
What Are Bloodborne Pathogens?

OSHA (Occupational Safety and Health Administration) defines bloodborne pathogens (BBPs) as micro organisms present in human blood that can cause disease.

- Keep in mind that you can't tell if someone is infected just by looking at them. Anyone could unknowingly harbor a BBP since some BBPs may not display symptoms for up to 30 years.

Types of BBPs

The three primary bloodborne pathogens found in the workplace are:

HIV

- HIV is the virus that can progress to AIDS
- You can carry HIV for many years and **not have symptoms** until it progresses to AIDS
- HIV attacks the immune system, making it difficult to fight off common diseases
- Early HIV symptoms resemble the common cold or flu virus
- An HIV antibody test is the only way to know for sure if you have HIV
- HIV **does not** survive outside the body. When HIV-infected human blood or other bodily fluid is dried, the risk of transmission is virtually zero
- Note, there is no cure for HIV or AIDS, only treatment for symptoms

HBV

- More than 1 million people nationwide are infected with Hepatitis B
- The virus can lead to chronic liver disease, liver cancer, and death.
- There are between 140,000 and 320,000 new infections each year in the United States
- Symptoms of Hepatitis B include: Jaundice, fatigue, abdominal pain, loss of appetite, nausea and vomiting
- A vaccine against Hepatitis B has been available since 1982.
- Hepatitis B **can** survive outside the body for at least 1 week in dried blood on surfaces such as a worktable, a knife, tools, broken glass, and sharp metal

HCV

- HCV is the most common chronic bloodborne infection
- Over 3.9 million people are infected with HCV
- HCV attacks the liver
- Symptoms of Hepatitis C include: Jaundice, dark urine, fatigue, loss of appetite, nausea, vomiting, and abdominal pain
- Can take **years** to manifest
- Antiviral medicines can cure more than 95% of cases

Other BBPs

- Hepatitis D (HDV)
- Syphilis
- Malaria
- Babesiosis
- Brucellosis
- Leptospirosis
- Arboviral Relapsing fever
- Creutzfeldt-Jakob Disease
- Human T-Lymphotropic Virus Type I
- Viral Hemorrhagic Fever/ Ebola

Occupational Exposure Sources

Occupational exposure is exposure to BBPs that may result from the performance of an employee's duties.

You may be exposed to BBPs if you come in contact with the following:

- Open skin
- Eye mucous membrane
- Blood: This category includes human blood, human blood components, and products made from human blood
- Other potential infectious materials (OPIMs). These include semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any bodily fluid that is visibly contaminated with blood, and all bodily fluids in situations where it is difficult or impossible to differentiate between body fluids.

Bloodborne Pathogens =

- Any unfixed tissue or organ (other than intact skin) from a human (living or dead) or 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.

Where Can You Be Exposed?

You can be exposed through:

- Cuts, bruises, or other injuries
- Human bites
- Contaminated sharps or needles
- Vomit, feces, or urine
- Providing First Aid
- Used condoms
- A workplace violence incident

Regulations

- OSHA has mandated the **Bloodborne Pathogens Standard** as part of the 2000 Needlestick Safety and Prevention Act.
- The standard imposes requirements on employers of workers who may be exposed to blood or other potentially infectious materials such as certain tissues and body fluids. This can include things like:
 1. Recordkeeping of incidents
 2. Work practice controls
 3. Exposure control plans
 4. HBV vaccination requirements
 5. Hazard communication and training

- There are also 28 OSHA approved state plans.
- OSHA regulations **must be followed at all times**.
- You may be subject to further regulations by the local health department, school district, or contract requirements. Make sure to reach out to your supervisor to become aware of BBP regulations that you must follow.

Exposure Determination and Control Plan

- OSHA Exposure Determination is for those who are at risk of being exposed to BBPs, without regard to **Personal Protective Equipment (PPE)**.
- Any occupation that OSHA has determined to have potential exposure **MUST** adhere to OSHA regulations regarding BBPs.
- An Exposure Control Plan is designed to eliminate or minimize exposure to BBPs.

Exposure Control Plans:

- **Identify** the jobs/tasks for which there may be the potential for exposure to infectious material
- **Describe** engineering and work practice controls like:
 - Safe work practices for first-aid providers and personnel assigned to clean up after an injury
 - Types of PPE they should wear to protect themselves
- **Outline** training requirements
- **Determine** the placement/use of signs and labels that warn employees of BBPs
- **Explain** how to decontaminate equipment and surfaces
- **Describe** how biohazard waste is handled
- **Documents** recordkeeping requirements

Methods of Compliance

Universal Precautions

When you employ Universal Precautions you:

- Treat all blood and bodily fluids as if they are infectious for HIV, Hepatitis, and other bloodborne pathogens
- Use barrier protection—gloves, masks, aprons, protective eyewear—to avoid contact with bodily fluids. Avoiding direct contact means there is no exposure
- Decontaminate yourself by washing your hands after handling any type of bodily fluid, even if you have worn gloves
- Immediately dispose of contaminated items and materials used to disinfect contaminated items in appropriate waste receptacles

Work Practice Controls

When you employ Work Practice Controls you:

- Eliminate or minimize exposure of bloodborne pathogens when possible
- Ensure hand washing facilities are available
 - If not available, then antiseptic cleaners must be provided
- Always wash your hands after removal of PPE
- Dispose contaminated sharps and needles using proper cleanup and disposal procedures
- When the presence of BBPs is possible, eating, drinking, smoking, or touching of the face is PROHIBITED

Personal Protective Equipment (PPE)

- Use personal protective equipment (PPE) to prevent exposure to bloodborne pathogens
- Barrier protection is a vital part of preventing exposure
- Use gloves, made of latex or nitrile, for applying bandages, cleaning up, and decontaminating
 - You should wear gloves in any situation that involves potential contact with blood or bodily fluids
- Eyewear such as goggles, or even a face shield, is needed to protect against splashes of blood that might be absorbed through your mucous membranes like in your eyes or nose.
- Spill kits and first aid kits **must include PPE**

Housekeeping

- Housekeeping principles include:
 - Keeping your workspace in a clean and sanitary condition
 - Decontaminating surfaces is essential in eliminating exposure: Use 10% bleach or EPA-approved disinfectant to decontaminate
- Remove glass and other sharp materials using a brush and dustpan or tongs
 - This is done to minimize exposure of contaminated sharps to your body
- Biohazard disposal should be done according to OSHA and local regulations

Hepatitis B Vaccine

- A Hepatitis B vaccination is strongly recommended to protect against exposure to HBV
 - The vaccine is endorsed by medical, scientific, and public health communities as a safe way to prevent Hepatitis B
- The Hepatitis B vaccine is offered to all potentially exposed employees within 10 days of their initial assignment at no cost to them
 - Employees include first-aid responders, personnel assigned to clean up after accidents, and janitorial personnel
- Vaccination involves a series of three injections that are effective in preventing HBV
- If you decline to be vaccinated against Hepatitis B, you will be asked to sign a form that states that you waived your opportunity to have the vaccination at this time

Communication

- Communication of BBPs is done through signs, labels, and training
- Training and how your workplace communicates BBPs risks is handled through your workplace
- Check with your supervisor about BBP training and communication

What to Do in an Exposure Incident

- An exposure incident is a specific incident of contact with potentially infectious blood or OPIM.

If you think you have been exposed, observe the following procedures:

- **Wash** any cuts and skin thoroughly with soap and water
 - **Rinse** your nose and mouth to remove any potential splashes of blood or OPIM
 - **Flush** eyes with clean water or sterile solution if you weren't wearing goggles or safety glasses
 - **Clean and decontaminate** all affected surfaces
 - **Report** ALL incidents involving blood or other bodily fluids: The organization will be able to determine if exposure occurred to any other employees and offer post-exposure medical evaluations if necessary
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- After each incident, an incident investigation report should be completed. The report should include:
 - Whether blood was spilled
 - Documentation of the spill locations
 - Who cleaned it up
 - Cleanup and waste disposal methods used

What Happens Next?

After you have experienced an exposure incident, a post-exposure medical evaluation is conducted.

- A post-exposure medical evaluation is intended to help determine if you were exposed to infected blood or bodily fluids.
- It is a completely confidential evaluation both for the exposed person and for the source person. Not even the organization will know the results of the testing.
- The evaluation will document the route of exposure and it will also identify the source individual. It will include testing the source person's blood, if he or she gives consent.
- The results will be provided to both the source individual and the exposed employee by medical personnel.