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BLOODBORNE PATHOGENS

MODULE DESCRIPTION

This module describes bloodborne pathogen risks in the workplace and identifies strategies to protect you from such risks.

OBJECTIVES

After completing this module, students will be able to:

- Define the term pathogen.
- Identify the hazards associated with bloodborne pathogens.
- Describe how bloodborne pathogens are transmitted.
- Understand who is at risk.
- List ways to reduce your risk of exposure.
- Identify OSHA requirements pertaining to bloodborne pathogens
- Describe how to StartSafe and StaySafe.

MODULE OUTLINE

1. What are Bloodborne Pathogens?

"Bloodborne Pathogens" are pathogenic microorganisms that are present in human blood and can cause disease in humans. Pathogens, such as the bacteria Salmonella, are found in food and are considered *foodborne pathogens*. Pathogens, such as the influenza virus, travel through the air and are considered *airborne pathogens*. So, as you might guess, *bloodborne pathogens* are those pathogens found in blood and transmitted from contact with blood. This module concentrates on bloodborne pathogens. Two of the most common organisms are:

- **Bacteria:** Bacteria are single-celled organisms that appeared on earth billions of years ago and are found everywhere; in the ground, in the air, and in the bodies of most living things. One thing to remember about bacteria is that is does not require a host organism to live and multiply.
- **Viruses:** Viruses are organisms that can cause diseases in humans, animals, and plants. They are capable of growth and multiplication only within the cells of another living thing. Although viruses require a host to continue to live, they can remain

viable on a surface for several hours or even days.

- **Warning:** Blood can also be found in other body fluids. As a result, bloodborne pathogens can be transmitted through contact with these fluids as well.

2. Hazards of Bloodborne Pathogens

While there are many diseases that can result from contact with a bloodborne pathogen, there are two viruses that are especially important to understand as they lead to diseases which currently have no cure: Hepatitis B Virus (HBV) and Human Immunodeficiency Virus (HIV)

- These viruses are especially dangerous because a person can be infected and pass the virus to others even without knowing or exhibiting any signs or symptoms.

Hepatitis B Virus (HBV): If a person is exposed to blood or bodily fluids that are infected with HBV, it is possible that they could become infected with the virus as well.

- HBV affects the liver and can lead to serious health threats.
- Symptoms of HBV infection may range from no symptoms at all, to brief flu-like symptoms, to serious illness.
- A vaccination is available and can be taken before or after an exposure to the virus. The vaccination helps reinforce the body's immune system to help fight HBV.

Human Immunodeficiency Virus (HIV) is the virus that causes AIDS (Acquired Immune Deficiency Syndrome).

- HIV gradually weakens the immune system of the infected person, leaving that person unable to fight off infections.
- At the onset of HIV, an infected person may have no signs or symptoms of the disease. However, as the disease progresses, symptoms become severe and the infection can be fatal.
- Although research continues, a cure for HIV/AIDS has not yet been developed.
- Bloodborne pathogens are not limited to HBV and HIV. There are many more out there, such as staph and strep infections, Gastroenteritis-salmonella, and pneumonia. All are dangerous to workers. For this reason, you must treat any potential exposure to bodily fluids with appropriate caution.

Pathogens can be transmitted in a variety of ways: they can be foodborne, airborne, or bloodborne.

Bloodborne pathogens, such as HBV and HIV, lead to serious diseases and can be passed by contact with blood or other bodily fluids that may contain blood. Even though neither of these viruses is curable, there are steps you can take to protect yourself.

3. Transmission of Bloodborne Pathogens

Pathogens can be transmitted when infectious blood or bodily fluids are introduced into the bloodstream of a person. Transmission of bloodborne pathogens can occur through several different routes.

Injection:

- Blood or bodily fluids of an infected person may be introduced directly into your body through a break in your skin. Examples include: a needle-stick injury or a cut with a piece of contaminated glass.

Mucous Membrane:

- Another transmission route would be through **mucous membrane exposure**. This route of exposure means that the infected blood or body fluid enters the body through contact with a mucous membrane found in the eyes, nose or mouth.

For example, lets say you are a teacher. During recess, one of your students is running, slips, and hits her face on the concrete. As you go to administer care, the child coughs and spits saliva and blood on your face. Since there are mucous membranes in your eyes, nose, and mouth, and since blood and saliva were involved, an exposure has just occurred and there is a possibility that a bloodborne pathogen has been transmitted.

Sexual Contact:

- Bloodborne pathogens may also be transmitted through **sexual contact**. HBV, HIV and various other diseases can be transmitted through unprotected sexual activities with an infected partner-even if the infected person does not exhibit symptoms of a disease

4. Who is at Risk?

Anyone who may come into contact with another persons blood or bodily fluid is at risk of contracting a bloodborne pathogen. This exchange of blood or bodily fluid could occur in a variety of ways.

Activities ranging from engaging in unsafe personal practices, such as unprotected sex or using someone else's razor, to not following the proper procedures for caring for a childs bleeding nose, places people at risk.

5. Reducing Your Risk of Exposure

To StaySafe, there are several things you can do to reduce your chances of coming into contact with a bloodborne pathogen. To reduce your risk of exposure, you should:

- FirstAcquire knowledge
- SecondUtilize universal precautions
- ThirdUse engineering controls
- FinallyFollow safe work practices

Acquire Knowledge: The first key to reducing your risk of exposure is to understand it. You should know what bloodborne pathogens are, how you can become infected, and how to protect yourself.

Utilize universal precautions: The next guideline to follow is universal precautions. Universal precautions simply means that you treat all blood and bodily fluids as infectious. StartSafe by always assuming that blood and bodily fluids you are exposed to carry pathogens; StaySafe by taking care to limit or prevent exposure.

Engineering Controls: Engineering controls are products or specific procedures that are designed to isolate or remove the bloodborne pathogens.

Examples of engineering controls include: placing used needles in a sharps container, disposing of soiled laundry properly, and using a bleach and water solution to decontaminate a surface covered in blood or bodily fluid. These controls reduce your risk of exposure by either removing the hazard or isolating you from the hazard.

Safe work practices: Safe work practices reduce the likelihood of exposure by altering how a task is performed.

One example of this would be to use Personal Protective Equipment (PPE). PPE is specialized clothing or

equipment worn to protect against infectious materials. The goal of PPEsuch as gloves, safety goggles, and masksis to prevent blood or bodily fluids from contacting your skin, eyes, mouth, or nose.
Another example of safe work practices is following established housekeeping procedures.

6. Reducing your risk of exposure
    a. If you are concerned exposure has occurred, First, immediately wash the exposed area with soap and water. If an exposure to the eyes, nose, or mouth has occurred, flush the area with water only. After thoroughly washing the area, promptly report the exposure to your supervisor. Your supervisor or employer will inform you of the next steps to follow.

7. OSHA Requirements
    a. Lets look briefly at what OSHA requires of your employer. First, your employer must identify those employees who have a potential risk of exposure to a bloodborne pathogen. Then, for those employees, the employer must:
        1. Establish a written program to control exposure to bloodborne pathogens in the workplace.
        2. Establish engineering controls and safe work procedures.
        3. Provide the necessary PPE.
        4. Offer Hepatitis B vaccines.
        5. Establish procedures for employees to follow in case of exposure.
        6. Conduct annual training on bloodborne pathogens.
    b. Exposure to bloodborne pathogens can be controlled through the following measures:
        Gaining knowledge of the hazards associated with bloodborne pathogens.
        Following universal precautions by treating all blood or bodily fluids as infectious.
        Utilizing established engineering controls to isolate or remove the bloodborne pathogen.
        Always using safe work practices to reduce your likelihood of exposure to a bloodborne pathogen.
        Remember, if an exposure occurs, wash the area immediately and then promptly report the exposure.