Bloodborne Pathogens

Commonwealth Health Corporation
In this module, you will explore:

• How you can be exposed to bloodborne diseases
• Bloodborne diseases found in a hospital setting
• Parts of the Exposure Control Plan
• The meaning of the term "Standard Precautions"
• Personal protective equipment (PPE)
• Proper disposal of waste products
• Workplace practices which guard against exposure to bloodborne diseases
• What to do if you are exposed
Bloodborne pathogens are germs which may be present in human blood that are capable of causing disease.

Bloodborne pathogens are important to consider when dealing with blood and other potentially infectious materials (OPIM).

OPIM includes semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, amniotic fluid, saliva in dental procedures, and any other body fluid that has visible blood in it.
Exposure to **bloodborne pathogens** in the workplace is a major concern for workers and employers.

The Occupational Safety and Health Administration (OSHA) is a government agency that requires employers to provide the safest work environment possible for employees, and has a standard or rule to address this concern. The **Bloodborne Pathogens Rule** requires both employers and workers to prevent the spread of bloodborne diseases.

Avoiding occupational blood exposure, providing Hepatitis B vaccinations, and appropriate management after an exposure are important parts of a complete program to prevent infections and improve workplace safety.
How Are People Exposed to Bloodborne Pathogens?

You can be exposed to a bloodborne pathogen by performing a task or being in an area where you might come in contact with blood or other potentially infectious materials.

The majority of exposures to bloodborne diseases in a hospital are by direct exposure from needle sticks or other injuries from sharps.

Exposures may also occur from contact with infected blood or other potentially infectious body fluids to open areas on the skin, splashes to the eyes, nose or mouth, and human bites.

Be sure to use caution when you might come in contact with any bodily fluids.
What Happens If You Are Exposed to a Bloodborne Pathogen?

Even one exposure to a bloodborne pathogen can lead to serious and disabling diseases such as:

• HIV
• Hepatitis B
• Hepatitis C

You will not know you are infected with a bloodborne disease at the time of exposure, but Infection Prevention will be able to tell you within hours if the patient is HIV or Hepatitis B positive and within 2-3 days if the patient is positive for Hepatitis C. If the patient is positive for either HIV, Hep B or Hep C, you will require repeat testing at 6 weeks and 4 months post-exposure. If you become infected from an exposure, a blood test will normally be positive within four months.
Does Everyone Exposed to a Bloodborne Pathogen Become Infected?

Not everyone exposed to a bloodborne pathogen will become infected. Whether or not you become infected depends on:

- the number and strength of the germs
- your resistance to disease
- the type of entry the germ has into your body
Review:

If the source patient is positive for HIV:

• you will be told by Infection Prevention within hours of exposure and counseling will begin
HIV is a virus that attacks the immune system. This infection robs a person of the ability to fight off other infections. Once the person develops one of these “opportunistic” illnesses, the patient is diagnosed with AIDS.

How Is HIV Contracted?

HIV can be contracted by:
- homosexual or heterosexual contact
- IV drug users who share needles
- mother to child during pregnancy or labor and delivery (risk is lowered if the mother receives appropriate treatment)
- mother to child through breast feeding
HIV **CANNOT** be contracted by:

- shaking hands, hugging
- mosquito bites
- eating food prepared by an HIV positive individual
- telephones, door knobs, toilet seats

You **CANNOT** get HIV from *donating* blood.
What Happens If You Are Exposed to HIV?

If you are exposed to HIV through a needle stick or other sharps injury, your risk of getting HIV is about 0.3%. The risk is less for blood splashes onto broken or scraped skin or mucous membranes such as the eyes, nose, and mouth.

- Symptoms may not occur until several years after being infected.

As HIV progresses, one will usually begin to have vague symptoms including enlarged lymph nodes, loss of appetite, chronic diarrhea, skin rashes, weight loss, low grade fever, fatigue, and repeated infections.

A person can spread HIV to others even though they do not look or feel sick.

A person can spread HIV to others even before they know they have the disease.
What is Post-Exposure Prophylaxis (PEP)?

PEP drugs may be given to employees who have had an occupational exposure to HIV to try to prevent infection.

- PEP drugs taken *as soon as possible after exposure* may prevent infection, not to exceed 72 hours after exposure.
- Centers for Disease Control and Prevention (CDC) guidelines are followed for giving PEP.
- Not all exposures need PEP.
- Employees may refuse any or all drugs for PEP.
Symptoms of HIV may not occur until several years after infection and a person may infect others even when they have no symptoms and don't know they are infected.

True

False

Click on the next to the correct answer
REVIEW QUESTION

HIV can be contracted by:

- donating blood
- toilet seats
- hugging
- needle sticks

Click on the next to the correct answer
Hepatitis B (HBV) is a virus that attacks the liver and can cause lifelong infection, inflammation, cirrhosis (scarring), liver cancer, and death.

- Many people who are infected with the virus do not have symptoms.
- An infected person with no symptoms can still spread the virus to others.

Hepatitis B virus is spread to others by infected blood and other potentially infectious body fluids, and has been shown to live in dried blood for at least one week.
Symptoms of Hepatitis B infection may include:

- yellow skin color/yellowing of the whites of the eyes
- dark urine
- abdominal pain
- nausea, vomiting
- feeling tired
- loss of appetite

About 30% of infected persons have no signs or symptoms.

Of persons who have symptoms, about ½ will no longer be infectious by 7 weeks after the beginning of symptoms.

Approximately 95% of adults recover completely from Hepatitis B infection and do not develop chronic (long lasting) infection. Infants and children are more likely to remain chronically infected.
You **CAN** get Hepatitis B by:

- needlesticks or sharps exposures on the job
- sexual contact with an infected person
- sharing drugs, needles, or “works” when “shooting” drugs
- infected mother to baby during birth

Healthcare workers should be **vaccinated** against the Hepatitis B Virus. Following completion of the vaccination series, a titer should be drawn to document immunity. Always follow routine barrier precautions (gloves, mask, gown, etc. when indicated) and practice **safe handling of needles and other sharps**.

Infants born to Hepatitis B infected mothers should receive Hepatitis B immune globulin and vaccine within 12 hours after birth to protect them from the disease.
OSHA requires that the hepatitis B vaccine be available to all healthcare workers who may be exposed to blood or other potentially infectious materials. The vaccine:

- is offered at no charge
- consists of a series of three injections given at intervals in the deltoid (upper arm) muscle, followed by a titer drawn to document immunity
- will not cause you to get the disease
- is available later if you elect not to take the vaccine initially

Contact Employee Health at Ext. 1263 for more information.
What Happens If You Are Exposed to Hepatitis B?

If you are exposed to Hepatitis B through a needle stick or other sharps injury, your risk of getting Hepatitis B is between **6 to 30%** if you have **not** had the series of three vaccinations. The risk drops to almost **0%** if you have had a successful series of vaccinations.

- The risk is less for blood splashes onto **mucous membranes** or broken/scraped skin.
- Hepatitis B can generally be prevented with immunizations, booster shots, and Hepatitis B immune globulin (HBIG).

If you are infected, there are medications available to treat chronic HBV. These are effective for some, but there is no cure. That is why **prevention** is so important.
What Is Hepatitis C? (HCV)

Hepatitis C (HCV) is a virus that, similar to Hepatitis B, attacks the liver. HCV causes liver disease that ranges in severity from a mild illness lasting a few weeks to a serious, lifelong illness. It is spread primarily through contact with the blood of an infected person.

- Approximately 3.2 million Americans have the long term or chronic infection.
- Serious long-term effects include cirrhosis (scarring) of the liver and liver cancer.
- Persons who have the infection may be able to spread it to others even if they have no symptoms.
- HCV is the most common reason for a liver transplant.
How Is Hepatitis C Contracted?

If you are exposed to **Hepatitis C** through a needle stick or other sharps injury, your risk of contracting the disease is approximately 1.8%.

- HCV can be spread by sex, but this is rare.
- HCV can be spread through sharing needles or “works” when “shooting” drugs.
- HCV can be spread through needlesticks or sharps exposures on the job.
- HCV can be spread from an infected mother to her baby during birth (risk is 4%; if the mother also has HIV, the risk is 2-3 times greater).
What Happens If You Develop Hepatitis C?

There is presently NO Vaccine or Post-Exposure Prophylaxis to prevent Hepatitis C.

Approximately 15-25% of persons who become infected with Hepatitis C clear the virus from their bodies without treatment and do not develop chronic infection.

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

- feeling tired
- nausea
- abdominal pain
- loss of appetite
- dark urine
- yellow skin color/yellowing of the whites of the eyes
What Happens If You Develop Hepatitis C?

Approximately 75-85% of persons who become infected with HCV develop **chronic** disease and long term liver problems. Most with **chronic** Hepatitis C do not have any symptoms. In many cases there are no symptoms of the disease until liver problems have developed.

While there is no definitive cure for Hepatitis C, there are new antiviral drugs to treat the **disease**.

- The treatment is not always effective, but often leads to sustained remission and long-term improvement.
- Even when effective, the virus may spontaneously return.
Which statement is most true of Hepatitis C?

- Most patients with Hepatitis C appear to have no symptoms.
- Hepatitis C is a major cause of cirrhosis of the liver and liver cancer.
- While there is no cure for Hepatitis C, there are new antiviral drugs that may lead to remission and long term improvement.
- All of the above statements are true of Hepatitis C.

Click on the ☀️ next to the correct answer.
OSHA requires all employers to develop an Exposure Control Plan. This is a written plan to eliminate or minimize employee exposures to bloodborne pathogens.

A copy of OSHA’s Bloodborne Pathogen Standard is available to all employees in the Infection Prevention Office or by calling 270-745-1581.

CHC's Exposure Control Plan is available on-line in Citrix (Policies and Manuals). The plan is updated at least annually to include:

- changes in equipment that reduce and/or eliminate exposure
- documentation of trials and implementation of safer medical devices
OSHA Requirements (cont.)

OSHA requires an **Exposure Determination** in every facility which lists employee risk for occupational exposure to bloodborne pathogens by job classification.

- It is available to all employees in the Exposure Control Plan.
- It identifies employee positions that may be exposed to blood or other potentially infectious materials.

OSHA requires the use of safety devices whenever possible. Healthcare workers who use the device must be involved in selecting and evaluating safety devices.
REVIEW QUESTION

Exposure Determination identifies the employee positions that are at risk for exposure to blood or other potentially infectious materials.

True

False

Click on the ☀ next to the correct answer
You are responsible for understanding the risk of exposure to **blood** or **other potentially infectious materials** at your workplace.

When working with blood or other potentially infectious materials:

- avoid splashing, spraying, splattering, and generation of droplets
- mouth pipetting/suctioning is prohibited
**Standard Precautions**

*Standard Precautions* include a group of infection prevention practices that apply to **ALL** patients. Standard Precautions are based on the principle that all blood, body fluids, secretions, excretions (except sweat), non-intact skin, and mucous membranes may contain germs that can cause infection if you are exposed.

- The use of **Standard Precautions** also prevents the spread of germs from patient to patient, patient to employee, and employee to patient. This approach assumes that certain areas of the body have germs that normally do not cause disease, but if spread to others, may cause an infection.

- The intent of **Standard Precautions** is to protect healthcare workers and patients from exposure to any disease-causing germs.

- **Standard Precautions** do not protect against airborne or droplet spread illnesses.
Standard Precautions (cont.)

**Standard Precautions include:**

1. Hand Hygiene

2. Use of personal protective equipment for any procedure/patient care activity where you could have exposure—gowns, gloves, mask, and eyewear as needed

3. Appropriate handling of equipment/items in the patient environment that may be contaminated

4. Respiratory Hygiene/Cough Etiquette—cough or sneeze in your sleeve

5. Safe injection practices—use 1 needle, 1 syringe, 1 time and safety devices

6. Use of face mask during insertion of central lines

7. Use of face mask any time there is a potential for splash, spray, or cough to the face

8. Use of face mask when placing a catheter or injecting material into the spinal or epidural space
This specialized clothing and equipment provides protection against contact with blood or other potentially infectious materials.

• Always use the required Personal Protective Equipment (PPE).

• Always check PPE before using it to be sure it is not damaged or worn.
Required use of Personal Protective Equipment:

- Wear a **mask and eye protection** whenever you might get splashed in the face (in the operating room, in the room with a ventilator patient, when suctioning or irrigating tubes, when a patient is coughing or sneezing, when emptying fluids that might splash, when removing central lines or NG tubes, etc.).
- Use a **CPR mask** when performing cardiopulmonary resuscitation.
- Wear a **disposable gown** when your clothing may have blood, body fluid, or pathogen exposure.
- Use **gloves** any time you may have contact with blood, other body fluids, mucous membranes, or non-intact skin (e.g., when you treat an open wound, draw blood, or handle dirty laundry).
Handling Hazardous/Infectious Waste

Place all **hazardous-infectious waste** in:

- a receptacle that exhibits a **biohazard symbol** (universal symbol placed on any container or area that may contain hazardous/infectious waste)

  or

- a policy-designated color-coded receptacle, i.e., a red bag or container

  **Soiled linen and equipment should NEVER be placed in a red bag.**
Hazardous/Infectious Waste (cont.)

Hazardous/infectious waste includes:

- blood and blood products
- other potentially infectious materials (OPIM)
- sharps such as needles, scalpels, and lancets - syringes **without** a needle attached require disposal as a sharp
- any pathological or microbiological wastes
- items that are blood **soaked** (“will drip when compressed”)
- contaminated items that could release blood or OPIM in a liquid, semi-liquid, or dried state during handling

IV bags with **patient-identifying labels attached/readable** **must** also be discarded in hazardous waste to protect patient’s privacy.
How To Dispose Of Sharps

Dispose of sharps only in **proper sharps containers**. These are rigid, puncture-resistant containers labeled as **biohazard**.

- When the container is **3/4 full** it should be replaced.
- The container should be securely closed and placed in the appropriate area for pickup by the Hazardous Waste Company.

**Never attempt:**
- to bend or break needles
- to remove needles from sharps containers
REVIEW QUESTION

Hazardous/infectious waste contains which of the following:

- waste from your home
- waste from the admissions office
- waste you have on a regular basis
- blood, contaminated sharps, other potentially infectious materials, and pathological or microbiological wastes

Click on the ☀ next to the correct answer
Protect yourself from infection by practicing personal hygiene and frequent hand hygiene. Wearing gloves does NOT replace hand hygiene (hand washing or using alcohol hand sanitizer).

**Cleanup of Spills**

If a spill of blood or body fluid occurs, you are responsible for initiating the cleanup.

- If no broken glass is involved, put on gloves and wipe the majority of the spillage from the floor using paper towels/cloths. Dispose of spillage in red bags and place in hazardous waste barrel. Notify ESD for final cleaning.
- If broken glass is involved, page ESD immediately. They will take total responsibility for the cleanup.
In work areas where exposure is likely, **do not:**

- eat, drink, or put objects in your mouth
- apply cosmetics, lip balm, or contact lenses

Practice **good housekeeping** by observing established practices, schedules, and procedures for cleaning and disinfecting work areas at your facility.

Follow **recommended practices** for handling contaminated clothing and laundry.

- Bag soiled linens (including isolation linens) in blue bags.
- Do not sort, rinse, double bag, or place any linen in red bags.
- Do not carry soiled linen or other items next to your clothing.
- All linen is handled with Standard Precautions (i.e., treated as if it was infectious) at the laundry.
The CDC estimates that each year 385,000 needlesticks and other sharps-related injuries are sustained by hospital-based healthcare workers, an average of 1,000 sharps injuries per day.

- Use effective safety devices that are designed to eliminate or reduce risk of exposure to bloodborne pathogens.

### Sharps Injury Log

When a percutaneous (puncture through the skin) exposure injury with a contaminated sharp occurs, the following information is recorded in the **Sharps Injury Log**:

- type and brand of device involved
- department or area where the injury occurred
- explanation of how it occurred

The confidentiality of the injured employee is protected.
No one medical device is considered appropriate or effective for all circumstances. Choose medical devices that:

- do not jeopardize employee or patient safety
- do make an exposure incident with a contaminated sharp less likely to occur

Any employee may recommend new and different safety devices and equipment by calling Infection Prevention at Ext 1581.
If you have contact with blood or other potentially infectious materials, immediately cleanse the area.

- Flush mucous membranes with a large amount of water. Report to the ED for eye splashes in the hospital; report to eye wash stations in other facilities. After irrigation, all eye splashes should be examined by a physician for corneal abrasions.

- Wash exposed skin with soap and water.

- Report the exposure incident to your supervisor, obtain the Exposure Packet from any computer and follow the policy. The Exposure Packet icon is on any CHC computer desktop.

- Contact Infection Prevention. If Infection Prevention is not available, they should be contacted on their next working day. For any questions, Infection Prevention on-call can be reached at any time by calling The Medical Center-Bowling Green operator at 270-745-1000.
Medical Follow-Up and Evaluation (cont.)

Go through the evaluation and follow-up process. Infection Prevention will complete the exposure evaluation and arrange follow-up testing, if required.

OSHA requires that an employee be notified of the post-exposure evaluation and the follow-up actions taken.

The Post-Exposure Evaluation consists of four steps:

- Test the source patient immediately for Hepatitis B, Hepatitis C and HIV.
- Offer the exposed person baseline and follow-up testing, if required, at six weeks and four months.
- Offer the exposed person treatment as needed, including PEP.
- Offer counseling.

*The exposure is confidential!*
REVIEW QUESTION

If you are exposed to blood or other potentially infectious materials, the source patient's blood will be tested for Hep B, Hep C and HIV.

True

False

Click on the ☀️ next to the correct answer
In Summary...

- **Know the risks in your work area**
  - Use Standard Precautions.
  - Use appropriate Personal Protective Equipment.
  - Receive the Hepatitis B vaccination series when it is offered.
  - Properly dispose of hazardous/infectious wastes.
  - Contact your supervisor and Infection Prevention immediately if you are exposed to blood or other potentially infectious materials.

- For more information about Bloodborne Pathogens and how to protect yourself, contact Infection Prevention at 270-745-1581.

---

- You will have three chances to pass the test.

- If you do not pass the test after the third attempt, please contact Melissa Allen at X1581 to make arrangements to retake the test.

- Passing score is 80%.
Return to Course
Return to Course
Return to Course
Return to Course
OOPS!
TRY AGAIN

Return to Course
OOPS!
TRY AGAIN
Return to Course
OOPS!
TRY AGAIN

Return to Course
OOPS!

TRY AGAIN

Return to Course
OOPS!
TRY AGAIN
Return to Course