

The Joint Commission: Bloodborne Pathogens and Exposure Control

Bloodborne Pathogens and Exposure Control

Lesson Information

Purpose

To provide healthcare workers with information to increase their knowledge and to help them meet the requirements of The Joint Commission, Occupational Safety and Health Administration, and other regulatory bodies, with the goal of providing safe, competent, and quality patient care.

Abstract

Bloodborne pathogens are bacteria and viruses carried in the blood that can cause disease. Bloodborne pathogens are spread when the blood or body fluid of an infected person comes into contact with the blood, open skin, or mucous membranes (such as the eyes, nose, or mouth) of another person. As a healthcare worker, you are at risk for exposure to bloodborne pathogens.

This lesson describes:

- Bloodborne pathogens
- The signs and symptoms of diseases caused by common bloodborne pathogens
- Your risk of being exposed to bloodborne pathogens while working in your healthcare organization
- Important parts of your organization's plan to control the spread of bloodborne pathogens

Objectives

Upon completion of this lesson, you will be able to:

1. Identify how bloodborne pathogens are transmitted.
2. Recognize the purpose of an exposure control plan.
3. Identify three engineering or work practice controls that decrease the risk of exposure to bloodborne pathogens.

Consultants

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Introduction

Bloodborne pathogens are bacteria and viruses carried in the blood that can cause disease. Bloodborne pathogens are spread when the blood or body fluid of an infected person comes into contact with the blood, open skin, or [mucous membranes](#) (such as the eyes, nose, or mouth) of another person.¹ As a healthcare worker, you are at risk for exposure to bloodborne pathogens.

This lesson describes:

- Bloodborne pathogens
- The signs and symptoms of diseases caused by common bloodborne pathogens
- Your risk of being exposed to bloodborne pathogens while working in your healthcare organization
- Important parts of your organization's plan to control the spread of bloodborne pathogens



Did You Know?

The blood is normally sterile (free from germs), but it can become a home for pathogens for infectious diseases such as hepatitis B or C or Ebola.¹

Learning Objectives

Upon completion of this lesson, you will be able to:

1. Identify how bloodborne pathogens are transmitted.
2. Recognize the purpose of an exposure control plan.
3. Identify three engineering or work practice controls that decrease the risk of exposure to bloodborne pathogens.

Examples of Bloodborne Pathogens

Healthcare workers who come in contact with the blood and body fluids of patients are at risk for becoming infected with bloodborne germs or pathogens. Examples of the most common bloodborne pathogens include hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV).

As a healthcare worker, you need to understand what bloodborne pathogens are, how diseases caused by bloodborne pathogens are spread, and how to eliminate or reduce your risk for exposure to the harmful germs.

Hepatitis B Virus

Hepatitis B is a serious disease caused by a virus that attacks the liver. The hepatitis B virus (HBV) is shed in all body fluids of those with hepatitis B infection, including persons with and without symptoms. Hepatitis B can cause lifelong infection, as well as cirrhosis or scarring of the liver, liver cancer, liver failure, and death.²

Click [Hepatitis B Virus](#) for more information on hepatitis B.



A stray needle lying in bed linen or carelessly thrown into a wastebasket is a prime source for exposure to bloodborne pathogens. Never place a wastebasket or a linen hamper under a sharps container. Hepatitis B and hepatitis C are the infections most commonly transmitted by contaminated needles. Report accidental needlesticks, which are considered an exposure incident, immediately to your supervisor.¹

How the Hepatitis B Virus is spread:

- Blood transfusions
- Sharing of contaminated or infected needles by drug users
- Sexual contact with an infected person
- Contact during birth from an infected mother to her baby
- Contact with a person's oral substance such as saliva (rare)

Signs and Symptoms of Hepatitis B Virus

Signs and symptoms of hepatitis B include:

- [Jaundice](#)
- Fatigue
- Pain in the abdomen
- Loss of appetite
- Nausea and vomiting
- Joint pain

In the United States, the overall number of persons infected with chronic hepatitis B virus is estimated to be about 1.4 million people. Of those infected, 20% to 30% acquired the infection during childhood.³ About 30% of persons infected do not have any signs or symptoms of the disease.

Hepatitis B Vaccination

The hepatitis B vaccine is a safe and effective way to prevent liver disease caused by the hepatitis B virus. The vaccine causes very few side effects and is about 90% effective in healthy adults. The vaccine is given through a syringe and needle and is injected into your muscle.

You will be offered the hepatitis B vaccination free of charge if you are a healthcare worker at risk for exposure to blood or body fluids.⁴ Contact a member of your employee health team if you have questions about the hepatitis B vaccination.⁵

Hepatitis C Virus

Hepatitis C is spread when the blood from an infected person enters the body of a person who is not infected. There is no vaccine for the hepatitis C virus.⁶

According to the Centers for Disease Control and Prevention (CDC), the hepatitis C virus (HCV) is the most common bloodborne infection in the United States today.⁷ An estimated 4.1 million Americans are infected with the hepatitis C virus. Of those infected with the virus, 3.2 million are chronically infected with the disease.

Click [Hepatitis C Virus](#) for more information on hepatitis C.

How Hepatitis C is spread:

- Sharing of contaminated or infected needles among drug users (most common)
- Needlesticks or sharps exposure on the job
- Contact during birth from an infected mother to her baby
- Sexual contact with an infected person (rare)

Signs and Symptoms of Hepatitis C Virus

Signs and symptoms of hepatitis C viral infection include⁶:

- Jaundice
- Fatigue
- Dark urine
- Pain in the abdomen
- Loss of appetite
- Nausea

About 80% of persons with the hepatitis C virus do not have any signs or symptoms.⁸

Human Immunodeficiency Virus

Human Immunodeficiency Virus (HIV) causes acquired immunodeficiency syndrome (AIDS). The Centers for Disease Control and Prevention (CDC) estimates that 1.2 million adults and adolescents were living with diagnosed or undiagnosed HIV in the United States at the end of 2011. An estimated 50,000 Americans become infected with HIV each year.⁹

The human immunodeficiency virus is different from most other viruses because it attacks the immune system. The immune system helps our bodies fight infections. There is no vaccine for the human immunodeficiency virus.

Healthcare workers have been infected with the human immunodeficiency virus after being stuck with needles contaminated with infected blood. Less frequently, healthcare workers have been infected when infected blood gets into their open skin or through contact with mucous membranes, such as the eyes or inside of the nose.¹⁰

How the Human Immunodeficiency Virus is spread:

- Sexual contact with an infected person
- Sharing of needles and syringes with someone who is infected
- A baby can become infected before birth, during birth, or through breastfeeding
- Blood transfusions (less common)

Signs and Symptoms of Human Immunodeficiency Virus

Many people who are infected with the human immunodeficiency virus do not have any signs or symptoms for 10 years or more.

Roll your mouse pointer over the image to view possible warning signs of advanced human immunodeficiency virus infection.



- Rapid weight loss
- Dry cough
- Frequent episodes of fever or night sweats
- Extreme and unexplained fatigue
- Swollen lymph glands in the armpits, groin, or neck
- Diarrhea that lasts for more than 1 week
- White spots or unusual blemishes on the tongue, in the mouth, or in the throat
- Pneumonia
- Red, brown, pink, or purplish blotches on or under the skin or inside the mouth, nose, or eyelids
- Memory loss and depression¹²

Ebola Virus Disease

Ebola virus disease (EVD) is a rare and often fatal disease caused by one of four viruses. EVD is found in all bodily fluids, such as blood, urine, feces, vomit, saliva, semen, breast milk, and sweat. EVD can be transmitted through:

- Direct contact through the mucous membranes of the eyes, nose, or mouth
- Broken skin with any infected bodily fluid
- A contaminated object, such as a needle or syringe
- Infected animals, especially bats

Healthcare providers are at higher risk for contracting EVD because they may be exposed to infectious bodily fluids.¹³

See the table to view signs and symptoms of Ebola.

Signs and Symptoms of EVD¹⁴
Symptoms occur between 2 and 21 days after exposure, with the average appearance around 8 to 10 days post-exposure.
Signs and symptoms of possible EVD: <ul style="list-style-type: none"> • Fever

- Severe headache
- Muscle pain
- Weakness
- Fatigue
- Diarrhea
- Vomiting
- Abdominal pain
- Unexplained bleeding

Screen 4 of 9

Quick Check: Spread of Bloodborne Pathogens

Match each bloodborne pathogen with the description of how it is spread. Use your mouse pointer to drag each blue box to the correct clear box then click **Check Answers** when you are done.

Bloodborne Pathogen		Spread By	
Hepatitis C Virus	1 <input type="checkbox"/>	<input type="checkbox"/>	Can be spread through all body fluids of a person with an infection
Hepatitis B Virus	2 <input type="checkbox"/>	<input type="checkbox"/>	May be passed from infected mother to baby during birth, after birth, or through breast-feeding
Human Immunodeficiency Virus	3 <input type="checkbox"/>	<input type="checkbox"/>	Spread mainly through sharing of infected needles during drug use

 Check Answers  Answer Key  Reset Choices

Tries Remaining : 2

ANSWER:

Match each bloodborne pathogen with the description of how it is spread. Use your mouse pointer to drag each blue box to the correct clear box then click **Check Answers** when you are done.

Bloodborne Pathogen		Spread By	
Hepatitis B Virus	1	1	Can be spread through all body fluids of a person with an infection
Hepatitis C Virus	2	3	May be passed from infected mother to baby during birth, after birth, or through breast-feeding
Human Immunodeficiency Virus	3	2	Spread mainly through sharing of infected needles during drug use

 Check Answers  Answer Key  Reset Choices

Tries Remaining: 1

The correct matches are shown.

Screen 5 of 9

Exposure Control Plan

The Occupational Safety & Health Administration (OSHA) developed Bloodborne Pathogen standards for healthcare workers to decrease their risk of accidental contact with bloodborne pathogens.⁴ These standards state that healthcare organizations must provide workers with information on what bloodborne pathogens are and how to prevent exposure to or contact with them.

In July 2010, The Joint Commission announced that injection practices will be observed during on-site surveys to ensure that care providers follow standard precautions for disease-free injections.¹⁴ Click [here](#) to read the guidelines for safe injection practices and information about the One & Only Campaign issued by The Centers for Disease Control and Prevention. The [guidelines](#) are designed to keep you and your patients safe.¹⁵

Information in the Exposure Control Plan

Your organization's Bloodborne Pathogen Exposure Control Plan was developed to communicate information to you about⁴:

- Bloodborne pathogens
- Risk of exposure
- How your organization plans to decrease and eliminate exposure to bloodborne pathogens
- Free hepatitis B vaccinations
- Postexposure evaluation and follow-up
- Communication of hazards to employees

The exposure control plan outlines your risk of exposure to bloodborne pathogens based on the tasks you perform as an employee. Take time to locate the Bloodborne Pathogen Exposure Control Plan developed by educators in your organization.

Your organization is required to have an Emergency Operations Plan (EOP) focused specifically for EVD, including a communication plan, management of resources, handling of hazardous waste safely, and staff training and security.¹⁶

Click [Exposure Control Plan](#) to find out more about the OSHA's requirements about bloodborne pathogens and an organization's exposure control plan.

If you are exposed to EVD, you must report it to you employer, self-monitor for signs and symptoms for 21 days, and immediately seek medical attention if any signs or symptoms appear.¹³

Quick Check: Exposure Control Plan

Please choose the correct answer for each statement. Click **Answer Key** to view the correct answers.

- True False The purpose of a healthcare organization's Bloodborne Pathogen Exposure Control Plan is to reduce an employee's risk of exposure to radiation.
- True False An organization should develop a Bloodborne Pathogen Exposure Control Plan after 60% of its employees have been exposed to bloodborne pathogens.

 [Answer Key](#)  [Reset Choices](#)

ANSWER:

Please choose the correct answer for each statement. Click **Answer Key** to view the correct answers.

True False

The purpose of a healthcare organization's Bloodborne Pathogen Exposure Control Plan is to reduce an employee's risk of exposure to radiation.

The purpose of the Exposure Control Plan is to eliminate or minimize healthcare workers' exposure to bloodborne pathogens, not radiation, in the workplace.

True False

An organization should develop a Bloodborne Pathogen Exposure Control Plan after 60% of its employees have been exposed to bloodborne pathogens.

Organizations are required by OSHA to develop an exposure control plan that eliminates or reduces the risk of exposure to bloodborne pathogens.

 Answer Key  Reset Choices

The correct choices are shown.

Personal Protective Equipment

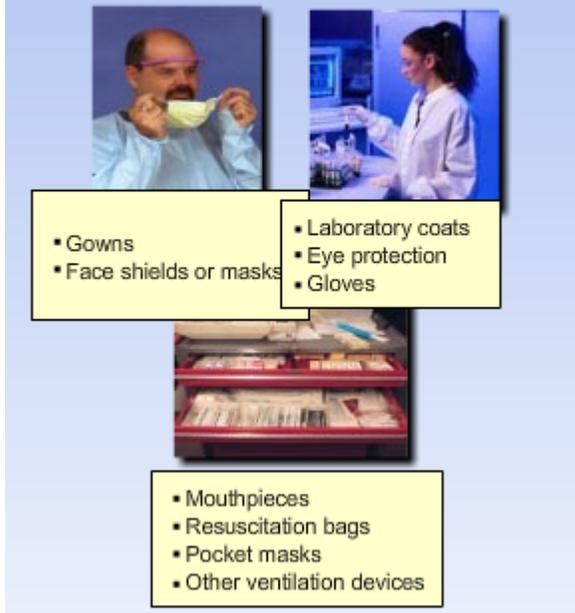
Your healthcare organization is required to provide free personal protective equipment to you if you are at risk for exposure to bloodborne pathogens. This requirement is enforced by OSHA for all healthcare workers who may have contact with blood, body fluids, or any other hazardous materials.⁴ To assist with the selection of appropriate protection while caring for a patient with Ebola, OSHA provides a PPE selection matrix for occupational exposure to Ebola.¹⁷

Under normal conditions of use, and for the time that it is used, personal protective equipment should prevent blood and other possibly infectious materials from passing through to you:

- Work clothes, street clothes, and undergarments
- Skin, eyes, mouth, and other mucous membranes

Click [Putting on and Removing PPE](#) to learn more about the proper way to put on and remove personal protective equipment. Although the order provided for putting on and taking off PPE is accurate, when faced with Ebola, OSHA acknowledges that in order to reduce confusion regarding the sequence for PPE, healthcare workers should adhere to the CDC's recommended sequence. This includes having a trained observer or buddy assist with putting on and taking off PPE.¹⁷ For additional information on the proper use of personal protective equipment, see the lesson titled Personal Protective Equipment.

Roll your mouse pointer over the image to view examples of personal protective equipment.



Media Credit

From Potter PA, Perry AG. *Fundamentals of Nursing*. 6th ed. St. Louis, Mo: Mosby; 2005.

Standard Precautions

Use standard precautions when providing patient care or while handling items that may be contaminated with blood and body fluids. Standard precautions help prevent the spread of bloodborne pathogens from patient to healthcare worker and from healthcare worker to patient. Unless otherwise directed, you should use standard precautions with every patient.¹

Click [Standard Precautions](#) to view more information about standard precautions. (See the resources section of this document)



Did You Know?

The presence of germs does not always cause a person to become ill. Carriers are persons who have no signs or symptoms of an illness but who have pathogens on or in their bodies that can be transferred to others. For example, a person can be a carrier of the hepatitis B virus without having signs or symptoms of infection.

Engineering Controls

Engineering controls are used to reduce workplace exposure to bloodborne pathogens.⁴ Examples of engineering controls include:

- Sharps disposal containers
- Self-sheathing or retractable needles
- Needleless intravenous (IV) systems

A number of these controls isolate or remove the risk for exposure to bloodborne pathogens using safety mechanisms. When using engineering controls, you should also use personal protective equipment to eliminate the risk of exposure to bloodborne pathogens.

For nurses, needlesticks during intravenous (IV) therapy are the most common cause of exposure to blood.¹



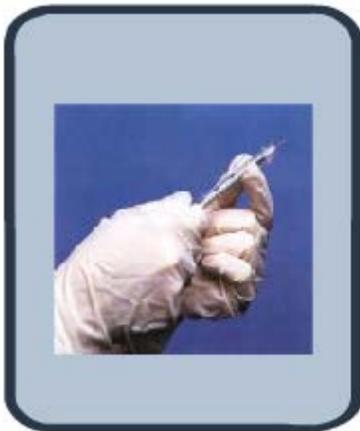
Did You Know?

OSHA requires organizations to consult with nonmanagerial healthcare workers who are responsible for direct patient care to help identify, evaluate, and select safety devices. Follow up with your manager or educator to give feedback on the different safety devices that you use.⁵

Work Practice Controls, Part I

Work practice controls are steps taken by an organization to reduce the chance of exposure to bloodborne pathogens by changing how a task is performed. Use personal protective equipment along with work practice controls to eliminate your risk of exposure to bloodborne pathogens.

Click on each flash card to see examples of work practice controls.



Media Credit

Prohibiting workers from bending, breaking, recapping, or removing needles and other dirty sharps.⁴

Prohibiting workers from eating, drinking, smoking, applying cosmetics, and handling contact lenses in areas where exposure to bloodborne pathogens is likely to occur.⁴

Requiring the placement of laboratory specimens, such as blood or other materials that might be infected, in containers that prevent leakage during collection, handling, processing, storage, transport, and shipping.⁴

Media Credit

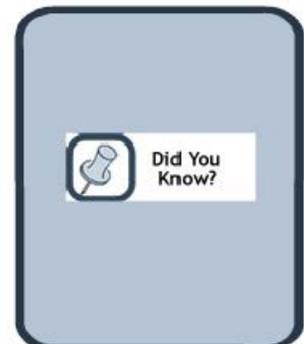
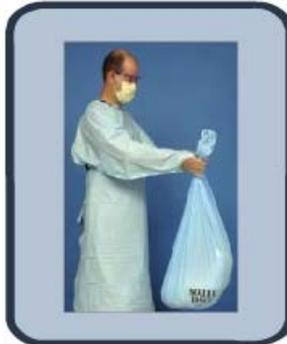
Media Credit

From Potter PA, Perry AG. *Fundamentals of Nursing*. 6th ed. St. Louis, Mo: Mosby; 2005.

Work Practice Controls, Part II

Work practice controls are steps taken by an organization to reduce the chance of exposure to bloodborne pathogens by changing how a task is performed. Use personal protective equipment along with work practice controls to eliminate your risk of exposure to bloodborne pathogens.

Click on each flash card to see examples of work practice controls.



Requiring that used needles and sharps be discarded immediately or as soon as possible in containers that are closable, puncture-resistant, leakproof on sides and bottom, and labeled or color-coded as required by the bloodborne pathogen standard.⁴

Requiring that contaminated laundry be bagged or put into containers at the location where it is used. Healthcare workers should not sort or rinse contaminated laundry in the patient's room.⁴

Developing a written schedule for cleaning and decontaminating areas within the healthcare organization based on the type of surface to be cleaned, the type of soil present, and the tasks or procedures being performed in the area.⁴

OSHA mandates that a healthcare worker's employer must clean, launder, and dispose of personal protective equipment at no cost to the employee.

Media Credit

From Potter PA, Perry AG. *Fundamentals of Nursing*. 6th ed. St. Louis, Mo: Mosby; 2005.



Did You Know?

For patients with EVD, the CDC recommends that visibly contaminated surfaces, PPE, or equipment be disinfected immediately with an EPA-registered disinfectant wipe. Regular cleaning and disinfecting should be done by nurses and doctors who are taking care of the patient to limit the number of people exposed to EVD.¹⁸

Screen 6 of 9

Quick Check: Precautions and Controls

Match each method for preventing exposure to bloodborne pathogens with an example. Use your mouse pointer to drag the labels to the correct placeholders then click **Check Answers**.

Engineering Controls

Standard Precautions

Work Practice Controls

Method

Example

Disposing of needles in a sharps disposal container

Using personal protective equipment when handling items contaminated with blood and body fluid

Prohibiting recapping of needles



Check Answers



Answer Key



Reset Choices

Tries Remaining: 2

ANSWER:

Match each method for preventing exposure to bloodborne pathogens with an example. Use your mouse pointer to drag the labels to the correct placeholders then click **Check Answers**.

Method	Example
Engineering Controls	Disposing of needles in a sharps disposal container
Standard Precautions	Using personal protective equipment when handling items contaminated with blood and body fluid
Work Practice Controls	Prohibiting recapping of needles

 Check Answers  Answer Key  Reset Choices

The correct matches are shown.

Tries Remaining: 2

Screen 7 of 9

Communicating Hazards to Employees

Healthcare organizations must provide information to workers on the risks for exposure to bloodborne pathogens and methods for safe disposal of contaminated waste.

Labels

OSHA requires that healthcare organizations educate workers on the disposal of waste that is contaminated with blood and body fluids. As part of meeting this requirement, organizations should tell healthcare workers when to use warning labels and how to recognize contaminated material. OSHA recommends using warning labels on:

- Containers of regulated waste
- Refrigerators and freezers containing blood or other material that may be infected
- Containers used to store, transport, or ship blood or other potentially infected materials

The labels and signs should be fluorescent orange or orange-red, with lettering and symbols in a contrasting color. Red bags or red containers may be substituted for labels.⁴

Employee Training

Your organization also communicates about your risk for exposure to bloodborne pathogens through information and training sessions. Training should address:

- Your risk for exposure to bloodborne pathogens
- Methods to reduce and eliminate exposure to bloodborne pathogens
- What you should do if you are exposed to bloodborne pathogens

Screen 8 of 9

Exposure Incident

An exposure incident happens when you have direct contact with blood or body fluid through:

- Splash or spray to your eyes, mouth, or other mucosal surface
- Needlestick, laceration, or other piercing of the skin by an object contaminated with blood or other body fluids
- Contact with contaminated blood or body fluid that enters a cut, abrasion, or other lesion on your skin

If you are exposed to Ebola, you must report it to your employer, self-monitor for signs and symptoms for 21 days, and seek medical attention immediately if any signs or symptoms appear.¹³

What to Do if You Are Exposed

Your organization's exposure control plan describes specific steps to follow if you are exposed to contaminated substances in the workplace. The exposure control plan should tell you about the free postexposure evaluation and follow-up care provided by your organization. The postexposure evaluation and follow-up are confidential.⁴

Exposure Incident	What to Do
Hands or skin	Immediately wash the area with soap and water.
Mucous membranes	Flush the exposed area with water.
Any exposure incident	Notify your supervisor of the exposure incident immediately. In some cases, preventive treatment may be necessary and must be started within only a few hours of the exposure. The patient involved in the exposure may require testing.

Screen 9 of 9

Summary

The risk of exposure to bloodborne pathogens in healthcare organizations has been greatly reduced through the use of engineering and work practice controls. As a healthcare worker, you are responsible for following the requirements outlined in your organization's exposure control plan.

The exposure control plan describes your risk of exposure to bloodborne pathogens. If you have any questions about bloodborne pathogens and exposure control, discuss them with your educator or supervisor.

References

1. Potter PA, Perry AG, Stockert P, Hall A. *Fundamentals of Nursing*. 8th ed. St. Louis, MO: Mosby; 2012.
2. Centers for Disease Control and Prevention (CDC). Hepatitis B information for health professionals. CDC Web site. <http://www.cdc.gov/hepatitis/HBV/index.htm>. Last updated May 16, 2012. Accessed December 9, 2014.
3. Centers for Disease Control and Prevention (CDC). Viral hepatitis surveillance – United States, 2010. CDC Web site. <http://www.cdc.gov/hepatitis/Statistics/2010Surveillance/index.htm>. Last updated August 26, 2013. Accessed December 9, 2014.
4. Occupational Safety & Health Administration (OSHA). Regulations (Standards - 29 CFR): bloodborne pathogens, CFR1910.1030. OSHA Web site. http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051. Accessed December 9, 2014.
5. Potter PA, Perry AG. *Clinical Nursing Skills & Techniques*. 8th ed. St. Louis, MO: Mosby; 2014.
6. Centers for Disease Control and Prevention (CDC). Hepatitis C FAQs for health professionals. CDC Web site. Last updated November 17, 2014. <http://www.cdc.gov/hepatitis/HCV/HCVfaq.htm>. Accessed December 9, 2014.
7. Centers for Disease Control and Prevention (CDC). Hepatitis C information for health professionals. CDC Web site. Last updated July 17, 2014. <http://www.cdc.gov/hepatitis/HCV/index.htm>. Accessed December 9, 2014.
8. Centers for Disease Control and Prevention (CDC). Hepatitis C FAQs for the public. CDC Web site. <http://www.cdc.gov/hepatitis/C/cFAQ.htm>. Accessed December 9, 2014.
9. Centers for Disease Control and Prevention (CDC). HIV/AIDS. Basic statistics. CDC Web site. Last updated November 25, 2014. <http://www.cdc.gov/hiv/basics/statistics.html>. Accessed December 9, 2014.
10. Centers for Disease Control and Prevention (CDC). About HIV/AIDS. CDC Web site. Last updated February 12, 2014. <http://www.cdc.gov/hiv/basics/whatishiv.html>. Accessed December 9, 2014.
11. Centers for Disease Control and Prevention (CDC). Bloodborne infectious diseases: HIV/AIDS, hepatitis B, hepatitis C. CDC Web site. Last updated January 31, 2012. <http://www.cdc.gov/niosh/topics/bbp/>. Accessed December 9, 2014.
12. U.S. Department of Health and Human Services (HHS). HIV/AIDS basics. Signs and symptoms. AIDS.gov. Last revised December 19, 2013. <http://aids.gov/hiv-aids-basics/hiv-aids-101/signs-and-symptoms/>. Accessed December 9, 2014.
13. Centers for Disease Control and Prevention (CDC). Ebola (Ebola virus disease). CDC Web site. Last updated December 8, 2014. <http://www.cdc.gov/vhf/ebola/index.html>. Accessed December 9, 2014.
14. The Joint Commission (TJC). Multi-dose vials. The Joint Commission Web site. http://www.jointcommission.org/standards_information/jcfaqdetails.aspx?StandardsFaqlD=143&ProgramId=47. Accessed May 20, 2013.
15. Centers for Disease Control and Prevention (CDC). Injection safety. CDC Web site. <http://www.cdc.gov/injectionsafety/>. Last updated May 30, 2014. Accessed December 9, 2014.
16. The Joint Commission (TJC). Joint Commission Standards – safety and effectively managing the infectious Ebola patient. TJC Web site. November 5, 2014. [http://www.jointcommission.org/assets/1/18/Joint Commission Standards for Managing Ebola Patient.pdf](http://www.jointcommission.org/assets/1/18/Joint_Commission_Standards_for_Managing_Ebola_Patient.pdf). Accessed December 9, 2014.
17. Centers for Disease Control and Prevention (CDC). Guidance on personal protective equipment to be used by healthcare workers during management of patients with Ebola Virus Disease in U.S. hospitals, including procedures for putting on (donning) and removing (doffing). CDC Web

site. Last reviewed November 10, 2014. <http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html>. Accessed December 9, 2014.

18. Occupational Safety & Health Administration (OSHA). *Fact Sheet: PPE selection matrix for occupational exposure to Ebola Virus*. OSHA fact sheet. Last updated November 24, 2014. [http://www.dol.gov/osh/pdfs/OSHA_FS-3761_PPE_Selection_Matrix_-_Ebola_\(11-24-14\).pdf](http://www.dol.gov/osh/pdfs/OSHA_FS-3761_PPE_Selection_Matrix_-_Ebola_(11-24-14).pdf). Accessed December 4, 2014.

Resources

Resource 1: [Standard Precautions](#)

This table lists the recommendations from the Centers for Disease Control and Prevention for the use of standard precautions for the care of patients in all healthcare settings.

Standard Precautions	
Hand hygiene	Perform after touching blood, body fluids, secretions, excretions, and contaminated items; after removing gloves; and between patient contacts.
Gloves	Use when touching blood; body fluids; secretions; excretions; contaminated items; mucous membranes; and skin with cuts, abrasions, or other openings.
Gown	Use during procedures and patient care activities when contact of clothing or exposed skin with blood, body fluids, secretions, or excretions may occur.
Mask, eye protection (goggles), face shield*	Use during procedures and patient care activities that are likely to cause splashes or sprays of blood, body fluids, or secretions, especially during suctioning and endotracheal intubation.
Soiled patient care equipment	Handle in a manner that prevents transfer of microorganisms to others and to the environment; wear gloves if visibly contaminated; and perform hand hygiene.
Environmental control	Routinely care for, clean, and disinfect environmental surfaces, especially frequently touched surfaces in patient care areas.
Material and laundry	Handle in a manner that prevents transfer of microorganisms to others and to the environment.
Needles and other sharps	Do not recap, bend, break, or hand-manipulate used needles. If recapping is required, use a one-handed scoop technique only. Use safety features when available. Place used sharps in a puncture-resistant container.
Patient resuscitation	Use a mouthpiece, resuscitation bag, and other ventilation devices to prevent contact with mouth and oral secretions.
Patient placement	Make it a priority to place a patient in a single-patient room if the patient is at increased risk for spreading an infection to others, does not maintain appropriate hygiene, or is at increased risk for acquiring infection or developing an adverse outcome following an infection.
Respiratory hygiene and cough etiquette	Instruct symptomatic persons to cover their mouth and nose when sneezing or coughing, use tissues and dispose of them in a no-touch receptacle, perform hand hygiene after soiling of hands with respiratory secretions, wear a surgical mask if tolerated, or maintain separation greater than 3 feet of space if possible.

Resource 2: Putting on and Removing PPE

Putting on and Removing PPE

Order for Putting on Personal Protective Equipment	Order for Removing Personal Protective Equipment
1. Isolation gown 2. Mask or respirator 3. Goggles or face shield 4. Gloves	1. Gloves 2. Face shield or goggles 3. Gown 4. Mask or respirator

Glossary

Mucous membrane: Thin tissue that covers or lines cavities of the body, such as the mouth, that open to the outside.

Hepatitis B: is a liver disease caused by the hepatitis B virus (HBV). It ranges in severity from a mild illness, lasting a few weeks (acute), to a serious long-term (chronic) illness that can lead to liver disease or liver cancer.

- **Transmission:** Contact with infectious blood, semen, and other body fluids from having sex with an infected person, sharing contaminated needles to inject drugs, or from an infected mother to her newborn.
- **Vaccination:** Hepatitis B vaccination is recommended for all infants, older children and adolescents who were not vaccinated previously, and adults at risk for HBV infection.

Jaundice: A yellow discoloration of the skin, mucous membranes, and sclerae (whites) of the eyes, caused by too much bilirubin in the blood.

Hepatitis C: is a liver disease caused by the hepatitis C virus (HCV). HCV infection sometimes results in an acute illness, but most often becomes a chronic condition that can lead to cirrhosis of the liver and liver cancer.

- **Transmission:** Contact with the blood of an infected person, primarily through sharing contaminated needles to inject drugs.
- **Vaccination:** There is no vaccine for hepatitis C.

General Instructions for Taking Tests

You have chosen to begin the test on:

The Joint Commission: Bloodborne Pathogens and Exposure Control

There are 10 questions in this test. Be sure you have enough time to complete all questions before you continue. If you exit the test before clicking 'Complete the Test,' your answers to the questions will not be saved. If you leave some questions blank and click, 'Complete the Test,' any unanswered questions will be scored as incorrect.

Tests may include case studies, true/false, and multiple choice questions, including single or multiple answer. Your test score is the percentage of questions answered correctly out of the total.

If you are ready to begin, click **Take Test** in the menu bar above.

You have the option to take this test later. If you would rather take this test later, click **Personal Page** in the menu bar above to return to your list of assigned lessons.

After you achieve a passing score for this test, please click **Evaluation** to complete and submit an evaluation of the activity.

Post test – Bloodborne Pathogens and Exposure Control

1. Which example of a work practice control decreases the risk of exposure to bloodborne pathogens?
 - A. Recapping used needles as soon as possible
 - B. Eating your lunch at your work station
 - C. Sorting dirty laundry, such as bed linens, in a patient's room
 - D. Placing used needles and sharps in a puncture-resistant container
2. Which type of precautions must be followed for every patient whom you come in contact with?
 - A. Airborne precautions
 - B. Standard precautions
 - C. Contact precautions
 - D. Healthcare precautions
3. According to OSHA, who must give input for decisions about safety devices?
 - A. Leaders within the organization who make purchasing decisions
 - B. Patients who receive care within the healthcare organization
 - C. Nonmanagerial employees who are responsible for direct patient care
 - D. Materials management employees responsible for stocking supplies
4. Which viruses are bloodborne pathogens?
 - A. Hepatitis A virus, hepatitis B virus, and hepatitis C virus
 - B. Hepatitis A virus, hepatitis B virus, and human immunodeficiency virus
 - C. Hepatitis B virus, hepatitis C virus, and human immunodeficiency virus
 - D. Hepatitis B virus, hepatitis E virus, and human immunodeficiency virus
5. How are bloodborne pathogens spread from an infected person to a noninfected person?
 - A. Through broken or open skin and mucous membranes
 - B. Through contaminated air
 - C. Through contact with personal items, such as the telephone
 - D. Through contaminated water

6. Which situation describes an exposure incident to a potential bloodborne pathogen?
- A. Drawing blood from a patient with hepatitis B
 - B. Touching the blood of a patient infected with human immunodeficiency virus with gloved hands
 - C. A splash of blood on intact skin
 - D. An accidental needlestick while changing a patient's bed linens
7. What information must be included in your healthcare organization's exposure control plan?
- A. Your risk for exposure to bloodborne pathogens
 - B. The needle size for different patient care procedures
 - C. The correct steps to take to clean a patient's room
 - D. How to draw blood from a patient
8. Which practice is included in Standard Precautions?
- A. Using gloves when handling blood or body fluids to prevent exposure to bloodborne pathogens
 - B. Wearing masks for every patient-related activity
 - C. Wearing shoe covers at all times to protect shoes from contamination
 - D. Wearing eye protection at all times
9. What type of germ is a bloodborne pathogen?
- A. A germ carried in the blood that can cause disease
 - B. A germ that everyone is born with
 - C. A germ normally found in blood products
 - D. A germ that causes cancer
10. What is the purpose of an exposure control plan?
- A. To decrease the spread of the common cold among healthcare workers
 - B. To decrease the exposure of healthcare workers to secondhand smoke
 - C. To increase the use of contact precautions in healthcare organizations
 - D. To eliminate or decrease healthcare workers exposure to pathogens