an infected person's blood or other body fluids. For example, indirect contact can occur when a person picks up blood-soaked bandages with a bare hand and the pathogens enter through a break in the skin on the hand.

Hepatitis B virus, hepatitis C virus, and human immune deficiency virus (HIV) share a common mode of transmission through direct or indirect contact with infected blood or body fluids, but they differ in the risk of transmission. Workers who have received hepatitis B vaccine and have developed immunity to the virus are at virtually no risk for infection by the hepatitis B virus. For an unvaccinated person, the risk for infection from a needle-stick or cut exposure to HBV-infected blood can be as high as 30 percent. In contrast, the risk for infection after a needle stick or cut exposure to HCV-infected blood is about 2 percent and the risk of HIV infection after a needle stick or cut exposure to HIV-infected blood is less than 1 percent. If exposure occurs, it is far less likely for someone to become infected with HIV than from hepatitis B or C viruses.

### **The Exposure Control Plan**

Preventing infectious diseases in the workplace begins with preparation and planning. An Exposure Control Plan is an important step in removing or reducing on-the-job exposure to blood and other potentially infectious materials. The Exposure Control Plan is the written program that outlines the protective measures your employer will take to eliminate or minimize employee exposure incidents. It is a key provision of the OSHA Bloodborne Pathogens Standards [1910.1030(c)(1)(i)].

According to the OSHA standard, an Exposure Control Plan should contain the following elements:

- Exposure determination
- Methods for implementing other parts of the OSHA standard (i.e., ways of meeting the requirements and record keeping)
- Procedures for evaluating details of an exposure incident

Exposure determination is one of the key elements of the Exposure Control Plan. It includes identifying and making a written record of jobs in which exposure to blood or other potentially infectious material can occur, regardless of the availability and use of personal protective equipment. [1910.1030(c)(1)(v)]

### **Precautions You Can Take**

As part of the Exposure Control Plan, precautions should be identified in your workplace to reduce the risk of exposure to potentially infectious blood or other potentially infectious materials (OPIM). Universal Precautions are OSHA's required practices of control to protect employees from exposure to blood and OPIM. [1910.1030(b)] These precautions require that all human blood and OPIM be treated as if known to be infectious for HBV, HCV, HIV or other bloodborne pathogens.

Other approaches to infection control are called, "Body Substance Isolation" (BSI) and "Standard Precautions". OSHA refers to these precautions as acceptable alternatives to Universal Precautions (CPL 02-02-069) These precautions mean that you should consider all body fluids and substances as infectious. These precautions and practices include the following four areas:

- Personal hygiene
- Personal protective equipment
- Engineering and work practice controls
- Equipment cleaning and disinfecting.

Each time you provide care, you must follow Universal

Precautions, Standard Precautions or Body Substance Isolation.

## Personal Hygiene

Good personal hygiene habits, such as frequent hand washing, help to prevent disease transmission. Washing your hands is an effective way to help keep you from getting sick. By washing your hands often, you wash away disease-causing germs that you have picked up from other people, animals or contaminated surfaces. In addition, jewelry (including rings and wrist watches) should not be worn where the potential for risk of exposure exists.

It is important that you wash your hands correctly. For clean hands, follow these seven steps:

1. Place your hands underneath a faucet of running water and wet your hands thoroughly.
2. Apply soap to your hands. Use a liquid antibacterial or antimicrobial soap if you have been exposed to viral or infectious germs.
3. Rub your hands together vigorously to lather the soap. Lather the soap over your entire hands and fingers for **at least 20 seconds**. Pay attention to both sides of your hands, between your fingers and around your wrists. Scratch your fingernails on the palms of your hands to get the lather underneath your nails.
4. Remove dirt from underneath your nails, using a clean nail stick. Discard the stick in a trash receptacle.
5. Rinse your hands under a faucet for **30 seconds**.
6. Grab a paper towel. Hold the paper towel while you turn off the water faucet. Use the paper towel as a barrier between your hand and the water faucet to prevent contaminating your hands with bacteria from the faucet. Throw the paper towel away.
7. Grab a fresh paper towel and dry your hands with it.

To prevent dry or chapped skin that may result from frequent

hand washing, you may want to use a moisturizing hand cream or lotion after washing your hands. However, if you use latex gloves in your workplace, avoid using petroleum-based hand creams or lotions since these products may weaken the protective impact of latex gloves.

Infection control products including waterless antiseptic hand cleansers, such as alcohol-based hand rub, allow you to cleanse your hands when soap and water are not readily available. These simple methods of infection control can help prevent bacteria or germs that may come in contact with the skin from transmitting an infectious disease. However, when these types of alternatives are used, you must also wash your hands (or other affected areas) with soap and running water as soon as possible.

When decontaminating hands with an alcohol-based hand rub, apply the product to the palm of one hand and rub hands together, covering all surfaces of hands and fingers until hands are dry. Follow the manufacturer's recommendations regarding the proper use of the product. OSHA states that these alternatives are acceptable only at workplaces where soap and running water are not available. [1910.1030 (d)(2)(v) and (vi)] In addition, the Centers for Disease Control and Prevention (CDC) recommend that healthcare personnel avoid wearing artificial nails and keep natural nails less than one-quarter of an inch long. (CDC's Guideline for Hand Hygiene in Health-care Settings. *MMWR* 2002; vol. 51, no. RR-16.)

## **Personal Protective Equipment**

Personal protective equipment (PPE) available for your workplace should be identified in the Exposure Control Plan. Personal protective equipment includes all specialized clothing, equipment and supplies that keep you from directly contacting infected materials. This includes, but is not limited to, single-use disposable gloves, gowns, masks, shields, resuscitation devices and breathing barriers.

Disposable gloves are made of latex, nitrile or vinyl. Wear disposable gloves when providing care to ill or injured people. Non-latex gloves should be made available to persons who are allergic or sensitive to latex. To reduce the risk of contracting or transmitting an infectious disease, follow these guidelines for the use of protective equipment:

- Wear disposable (single-use) gloves whenever providing care to ill or injured people, particularly if you may come in contact with blood or body fluids. This may happen directly through contact with a victim or indirectly through contact with soiled clothing or other personal articles.
- Use gloves that are appropriate to the task and provide an adequate barrier for the task.
- Remove jewelry, including rings and watches, before wearing disposable gloves.
- Keep any cuts, scrapes or sores covered prior to putting on protective clothing.
- Do not use disposable gloves that are discolored, torn or punctured.
- Do not clean or reuse disposable gloves.
- Avoid handling items such as pens, combs or radios, when wearing soiled gloves.
- Change gloves before you give care to a different person.
- In addition to gloves, wear protective coverings, such as a mask, eyewear and gown, whenever you are likely to come in contact with blood or other body fluids that may splash.
- Do not wear gloves and other personal protective equipment away from the workplace.
- Use breathing barriers, such as resuscitation masks, face shields and bag-valve-mask resuscitators (BVMs) when giving rescue breaths to a victim.
- Remove disposable gloves without contacting the soiled part of the gloves and dispose of them in a proper

container. Partially remove the first glove. Pinch glove at the wrist, being careful to touch only the glove's outside surface. Pull glove toward the fingertips without completely removing it. The glove is now inside out. Remove second glove. With partially gloved hand, pinch the exterior of second glove. Pull the second glove toward the fingertips until it is inside out, and then remove it completely. Finish removing both gloves. Grasp both gloves with your free hand. Touch only the clean interior surface of the glove. After removing both gloves, discard gloves in an appropriate container. Wash your hands thoroughly.

- Select personal protective equipment that is appropriate for the task. For example, when caring for a small wound, wearing a gown, mask and protective eyewear may not be necessary. However, if splashing is likely, wearing a gown, mask and protective eyewear, in addition to disposable gloves, is recommended.

## **Engineering and Work Practice Controls**

The Exposure Control Plan should identify engineering and work practice controls established within the workplace. [Paragraph 1910.1030(d)(2)(i)] Engineering controls are all control measures that isolate or remove a hazard from the workplace. In other words, engineering controls are the things you use in the workplace to help reduce the risk of an exposure incident. Once put in place, engineering controls should be maintained and replaced as needed.

Work practice controls reduce the likelihood of exposure by changing the way a task is carried out. These are the things you do to help reduce the risk of an exposure incident. The protection provided by work practice controls is based on the way an employer and employee behave rather than on a physical device.

Examples of engineering controls include:

- Sharps disposal containers
- Self-sheathing needles
- Safer medical devices such as sharps with engineered sharps injury protections
- Needless systems
- Biohazard bags and labels
- Personal protective equipment

Examples of work practice controls include:

- Placing sharp items (e.g., needles, scalpel blades) in puncture-resistant, leak proof and labeled containers and having the containers at the point of use.
- Performing all procedures in such a way that cuts down on splashing, spraying and splattering droplets of blood or OPIM.
- Removing and disposing of soiled protective clothing as soon as possible.
- Cleaning and disinfecting all equipment and work surfaces possibly soiled by blood or other body fluids.
- Washing your hands thoroughly with soap and water immediately after providing care using a utility or rest- room sink (not one in a food preparation area).
- Not eating, drinking, smoking, applying cosmetics or lip balm, handling contact lenses or touching your mouth, nose or eyes when you are in an area where you may be exposed to infectious materials.
- Using alcohol-based hand rubs where hand-washing facilities are not available, but not in place of hand washing with soap and water.

**THE CURRENT OSHA STANDARD STATES THAT YOU MUST USE ENGINEERING CONTROLS WHERE THEY WILL REDUCE EMPLOYEE EXPOSURE EITHER BY REMOVING, ELIMINATING OR ISOLATING THE HAZARD.**

### **BIOHAZARD SIGNAGE AND LABELING**

You should know about any areas, equipment or containers that

may be contaminated. Biohazard warning labels are required on any container holding contaminated materials. Signs should be posted at entrances to work areas where infectious materials may be present. These signs and labels must be fluorescent orange, orange-red or predominantly so with lettering or symbols in a contrasting color. Red bags or red containers may be substituted for labels as long as it is clear what these colors represent.

## **SPILL CLEAN-UP**

The Exposure Control Plan should include procedures for dealing with spills of blood or other potentially infectious materials. These procedures should include how such spills are reported and who is responsible for containing them and cleaning them up, as well as procedures for safe containment and cleanup. The first step in dealing with a spill is containment. Commercially available spill containment units designed for hazardous materials work very well. However, any absorbent material, such as paper towels, can be used if the material is disposed of properly. The steps for spill containment are as follows:

- Wear single-use disposable gloves and other personal protective equipment when cleaning spills.
- Clean up spills immediately or as soon as possible after the spill occurs.
- If the spill is mixed with sharp objects, such as broken glass and needles, do not pick these up with your hands. Use tongs, a broom and dustpan, or two pieces of cardboard.
- Dispose of the absorbent material used to collect the spill in a labeled biohazard container.
- Flood the area with disinfectant solution, and allow it to stand for at least 10 minutes. OSHA recommends a fresh mixture of one part bleach per 10 parts water.
- Use appropriate material to absorb the solution, and dispose of it in the biohazard container.



## **EQUIPMENT CLEANING AND DISINFECTING**

The OSHA Bloodborne Pathogens Standard requires that the work area be kept in a clean and sanitary condition to help prevent exposure to bloodborne pathogens. Specific procedures for cleaning and disinfecting equipment in your workplace should be outlined in the Exposure Control Plan.

- Handle all soiled supplies, equipment and other materials with care until they are properly cleaned and disinfected.
- Place all used disposable items in labeled containers.
- Place all soiled clothing in marked plastic bags for disposal or washing.
- Scrub soiled boots, leather shoes and other leather goods, with soap, a brush and hot water.
- If you wear a uniform to work, wash and dry it according to the manufacturer's instructions.
- Floors, decks, countertops, ambulance and automobile seats must be cleaned before using a disinfectant solution.
- Handle all soiled equipment, supplies or other materials with great care until they are properly cleaned and disinfected.

Following these precautions will usually remove at least one of the four conditions necessary for disease transmission. Remember, if only one condition is missing, infection will not occur.

### **Employees' Responsibilities:**

- Using work practices, such as following Standard Precautions, to minimize the possibility of infection.
- Using engineering controls, such as puncture-resistant containers for sharp objects or sharps with engineered sharps injury protections, to minimize the possibility of infection.

- Following the protective measures and precautions outlined in the Exposure Control Plan to reduce on-the-job contact with bloodborne pathogens.
- Following the procedures for reporting exposure incidents outlined in the Exposure Control Plan.

### **If You Have an Exposure Incident:**

Exposure incidents involve contact with blood or other potentially infectious materials through a needle stick, broken or scraped skin or the mucous membranes of the eyes, nose or mouth. Take these steps immediately:

- Wash needle stick injuries, cuts and exposed skin with soap and water.
- Flush splashes of blood or OPIM to the nose and mouth with water.
- Irrigate eyes with clean water, saline or sterile irritants.

Following any exposure incident you should:

- Immediately report the exposure incident to your supervisor. Reporting an exposure incident immediately can be critical to the success of post exposure treatment.
- Follow the steps in the Exposure Control Plan for confidential medical evaluation and follow-up by a healthcare professional.
- The Exposure Control Plan should include procedures for reporting an exposure incident.
- Follow the procedures outlined in your workplace Exposure Control Plan when reporting an exposure incident.

The OSHA standard requires that the hepatitis B vaccination series be made available, free of charge, to all employees who have occupational exposure to blood or other potentially infectious materials (OPIM). It also requires post-exposure

evaluation and follow-up be made available to all employees who have had an exposure incident. All medical evaluations and procedures, including the hepatitis B vaccination series and post-exposure evaluation and follow-up must be:

- Made available at no cost to the employee
- Made available to employees at a reasonable time and place
- Provided by or under the supervision of a licensed physician or other licensed health-care professional
- Provided according to the current recommendations of the U.S. Public Health Office

The OSHA standard also requires that the post-exposure medical evaluation and follow-up be made available immediately for employees who have had an exposure incident. If you think you have had an exposure incident, it is your responsibility to notify your supervisor immediately. Even before a disease is confirmed, you should receive medical evaluation, counseling and safe and effective post-exposure treatment, such as the hepatitis B vaccine for those who have not received the vaccine as a pre-exposure preventative measure. Your supervisor or medical professionals are responsible for notifying others who might have had an exposure incident. If your organization does not have a designated physician or nurse at a local hospital for follow-up care, see your personal physician.

## **Summary**

Although the body's natural defense system defends well against disease, bloodborne pathogens can still enter the body and sometimes cause infection. These pathogens can be transmitted from person to person through direct or indirect contact with infected blood or other body fluids. You should know how bloodborne diseases are spread and take appropriate measures to protect yourself from them. Remember that the four

conditions of infection must be present for a disease to be spread.

The OSHA Bloodborne Pathogens Standard (29 CFR part 1910.1030) contains regulations for reducing risks from on-the-job exposure to bloodborne pathogens. The agency has determined that employees face a significant risk as a result of on-the-job exposure to blood and other potentially infectious materials (OPIM) because they may contain bloodborne pathogens. OSHA concludes that this hazard can be reduced or removed using a combination of personal hygiene, personal protective equipment, engineering and work practice controls and training.

The OSHA standard defines the range of employees covered by the standard, and it sets forth certain requirements that employers must meet to maintain workplaces in a clean and sanitary condition. Following the OSHA bloodborne pathogens standard, especially the precautions, greatly reduces your risk of contracting or transmitting a bloodborne disease. If you suspect you have had contact with potentially infectious material, always document it and notify your supervisor and other appropriate personnel. Seek medical help and participate in any follow-up procedures.

**Following the OSHA standard on Bloodborne Pathogens and the prevention methods covered in this educational offering greatly decreases your risk of contracting a blood borne disease.**

## **GLOSSARY**

Pronunciation Guide The accented syllable in a word is shown in capital letters.

river = RIVer

An unmarked vowel that ends a syllable or makes up a syllable has a long sound. silent = SI lent An unmarked vowel in a

syllable that ends with a consonant has a short sound. sister = SISTER The sound of the letter a in an unaccented syllable is spelled ah. ahead = ah HED

AIDS (acquired immunodeficiency syndrome): A condition caused by the human immunodeficiency virus (HIV).

Antibiotics (an ti bi OT iks): Medicines prescribed to help the body fight bacterial infections.

Antibodies (AN ti bod ez): Infection-fighting proteins released by white blood cells.

Antigen (an Ti jen): A substance that stimulates the production of antibodies.

Bacteria (bac TE re ah): One-celled microorganisms that may cause infections.

Bloodborne pathogens (blu De bor Ne /pa th oh JENS): Bacteria and viruses present in human blood and body fluids that can cause disease in humans.

Body substance isolation (BSI): An infection control strategy that considers all body substances as potentially infectious.

Breathing devices: Equipment used to ventilate a victim; prevents the user from making direct mouth-to-mouth contact with that victim.

Chronic: Of long duration or long-lasting.

Confidentiality: Protecting a victim's privacy by not revealing any personal information you learn about the victim except to law enforcement personnel or EMS personnel caring for the victim.

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

Contaminated laundry: Laundry that has been soiled with blood or other potentially infectious materials or may contain sharps.

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

Direct contact transmission: Occurs when infected blood or body fluids from one person enters another person's body at a correct entry site.

Disease transmission: The passage of a disease from one person to another.

Disinfect: To wash thoroughly with a solution of common household chlorine bleach and water or other decontaminating agent in order to kill pathogens.

Emergency medical technician (EMT): A person who has successfully completed a state-approved Emergency Medical Technician training program; levels of EMTs include paramedics at the highest level.

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

Exposure Control Plan: Written document required by the OSHA standard on bloodborne pathogens, in which an employer specifies how the provisions of the standard will be met in a particular workplace and which employees there are covered by its provisions.

Exposure determination: The identification and documentation of job classifications and tasks in which occupational

exposure to blood or other potentially infectious materials can occur.

Exposure incident: 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.

"Good Samaritan" Act: In the context of the OSHA standard on bloodborne pathogens, the act of voluntarily providing assistance (e.g., first aid) in one's place of employment, even though providing that assistance is not one of the employee's job duties.

Hepatitis (hep ah TI tis): A viral infection of the liver.

Hepatitis B: A type of hepatitis that is transmitted by sexual contact and blood-to-blood contact (also called serum hepatitis).

Hepatitis C: Formerly called non-A/non-B hepatitis. A type of hepatitis that is transmitted by sexual contact and blood-to-blood contact.

#### References:

OSHA's Bloodborne Pathogens Standard; Corrections and Technical Amendment- 77: 19933-19934 (April 2, 2012). [https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=FEDERAL\\_REGISTER&p\\_id=22616](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=FEDERAL_REGISTER&p_id=22616)

Standard Interpretations (November 13, 2013). [https://www.osha.gov/pls/oshaweb/owasrch.search\\_form?p\\_doc\\_type=INTERPRETATIONS&p\\_toc\\_level=3&p\\_keyvalue=1910.1030&p\\_status=ARCHIVED](https://www.osha.gov/pls/oshaweb/owasrch.search_form?p_doc_type=INTERPRETATIONS&p_toc_level=3&p_keyvalue=1910.1030&p_status=ARCHIVED)

Bloodborne Pathogens and Needlestick Prevention Standards. [https://www.osha.gov/pls/oshaweb/owadisp.show\\_docum](https://www.osha.gov/pls/oshaweb/owadisp.show_docum)

[ent?p\\_id=10051&p\\_table=STANDARDS](#)

Enforcement Procedures for the Occupational Exposure to Bloodborne

Pathogens. [https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=DIRECTIVES&p\\_id=2570](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=DIRECTIVES&p_id=2570)

Acceptable use of anti-septic hand cleansers for bloodborne pathogen decontamination and as appropriate handwashing practice. [https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=INTERPRETATIONS&p\\_id=24389](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=24389)

Centers for Disease Control (CDC)'s Hand Hygiene in Healthcare Settings Guidelines (2011). <http://www.cdc.gov/handhygiene/guidelines.html>

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