

Bloodborne Pathogens



**AMERICAN
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INSTITUTE**

OSHA Bloodborne Pathogens Standard

The screenshot shows the OSHA website's navigation menu and a search bar. Below the navigation menu, there is a section titled "29 CFR 1910.1030 - Bloodborne Pathogens". The page content includes a table of contents for the standard, a "Scope and Application" section, and a "Definitions" section. The "Definitions" section lists terms such as "Blood", "Bloodborne Pathogens", "Clinical Laboratory", "Contaminated Laundry", and "Contaminated Sharps".

Part Number:	1910
Part Title:	Occupational Safety and Health Standards
Section:	2
Support Title:	Toxic and Hazardous Substances
Standard Number:	1910.1030
Title:	Bloodborne pathogens
Applicable:	A
GPO Source:	6-528

2910.10300
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.

2910.10300
Definitions: For purposes of this section, the following apply:
Blood: means human blood, human blood components, and products made from human blood.
Bloodborne Pathogens: means 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) and human immunodeficiency virus (HIV).
Clinical Laboratory: means a workplace where diagnostic or other screening procedures are performed on blood or other potentially infectious materials.
Contaminated Laundry: means the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.
Contaminated Laundry means laundry which has been soiled with blood or other potentially infectious materials or their contents.
Contaminated Sharps: means any contaminated object that can penetrate the skin (including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires).

- Some employees face significant health risk as a result of exposure to blood or other potentially infectious materials (OPIM)
- The Bloodborne Pathogens Standard, 29 CFR 1910.1030 applies to employees who can reasonably come in contact with human blood and OPIM in the course of their job
- The purpose of the Standard is to protect employees by minimizing/eliminating exposure to disease-carrying microorganisms

OSHA Bloodborne Pathogens Standard



- Employees with potential for exposure must receive training yearly
- Understanding important concepts can reduce risk
 - Engineering controls
 - Work practice controls
 - Personal protective equipment
 - Exposure follow up
 - Housekeeping procedures



Knowledge Check

What is the purpose of the OSHA Bloodborne Pathogens Standard?



Knowledge Check Answer

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.

Who to Talk About BBP in Your Organization:

- Insert Site-Specific Information Here

Specific Bloodborne Pathogens

- Most concerning bloodborne pathogens:
 - Hepatitis B virus (HBV)
 - Hepatitis C virus (HCV)
 - Human immunodeficiency virus (HIV)
- Not all are contagious to same degree, nor have same symptoms
- Someone can be infected and contagious but show no symptoms
- Only a few have available treatment





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
 - A chronic HBV infection can develop over time if virus remains in the body
- Life-threatening complications of hepatitis include:
 - Cirrhosis of the liver
 - Liver cancer
 - Liver failure



Hepatitis B Virus (HBV)

Symptoms 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)



Hepatitis B Virus (HBV)

- Not all people infected with HBV show symptoms
- Even without symptoms, HBV-infected individuals can still be infectious
- 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
 - Relatively few adverse side effects
 - Well tolerated by most of the population



Hepatitis C Virus (HCV)

- HCV can cause severe liver damage, both acute and chronic infections
- Most with an acute HCV infection do not display symptoms
- When symptoms do occur, they are the same that can occur with HBV
- Infected individuals are still infectious even if showing no symptoms
- HCV has an increased risk of indirect exposure, can be infectious on surfaces for up to 3 weeks in the presence of dried blood
- No immunization available for HCV
- Treatment available for acute infection can reduce risk of disease becoming chronic, however, there is uncertainty about it

Human Immunodeficiency Virus (HIV)

- The human immunodeficiency virus (HIV) is the virus responsible for causing acquired immunodeficiency syndrome (AIDS)
- Virus attacks and suppresses the immune system
 - Specifically targets cells that are crucial for fighting infection
 - Allows other diseases and infections to progress in the body without resistance
- Many of those infected with HIV will not show any symptoms of infection but are still potentially infectious to others

Human Immunodeficiency Virus (HIV)

- Early symptoms could include the following:
 - Fever, chills
 - Rash
 - Night sweats
 - Muscle aches
 - Sore throat
 - Fatigue
 - Swollen lymph nodes
 - Mouth ulcers
- Could take years before an HIV-infected person shows symptoms of disease
- As infection progresses to AIDS, more severe symptoms can develop
- No immunization or known cure for HIV, but effective new drug therapies can keep HIV-infected healthy longer and have reduced the death rate



Risk of Infection

Of the 3 major bloodborne pathogens...



HBV - 1 in 3



HCV - 1 in 50



HIV - 1 in 300



Knowledge Check

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



Knowledge Check Answer

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

Hepatitis B Immunization

Hepatitis B vaccine is very effective in protecting against hepatitis B virus



- 96% decline in infections of children and adolescents due to childhood vaccination
- Majority of new HBV infections occur among adults
- Employer must offer free vaccine to employees at risk
- Series of 3 shots at intervals needed for full immunity
- Vaccine is safe, few adverse reactions
- Physician or licensed healthcare professional will perform or supervise

Hepatitis B Immunization



- Employer does not have to offer vaccination if employee previously completed series or tested as immune
- You can decline vaccination after being informed of risks and benefits
 - You must sign a declination form
 - If you initially decline, you can request it from company at any time, at no cost



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.



Knowledge Check Answer

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 Organization's Method for Providing HBV Vaccination:

- Insert Site-Specific Information Here

Your Company's Exposure Control Plan



- A requirement of the OSHA Bloodborne Pathogen Standard
- Outlines strategies necessary to eliminate or minimize exposure to blood and other body fluids
- Site-specific plan defines:
 - Which employees are covered
 - How to minimize risk of exposure
 - How to handle exposure if one occurs

Job Classifications with Risk of Exposure

An Exposure Control Plan includes job classifications that an employer has determined to include tasks and procedures with exposure risk

- If a job classification puts you at risk, be aware of the tasks or procedures that could cause exposure
- Job classifications with a likely chance of exposure include:
 - First aid providers
 - Housekeeping staff
 - Lab workers
 - Firefighters, EMTs and paramedics
 - Law enforcement agents
 - Medical and dental personnel
 - Tattoo and body modification artists

Communicating a Hazard in the Workplace

An Exposure Control Plan explains how an employer has decided to make an employee aware of potentially infectious materials



- Biohazard label should be attached to contaminated materials by a method that prevents loss or unintentional removal
 - Signs should be fluorescent orange or orange-red with black “biohazard” symbol
 - Labels must contain “biohazard” and symbol
 - When red bags/containers with biohazard symbol are used, sign/label not necessary
- Proper labeling greatly reduces risk of accidental exposure
- Be aware of and abide by signs and labels signaling hazards and hazardous materials

Reducing Risk of Exposure

An Exposure Control Plan will contain site-specific methods used to reduce risk of occupational exposure

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

Reducing Risk of Exposure

An Exposure Control Plan also lists site-specific means by which a facility will reduce employee risk

- Appropriate training
- Communication of hazards
- Hepatitis B vaccinations
- Methods for post-exposure evaluation and follow-up
- Proper recordkeeping





Managing an Exposure

An Exposure Control Plan describes the procedure for investigation and evaluation of circumstances surrounding exposure incidents

- To quickly provide effective follow-up care to exposed employees
- To help you and your employer learn from what happened and establish measures to prevent it from happening again
- May call for specific recordkeeping of incidents, such as documentation of route of exposure, how incident occurred, and consent for medical testing
- Must be a written document accessible to all employees
- Reviewed and updated at least annually or when alterations in procedures create possibility of new occupational exposure



Knowledge Check

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



Knowledge Check Answer

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

How to Get a Copy of Your Organization's Exposure Control Plan:

- Insert information here

General Details of Your Organization's Exposure Control Plan:

- Insert information here

Transmitting Bloodborne Pathogens

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
 - Mucous membranes of eyes, nose, or mouth
 - Puncture wound from contaminated object
- Outside an occupational setting, sexual contact and shared hypodermic needles are the most common ways
- Casual contact, such as shaking hands, does NOT transmit bloodborne pathogens

Transmitting 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

Transmitting Bloodborne Pathogens



- Blood and cerebrospinal fluid have a risk of transmitting bloodborne pathogens in an occupational setting
- In absence of visible blood, some body fluids have no documented risk
- In emergency, you may not be able to identify fluids 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?



Knowledge Check Answer

The primary ways exposure to bloodborne pathogens occur in an occupational setting is through:

- Non-intact skin, such as a cut or abrasion
- Mucous membranes of the eyes, nose, or mouth; or
- Puncture wound from a sharp, contaminated object, such as a syringe or broken glass

Methods to Control Risks of Exposure

Work practice and engineering controls help prevent transmission of bloodborne diseases and the risk of exposure

- Work practice controls focus on how tasks are performed, such as using gloves when performing first aid
- Engineering controls reduce exposure by removing or isolating hazard, such as providing an appropriate disposal container for needles
- Employers are required to examine and maintain these controls on a regular basis





Standard Precautions

- A recommended approach to any scene where blood or other body fluids may be present
- It means treating all body fluid as potentially infectious, even that of someone you know well

Personal Protective Equipment (PPE)

- Specialized clothing or equipment that isolates your body from contact with potentially infectious materials, such as:
 - Disposable gloves
 - Protective eye/face shields
 - Resuscitation masks or CPR barrier shields with one-way valves



Personal Protective Equipment (PPE)

Effective PPE must not permit potentially infectious materials to reach the skin, eyes, mouth, or clothes

- Employer will make free PPE available in appropriate sizes
 - Non-latex alternatives will be made available to those allergic to latex
 - Employers must clean, launder, repair, replace, or dispose of contaminated PPE
- Always wear disposable gloves when there is a possibility of hand contact with blood or other body fluids
 - Replace ASAP when torn, punctured, or contaminated
- Perform actions in a way to minimize splattering, splashing, and spraying
 - If needed, wear face shields when there is a hazard to eyes, nose, or mouth



Knowledge Check

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



Knowledge Check Answer

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

Engineering Controls at Your Organization:

- Insert information here

Work Practice Controls at Your Organization:

- Insert information here

Personal Protective Equipment at Your Organization:

- Insert information here

When an Exposure Occurs

If an exposure occurs, immediately care for it!



- If a contaminated sharp object creates an open wound, wash/irrigate with soap and running water
- If exposure to eyes/nose/mouth occurs or is suspected, flush with running water
- If contact with non-intact skin occurs, wash ASAP with soap and water
- If you are a care provider, wash hands immediately, even if wearing gloves, especially if you have cuts or scrapes
- If soap and running water are not available use an alcohol-based hand sanitizer



When an Exposure Occurs

- 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 splashing or spraying of blood and other body fluids
- Never wash or decontaminate disposable gloves for reuse

Follow employer's written procedures for handling medical self-care, evaluation and documentation



- Report an exposure without delay
- Exposed individuals will be directed to healthcare professional ASAP for an evaluation that:
 - Documents the route of exposure and how it occurred
 - Is at no cost to employee
 - Is confidential
 - Includes counseling and education
- Evaluations are conducted according to Centers for Disease Control and Prevention guidelines

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)
- Therapy must begin ASAP after 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?



Knowledge Check Answer

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.

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

- Insert information here

Proper containment and labeling of potentially infectious materials ensure the items are handled appropriately

- “Regulated waste” refers to specific categories of waste that require special handling, including:
 - Liquid or semi-liquid infectious materials
 - Items that would release infectious materials in a liquid or semi-liquid state
 - Items caked with infectious materials, capable of releasing these materials during handling
 - Contaminated sharp objects



It is important that infectious waste be safely contained

- Placed in containers, specially designed for infectious waste, that are:
 - Leak-proof
 - Labeled or color coded
 - Closed prior to removal to prevent spills
- If a container is leaking, place it in a more appropriate second container
- Pick up broken glass using mechanical means ONLY... never use your hands
- Items should not be stored in a way that requires reaching where contents cannot be seen or safely handled



Contaminated Laundry

Contaminated laundry is laundry soiled with potentially infectious materials.

- Handle contaminated laundry as little as possible
- Wear gloves when handling
- Place in appropriate containers before transporting
- Do NOT take home for laundering



Decontaminating Surfaces

Keep potentially infectious materials from lingering on surfaces

- Equipment and surfaces that could be contaminated should be cleaned and decontaminated routinely
 - Use an appropriate disinfectant
 - Wear appropriate PPE
- Pails, bins, reusable receptacles should be decontaminated regularly and ASAP after visible contamination is noticed
- Cleanup and decontamination are very important in reducing future exposures from indirect contact





Knowledge Check

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



Knowledge Check Answer

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

Housekeeping Procedures Used by Your Organization:

- Insert information here