



**OSHA Academy**<sup>TM</sup>  
Occupational Safety & Health Training

# Bloodborne Pathogens Program Management

Bloodborne Pathogens Program Management is designed to provide students with the essential knowledge necessary to help reduce or eliminate the occupational risk of bloodborne pathogens and develop a comprehensive Exposure Control Plan (ECP). This training program teaches the information every safety leader needs to know in order help avoid an accidental exposure to potentially infectious materials and how to manage an accidental exposure if one occurs.

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# OSHAcademy Course 755 Study Guide

## Bloodborne Pathogens Program Management

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Contact OSHAcademy to arrange for use as a training document.

This study guide is designed to be reviewed off-line as a tool for preparation to successfully complete OSHAcademy Course 755.

Read each module, answer the quiz questions, and submit the quiz questions online through the course webpage. You can print the post-quiz response screen which will contain the correct answers to the questions.

The final exam will consist of questions developed from the course content and module quizzes.

We hope you enjoy the course and if you have any questions, feel free to email or call:

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## Course Introduction

### Why do I need to learn about the risk of occupational exposure to bloodborne pathogens?

OSHA estimates more than 5.6 million workers are at risk of occupational exposure to bloodborne pathogens. All occupational exposure to blood or other potentially infectious materials (OPIM) place workers at risk for infection with bloodborne pathogens.

Workers in many different occupations are at risk of exposure to bloodborne pathogens, including Hepatitis B, Hepatitis C, and HIV/AIDS. First aid team members, housekeeping personnel in some settings, nurses and other healthcare providers are examples of workers who may be at risk of exposure.

Employers are required to provide training to any employee that has a potential exposure to bloodborne pathogens. In addition, each employer must establish an Exposure Control Plan (ECP) for each worksite. We walk you through the process of setting up an ECP, and review all of the required components of the plan.

## Module 1: What are Bloodborne Pathogens?

### What are bloodborne pathogens?

Bloodborne pathogens are infectious materials in blood that can cause disease when transmitted from an infected individual to another individual through blood and certain body fluids.

Bloodborne pathogens are capable of causing serious illness and death. The most common illness caused by bloodborne pathogens are hepatitis B (HBV), hepatitis C (HCV, and acquired immunodeficiency syndrome (AIDS) from HIV, or human immunodeficiency virus.

### Who is covered by OSHA's Bloodborne Pathogens standard?

The standard applies to all employees who have **occupational exposure** to **blood** or **other potentially infectious materials** (OPIM).

- Occupational exposure is defined as "reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or OPIM that may result from the performance of the employee's duties."
- Blood is defined as human blood, human blood components, and products made from human blood.

Other potentially infectious materials (OPIM) means:

- a. The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids;
- b. Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and
- c. HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV. The following references aid in recognizing workplace hazards associated with bloodborne pathogens.

You can find more information on recognizing workplace hazards associated with bloodborne pathogens on [OSHA's Hazard Recognition Page](#).

### **What is the purpose of OSHA's Bloodborne Pathogens standard?**

The purpose of the standard is to minimize or eliminate occupational exposure to disease-carrying microorganisms or "pathogens" that can be found in human blood and body fluids.

### **Who must be trained under OSHA's Bloodborne Pathogens standard?**

OSHA has mandated annual training is required for all employees with potential occupational exposure. This means if there is a reasonable possibility an employee might be exposed to blood or other potentially infectious bodily fluids, they must receive training to minimize or eliminate their risk to potential exposure.

### **What are the primary bloodborne pathogens?**

The primary bloodborne pathogens are:

- Hepatitis B Virus (HBV)
- Hepatitis C Virus (HCV)
- Human Immunodeficiency Virus (HIV)

Other commonly recognized pathogens transmitted by body fluids include:

- West Nile Virus
- Malaria
- Syphilis

OSHA has determined employers can minimize or even eliminate occupational bloodborne hazards by developing and enforcing a combination of exposure control strategies which work for all bloodborne diseases. It is not enough for an employer to provide bloodborne pathogens training; they must also have a formal exposure control plan documented and implemented.

*Training Is Not Enough; An Employer Must Implement A Formal Exposure Control Plan*

## Scenario

---

Stanley is an employee for a small manufacturing company. One of Stanley's job responsibilities is to respond to medical emergencies that might happen in the warehouse. Stanley has worked for his employer for five years and has never had to respond to an emergency.

**Does Stanley still need to receive annual bloodborne pathogens training?**

**Yes!**

The frequency in which an employee is exposed to potential bloodborne pathogens is not the standard used to determine the need for training. Because there is a reasonable possibility that Stanley might be exposed to bloodborne pathogens as an employee, he must receive annual training. Neither Stanley nor his employer can predict when he might need to provide emergency medical care.

---

## Module 1 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

- 1. As part of Kevin's job he is required to provide emergency first aid to employees that become injured or ill while at work. What are the three primary bloodborne pathogens Kevin must be aware of due to occupational exposure?**
  - a. West Nile Virus, Influenza, and Malaria
  - b. Hepatitis B, Syphilis, and Malaria
  - c. Hepatitis B, Hepatitis C, and Human Immunodeficiency Virus
  - d. Human Immunodeficiency Virus, Influenza, and Small Pox
  
- 2. Samantha is an employee covered by the OSHA Bloodborne Pathogens Standard 29 CFR 1910.1030. How often must she complete bloodborne pathogen training?**
  - a. once
  - b. annually
  - c. every 2 years
  - d. every 4 years
  
- 3. What is the purpose of OSHA's Bloodborne Pathogens standard?**
  - a. To ensure that companies don't unnecessarily train employees about bloodborne pathogens.
  - b. To minimize or eliminate occupational exposure to pathogens that can be found in inorganic matter.
  - c. To minimize or eliminate occupational exposure to disease-carrying microorganisms or "pathogens" that can be found in human blood and body fluids.
  - d. To increase the likelihood that employees are exposed to bloodborne pathogens.

**4. Who is covered by OSHA's Bloodborne Pathogens standard?**

- a. Only public employees
- b. Only EMT's, Nurses, and Doctors.
- c. Employees who DO NOT have occupational exposure to blood or other potentially infectious materials (OPIM).
- d. All employees who have occupational exposure to blood or other potentially infectious materials (OPIM).

**5. In regards to OSHA's Bloodborne Pathogens Standard, occupational exposure is defined as: \_\_\_\_\_.**

- a. reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or OPIM that may result from the performance of the employee's duties
- b. reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or OPIM while at home
- c. exposing your employer to legal liability
- d. skin contact with chemical solutions while in the performance of the employee's duties



## Module 2: Specific Bloodborne Pathogens

### Hepatitis B Virus (HBV)

The Hepatitis B virus (HBV) is one of the primary causes of Hepatitis, an infection which causes inflammation of the liver. Complications of Hepatitis include cirrhosis of the liver, liver cancer, and liver failure. There is no known cure for the Hepatitis B virus. In the United States, approximately 15 to 25 percent of people infected with HBV will die because of the illness.

An estimated 3,000 people in the United States and 600,000 people worldwide die from Hepatitis B-related liver disease annually.

The Center for Disease Control (CDC) reported 3,374 confirmed acute cases of Hepatitis B in 2010. The CDC estimates 38,000 people were infected with the Hepatitis B virus the same year.

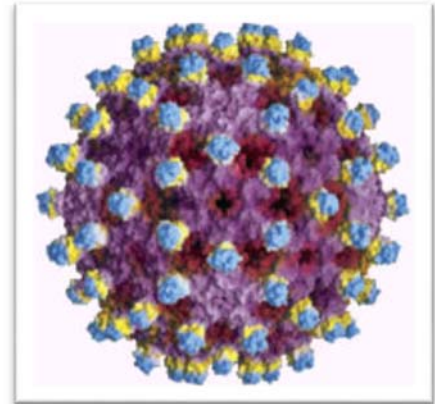
Hepatitis B can be either acute or chronic.

- Acute Hepatitis B virus infection is a short-term illness that occurs within the first 6 months after someone is exposed to the Hepatitis B virus. Acute infection can, but does not always, lead to chronic infection.
- Chronic Hepatitis B virus infection is a long-term illness that occurs when the Hepatitis B virus remains in a person's body. Chronic Hepatitis B is a serious disease that can result in long-term health problems, and even death.

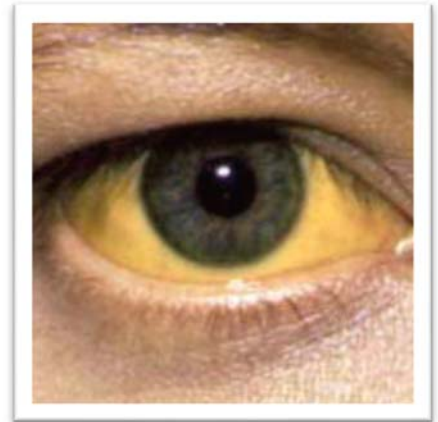
### Symptoms of HBV

Symptoms of HBV infection include, but are not limited to:

- Loss of appetite
- Fatigue
- Fever



Electron Micrograph of Hepatitis B Virus



The appearance of jaundice (yellowing) in the eyes

- Nausea, vomiting and/or abdominal pain
- Joint pain
- Jaundice seen in the eyes

Jaundice, a symptom of hepatitis B, often first appears in the eyes.

Jaundice, also called icterus, is a yellowing of the skin or eyes and occurs in the more serious phase of Hepatitis B virus. Hepatitis B can damage the liver, resulting in decreased liver function. As the liver's ability to filter waste from the blood decreases, the concentration of waste in the blood increases.

Only about 50 to 60 percent of individuals infected with Hepatitis B virus show symptoms. It is important to understand even without symptoms, HBV-infected individuals are still infectious to others.

[Click here to view the CDC fact sheet for Hepatitis B.](#) (PDF)

### Exposure

An exposure that might place a worker at risk for HBV, HCV, or HIV infection is defined as:

- a. a percutaneous injury (e.g., a needlestick or cut with a sharp object); or
- b. contact of mucous membrane or nonintact skin (e.g., exposed skin that is chapped, abraded, or afflicted with dermatitis) with blood, tissue, or other body fluids that are potentially infectious.

Indirect exposure from contaminated objects is a risk, because Hepatitis B virus can remain infectious on environmental surfaces for up to a week (7 days) in the form of dried blood. This means you must always treat blood, wet or dry, as infectious!

### Vaccination

A vaccination to prevent Hepatitis B virus infection is available. The Hepatitis B vaccine series is a sequence of three shots, typically given one month apart, that stimulate a person's natural immune system to protect against the virus. After the vaccine is given, the body makes antibodies to protect a person against the virus. Antibodies are specialized proteins found in the blood that produce an immune response to a virus invading the body. These antibodies are

stored in the body to guard against future infections. They will fight off an infection if a person is exposed to the Hepatitis B virus in the future.

## Scenario

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Michelle is a custodian in a public elementary school. At the end of each school day, she cleans and vacuums the building, including the schools' health room. While cleaning the health room she notices some dried blood on the floor.

**Should Michelle be concerned about exposure to Hepatitis B virus?**

**Yes.**

Any blood, wet or dry, has the potential to carry infectious Hepatitis B virus. As a result, Michelle must take precautions to prevent potential exposure to bloodborne pathogens, including Hepatitis B virus.

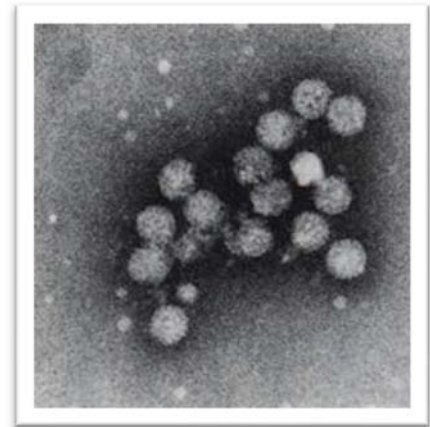
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## Hepatitis C Virus (HCV)

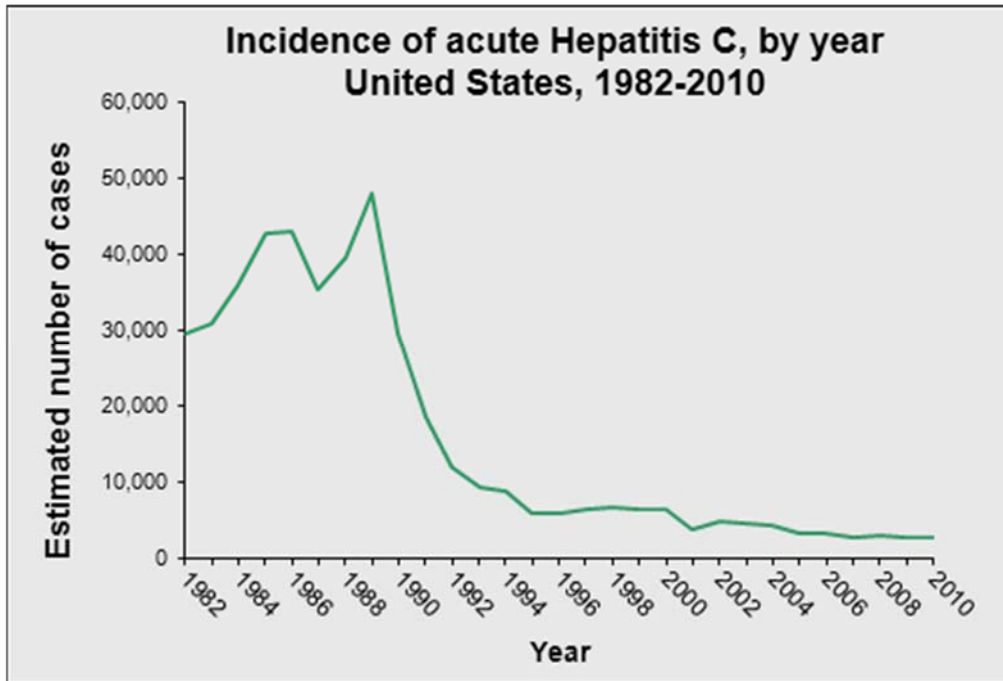
The Hepatitis C virus (HCV) is also a significant cause of severe liver damage and death.

The Center for Disease Control (CDC) estimates approximately 30,500 new acute hepatitis C virus infections were reported in 2014. Persons newly infected with hepatitis C virus are usually asymptomatic (symptom-free), so acute Hepatitis C is rarely identified or reported.

Approximately 2.7 to 3.9 million persons in the United States have chronic Hepatitis C virus infection. Chronic Hepatitis C virus infection accounts for more than 19,000 deaths each year in the United States. Approximately 1 to 5% of people infected with Hepatitis C virus die as a result of the long-term damage caused to the liver and body.



Electron micrograph of Hepatitis C virus particles



Incidence of acute HCV.

Approximately 70%-80% of people with acute Hepatitis C do not have any symptoms. Some people, however, can have mild to severe symptoms soon after being infected, including:

- Fever
- Fatigue
- Loss of appetite
- Nausea
- Vomiting
- Abdominal pain
- Dark urine
- Clay-colored bowel movements
- Joint pain
- Jaundice (yellow color in the skin or eyes)

[Click here to view the CDC fact sheet for Hepatitis C. \(PDF\)](#)

If symptoms occur, the average time is 6-7 weeks after exposure, but this can range from 2 weeks to 6 months. However, many people infected with the Hepatitis C virus do not develop symptoms.

Hepatitis C virus-infected individuals are infectious to other people, whether they show symptoms or not. Interestingly, Hepatitis C virus is strictly a human disease. It is not known to cause disease in any animals.

Blood testing for Hepatitis C virus was not available until 1992. As a result, blood donation agencies did not screen for Hepatitis C virus. Many Hepatitis C virus infections occurred as a result of receiving blood products from infected individuals. Today, testing for Hepatitis C is common place and should occur after any exposure to potential bloodborne pathogens has occurred.

There is no vaccine for Hepatitis C.

### Treatment

According to the CDC, approximately 25% of people infected with acute Hepatitis C will naturally be able to clear the infection from their body without treatment.

There are several medications available to treat chronic Hepatitis C, including newer, more effective drugs with fewer side effects.

### Around the World

According to the World Health Organization (WHO), every year, 3–4 million people are infected with the hepatitis C virus. About 150 million people are chronically infected and at risk of developing liver cirrhosis and/or liver cancer. More than 500,000 people worldwide die from hepatitis C-related liver diseases every year.

### Decontamination

Any blood spills - including dried blood, which can still be infectious - should be cleaned using a 10% solution of household bleach (one-part household bleach to 9 parts water). Gloves should be worn when cleaning up blood spills.

### Scenario

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Manuel is a nurse working nights in the local hospital. During a shift in the emergency department he is stuck with a used needle that punctures his skin and draws blood.

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## Is Manuel at risk for contracting Hepatitis C?

**Yes.**

After a needlestick or sharps exposure to Hepatitis C-positive blood, the risk of infection is approximately 1.8%. Manuel should immediately report the potential exposure and follow his employer's exposure control plan to ensure he receives proper medical treatment and testing.

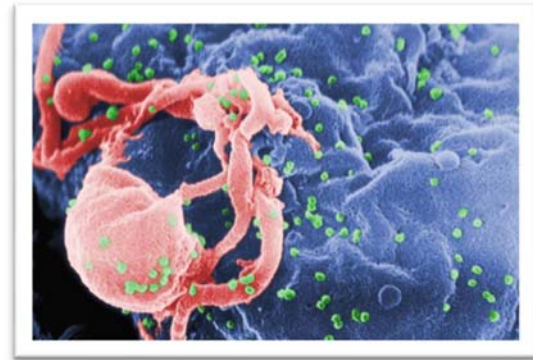
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## Human Immunodeficiency Virus (HIV)

The Human Immunodeficiency Virus (HIV) is the virus responsible for causing Acquired Immunodeficiency Syndrome (AIDS).

### Statistics

- In 2010, 47,129 new cases of HIV/AIDS in adults, adolescents, and children were diagnosed.
- As of 2012, approximately 1.2 million people are living with HIV. The CDC estimates 12.8% of people living with HIV do not know they are infected.
- As of December 31, 2013, 58 confirmed occupational transmissions of HIV and 150 possible transmissions had been reported in the United States.
- As of 2013, there are about 35 million people living with HIV around the world, with only 37% receiving treatment.
- In 2013, about 1.2 million people died from AIDS-related illnesses around the world.



Human Immunodeficiency Virus (green) attacking a healthy immune system cell.

The Human Immunodeficiency Virus attacks and suppresses the immune system, reducing a person's ability to fight infection. The virus specifically targets the cells crucial for fighting infection from pathogens. This allows diseases and infections to progress without resistance.

Within a few weeks of being infected with HIV, some people develop flu-like symptoms that last for a week or two, but others have no symptoms at all. People living with HIV may appear and feel healthy for several years. However, even if they feel healthy, HIV is still affecting their

bodies. Untreated early HIV infection is also associated with many diseases including cardiovascular disease, kidney disease, liver disease, and cancer.

## Scenario

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Stacy is a police officer employed by the city of Denver, Colorado. She is regularly required to respond to emergency medical situations, often arriving before the local ambulance company. As a result, Stacy is frequently exposed to human blood.

**Is Stacy likely to contract HIV from exposure to infected blood?**

**No.**

As long as Stacy follows universal precautions she is not likely to contract HIV. Universal precautions involve the use of protective barriers such as gloves, gowns, aprons, masks, or protective eyewear, which can reduce the risk of exposure of the first aid provider's skin or mucous membranes to potentially infective materials.

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It can take many years before an HIV-infected person displays symptoms of the disease.

Symptoms include:

- Enlarged lymph nodes
- Fatigue
- Frequent fevers
- Persistent or frequent yeast infections of the mouth or vagina
- Persistent or frequent skin rashes
- Short-term memory loss
- Weight loss
- Enlarged liver and spleen

As with Hepatitis B virus and Hepatitis C virus, it is important to understand that individuals with HIV are potentially infectious to others, even though they may have no observable symptoms.

Presently, there is no known cure for HIV. Although the life expectancy for HIV-infected individuals has increased due to recent advances in treatment, the end result of HIV/AIDS is premature death.

HIV cannot reproduce outside the human body. It is not spread by:

- Air or water.
- Insects, including mosquitoes. Studies conducted by CDC researchers and others have shown no evidence of HIV transmission from insects.
- Saliva, tears, or sweat. There is no documented case of HIV being transmitted by spitting.
- Casual contact like shaking hands or sharing dishes.
- Closed-mouth or "social" kissing.

All reported cases suggesting new or potentially unknown routes of transmission are thoroughly investigated by state and local health departments with assistance, guidance, and laboratory support from CDC.

### **Disease Comparison**

Of the three major bloodborne pathogens, Hepatitis B virus is the most contagious. Approximately 33% of individuals exposed to Hepatitis B virus will become infected. Of those individuals exposed to Hepatitis C virus, only about 2% will become infected.

Comparatively, Human Immunodeficiency Virus is much less contagious than either form of hepatitis. About 0.33%, or 1 in 300, people exposed to HIV will become infected with the virus.

Despite these statistics, every exposure has the potential to transmit bloodborne pathogens and must be considered significant.



## Module 2 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

- 1. The Hepatitis B virus (HBV) may remain infectious on contaminated objects or surfaces for up to: \_\_\_\_\_.**
  - a. 3 hours
  - b. 24 hours
  - c. 3 days
  - d. 7 days
  
- 2. What is the primary organ Hepatitis B damages over time?**
  - a. Skin
  - b. Liver
  - c. Eyes
  - d. Heart
  
- 3. Persons newly infected with Hepatitis C are usually \_\_\_\_\_.**
  - a. children
  - b. chronically ill
  - c. symptomatic (have symptoms)
  - d. asymptomatic (symptom-free)
  
- 4. Which of the three major bloodborne pathogens is the most contagious, with 33% of those exposed becoming infected?**
  - a. Hepatitis B virus (HBV)
  - b. Hepatitis C virus (HCV)
  - c. Human Immunodeficiency Virus (HIV)
  - d. H1N1 Influenza (Swine Flu)

**5. HIV is not spread by: \_\_\_\_\_.**

- a. saliva, tears, or sweat
- b. casual contact like shaking hands or sharing dishes
- c. closed-mouth or "social" kissing
- d. all of the above

## Module 3: Transmitting Bloodborne Pathogens

### Fluids that Spread Bloodborne Pathogens

The transmission of bloodborne pathogens from one person to another occurs through the transfer of infected body fluids.

Common body fluids which can transmit pathogens include:

- blood
- cerebral spinal fluid
- semen
- vaginal secretions

Semen and vaginal secretions can transmit bloodborne pathogens, but only during sexual contact.

Wearing disposable gloves can help protect you from accidental exposure to bloodborne pathogens.

### Fluids that Do Not Spread Bloodborne Pathogens

Some body fluids have no documented risk of transmitting pathogens, including:

- sweat
- saliva
- urine
- feces

Although the risk of contracting a pathogen from these bodily fluids might be low, you may not always be able to tell which fluids you are handling, or whether injury has mixed them with blood.

For example, a severe abdominal injury could cause blood to be present in urine or feces. Therefore, it is best to protect yourself from ALL bodily fluids.

## How Bloodborne Pathogens are Transmitted

Non-occupational bloodborne pathogens are most commonly transmitted through:

- sexual contact; or
- sharing hypodermic needles.

Occupational bloodborne pathogens are most commonly transmitted through:

- puncture wounds from a sharp or contaminated object, such as broken glass; or
- from a splash of blood to the mucous membranes of the eyes, nose, or mouth.

## Protect Yourself from All Bodily Fluids

It's important to remember the Hepatitis B virus can remain infectious outside of the body for up to 7 days. For this reason, it is essential that cleanup and decontamination of contaminated objects and surfaces be performed as soon as possible. This will reduce the risk of indirect contact resulting in a bloodborne exposure incident.

Understanding how bloodborne pathogens are transmitted will help reduce your risk of exposure and infection.

Casual social contact, such as shaking hands, hugging, or sharing a telephone or tool, does not transmit bloodborne pathogens.

Direct contact with blood or other potentially infectious bodily fluid can cause an exposure incident. Indirect contact with a contaminated object, such as a countertop, bedding, or clothing, can also cause an exposure incident.

## Scenario

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Jasmine is a daycare worker taking care of children between the ages of 6 months and 12 years. Kevin is a 3 year old child at the daycare center and has been complaining of a stomachache. Suddenly Kevin begins to vomit unexpectedly. After Kevin's parents have been called to pick him up, Jasmine is asked to clean up the mess.

**Should Jasmine be concerned about bloodborne pathogens?**

**Yes!**

Although vomit is not documented as a risk for transmitting bloodborne pathogens, it is often impossible to determine if there is blood mixed in with the vomit. Even a very small amount of blood has the potential to transmit disease. You should always prevent contact with bodily fluids, regardless of whether blood is visible in the fluids.

---

### Module 3 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

- 1. Trent is an employee for a local ambulance company. As part of his job he is routinely exposed to blood and other bodily fluids. Which of the following could potentially transmit a bloodborne pathogen to Trent?**
  - a. Having blood splashed into his eyes
  - b. Shaking a patient's hand
  - c. Using the telephone at the hospital
  - d. Pushing a wheelchair
  
- 2. Common body fluids which can transmit pathogens include \_\_\_\_\_.**
  - a. blood and cerebral spinal fluid
  - b. sweat and saliva
  - c. semen and vaginal secretions
  - d. both a and c
  
- 3. Some body fluids have NO documented risk of transmitting pathogens, including \_\_\_\_\_.**
  - a. blood and cerebral fluid
  - b. sweat, saliva, urine, and feces
  - c. semen and vaginal secretions
  - d. all of the above
  
- 4. Bloodborne pathogens are commonly transmitted through \_\_\_\_\_.**
  - a. puncture wounds from sharp, contaminated objects
  - b. shaking hands
  - c. hugging
  - d. sharing a telephone

- 5. It is essential that cleanup and decontamination of contaminated objects and surfaces be performed as soon as possible.**
- a. True
  - b. False

## Module 4: The Exposure Control Plan

### The Exposure Control Plan

An employer exposure control plan (ECP) is a requirement of 29 CFR 1910.1030(c) of the Bloodborne Pathogens Standard established by the Occupational Safety and Health Administration (OSHA). The purpose of the ECP is to establish procedures to eliminate or minimize employee exposure to bloodborne pathogens.

Let's take a closer look at a sample ECP.

### Policy

Notice in the sample below, the policy is specific to a facility, not the business. This is because a business with multiple work-sites must have a separate Exposure Control Program for each site.

The policy establishes the required contents of the ECP.

---

### Sample Policy

The (*Your facility name*) is committed to providing a safe and healthful work environment for our entire staff. In pursuit of this goal, the following exposure control plan (ECP) is provided to eliminate or minimize occupational exposure to bloodborne pathogens in accordance with OSHA standard 29 CFR 1910.1030, "Occupational Exposure to Bloodborne Pathogens."

The ECP is a key document to assist our organization in implementing and ensuring compliance with the standard, thereby protecting our employees. This ECP includes:

- Determination of employee exposure
- Implementation of various methods of exposure control, including:
  - Universal precautions
  - Engineering and work practice controls
  - Personal protective equipment
  - Housekeeping
- Hepatitis B vaccination



- Post-exposure evaluation and follow-up
- Communication of hazards to employees and training
- Recordkeeping
- Procedures for evaluating circumstances surrounding exposure incidents

Implementation methods for these elements of the standard are discussed in the subsequent pages of this ECP.

---

### Program Administration

The program administration section of the Exposure Control Plan (ECP) is very important. Within this section of the ECP, the people and/or departments responsible for the various administrative functions are identified.

You must identify the responsible person or department for each key function within the ECP.

The program administrative section determines who will:

- implement the ECP
  - maintain, review, and update the ECP
  - provide PPE and all necessary equipment or materials
  - ensure all medical actions required are performed and OSHA records are maintained
  - ensure training and document the training
  - make available the ECP to employees, OSHA and/or NIOSH representatives
- 

### Sample Program Administration

- *(Name of responsible person or department)* is (are) responsible for implementation of the ECP. *(Name of responsible person or department)* will maintain, review, and update the ECP at least annually, and whenever necessary to include new or modified tasks and procedures. Contact location/phone number: \_\_\_\_\_.

- Those employees who are determined to have occupational exposure to blood or other potentially infectious materials (OPIM) must comply with the procedures and work practices outlined in this ECP.
  - *(Name of responsible person or department)* will provide and maintain all necessary personal protective equipment (PPE), engineering controls (e.g., sharps containers), labels, and red bags as required by the standard. *(Name of responsible person or department)* will ensure that adequate supplies of the aforementioned equipment are available in the appropriate sizes. Contact location/phone number: \_\_\_\_\_.
  - *(Name of responsible person or department)* will be responsible for ensuring that all medical actions required by the standard are performed and that appropriate employee health and OSHA records are maintained. Contact location/phone number: \_\_\_\_\_.
  - *(Name of responsible person or department)* will be responsible for training, documentation of training, and making the written ECP available to employees, OSHA, and NIOSH representatives. Contact location/phone number: \_\_\_\_\_.
- 

### Employee Exposure Determination

One of the key elements of the Exposure Control Plan (ECP) is the employee exposure determination. This section of the plan lists all job classifications at the work-site with occupational exposure to bloodborne pathogens.

As part of your ECP, you will need to list all job classifications for each work-site.

For example, in this section you might identify the job title "Housekeeper" within the department "Facility Maintenance".

Notice that individual names are not used. Occupational exposure is classified by the job or task, not by the individual.

In addition to identifying the job classification and department, the ECP should also identify the procedures, or group of closely related tasks and procedures, in which occupational exposure may occur.

Adding to our previous example, the job title, location, and task would be identified as "Housekeeper / Facility Maintenance / Handling Regulated Waste".

NOTE: Part-time, temporary, contract and per diem employees are covered by the bloodborne pathogens standard. The ECP should describe how the standard will be met for these employees.

### Sample Employee Exposure Determination

The following is a list of all job classifications at our establishment in which all employees have occupational exposure:

Job Title	Department/Location
(Example: Phlebotomists)	(Clinical Lab)

Use as many lines as necessary.

The following is a list of job classifications in which some employees at our establishment have occupational exposure. Included is a list of tasks and procedures, or groups of closely related tasks and procedures, in which occupational exposure may occur for these individuals:

Job Title / Department - Location / Task - Procedure

(Example: Housekeeper / Environmental Services Handling / Regulated Waste)

Use as many lines as necessary.

---

### Methods of Implementation and Control

This section of the Exposure Control Plan (ECP) discusses the methods and controls the organization will use to prevent occupational exposure.

Topics included in this section of the ECP are:

- Exposure Control Plan
- Engineering Controls and Work Practices
- Personal Protective Equipment (PPE)
- Housekeeping
- Laundry

- Labels

---

## Sample Methods of Implementation and Control

- Universal Precautions
- All employees will utilize universal precautions.
- Exposure Control Plan

Employees covered by the bloodborne pathogens standard receive an explanation of this ECP during their initial training session. It will also be reviewed in their annual refresher training. All employees can review this plan at any time during their work shifts by contacting (Name of responsible person or department). If requested, we will provide an employee with a copy of the ECP free of charge and within 15 days of the request.

*(Name of responsible person or department)* is responsible for reviewing and updating the ECP annually or more frequently if necessary to reflect any new or modified tasks and procedures that affect occupational exposure and to reflect new or revised employee positions with occupational exposure.

### *Engineering Controls and Work Practices*

Engineering controls and work practice controls will be used to prevent or minimize exposure to bloodborne pathogens. The specific engineering controls and work practice controls used are listed below:

(For example: non-glass capillary tubes, SESIPs, needleless systems)

Sharps disposal containers are inspected and maintained or replaced by *(Name of responsible person or department)* every *(list frequency)* or whenever necessary to prevent overfilling.

This facility identifies the need for changes in engineering controls and work practices through \_\_\_\_\_ (Examples: Review of OSHA records, employee interviews, committee activities, etc.)

We evaluate new procedures and new products regularly by \_\_\_\_\_ (Describe the process, literature reviewed, supplier info, products considered)

Both front-line workers and management officials are involved in this process in the following manner: \_\_\_\_\_ (Describe employees' involvement)

(*Name of responsible person or department*) is responsible for ensuring that these recommendations are implemented.

### *Personal Protective Equipment (PPE)*

PPE is provided to our employees at no cost to them. Training in the use of the appropriate PPE for specific tasks or procedures is provided by (***Name of responsible person or department***).

The types of PPE available to employees are as follows: \_\_\_\_\_ (gloves, eye protection, etc.)

PPE is located (List location) and may be obtained through (*Name of responsible person or department*). (Specify how employees will obtain PPE and who is responsible for ensuring that PPE is available.)

All employees using PPE must observe the following precautions:

- Wash hands immediately or as soon as feasible after removing gloves or other PPE.
- Remove PPE after it becomes contaminated and before leaving the work area.
- Used PPE may be disposed of in (List appropriate containers for storage, laundering, decontamination, or disposal.)
- Wear appropriate gloves when it is reasonably anticipated that there may be hand contact with blood or OPIM, and when handling or touching contaminated items or surfaces; replace gloves if torn, punctured or contaminated, or if their ability to function as a barrier is compromised.
- Utility gloves may be decontaminated for reuse if their integrity is not compromised; discard utility gloves if they show signs of cracking, peeling, tearing, puncturing, or deterioration.
- Never wash or decontaminate disposable gloves for reuse.
- Wear appropriate face and eye protection when splashes, sprays, spatters, or droplets of blood or OPIM pose a hazard to the eye, nose, or mouth.
- Remove immediately or as soon as feasible any garment contaminated by blood or OPIM, in such a way as to avoid contact with the outer surface.

The procedure for handling used PPE is as follows: \_\_\_\_\_ (may refer to specific procedure by title or number and last date of review; include how and where to decontaminate face shields, eye protection, resuscitation equipment)

### *Housekeeping*

Regulated waste is placed in containers which are closable, constructed to contain all contents and prevent leakage, appropriately labeled or color-coded (see the following section "Labels"), and closed prior to removal to prevent spillage or protrusion of contents during handling.

The procedure for handling sharps disposal containers is: (may refer to specific procedure by title or number and last date of review)

The procedure for handling other regulated waste is: (may refer to specific procedure by title or number and last date of review)

Contaminated sharps are discarded immediately or as soon as possible in containers that are closable, puncture-resistant, leak proof on sides and bottoms, and appropriately labeled or color-coded. Sharps disposal containers are available at (must be easily accessible and as close as feasible to the immediate area where sharps are used).

Bins and pails (e.g., wash or emesis basins) are cleaned and decontaminated as soon as feasible after visible contamination.

Broken glassware that may be contaminated is only picked up using mechanical means, such as a brush and dustpan.

### *Laundry*

The following contaminated articles will be laundered by this company:

Laundering will be performed by (*Name of responsible person or department*) at (*time and/or location*).

The following laundering requirements must be met:

- Handle contaminated laundry as little as possible, with minimal agitation
- Place wet contaminated laundry in leak-proof, labeled or color-coded containers before transport. Use (specify either red bags or bags marked with the biohazard symbol) for this purpose.

- Wear the following PPE when handling and/or sorting contaminated laundry:  
\_\_\_\_\_ (List appropriate PPE).

### Labels

The following labeling methods are used in this facility:

Equipment to be Labeled: \_\_\_\_\_ (Label Type and Size, Color ) (specimens, contaminated laundry, etc.) (red bag, biohazard label)

*(Name of responsible person or department)* is responsible for ensuring that warning labels are affixed or red bags are used as required if regulated waste or contaminated equipment is brought into the facility. Employees are to notify *(Name of responsible person or department)* if they discover regulated waste containers, refrigerators containing blood or OPIM, contaminated equipment, etc., without proper labels.

---

### Hepatitis B Vaccination

This section of the Exposure Control Plan (ECP) establishes your organizations policy regarding hepatitis B (HBV) vaccinations.

Employers must provide HBV vaccinations at no cost to the employee.

Employers are required to provide the HBV vaccination to employees at no cost within 10 days of initial assignment.

It is important to note that "employers" includes both for-profit and non-profits organizations. Volunteers are considered employees for the purpose of the Bloodborne Pathogens standard. Also, if a school, requires students to perform tasks which exposes them to bloodborne pathogens, the school may be required to provide the HBV vaccination at no cost to the student.

Vaccination is encouraged unless:

1. Documentation exists that the employee has previously received the series
2. Antibody testing reveals that the employee is immune
3. Medical evaluation shows that vaccination is contraindicated

Employees can decline the vaccination. If they do, the employee must sign a declination form. Employees who decline the vaccination may request and obtain the vaccination at a later date at no cost.

---

### Sample Hepatitis B Vaccination

**(Name of responsible person or department)** will provide training to employees on hepatitis B vaccinations, addressing safety, benefits, efficacy, methods of administration, and availability.

The hepatitis B vaccination series is available at no cost after initial employee training and within 10 days of initial assignment to all employees identified in the exposure determination section of this plan. Vaccination is encouraged unless: 1) documentation exists that the employee has previously received the series; 2) antibody testing reveals that the employee is immune; or 3) medical evaluation shows that vaccination is contraindicated.

However, if an employee declines the vaccination, the employee must sign a declination form. Employees who decline may request and obtain the vaccination at a later date at no cost. Documentation of refusal of the vaccination is kept at (List location).

Vaccination will be provided by (List health care professional responsible for this part of the plan) at (location).

Following the medical evaluation, a copy of the health care professional's written opinion will be obtained and provided to the employee within 15 days of the completion of the evaluation. It will be limited to whether the employee requires the hepatitis vaccine and whether the vaccine was administered.

---

### Post-Exposure Evaluation and Follow-Up

OSHA expects employers to have a plan in place in the event an employee does have an occupational exposure.

This section of the Exposure Control Plan (ECP) must identify the person responsible for post-exposure follow-up.

Additionally, this section of the ECP must provide the post-exposure steps to be taken in the event of an occupational exposure. Remember, employees must be able to access the ECP for their personal review, even if an exposure has not occurred.



### Sample Post-Exposure Evaluation and Follow-Up

Should an exposure incident occur, contact (*Name of responsible person*) at the following number \_\_\_\_\_.

An immediately available confidential medical evaluation and follow-up will be conducted by (*name of licensed health care professional*).

Following initial first aid (clean the wound, flush eyes or other mucous membrane, etc.), the following activities will be performed:

- Document the routes of exposure and how the exposure occurred.
- Identify and document the source individual (unless the employer can establish that identification is infeasible or prohibited by state or local law).
- Obtain consent and make arrangements to have the source individual tested as soon as possible to determine HIV, HCV, and HBV infectivity; document that the source individual's test results were conveyed to the employee's health care provider.
- If the source individual is already known to be HIV, HCV and/or HBV positive, new testing need not be performed.
- Assure that the exposed employee is provided with the source individual's test results and with information about applicable disclosure laws and regulations concerning the identity and infectious status of the source individual (e.g., laws protecting confidentiality).
- After obtaining consent, collect exposed employee's blood as soon as feasible after exposure incident, and test blood for HBV and HIV serological status
- If the employee does not give consent for HIV serological testing during collection of blood for baseline testing, preserve the baseline blood sample for at least 90 days; if the exposed employee elects to have the baseline sample tested during this waiting period, perform testing as soon as feasible.

## Administration of Post-Exposure Evaluation and Follow-Up

This section of the Exposure Control Plan (ECP) identifies the person or department responsible for ensuring the post-exposure evaluation and follow-up are performed.

After the post-exposure evaluation is completed, the employee must be provided a copy of the health care professional's written opinion within 15 days after the evaluation is completed.

---

### Sample Administration of Post-Exposure Evaluation and Follow-Up

*(Name of responsible person or department)* ensures that health care professional(s) responsible for employee's hepatitis B vaccination and post-exposure evaluation and follow-up are given a copy of OSHA's bloodborne pathogens standard.

*(Name of responsible person or department)* ensures that the health care professional evaluating an employee after an exposure incident receives the following:

- A description of the employee's job duties relevant to the exposure incident
- Route(s) of exposure
- Circumstances of exposure
- If possible, results of the source individual's blood test
- Relevant employee medical records, including vaccination status

*(Name of responsible person or department)* provides the employee with a copy of the evaluating health care professional's written opinion within 15 days after completion of the evaluation.

---

### Procedures for Evaluating the Circumstances Surrounding an Exposure Incident

This section of the Exposure Control Plan (ECP) identifies who is responsible for evaluating an exposure incident. In addition, it should list what will be included as part of the evaluation process.

One important piece to this section is the recording of percutaneous injuries from contaminated sharps in a Sharps Injury Log. If your company is not required to maintain a

Sharps Injury Log, then this can be excluded. The Sharps Injury Log is discussed further in course [708 OSHA Recordkeeping, Module 4](#).

---

### Sample Procedures for Evaluating the Circumstances Surrounding an Exposure Incident

(*Name of responsible person or department*) will review the circumstances of all exposure incidents to determine:

- Engineering controls in use at the time
- Work practices followed
- A description of the device being used (including type and brand)
- Protective equipment or clothing that was used at the time of the exposure incident (gloves, eye shields, etc.)
- Location of the incident (O.R., E.R., patient room, etc.)
- Procedure being performed when the incident occurred
- Employee's training

(*Name of Responsible Person*) will record all percutaneous injuries from contaminated sharps in a Sharps Injury Log.

If revisions to this ECP are necessary (Responsible person or department) will ensure that appropriate changes are made. (Changes may include an evaluation of safer devices, adding employees to the exposure determination list, etc.)

---

### Employee Training

Not providing training is one of the most common reasons for receiving an OSHA citation.

All employees who have been identified as having occupational exposure must receive initial and annual Bloodborne Pathogens training. Remember, you should have already identified all of the job classifications previously in your Exposure Control Plan.

Some companies put all of their employees through this training, regardless of their job classification, especially if an employee's job classification can change. This can potentially save in training costs, by reducing the number of separate trainings that might need to be offered. For example, primary and secondary teachers are often given this training at the beginning of each school year.

Computer based training (CBT) can be used to provide this training if all of the criteria below are met. It is important to note that hands on training for personal protective equipment (PPE) will be required for bloodborne pathogens training. Employees must be able to practice putting on and taking off the PPE, as well as being instructed in its proper use.

---

### Sample Employee Training

All employees who have occupational exposure to bloodborne pathogens receive initial and annual training conducted by *(Name of responsible person or department)*. *(Attach a brief description of their qualifications.)*

All employees who have occupational exposure to bloodborne pathogens receive training on the epidemiology, symptoms, and transmission of bloodborne pathogen diseases. In addition, the training program covers, at a minimum, the following elements:

- A copy and explanation of the OSHA bloodborne pathogen standard
- An explanation of our ECP and how to obtain a copy
- An explanation of methods to recognize tasks and other activities that may involve exposure to blood and OPIM, including what constitutes an exposure incident
- An explanation of the use and limitations of engineering controls, work practices, and PPE
- An explanation of the types, uses, location, removal, handling, decontamination, and disposal of PPE
- An explanation of the basis for PPE selection
- Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine will be offered free of charge

- Information on the appropriate actions to take and persons to contact in an emergency involving blood or OPIM
- An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available
- Information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident
- An explanation of the signs and labels and/or color coding required by the standard and used at this facility
- An opportunity for interactive questions and answers with the person conducting the training session.

Training materials for this facility are available at *(name location)*.

---

### Recordkeeping

This section of the Exposure Control Plan (ECP) details what training records must be maintained in relation to:

- Training
- Medical Records
- OSHA Recordkeeping
- Sharps Injury Log

These documents must be maintained for at least three (3) years.

Additionally, an employee or their authorized representative may request a copy of the employee's exposure and medical records.

## Sample Recordkeeping

Training Records Training records are completed for each employee upon completion of training. These documents will be kept for at least three years at *(Location of records)*.

The training records include:

- the dates of the training sessions
- the contents or a summary of the training sessions
- the names and qualifications of persons conducting the training
- the names and job titles of all persons attending the training sessions

Employee training records are provided upon request to the employee or the employee's authorized representative within 15 working days. Such requests should be addressed to *(Name of responsible person or department)*.

## Medical Records

Medical records are maintained for each employee with occupational exposure in accordance with 29 CFR 1910.1020, "Access to Employee Exposure and Medical Records."

*(Name of responsible person or department)* is responsible for maintenance of the required medical records. These confidential records are kept in *(List location)* for at least the duration of employment plus 30 years.

Employee medical records are provided upon request of the employee or to anyone having written consent of the employee within 15 working days. Such requests should be sent to *(Name of responsible person or department and address)*.

## OSHA Recordkeeping

An exposure incident is evaluated to determine if the case meets OSHA's Recordkeeping Requirements (29 CFR 1904). This determination and the recording activities are done by *(Name of responsible person or department)*.

### *Sharps Injury Log*

In addition to the 1904 Recordkeeping Requirements, all percutaneous injuries from contaminated sharps are also recorded in a Sharps Injury Log. All incidences must include at least:

- Date of the injury
- Type and brand of the device involved (syringe, suture needle)
- Department or work area where the incident occurred
- Explanation of how the incident occurred.

This log is reviewed as part of the annual program evaluation and maintained for at least five years following the end of the calendar year covered. If a copy is requested by anyone, it must have any personal identifiers removed from the report.

---

### **Hepatitis B Vaccine Declination (Mandatory)**

The hepatitis B vaccine declination statement is used if an employee declines the vaccination. This must be signed by the employee and kept of file as part of the employee's records.

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### **Sample Hepatitis B Vaccine Declination (Mandatory)**

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

Signed: (Employee Name) \_\_\_\_\_ Date: \_\_\_\_\_

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### **Model Exposure Control Plan**

Here is a model Exposure Control Plan based on the samples provided throughout this module. You can use this to help you create your own companies ECP.

[Model Exposure Control Plan](#) (Word 97 format)



## Module 4 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

- 1. An exposure control plan must: \_\_\_\_\_.**
  - a. be unique to each location or job site
  - b. define the employees covered by the Bloodborne Pathogens Standard
  - c. provide procedures for investigating and evaluating an exposure
  - d. all of the above
  
- 2. The purpose of the Exposure Control Plan (ECP) is: \_\_\_\_\_.**
  - a. to establish procedures to create or increase employee exposure to bloodborne pathogens
  - b. to help employees after they've been exposed to blood borne pathogens
  - c. to establish procedures to eliminate or minimize employee exposure to bloodborne pathogens
  - d. to reduce the employers legal liability after an employee is exposed to blood borne pathogens
  
- 3. The following is a component of an Exposure Control Plan (ECP): \_\_\_\_\_.**
  - a. the release of potentially infectious materials
  - b. personal protective equipment (PPE)
  - c. monetary controls
  - d. purchasing controls
  
- 4. Employees must have access to their employer's exposure control plan (ECP).**
  - a. True
  - b. False

- 5. When must an Exposure Control Plan (ECP) be reviewed and updated?**
- a. Semi-annually and when alterations in procedures create the possibility of fewer occupational exposures.
  - b. Annually or when alterations in procedures create the possibility of new occupational exposures.
  - c. Every two years
  - d. Every four years
- 6. OSHA expects employers to have a plan in place in the event an employee does have an occupational exposure.**
- a. True
  - b. False
- 7. After the post-exposure evaluation is completed, the employee must be provided a copy of the health care professional's written opinion within \_\_\_\_\_ days after the evaluation is completed.**
- a. 5
  - b. 10
  - c. 15
  - d. 30
- 8. An employee or their authorized representative may request a copy of the employee's exposure and medical records.**
- a. True
  - b. False
- 9. Employers are required to provide the HBV vaccination to employees at no cost within 30 days of initial assignment.**
- a. True
  - b. False

## Module 5: Recognize the Potential for Exposure

### Employer Responsibilities to Identify Jobs at Risk

Employers must identify job classifications in which employees have occupational exposure, as well as the associated tasks and procedures in which there is a potential of exposure to blood or other infectious materials. Employers must review job classifications annually to ensure proper procedures and training is established.

### What jobs are most at risk of exposure?

Occupations with a likely chance of occupational exposure include:

- first aid providers
- teachers
- daycare workers
- housekeepers
- lab workers
- firefighters
- Emergency Medical Technicians (EMTs) and paramedics
- law enforcement agents
- medical and dental personnel

An employer must review every job classification and make a determination of the potential occupational exposure for that position. Failure to properly identify potential occupational exposure can result in warnings or fines issued by OSHA.

If an occupational exposure does occur, it is important for you to follow the employer's written procedures for handling medical self-care and evaluation, as well as documenting the circumstances of the exposure.

## Scenario

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Maria is an employee for a local hospital and works in their housekeeping department.

**Is it Maria's responsibility to know what her occupational exposure is?**

**No.**

It is the employer's responsibility to ensure each employee is properly trained and understands their potential occupational exposure. Further, the employer is responsible for documenting the training and maintaining all associated records. Maria has the responsibility to follow the established procedures identified in her employer's exposure control plan and ask questions if needed.

It is important to know if your job classification puts you at risk for occupational exposure. If your job classification does put you at risk, be aware that specific tasks or procedures in your job may still have the potential for exposure.

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## Module 5 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

- 1. Sarah has just been assigned new job responsibilities after receiving a promotion at work. Where should Sarah look to determine if her new responsibilities create an occupational exposure to bloodborne pathogens?**
  - a. Exposure control plan
  - b. Job applications
  - c. Standard operating procedure
  - d. Employee handbook
  
- 2. How often must employers review job classifications to ensure proper procedures and training are established?**
  - a. Every two years
  - b. Whenever the employer feels like it
  - c. Semi-annually
  - d. Annually
  
- 3. Occupations with a likely chance of occupational exposure include \_\_\_\_\_.**
  - a. first aid providers, teachers, and daycare workers
  - b. housekeepers, lab workers, and fire fighters
  - c. EMT's/paramedics, law enforcement agents, and medical/dental personnel
  - d. all of the above
  
- 4. An employer must review every job classification and make a determination of the potential occupational exposure for that position.**
  - a. True
  - b. False

**5. Failure of an employer to properly identify potential occupational exposure can result in warnings or fines issued by OSHA.**

- a. True
- b. False

## Module 6: Exposure Control Methods

### Methods to Control the Risk of Exposure

The recommended infection-control concept called "Universal Precautions" advocates everyone's blood and body fluids be considered potentially infectious. This eliminates the difficulty in determining risk individually. Remember, although some bodily fluids have not been documented to transmit pathogens, it is sometimes impossible to tell if blood or another potentially infectious fluid is present.

The two essential control strategies employees use to eliminate or minimize the transmission of bloodborne diseases in the workplace are:

- engineering controls, and
- work practice controls.

### Engineering Controls

Engineering controls minimize exposure in the workplace either by removing or isolating the hazard, such as providing a sharps container for needles, splash guards, and mechanical pipetting devices.

**Engineering controls is all about the equipment used to minimize exposure.**

- The Sharps container for needles is a good example of an engineering control.
- Employers will examine and maintain or replace engineering controls on a regularly scheduled basis.

### Work Practice Controls

Work practice controls focus on the manner in which tasks are performed. For example, using disposable gloves when performing emergency care is considered a work practice control. Another example of work practice controls is to perform all actions involving potentially infectious material in such a way as to minimize splattering, splashing, and spraying. Proper handling and disposal of needles or sharps, contaminated bandages, gauze, or linens is also essential.

Work practice controls are all about how tasks are performed to minimize exposure.

Safe work practices include eliminating eating, drinking, smoking, applying make-up or lip balm, or handling contact lenses in locations with potentially infectious material. In healthcare facilities, employees are prohibited from wearing artificial nails. Food and drink must not be kept in a refrigerator, freezer, shelf, or in the general area of where blood or other potentially infectious material are kept.

### **Wash your hands!**

Hand washing after an exposure can reduce your risk of infection.

Your employer must provide readily accessible hand-washing facilities or antiseptic hand cleanser or wipes if hand-washing facilities are not available.

Perform hand washing immediately after any exposure, even if you were wearing gloves. Vigorous scrubbing with soap or alcohol-based foam or gel and warm water is considered the most effective technique. This will further reduce your risk of infection resulting from an exposure.

### **Prohibited Practices**

Practices that are completely prohibited in the workplace include: bending, recapping, and removing contaminated needles, shearing or breaking needles, and mouth pipetting or suctioning of potentially infectious material.

These practices significantly increase the risk of exposure. As a result, they should never be performed by employees.

Antiseptic hand cleaner in conjunction with clean cloth/paper towels or antiseptic towelettes are examples of acceptable alternatives to running water.

However, when these types of alternatives are used, employees must wash their hands (or other affected areas) with soap and running water as soon as feasible.

This alternative would only be acceptable at worksites where soap and running water are not feasible.



## Scenario

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Dr. Kramer owns and operates a small dental clinic in San Francisco, CA. As part of her exposure control plan, she requires her employees to wash their hands before and after working with any patients. She also requires new gloves be used with every patient.

**Is this an example of engineering controls or work practice controls?**

### Work practice controls

Dr. Kramer is requiring her employees to do something to reduce the risk of occupational exposure. Work practice controls focus on the actions taken to minimize exposure.

---

## Module 6 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

- 1. The recommended infection-control concept called "Universal Precautions" advocates everyone's blood and body fluids be considered \_\_\_\_\_.**
  - a. potentially non-infectious
  - b. not harmful
  - c. not infectious
  - d. potentially infectious
  
- 2. The two essential control strategies employees use to eliminate or minimize the transmission of bloodborne diseases in the workplace are \_\_\_\_\_.**
  - a. elimination and administrative controls
  - b. substitution and elimination controls
  - c. administrative and substitution controls
  - d. engineering and work practice controls
  
- 3. Which of the following are work practice controls?**
  - a. Adding a sharps container to the bathroom
  - b. Using disposable gloves when performing emergency care
  - c. Adding a splash guard into an operating room
  - d. Both a and c
  
- 4. After an exposure, you should immediately \_\_\_\_\_ and \_\_\_\_\_.**
  - a. wash your hands, report to your supervisor
  - b. flush your eyes, go to the doctor
  - c. go home, report to your supervisor
  - d. use eyedrops, get medical attention

- 5. When exposed to bloodborne pathogens, antiseptic hand cleaner in conjunction with clean cloth/paper towels is only an acceptable alternative to washing your hands when soap and running water are not feasible.**
- a. True
  - b. False

## Module 7: Personal Protective Equipment

### Using Personal Protective Equipment (PPE)

Personal Protective Equipment (PPE) is specialized clothing or equipment that protects you from exposure to blood or other potentially infectious material.

Personal protective equipment is designed to keep blood and other potentially infectious material away from your skin, eyes, and mouth

Examples of PPE include: disposable gloves, gowns, laboratory coats, protective face shields, resuscitation masks or shields, and mouth pieces. Any equipment necessary to prevent exposure to blood or other potentially infectious material is considered PPE.

### Effective PPE

Effective personal protective equipment must not allow potentially infectious materials to pass through or reach your skin, eyes, mouth, or clothes under normal conditions of use.

General work clothes, such as uniforms, pants, shirts, or blouses, which are not intended to function as a protective barrier against hazards, are not considered to be PPE.

### Employer Responsibilities

An employer must ensure employees use appropriate personal protective equipment.

Your employer must make PPE available to you in the appropriate size and at no cost. Non-latex alternatives will also be made available to employees who have allergic sensitivity to latex. Employers must also properly clean, launder, repair, replace, or dispose of contaminated PPE as needed at no cost to the employee.

Employees should never take contaminated clothing home to be washed. This can increase the chance of accidental exposure to themselves and their family.

### Disposable Gloves

Disposable gloves should be a standard component of emergency response and first aid equipment and should be worn by anyone initiating emergency care.

It is best to always wear disposable gloves when providing first aid care.

- Replace your gloves as soon as possible if they are torn, punctured, contaminated, or if their ability to function as a barrier is compromised.

- Remove contaminated gloves by turning them inside out. Be careful to prevent any splashing or spraying of potentially infectious material.
- You should always wash your hands after removing your gloves, even if you don't think they were contaminated.

### Face Shields

Wear face shields when splashes, sprays, spatters, or droplets of infectious material pose a hazard to your eyes, nose, or mouth. It is always better to be prepared and wear a face shield if there is any chance of potential exposure to your eyes, nose, or mouth.

### Pocket CPR Mask and Gloves

Use a disposable ventilation mask or shield with a one-way valve to prevent an exposure when performing rescue ventilations during CPR. It is common for patients to vomit during CPR due to excess air in the stomach.

Place contaminated protective equipment in appropriately designed areas or containers for cleaning or disposal. These areas or containers should be properly labeled and identified in your employer's exposure control plan.

### Scenario

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Sarah is a medical laboratory technician. As part of her job duties she analyzes blood and body fluid samples. Sarah was recently reprimanded for not wearing disposable gloves to perform her work duties. She tells her supervisor the gloves make it hard for her to handle the collection containers and that she would like to not be required to wear gloves.

#### **What should Sarah's supervisor tell her?**

Sarah's supervisor must tell her the use of personal protective equipment is not optional. She must wear the gloves. The supervisor should also ask Sarah if the gloves are the correct size and fit for her hands. If the gloves are not the correct size, then this issue must be resolved as well. Only under very rare circumstances can an employee decline the use of personal protective equipment.

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## Module 7 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

- 1. Is it acceptable for an employee to take contaminated clothing home to be washed?**
  - a. Yes
  - b. No
  - c. Maybe
  
- 2. All of these are examples of personal protective equipment, EXCEPT \_\_\_\_\_.**
  - a. disposable gloves
  - b. laboratory coat
  - c. thermometer
  - d. safety glasses
  
- 3. When performing CPR, it is always best to \_\_\_\_\_.**
  - a. wear disposable gloves
  - b. use a ventilation mask or shield with a one-way valve
  - c. be prepared for the patient to vomit
  - d. all of the above
  
- 4. Remove contaminated gloves by \_\_\_\_\_.**
  - a. cutting them off
  - b. ripping them off
  - c. turning them inside out
  - d. pulling them off and spraying infectious material across the room
  
- 5. Place contaminated protective equipment in \_\_\_\_\_.**
  - a. a garbage bag laying on the floor
  - b. a stainless steel garbage can with no garbage bag
  - c. appropriately designed areas or containers for cleaning or disposal
  - d. a plastic basket labeled "reuse"

## Module 8: Hepatitis B (HBV) Immunization

### Getting vaccinated

The best way to prevent Hepatitis B is by getting vaccinated.

The Hepatitis B vaccine is considered one of the safest and most effective vaccines ever made. Numerous studies looking at the vaccine's safety have been conducted by the Centers for Disease Control and World Health Organization.

Your employer must offer you a Hepatitis B vaccination series if you have a risk of occupational exposure to blood or other potentially infectious materials. Your employer must pay for the cost of the vaccination series. You must be offered the vaccination before you undertake tasks that expose you to potentially infectious materials, and at a reasonable time and location.

### Three shots!

The Hepatitis B vaccine is very effective in protecting against the Hepatitis B virus. It is given in a series of three shots.

According to the [CDC](#), after receiving all three doses, Hepatitis B vaccine provides greater than 90% protection to infants, children, and adults immunized before being exposed to the virus. The entire series of shots is required to provide full immunity. The vaccine is safe with very few adverse reactions.

**Typical Vaccination Schedule:** The first injection can be administered at any given time. The second injection must be given at least one month after the first, and the third injection must be given six months after the first.

A licensed physician or other healthcare professional will perform or supervise the vaccinations.

Your employer does not have to offer you the vaccination series if you have previously received the complete series or have tested as immune to HBV.

You can decline the vaccination for Hepatitis B after being informed of the risks and benefits.

To do this, you must sign a declination form. If you initially decline the vaccination for Hepatitis B, you can later request it from your employer at no charge.

There are currently two vaccines used to prevent Hepatitis B infection in the United States. Neither vaccine contains blood products. You cannot get Hepatitis B from these vaccines.

## Scenario

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Tony has just been accepted to a local paramedic training program. Before beginning the program, the school requires students to receive the Hepatitis B vaccination and pay for it themselves.

**Is the school required to pay for the vaccination?**

**No.**

Typically only employers are required to pay for the Hepatitis B vaccination series. Post-secondary schools can require the vaccination series as an admissions requirement, and require the applicant to pay for the cost. There have been instances where public school districts (K-12) have been required to pay for the vaccination series if there is a potential for the student to be exposed to bloodborne pathogens as part of their coursework.

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## Module 8 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

- 1. Kristina has just been hired for a position which is classified as having occupational exposure. Kristina's employer offers to pay for the Hepatitis B vaccination series. Can Kristina decline the vaccination series?**
  - a. Yes
  - b. No
  - c. Maybe
  
- 2. How many shots are required for the Hepatitis B immunization series?**
  - a. One
  - b. Two
  - c. Three
  - d. Four
  
- 3. The Hepatitis B vaccine is considered one of the safest and most effective vaccines ever made.**
  - a. True
  - b. False
  
- 4. Your employer does not have to offer you the vaccination series if \_\_\_\_\_.**
  - a. you have previously received the complete series or have tested as immune to HBV
  - b. you have tested immune to HCV
  - c. you have tested immune to HIV
  - d. you have previously received one shot of the vaccination series
  
- 5. You cannot get Hepatitis B from either of the Hepatitis B vaccines that are available.**
  - a. True
  - b. False

## **Module 9: When an Exposure Occurs**

### **What to do When You are Exposed**

When an exposure occurs, immediate self-care is the highest priority. Flush potentially contaminated materials from the mucous membranes of the eyes, nose, and mouth with large amounts of running water.

Allow a puncture wound from a potentially contaminated sharp object to bleed. Wash the wound with soap and water.

Wash potentially contaminated material off your skin with soap and water as quickly as possible after an exposure. Washing is especially important when you have cuts, rashes, or scrapes on your skin.

When available, use a face and eye wash station to flush the eyes, nose, or mouth if they are exposed to blood or bodily fluids.

### **What do you do next?**

After self-care, report the exposure incident without delay. This allows for timely testing of the source individual and, if necessary, the employee.

You will be directed to a healthcare professional for medical evaluation as soon as possible after receiving the source individual's test results. The evaluation will document the route of exposure and how the exposure occurred. There is no cost to you for this evaluation.

### **Post-Exposure Therapy**

If you are exposed to HIV-infected blood, most medical facilities offer short-term therapy called Post-Exposure Prophylaxis (PEP). This therapy must begin as soon as possible after the exposure. PEP can reduce the risk of getting HIV by as much as 80 percent.

The evaluation will also include counseling and education regarding the testing process and the ramifications of the exposure. This includes sexual practices information for the six month post-exposure evaluation period.

The result of testing is confidential and will be reported only to you and your company's exposure control plan. No other person will be notified of the results.

## Scenario

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Patrick is a nurse working in the emergency department of the local hospital. During one of his shifts he is accidentally jabbed by a used needle. The needle punctures his skin and draws blood.

**What should Patrick do?**

**Immediate self-care is Patrick's first priority.**

He needs to allow the puncture wound to bleed, hopefully flushing any contaminants out of his body. Next, he should wash the affected area thoroughly with soap and water.

Next, Patrick needs to report the incident to his direct supervisor so a injury report can be completed. Patrick will then be seen by a health care professional to determine the best course of treatment for him. Sometimes it is possible to test for various diseases if the exposure source can be identified. This is not always possible.

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## Module 9 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

- 1. While providing first aid treatment to a fellow employee, Maria had blood sprayed into her eyes. What should Maria do first?**
  - a. Provide immediate self-care
  - b. Report the incident to her supervisor
  - c. Go to a hospital
  - d. Continue working
  
- 2. If your eyes, nose, or mouth are exposed to blood or bodily fluids you should \_\_\_\_\_.**
  - a. use a washcloth to wipe your face off
  - b. flush the eyes, nose, and mouth with large amounts of running water
  - c. take a shower within 24 hours of exposure
  - d. apply baking soda to the eyes, nose, and mouth to absorb any contaminated materials from the mucus membranes
  
- 3. If you have potentially contaminated material on your skin the first thing you should do is \_\_\_\_\_.**
  - a. lay down and elevate the contaminated area
  - b. seek medical attention
  - c. apply ice
  - d. wash with soap and water as quickly as possible
  
- 4. You are exposed to contaminated material and finish immediate self-care. What do you do next?**
  - a. Go home and try to forget about the exposure
  - b. Catch a movie to take your mind off of the exposure
  - c. Report the exposure incident without delay
  - d. You write about the exposure incident in your personal journal

**5. If you are exposed to HIV-infected blood, most medical facilities offer short-term therapy called Post-Exposure Prophylaxis (PEP).**

- a. True
- b. False

## Module 10: Housekeeping

### What is housekeeping?

"Housekeeping" refers to ensuring a worksite is maintained in a clean and sanitary condition.

An employer must implement an appropriate written schedule for cleaning, and determine the best method to decontaminate each location within a facility.

There are four types of regulated waste that require special handling:

1. Liquid or semi-liquid blood or potentially infectious materials
2. Contaminated items that could release potentially infectious material in a liquid or semi-liquid state
3. Items caked (solid or dry) with potentially infectious materials that are capable of releasing these materials during handling
4. Contaminated sharp objects

### Potentially Biohazardous Waste

It is of the utmost importance that infectious waste be safely contained.

- Infectious waste should be placed in specially designed containers constructed to contain the contents.
- The containers need to be leak-proof, labeled or color coded, and closed prior to removal to prevent spills.
- If a container is leaking, place it in a secondary leak-proof container.

### Contaminated Laundry

"Contaminated laundry" refers to laundry that is soiled with potential infectious material or that may contain sharp objects, such as needles.

When working with contaminated laundry, the following guidelines should be followed:

- Contaminated laundry should be handled as little as possible.

- Wear gloves when handling contaminated laundry, and place it in labeled, leak-proof bags or containers before transporting it.
- Never take contaminated protective clothing home for laundering, even if it is personal clothing.
- Pick up potentially contaminated broken glassware using mechanical means only, such as tongs, forceps, or brush and dustpan.
- Never use your hands, even if you are wearing gloves.

Contaminated items should not be stored or processed in a way that requires you to reach into containers.

Work practice controls should be established to prevent you from reaching into a container to remove potentially contaminated items, such as glassware or needles.

All equipment and work surfaces that could become contaminated should be cleaned and decontaminated routinely using an appropriate disinfectant while wearing PPE.

All pails, bins, and similar reusable receptacles should be decontaminated on a regular basis and as soon as possible after visible contamination is noticed.

### Scenario

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Kevin is a custodial engineer for a local middle school. As part of his job duties, he is required to clean the health room daily. It is common for students to have minor injuries or ailments, such as nose bleeds or a skinned knee, during the school day.

#### **What housekeeping issues does Kevin face?**

It is important all contaminated materials, such as bloody gauze, is contained, labeled, and disposed of properly. Kevin should wear PPE, such as gloves, when performing this task. Kevin should decontaminate the health room surfaces daily using an approved method and appropriate disinfectant. If visible blood or body fluids are present on a surface, the fluid should be cleaned and the surface decontaminated immediately.

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## Module 10 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

- 1. Is it acceptable for an employee to take contaminated clothing home to be washed?**
  - a. Yes
  - b. No
  - c. Maybe
  
- 2. One of the four types of regulated waste that requires special handling is \_\_\_\_\_.**
  - a. water with a concentration of bleach that is 5% or greater
  - b. liquid or semi-liquid blood or potentially infectious materials
  - c. cigarette butts
  - d. food wrappers or cups that have been used by persons with HIV
  
- 3. In regards to bloodborne pathogens and contaminated materials, what is "housekeeping"?**
  - a. An employer managing their financial books appropriately.
  - b. When an employer lays off employees that cause trouble, especially employees that expose themselves to bloodborne pathogens.
  - c. Employees cleaning and maintaining their own homes.
  - d. An employer ensuring a worksite is maintained in a clean and sanitary condition.
  
- 4. Infectious waste should be \_\_\_\_\_.**
  - a. placed in specially designed containers constructed to contain the contents
  - b. placed in any available garbage can
  - c. thrown out with all of the other garbage
  - d. both b and c



5. Pick up potentially contaminated broken glassware using \_\_\_\_\_.
- a. your bare hands
  - b. mechanical means only, such as tongs, forceps, or brush and dustpan
  - c. your hands while wearing gloves
  - d. both a and c

## **Module 11: Communicating a Hazard in the Workplace**

### **Primary methods of communicating: Signs and Labels**

Signs and labels that alert you to the presence of potentially infectious material and the risk of exposure are vital to a workplace with occupational exposure to potentially infectious materials.

Be sure you are aware of and abide by all signs and labels signaling hazards and hazardous material.

Signs should have a fluorescent orange or orange-red background with a black "biohazard" symbol in the foreground.

Labels must contain the biohazard symbol and must have the word "Biohazard" written on them.

A biohazard label or sign should be attached to each object or container of contaminated material by string, wire, adhesive, or another method that prevents loss or unintentional removal of the label or sign.

When red bags or containers with the biohazard symbol on them are used, a sign or label is not necessary.

Also, when medical laboratory personnel are drawing and testing blood samples, the individual containers housing potentially infectious materials do not need to be labeled.

Properly indicating contaminated material using labels and signs will greatly reduce the risk of accidental exposure to the contaminated material. It is important to maintain appropriate container labeling at all times.

Annual training must be conducted for all employees with occupational exposure.

### **Information and Training**

All employees (including part-time and temporary employees) with occupational exposure in the organization should participate in a training program that is provided at no cost during working hours. The training materials used should be appropriate in content and vocabulary to the educational and literacy levels and are conveyed in the language of the employees.

The training materials should clearly state the objectives of the training. Trainers should be knowledgeable in the subject matter covered by the training program as it relates to the workplace. All employees should have an opportunity for interactive questions and answers with the person(s) conducting the training. If computer or online training is used, it should provide an opportunity for a person knowledgeable about the training material to be available to answer questions.

### **Training Program Elements**

The Bloodborne Pathogens training program should include information and explanations of at least the following:

- Epidemiology, symptoms, and modes of transmission of bloodborne diseases
- the Exposure control plan that has been implemented and how to obtain a copy of the written plan
- Appropriate methods for recognizing tasks and activities that may involve exposure to blood or OPIM
- Use and limitations of methods that will prevent or reduce exposures, including appropriate engineering, administrative or work practice controls, and personal protective equipment (PPE) Information and Training
- The basis for selection of PPE
- Types, proper use, location, removal, handling, decontamination, and disposal of PPE
- Hepatitis B vaccination series, including its efficacy, safety, method of administration, benefits, and the fact that the vaccination will be offered to employees free of charge
- Appropriate actions to take and persons to contact in an emergency involving blood or OPIM
- Procedure to follow if an exposure incident occurs, including the:
  - Method of reporting the incident
  - Medical follow-up that will be made available
  - Procedure for recording the incident in the sharps injury log
  - Post-exposure evaluation and follow-up that will be made available to employees
- Signs, labels, and/or color codings that are used

### **Frequency of Training**

Training should be provided at the time of employees' initial assignment (to tasks in which occupational exposure may occur) and at least annually thereafter (i.e., within one year of their previous training).

Additional training, limited to addressing the new exposures created, is provided to the employee whose occupational exposure is affected by:

- Introduction of new engineering, administrative, or work practice controls
- Changes or modifications in existing tasks or procedures
- Institution of new tasks or procedures

## Scenario

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Jennifer works for a computer parts manufacturer. One of her job duties is to perform housekeeping tasks for her section of the warehouse. During her last shift an employee was injured and required first aid treatment, producing contaminated clothing and personal protective equipment. This contaminated material needs to be labeled and disposed of.

### **How should Jennifer dispose of this contaminated material?**

Jennifer needs to use appropriate personal protective equipment while working with the contaminated materials.

She must also place the contaminated material in a leak-proof bag that is labeled with the symbol and word "Biohazard".

Jennifer should then dispose of the bag based on her employer's exposure control plan.

*What's missing on the bag of contaminated clothing to the right?*

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## Module 11 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

1. **Signs should have a \_\_\_\_\_.**
  - a. fluorescent yellow background with a black "lightning bolt" symbol in the foreground
  - b. fluorescent red background with a black "radioactivity" symbol in the foreground
  - c. fluorescent orange or orange-red background with a black "biohazard" symbol in the foreground
  - d. red background with a black "skull" symbol in the foreground
  
2. **A biohazard label or sign should \_\_\_\_\_.**
  - a. be attached to each object or container of contaminated material
  - b. be posted, at eye level, at the entrance of any room that contains biohazard material
  - c. not be necessary if the biohazard container is made of a clear material and has no indicators that contaminated material is inside
  - d. contain the contaminated materials symbol and the words "contaminated materials" written on it
  
3. **All employees (including part-time and temporary employees) with occupational exposure in the organization should participate in a training program that is provided at no cost during working hours.**
  - a. True
  - b. False
  
4. **The Bloodborne Pathogens training program should include \_\_\_\_\_.**
  - a. the Exposure Control Plan that has been implemented and how to obtain a copy of the written plan
  - b. appropriate methods for recognizing tasks and activities that may involve exposure to blood or OPIM
  - c. types, proper use, location, removal, handling, decontamination, and disposal of PPE
  - d. all of the above

- 5. Training should be provided at the time of employees' initial assignment (to tasks in which occupational exposure may occur) and at least \_\_\_\_\_.**
- a. semi-annually thereafter (i.e., within six months of their previous training)
  - b. annually thereafter (i.e., within one year of their previous training)
  - c. every 2 years thereafter (i.e., within two years of their previous training)
  - d. every 3 years thereafter (i.e., within three years of their previous training)