

# Bloodborne Pathogens



**AMERICAN  
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INSTITUTE**

# AMERICAN SAFETY & HEALTH INSTITUTE

An HSI Company

## Bloodborne Pathogens

Student Book, *Version 8.0*

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# OSHA Bloodborne Pathogens Standard



UNITED STATES DEPARTMENT OF LABOR

Occupational Safety and Health Administration

ABOUT OSHA - WORKERS - EMPLOYERS - REGULATIONS - ENFORCEMENT - TOPICS - NEWS - DATA - TRAINING

Regulations (Standards - 29 CFR) - Table of Contents

- Part Number: 1910
- Part Title: Occupational Safety and Health Standards
- Subpart: Z
- Subpart Title: Toxic and Hazardous Substances
- Standard Number: 1910.1030
- Title: Bloodborne pathogens.
- Appendix: A
- GPO Source: e-CFR

1910.1030(a)  
*Scope and Application.* This section applies to all occupational exposure to blood or other potentially infectious materials as defined by paragraph (b) of this section.

1910.1030(b)  
*Definitions.* For purposes of this section, the following shall apply:  
*Assistant Secretary* means the Assistant Secretary of Labor for Occupational Safety and Health, or designated representative.

Some employees face significant health risk as a result of exposure to blood or other potentially infectious materials (OPIM).

In 1991, the Occupational Safety and Health Administration (OSHA) issued the Bloodborne Pathogens Standard, 29 CFR 1910.1030, which applies to all employees who can reasonably come in contact with human blood and OPIM in the course of their job activities.

The purpose of the standard is to protect employees by minimizing or eliminating exposure to disease-carrying microorganisms, or pathogens that can be found in human blood and other body fluids.

Every year, all employees with the potential of occupational exposure must receive training on bloodborne pathogens and exposure control methods.

Your understanding of important concepts such as engineering and work practice controls, personal protective equipment, exposure follow up, and housekeeping procedures can help reduce or eliminate your risk of being exposed to potentially infectious materials in your workplace.



### *The Needlestick Safety and Prevention Act*

An estimated 385,000 needlestick injuries occur annually in hospital settings. Nurses are the most frequently injured, but laboratory staff, physicians, housekeepers, and other healthcare workers are also injured.

In response to concern over these exposures, Congress passed the Needlestick Safety and Prevention Act, directing OSHA to revise the Bloodborne Pathogens Standard. This revision became effective in April 2001.

The revised standard states that “safer medical devices, such as sharps with engineered sharps injury protections and needleless systems, must be used where feasible.” Safer needles have built-in safety control devices, such as those that use a self-sheathing needle, to help prevent injuries before, during, and after use through safer design features.

Since the act was implemented, there has been a 31.6% decrease in sharps injuries in non-surgical settings. For more information, OSHA has developed an excellent website dedicated to safety and prevention of needlesticks and sharps injuries. See the Hospital eTool (HealthCare Wide Hazards Module) at <http://www.osha.gov>.



### *Knowledge Check*

What is the purpose of the OSHA Bloodborne Pathogens Standard?

*The Bloodborne Pathogens Standard, 29 CFR 1910.1030 is accessible through the OSHA website at [www.osha.gov](http://www.osha.gov).*

## **Who to Talk to About BBP in Your Organization**

**Notes:**

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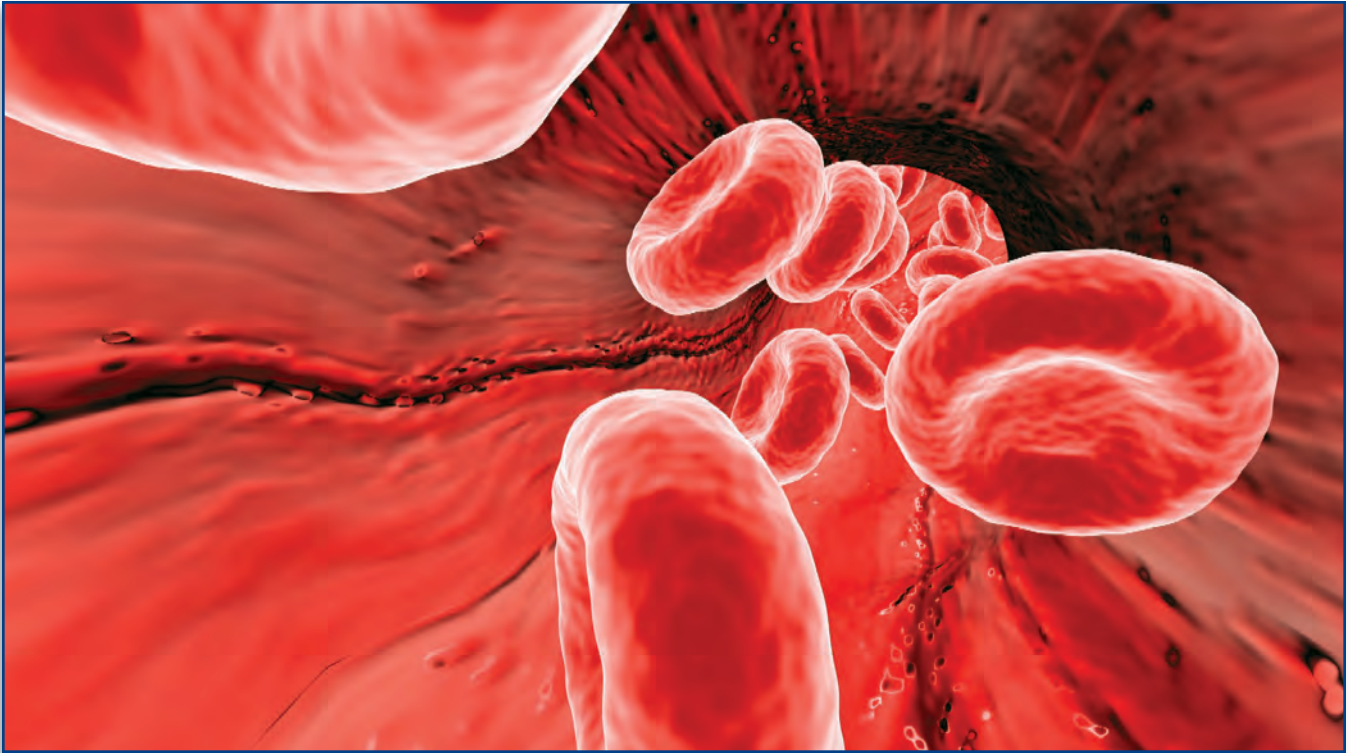
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# Specific Bloodborne Pathogens



The most concerning bloodborne pathogens are the hepatitis B virus (HBV), the hepatitis C virus (HCV), and the human immunodeficiency virus (HIV), the virus that causes AIDS. Other recognizable bloodborne diseases include syphilis, and viral hemorrhagic fevers such as Ebola.

Not all of these bloodborne pathogens are contagious to the same degree, nor have the same symptoms. Some people can be infected and contagious but show no symptoms. All can be caused by bloodborne pathogen transmission, but only a few have any available treatment.

## ***Hepatitis B Virus (HBV)***

The hepatitis B virus (HBV) can cause hepatitis, an infection that causes inflammation of the liver. An acute HBV infection can occur when a non-infected person is exposed to the virus. A chronic HBV infection can develop over time if the virus remains in the body. Life-threatening complications of hepatitis include cirrhosis of the liver, liver cancer, and liver failure.

Symptoms of someone infected with hepatitis B can include the following:

- 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)

Not all people infected with HBV show symptoms. Even without symptoms, HBV-infected individuals can still be infectious to others.

The hepatitis B virus can be infectious on surfaces for up to 7 days in the presence of dried blood, increasing the risk of exposure through indirect contact.

There are no medications available to treat an acute HBV infection. Limited medications are available for chronic infections.

A vaccination to prevent HBV infection is available. It has relatively few adverse side effects and is well tolerated by most of the population.

## Hepatitis C Virus (HCV)

The hepatitis C virus (HCV) can cause severe liver damage in a manner similar to HBV, including both acute and chronic infections.

Most people with an acute HCV infection do not display symptoms. When they do occur, they include the same symptoms that can occur with HBV.

Just like with HBV, HCV-infected individuals are still infectious to others even if they show no symptoms.

Similar to HBV, HCV has an increased risk of indirect exposure. HCV can be infectious on surfaces for up to 3 weeks in the presence of dried blood.

Currently, there is no immunization available for HCV, but treatment is available for an acute infection that can reduce the risk of the disease becoming chronic. However, there is uncertainty about the treatment and when it should be started.

## Human Immunodeficiency Virus (HIV)

The human immunodeficiency virus (HIV) is the virus responsible for causing acquired immunodeficiency syndrome (AIDS). The virus attacks and suppresses the immune system. It specifically targets the cells that are crucial for fighting infection from invading organisms. This allows other diseases and infections to progress in the body without resistance.

Similar to HBV and HCV, many of those infected with HIV will not show any symptoms of infection but are still potentially infectious to others.

Early symptoms could include the following:

- Fever, chills
- Rash
- Night sweats
- Muscle aches
- Sore throat
- Fatigue
- Swollen lymph nodes
- Mouth ulcers

It could take many years before an HIV-infected person shows symptoms of disease. As the infection progresses to AIDS, more severe symptoms can develop, generally related to other, opportunistic infections that occur due to a weakened immune system.

Unlike HBV and HCV, HIV poses a much shorter risk of indirect exposure. HIV is very fragile and can only survive for a few hours outside of the human body.

There is no immunization or known cure for HIV. Effective new drug therapies can keep HIV-infected persons healthy longer and have dramatically reduced the death rate.

### Risk of Infection

Of the 3 major bloodborne pathogens, HBV is the most contagious, with up to a 1-in-3 chance of getting infected from being exposed if you are not vaccinated. HCV has the next greatest risk of transmission, with up to a 1-in-50 chance of getting infected. Comparatively, HIV is much less contagious than either hepatitis virus, with the highest risk of occupational transmission at about 1 in 300.<sup>1</sup>



### Knowledge Check

Which of the bloodborne pathogens covered has the greatest risk of transmission from an exposure?



# Hepatitis B Immunization

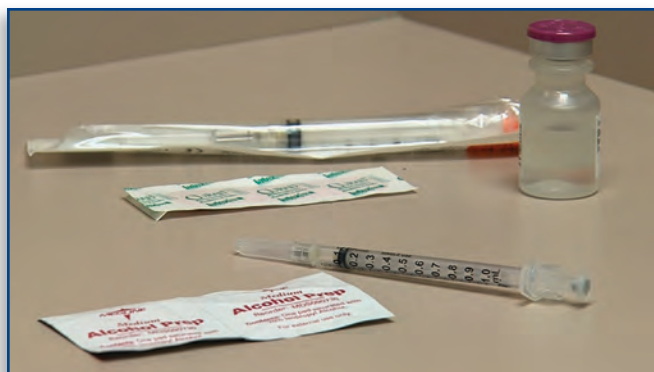


The hepatitis B vaccine is very effective in protecting against the hepatitis B virus. Childhood vaccination for hepatitis B has contributed to an overall 96% decline in acute HBV infections of children and adolescents. The majority of new HBV infections now occur among adults,<sup>2</sup> including through occupational exposure.

Your employer must offer the hepatitis B vaccine for free to any employees determined to be at risk of occupational exposure to blood or body fluids, prior to undertaking any tasks that could result in an exposure. The entire series of 3 shots at specific intervals is needed to provide full immunity. The vaccine is safe with very few adverse reactions.

A physician or other licensed 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 hepatitis B vaccine, you can ask for it from the company at any time, at no cost to you.



### *The HBV vaccine*

The HBV vaccine has become more routine as part of a childhood immunization schedule. All children should get their first dose of hepatitis B vaccine at birth and should have completed the vaccine series between 6 and 18 months of age. Children and adolescents through 18 years of age who did not get the vaccine when they were younger should also be vaccinated. For additional information, visit <http://www.cdc.gov/hepatitis/hbv/vaccchildren.htm>



### *Knowledge Check*

True or false? An employee may not change his or her mind about receiving the hepatitis B immunization after initially declining the vaccine.

### ***Your Organization's Method for Providing HBV Vaccination***

**Notes:**

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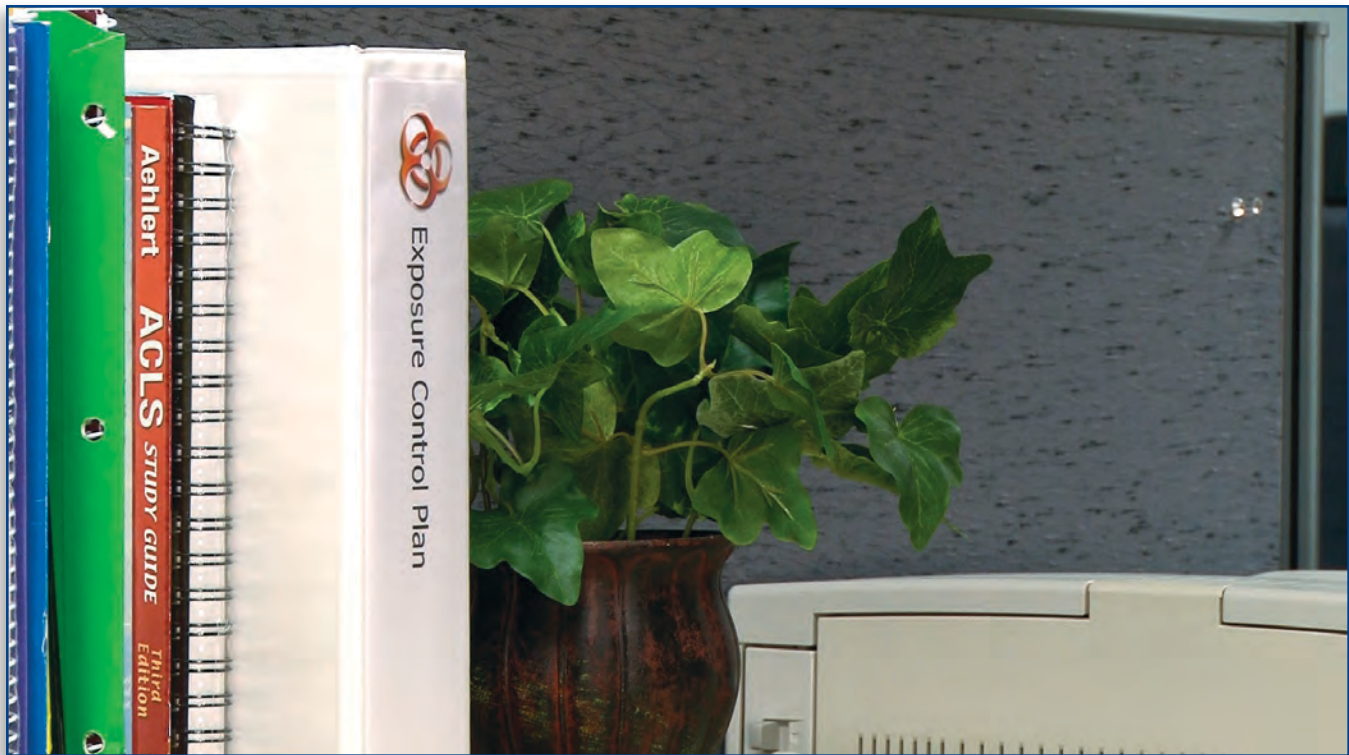
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# Your Company's Exposure Control Plan



Your company's exposure control plan is a requirement of the OSHA Bloodborne Pathogen Standard. It outlines the strategies necessary to eliminate or minimize employee exposure to blood and other body fluids. This site-specific plan defines which employees are covered by the OSHA standard, how to minimize the risk of exposure, and how to handle an exposure if one occurs.

## ***Job Classifications with Risk of Exposure***

The plan includes the identification of job classifications that your employer has determined include tasks and procedures that have risk of exposure to blood and other potentially infectious materials.

It is important to know that your job classification puts you at risk for occupational exposure. If your job classification does put you at risk, be aware of the specific tasks or procedures that could cause exposure.

Job classifications with a likely chance of occupational exposure include first aid providers, housekeeping staff, lab workers, firefighters, EMTs and paramedics, law enforcement agents, medical and dental personnel, and tattoo and body modification artists.

## ***Communicating a Hazard in the Workplace***

The exposure control plan also explains how your employer has decided to make you aware of potentially infectious materials in your workplace.

Biohazard signs and labels are used to indicate hazardous materials, including potentially infectious materials or anything contaminated with blood or body fluid.

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

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.

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



Properly indicating contaminated materials using labels and signs will greatly reduce the risk of accidental exposure. Be sure that you are aware of and abide by all signs and labels signaling hazards and hazardous materials.

### *Laboratory Personnel*

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

## ***Reducing the Risk of Exposure***

The exposure control plan at your workplace will contain site-specific methods used to reduce the risk of occupational exposure:

- Engineering and work practice controls
- Personal protective equipment (PPE)
- Housekeeping procedures
- Containment and labeling of potentially infectious materials

Engineering and work practice controls consist of procedures to help you complete your job tasks with a minimal risk of exposure. Personal protective equipment isolates your body from contact with potentially infectious materials. Housekeeping protocols keep potentially infectious materials from lingering on surfaces. Proper containment and labeling of potentially infectious materials ensure that these items are handled appropriately.

Another key part of the plan includes listing the site-specific means by which the facility will reduce employee risk. These methods include appropriate training, the communication of hazards, hepatitis B vaccinations for any employee who has occupational risk of exposure, methods for post-exposure evaluation and follow-up, and proper recordkeeping.



## ***Managing an Exposure***

The final part of the plan describes the procedure for the investigation and evaluation of circumstances surrounding exposure incidents in order to quickly provide effective follow-up care to exposed employees.

This investigation will help you and your employer learn from what happened and establish measures to prevent it from happening again. The exposure control plan may also call for specific recordkeeping of incidents, including documentation of the route of exposure, how the incident occurred, and consent for medical testing.

The exposure control plan must be a written document accessible to all employees. It is reviewed and updated at least annually or when alterations in procedures create the possibility of new occupational exposure.



### *Knowledge Check*

What 4 general things can you expect to find in your company's exposure control plan?

## ***How to get a Copy of Your Organization's Exposure Control Plan***

### ***General Details of your Organization's Exposure Control Plan***

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# Transmitting Bloodborne Pathogens



The transmission of bloodborne pathogens occurs through direct or indirect exposure to infected body fluids.

The primary ways exposure to bloodborne pathogens occur in an occupational setting are through non-intact skin, such as a cut or abrasion; the mucous membranes of the eyes, nose, or mouth; or through a puncture wound from a sharp, contaminated object, such as a syringe or broken glass.

Outside an occupational setting, the common modes of bloodborne pathogen transmission are sexual contact and shared hypodermic needles.

Casual contact like shaking hands or hugging does not transmit bloodborne pathogens.

Direct contact with blood or other potentially infectious materials can cause an exposure incident. Indirect contact with an intermediate object such as a work surface or door knob that has been contaminated with body fluids can also cause an exposure incident.

Body fluids that have a risk of transmitting bloodborne pathogens in an occupational setting include blood and cerebrospinal fluid. Semen and vaginal secretions can also transmit pathogens during sexual contact.



In the absence of visible blood, some body fluids have no documented risk of transmission. However, during an emergency, you may not be able to tell which fluids you are handling or whether injury has mixed them with blood. It is best to simply consider all body fluids as potentially infectious.



## Knowledge Check

What are the primary ways exposure to bloodborne pathogens occur in an occupational setting?

# Methods to Control the Risks of Exposure



Work practice controls and engineering controls help prevent the transmission of bloodborne diseases in the workplace and allow you to perform job tasks with a minimal risk of exposure.

Work practice controls focus on the manner in which tasks are performed. For example, using personal protective equipment such as disposable gloves when performing first aid is considered a work practice control.

Engineering controls reduce exposure in the workplace by either removing or isolating the hazard, such as providing an appropriate disposal container for needles. Your employer is required to examine and maintain or replace engineering controls on a regular basis.

## ***Standard Precautions***

Standard precautions is a recommended approach to any scene where blood or other body fluids may be present. This means treating all body fluid as potentially infectious, even that of someone you know well.

### ***Safe Work Practices***

Safe work practices include eliminating eating, drinking, smoking, applying makeup or lip balm, or handling contact lenses in locations with potentially infectious materials. In healthcare facilities, employees are prohibited from wearing artificial nails.

### ***Prohibited Practices***

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



### Standard Precautions versus Universal Precautions

According to the U.S. Department of Health & Human Services, Centers for Disease Control and Prevention (CDC), "Standard Precautions are designed to protect health care personnel and to prevent them from spreading infections to patients. They are based on the premise that all blood, body fluids, secretions, excretions (except sweat), nonintact skin, and mucous membranes might contain transmissible infectious agents. Standard Precautions include 1) hand hygiene, 2) use of personal protective equipment (PPE), 3) respiratory hygiene and cough etiquette, 4) safe injection practices, and 5) safe handling of potentially contaminated equipment or surfaces in the patient environment."<sup>3</sup>

According to the U.S. Department of Labor, Occupational Safety & Health Administration (OSHA), Universal Precautions is an approach to infection control to treat all human blood and certain human body fluids as if they were known to be infectious for HIV, HBV and other bloodborne pathogens. The OSHA Bloodborne Pathogen Standard 29 CFR 1910.1030(d)(1) requires employees to observe Universal Precautions to prevent contact with blood or other potentially infectious materials (OPIM). Universal Precautions include use of gloves, masks, gowns, as well as engineering and work practice controls to limit exposure if blood or OPIM exposure is anticipated.

For compliance with OSHA Standards, the use of either Universal Precautions or Standard Precautions are acceptable.<sup>4</sup>

### Personal Protective Equipment (PPE)

Personal protective equipment (PPE) is specialized clothing or equipment that isolates your body from contact with potentially infectious materials. Examples of PPE include the following:

- Disposable gloves
- Protective eye/face shields
- Resuscitation masks or CPR barrier shields with one-way valves

Effective PPE must not permit potentially infectious materials to pass through or reach your skin, eyes, mouth, or clothes under normal conditions of use.

Your employer will 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.

Always wear disposable gloves when there is a possibility of hand contact with blood or other body fluids. Replace gloves as soon as possible when torn, punctured, contaminated, or if their ability to function as a barrier is compromised.

Perform all actions involving blood or other potentially infectious materials in such a way as to minimize splattering, splashing, and spraying. If needed, wear face shields in situations where this could occur and pose a hazard to your eyes, nose, or mouth. Proper handling and disposal of needles/sharps, contaminated bandages, gauze, or linens is also important.



### Essential PPE

Use a resuscitation mask or CPR barrier shield with a one-way valve to prevent exposure when performing rescue breaths during CPR.

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



### Knowledge Check

What is the infection-control approach wherein all blood and body fluids are treated as potentially infectious?

## ***Engineering Controls at Your Organization***

**Notes:**

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## ***Work Practice Controls at Your Organization***

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## ***Personal Protective Equipment at Your Organization***

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## When an Exposure Occurs



If an exposure occurs, immediately care for it. When a potentially contaminated sharp object creates an open wound, wash and irrigate the wound with soap and large amounts of running water.

If you suspect an exposure from potentially contaminated materials to the eyes, nose, or mouth, flush the affected areas with large amounts of running water.

If potentially contaminated material gets on to non-intact skin, wash it off as soon as possible with soap and water.

If you are a care provider, wash your hands immediately whenever blood or other potentially infectious materials is present, even if you are wearing gloves. Washing is especially important if you have cuts, rashes, or scrapes on your skin.

If soap and running water are not available, alcohol-based foam or gel hand sanitizers can be used if the hands are not visibly soiled. If hands are visibly soiled, remove any gross contamination first before using an alcohol-based hand sanitizer.

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

### *Handwashing*

Vigorous scrubbing with soap and water for at least 20 seconds is the most effective method to reduce the spread of pathogens. Be sure to scrub the backs of your hands, between your fingers and thumbs, and under your nails. Rinse hands thoroughly, dry your hands with a disposable towel, and use a towel to turn off faucet.

Place contaminated protective equipment in appropriately designated areas or containers for cleaning or disposal. Remove contaminated gloves by turning them inside out. Be careful to prevent any splashing or spraying of blood and other body fluids. Never wash or decontaminate disposable gloves for reuse.

## Post-Exposure Follow-up

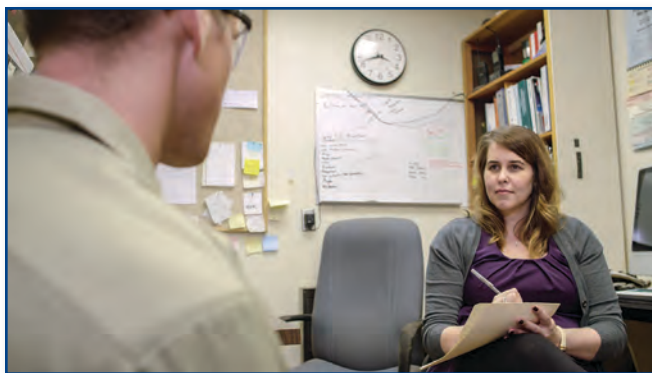
If an occupational exposure does occur, it is important for you to follow the employer's written procedures for handling medical self-care and evaluation, as well as for documenting the circumstances of the exposure.

After any immediate care, report an exposure incident without delay. This allows for timely testing of the source individual and, if necessary, the person who was exposed.

Anyone affected by an exposure will be directed to a healthcare professional for medical evaluation and testing 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 an employee for this evaluation.

The result of your testing is confidential and is reported only to you and your healthcare provider. No one else is notified of the test results, not your supervisor or anyone from the company. The evaluation will also include counseling and education regarding the testing process and the ramifications of exposure. This includes safe sexual practices information for the 3-month post-exposure evaluation period.

Healthcare professionals conduct the evaluation according to the Centers for Disease Control and Prevention guidelines for testing for HIV, HBV, and HCV.



### Chain of Infection

In order for an exposure to blood or other body fluids to result in an infection, a number of links in a "chain of infection" must be in place.

- An infectious agent or pathogen must be present (for example, the hepatitis C virus).
- A source of the infectious agent must exist (e.g., the infected person's blood).
- A means of exit from the source must exist (like a bleeding injury).
- A direct or indirect way to transmit the infectious agent must occur (such as a contaminated surface or hands, splashing or spraying, etc.)
- A suitable entry site for the infectious material to enter the non-infected person's body must exist (like a break in the skin, the mucous membrane of mouth, nose, or eyes, etc.)
- A susceptibility to the infectious agent must exist for the non-infected person (e.g., non-immunity, the person is young or old, has a weakened immune system, a pre-existing condition, etc.)

Exposure to an infectious agent or pathogen does not mean that an infection will occur. It depends on whether all of the links in the chain of infection are present. By eliminating one or more of the links, the risk of infection is removed.<sup>3</sup>

## Post-Exposure Prophylaxis (PEP)

If an employee has been 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%.



### Knowledge Check

What is the first thing to do if an exposure to blood or other potentially infectious materials occurs?



## Your Organization's Procedure for Following up on a Suspected Exposure

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## Housekeeping



Proper containment and labeling of potentially infectious materials ensure that these items are handled appropriately.

### **Regulated Waste**

The term “regulated waste” refers to specific categories of waste that require special handling, including blood and other potentially infected materials.

Regulated waste that warrants special handling includes the following:

- Liquid or semi-liquid blood or other potentially infectious materials
- Contaminated items that would release potentially infectious materials in a liquid or semi-liquid state
- Items caked with potentially infectious materials that are capable of releasing these materials during handling
- Contaminated sharp objects

## Safe Containers

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

It 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 container that is appropriate for handling liquids or semi-liquids.

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 anyone to reach into containers where the contents cannot be seen or safely handled.



## Contaminated Laundry

Contaminated laundry is laundry soiled with potentially infectious materials or that may contain contaminated sharp objects, such as needles. 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.

Do not take contaminated protective clothing home for laundering.

## Decontaminating Surfaces

Keep potentially infectious materials from lingering on surfaces. All equipment and work surfaces that could be 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.

Cleanup and decontamination of contaminated objects and surfaces are very important in helping reduce future exposures from indirect contact.



### Knowledge Check

True or false? Employees can take contaminated protective clothing home for laundering.

## Housekeeping Procedures Used by Your Organization

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# Glossary

## bloodborne pathogens

Pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV).

## contaminated

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

## decontamination

The use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal.

## engineering controls

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

## occupational exposure

Reasonably anticipated skin, eye, mucous membrane, or parenteral (sharps) contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

## other potentially infectious materials (OPIM)

- (1) 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.
- (2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and
- (3) 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.

## personal protective equipment (PPE)

Specialized clothing or equipment worn by an employee for protection against a hazard. General work clothes (e.g., uniforms, pants, shirts or blouses) not intended to function as protection against a hazard are not considered to be personal protective equipment.

## regulated waste

Liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.

## standard precautions

A method of infection control—recommended by the CDC—in which all human blood, certain body fluids, as well as fresh tissues and cells of human origin are handled as if they are known to be infected with HIV, HBV, and/or other bloodborne pathogens

## work practice controls

Controls that reduce the likelihood of exposure by altering the manner in which a task is performed.

# Sources

“Bloodborne Pathogens: Occupational Safety and Health Standards 1910.1030.” *Occupational Safety and Health Administration*. United States Department of Labor. [https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARDS&p\\_id=10051](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051)

“Enforcement Procedures for the Occupational Exposure to Bloodborne Pathogens: CPL 2-2.69.” *Occupational Safety and Health Administration*. United States Department of Labor. [https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=DIRECTIVES&p\\_id=2570](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=DIRECTIVES&p_id=2570)

“Viral Hepatitis- Hepatitis B Information: Hepatitis B FAQs for the Public.” *Centers for Disease Control and Prevention*. <http://www.cdc.gov/hepatitis/hbv/bfaq.htm>

“Viral Hepatitis- Hepatitis C Information: Hepatitis C FAQs for the Public.” *Centers for Disease Control and Prevention*. <http://www.cdc.gov/hepatitis/hcv/cfaq.htm>

AIDS.gov. <https://www.aids.gov/>

# Endnotes

1. “Infection Control: Frequently Asked Questions, Bloodborne Pathogens, Occupational Exposure.” *Centers for Disease Control and Prevention*. [https://www.cdc.gov/oralhealth/infectioncontrol/faq/bloodborne\\_exposures.htm](https://www.cdc.gov/oralhealth/infectioncontrol/faq/bloodborne_exposures.htm)

2. “Viral Hepatitis- Hepatitis B Information: Vaccination of Adults.” *Centers for Disease Control and Prevention*. <http://www.cdc.gov/hepatitis/hbv/vaccadults.htm>

3. “Lesson 1: Introduction to Epidemiology, Section 10: Chain of Infection.” *Principles of Epidemiology in Public Health Practice, Third Edition*, found via the Centers for Disease Control and Prevention. <https://www.cdc.gov/opphss/csels/dsepd/ss1978/lesson1/section10.html>

# Knowledge Check Answers

## **OSHA Bloodborne Pathogen Standard — Page 2**

The purpose of the OSHA Bloodborne Pathogens Standard is to protect employees by minimizing or eliminating exposure to disease-carrying microorganisms, or pathogens, that can be found in human blood and other body fluids.

## **Specific Bloodborne Pathogens — Page 4**

Hepatitis B (HBV) is the bloodborne pathogen covered here that has the greatest risk of transmission from an exposure.

## **Hepatitis B Immunization — Page 6**

False. If an employee initially declines the hepatitis B vaccine, he or she can ask for it from the company at any time, at no cost.

## **Your Company's Exposure Control Plan — Page 8**

You should find which employees are covered by the OSHA standard, how to communicate the presence of contaminated materials, how to minimize the risk of exposure, and how to handle an exposure if one occurs.

## **Transmitting Bloodborne Pathogens — Page 9**

The primary ways exposure to bloodborne pathogens occur in an occupational setting is through non-intact skin, the mucous membranes of the eyes, nose, or mouth; or through a puncture wound from a sharp, contaminated object, such as a syringe or broken glass.

## **Methods to Control the Risks of Exposure — Page 11**

Standard precautions is the infection-control approach wherein all blood and body fluids are treated as potentially infectious.

## **When an Exposure Occurs — Page 14**

The first thing to do if an exposure to blood or other potentially infectious materials occurs is to immediately care for it. When there is non-intact skin or a potentially contaminated sharp object creates an open wound, wash and irrigate the wound with soap and large amounts of running water.

For an exposure to the eyes, nose, or mouth, flush the affected areas with large amounts of running water.

## **Housekeeping — Page 16**

False. Employees should not take contaminated protective clothing home for laundering.

### Notes:

[illegible]

# Rate Your Program

This course evaluation allows you to rate the training course you have just completed. This evaluation will provide your training provider with feedback on the quality of the instruction you received.

Program Name \_\_\_\_\_ ☐ ASHI ☐ MEDIC First Aid

Instructor \_\_\_\_\_ Date of Course \_\_\_\_\_

<i>Please rate the following course elements as indicated below. Place a check in the box that best represents your opinion of the quality of each element.</i> <i>Thank you for your help.</i>	4-Excellent	3-Good	2-Average	1-Poor
<b>Course Presentation</b>				
Organization, pace, and flow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not too basic, not too complex	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Time allowed for skill practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increased your confidence and ability to take action	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Instructor(s)</b>				
Subject knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teaching ability (clear, concise, organized)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demeanor (friendly, helpful, engaging)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Program Materials</b>				
Video	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PowerPoint®	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Student Book	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Online Training Component (if taken)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Location and Equipment</b>				
Space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Training equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Self Assessment</b>				
How would you rate your emergency care skills BEFORE taking this class?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How would you rate your emergency care skills AFTER taking this class?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How willing would you be to respond in an emergency BEFORE taking this class?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How willing would you be to respond in an emergency AFTER taking this class?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Your overall score for the course</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What did you like most about this course? \_\_\_\_\_

What did you like least about this course? \_\_\_\_\_

Would you recommend this course to others? ☐ Yes ☐ No

Student input is an essential aspect of our ongoing quality assurance efforts. HSI requires that students be given the opportunity to evaluate their ASHI or MEDIC First Aid course using this “Rate Your Program” course evaluation form. You may also provide feedback directly to HSI at [www.hsi.com/rateyourprogram](http://www.hsi.com/rateyourprogram).







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## Bloodborne Pathogens

