Bloodborne Pathogens

Protecting Yourself and Others

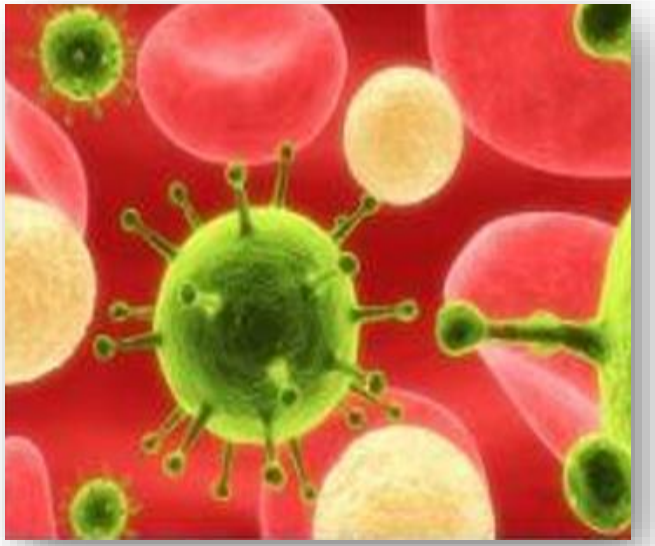
bioventus®

Active Healing Through Orthobiologics

Introduction
OSHA Bloodborne Pathogens Standard (29 CFR 1910.1030)

What are Bloodborne Pathogens?

Bloodborne pathogens are infectious microorganisms in human blood that can cause disease in humans, such as HIV or Hepatitis B or C. Workers in many occupations may be at risk for exposure to bloodborne pathogens.



In order to reduce or eliminate the hazards of occupational exposure to bloodborne pathogens, we have created an **Exposure Control Plan with details on employee protection measures**. This plan and training meet the requirements of OSHA's Bloodborne Pathogens Standard.

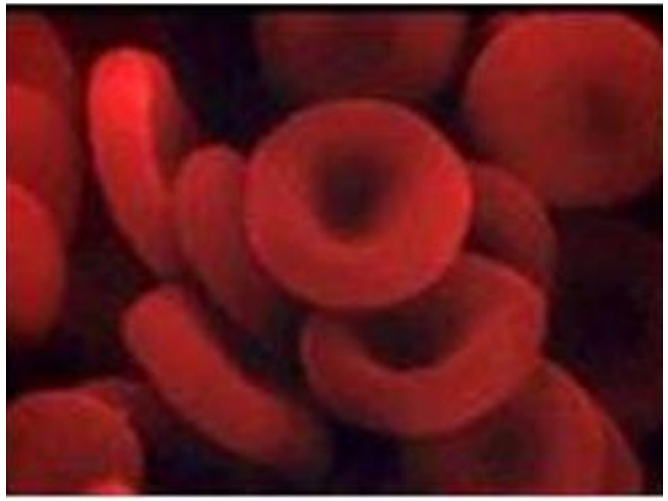
Course Objectives

- In this course, you will learn how to **define bloodborne pathogens** and identify the most common diseases transmitted.
- Because of the hazardous nature of bloodborne pathogens, we will **describe the methods that you can use to protect yourself** from being exposed to bloodborne pathogens.
- We will also **explain roles and responsibilities** at Bioventus regarding bloodborne pathogens and provide you with a contact person at Bioventus if you should have any questions or comments.

After completing this course, you will be able to:

- Define Bloodborne Pathogens
- Identify the most common diseases transmitted through contact with blood and body fluids
- Describe methods that will protect you from being exposed to bloodborne pathogens
- Explain roles and responsibilities regarding the Bioventus Bloodborne Pathogens Plan
- Understand what to do if you are exposed to a bloodborne pathogen

What are Bloodborne Pathogens?

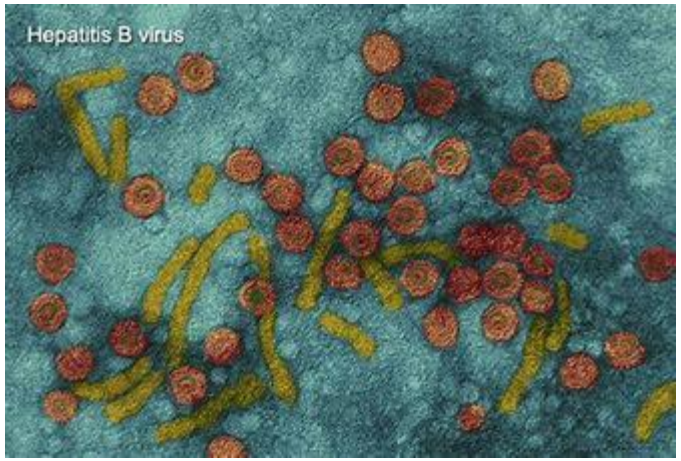


Bloodborne pathogens (BBPs) are micro -organisms that may be present in blood or body fluids and can cause serious diseases.

The most common diseases transmitted through contact with blood and body fluids are:

- HBV (Hepatitis B Virus)
- HCV (Hepatitis C Virus)
- HIV (Human Immunodeficiency Virus)

Hepatitis B (HBV)



Hepatitis B (HBV) is a virus that attacks the liver. 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, or other bodily fluids contaminated with blood.
- **Symptoms**: if they appear, can include: fever, fatigue, loss of appetite, nausea, vomiting, abdominal pain, dark urine, clay-colored bowel movements, joint pain, jaundice (yellow color in the skin or the eyes)
- **Vaccination**: A Hepatitis B vaccination is recommended.

Efficacy of the Hepatitis B Immunization

The Hepatitis B vaccine has been available since 1982. People who have received hepatitis B vaccine and developed immunity to the virus are at virtually no risk for infection.

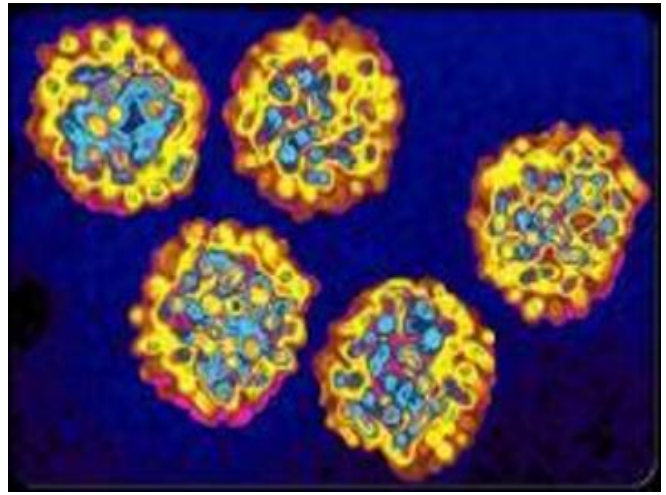
Hepatitis B vaccine is very safe. There is no information that the vaccine causes any chronic illnesses.

If you have the potential for exposure to blood or body fluids in the performance of your job, **Bioventus will provide the Hep B immunizations at no charge to you**. The immunization series is a three (3) injection series, that prevents Hepatitis B.

Employees may choose to decline vaccination and will then be provided a declination form to sign. Employees who decline may request and obtain the vaccination at a later date at no cost

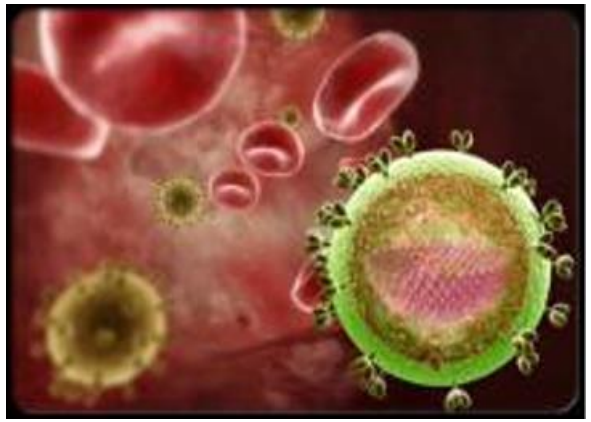
Hepatitis C (HCV)

Hepatitis C is an infection caused by a virus that attacks the liver and leads to inflammation. HCV infection can result in an acute illness or may become a chronic condition that can lead to cirrhosis of the liver or liver cancer. It may remain dormant with no symptoms for 10-20 years, and people may be contagious even if they have no symptoms.



- **Transmission**: Contact with infectious blood, or other bodily fluids contaminated with blood.
- **Symptoms**: Approximately 70%-90% of people with acute hepatitis C have no symptoms. Some people can have mild to severe symptoms soon after being infected, including 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).
- **Vaccination**: There is no vaccine for hepatitis C.

Human Immunodeficiency Virus (HIV)



This is the virus that causes AIDS. HIV is different from most other viruses because it attacks the immune system. The immune system gives our bodies the ability to fight infections. HIV finds and destroys a type of white blood cell (T cells or CD4 cells) that the immune system must have to fight disease.

Transmission: HIV is a fragile virus. It cannot live for very long outside the body. As a result, the virus is not transmitted through day-to-day activities such as shaking hands, hugging, or a casual kiss. You cannot become infected from a toilet seat, drinking fountain, doorknob, dishes, drinking glasses, food, or pets. You also cannot get HIV from mosquitoes.

HIV is transmitted in 3 main ways:

- Having sex with someone infected with HIV
- Sharing needles and syringes with someone infected with HIV
- Being exposed (fetus or infant) to HIV before or during birth or through breast feeding

Symptoms: The only way to know whether you are infected is to be tested for HIV. You cannot rely on symptoms alone because many people who are infected with HIV do not have symptoms for many years. Someone can look and feel healthy but can still be infected. In fact, one quarter of the HIV- infected persons in the United States do not know that they are infected.

BBP Transmittals

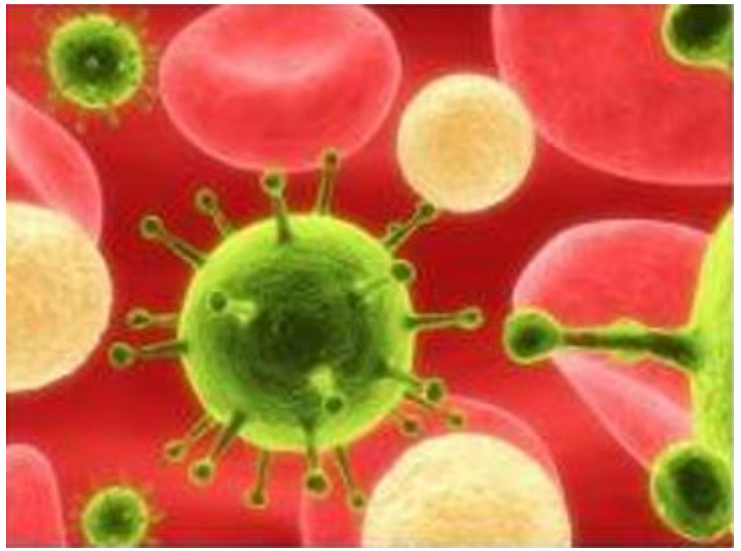
Bloodborne pathogens may be transmitted through human blood and other body fluids, including semen, vaginal secretions, cerebrospinal fluid, amniotic fluid, synovial fluid, saliva, and pleural and pericardial fluid.

You can be exposed when bloodborne pathogens enter your body through one of these routes:

1. Through mucous membranes (eyes, nose or mouth)
2. A cut or sore on your skin
3. A wound from a contaminated object (needle stick or broken glass, contaminated surgical items)

Risk of Infection

The risk of infection may vary depending on the following:



- The pathogen involved
- The type of exposure
- The amount of blood involved in the exposure
- The amount of virus in the patient's blood at the time of exposure

Bioventus Exposure Control Plan

The Exposure Control Plan is a key document in assisting Bioventus in implementing the BBP standard, and applies to any employee who has the potential for exposure to a bloodborne pathogen as part of their job duties. Key elements of the written plan are:

- Determination of employee exposure
- Implementation of various methods of exposure control including:
  - Universal precautions
  - Engineering and work practice controls
  - Personal Protective Equipment
  - Housekeeping
- Hepatitis B vaccinations
- Post-exposure evaluation and follow-up
- Procedures for evaluating circumstances surrounding and exposure incident
- Training and communication of hazards to employees
- Recordkeeping

Job Groups Covered by the Bioventus Exposure Control Plan
Production & Manufacturing Techs
Assemblers & Machinists
Material Handlers
Service & Repair Techs
Facilities & Maintenance Techs
Janitorial Staff
Laboratory Techs
Sales Representatives

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Roles and Responsibilities

Role	Responsibility
Facilities, Maintenance and EHS	• Implementation of the BBP program and reviewing it annually for any changes. • Training, documentation of training, and making this Exposure Control Plan available to employees
Service & Repair Dept.	• Maintain and provide all necessary PPE, engineering controls, labels and other equipment (i.e. red bags) as required by this plan. • Ensure that adequate supplies of PPE and equipment are available in the appropriate sizes.
Human Resources	• Ensuring that all medical actions required as part of the Exposure Control Plan are performed and that appropriate employee health and OSHA records are maintained.
Supervisors / People Managers	• Understanding the procedures for reporting and investigating exposures, should they occur
All employees covered by the plan	• Comply with procedures and work practices outlined in this Exposure Control Plan.

Tasks/Activities That May Involve Potential Exposure

Exposures can occur through needle sticks, cuts from sharp instruments or splashes contaminated with blood, through contact of the eye, nose, mouth, or skin with a person's blood.

Any employee who has contact with blood, body fluids or specimens is at risk for a potential exposure. Examples include:

- Production/maintenance personnel who are responding to first aid or other emergency medical incidents
- Service and repair personnel who are decontaminating returned equipment from the field
- Facilities or cleaning personnel who are servicing areas such as bathrooms or first aid rooms
- Sales personnel who are present in healthcare facilities

Protecting Yourself with Universal Precautions

"Universal Precautions" is a common approach to infection control, in which you **operate with the ASSUMPTION that ALL human blood and body fluids are infectious** for HIV, HBV and other bloodborne pathogens.

By making this assumption you can protect yourself when rendering first aid, or if exposed in any situation, by following the elements of the Bioventus Exposure Control Plan.

ALWAYS assume that all body fluids are sources of danger and infection and protect yourself using the proper personal protective equipment.

Protecting Yourself with Personal Protective Equipment (PPE)

PPE refers to protective clothing designed to protect the wearer's body or clothing from injury or exposure. Some examples are:

- Single use latex gloves
- Eye protection
- Protective face masks and shields
- Lab coats
- Gowns or other protective clothing

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Personal Protective Equipment (PPE) Requirements

- Remove PPE after it becomes contaminated, and before leaving the work area.
- Wash hands immediately or as soon as feasible after removal of gloves or other PPE.
- Wear appropriate gloves when it is anticipated that there may be contact with blood or potentially infectious body fluid, and when handling or touching contaminated surfaces.
- Replace gloves if torn, punctured, contaminated, or if their ability to function as a barrier is compromised.
- Never wash or decontaminate disposable gloves for reuse.
- Wear appropriate face and eye protection when splashes/sprays of blood or other potentially infectious body fluids pose a hazard to the eye, nose, or mouth.
- Remove immediately or as soon as feasible any garment contaminated by blood or other potentially infectious material, in such a way as to avoid contact with the outer surface.

Proper Removal of Gloves

Pinch one glove at the heel of the hand with the other gloved hand and roll the cuff downward over the contaminated side of the other glove.

Pull glove halfway down your hand until you can touch the inside of the other glove with your fingers. **Remember the outside of your gloves are contaminated and should not touch your skin.**

Reach under the cuff of the remaining glove with one or two fingers of the ungloved hand.

Peel off the glove over the glove being held in the palm and dispose of properly.

Remember!

- Proper removal of gloves is important in preventing accidental splashing of contaminated fluid into the eyes, nose or mouth. Improper removal increases this risk.
- Remove other PPE in a similar manner (turn gowns inside out, remove masks from behind, etc.)

Engineering and **Work Practice** Controls are two main elements of the Bioventus Exposure Control Plan

- Engineering controls - controls that isolate or remove the bloodborne pathogen hazard from the workplace. For example:
  - Red bag containers for biohazardous waste
  - Sharps disposal containers
  - Designated areas for storage of potentially contaminated equipment returns

- Work practice controls - controls that reduce the likelihood of exposure by altering the manner in which a task is performed. Examples include:
  - PPE requirements for certain operations (ex. Decontamination of returned equipment)
  - Hand washing procedures following the removal of gloves
  - Restricting eating and drinking in work areas
  - Decontaminating equipment before servicing if visibly soiled or when a customer decontamination attestation is not present

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Work Practice Controls in Place

Handwashing:

- When rendering first aid, or in any situation where there is an exposure potential (even if there is no known exposure) all employees are required to wash their hands immediately or as soon as feasible after removal of gloves or other personal protective equipment.
- Alcohol based hand sanitizer may be used for disinfection if hands are not visibly soiled.

Work area restrictions

- In work areas where there is a reasonable likelihood of exposure to blood or other potentially infectious materials – production areas, maintenance areas – employees are not permitted to eat, drink, or handle contact lenses.
- In laboratories, food and beverages are not to be kept in refrigerators, freezers, shelves, cabinets or on countertops or benchtops where blood or other potentially infectious materials are present.
- For equipment decontamination operations, all returned equipment that can be potentially contaminated will be stored in a designated and marked area, until inspection and customer attestations can be verified.

Protecting Yourself with Handwashing

When washing hands with soap and water:

- Wet your hands with clean running water and apply soap. Use warm water if it is available.
- Rub hands together to make a lather and scrub all surfaces.
- Continue rubbing hands for 15-20 seconds. Need a timer? Imagine singing “Happy Birthday” twice through to a friend.
- Rinse hands well under running water.
- Dry your hands using a paper towel or air dryer. If possible, use your paper towel to turn off the faucet.
- Always use soap and water if your hands are visibly dirty.

Protecting Yourself with Alcohol-Based Cleaners

If soap and clean water are not available, use an alcohol-based hand rub to clean your hands. Alcohol-based hand sanitizers significantly reduce the number of germs on skin and are fast-acting.

When using an alcohol-based hand sanitizer:

- Apply product to the palm of one hand.
- Rub hands together.
- Rub the product over all surfaces of hands and fingers until hands are dry.

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Engineering Controls in Place

Disposal Containers:

- Contaminated sharps, including needles or other sharp items contaminated with blood or other potentially infectious body fluids must be disposed of in sharps containers.

- Contaminated PPE or other materials that are contaminated with blood or other potentially infectious body fluids will be disposed of in a biohazardous waste receptable (i.e. red bag).

- Receptacles for sharps and biohazardous waste will be kept in first aid areas.

Equipment

- Any equipment which has become contaminated onsite with blood or other potentially infectious material shall be examined prior to servicing or shipping and shall be decontaminated as necessary unless the decontamination of the equipment is not feasible.

- Any returned Bioventus product shall be stored in a designated and marked area prior to inspection.
  - Product must have a customer decontamination attestation with it prior to moving it for servicing.
  - If no customer attestation is present and/or there is visible soiling on the equipment, it must be decontaminated prior to servicing.

Protecting Others Through Proper Disposal and Labeling

All contaminated PPE and other materials (ex. tissue/towels with blood) should be discarded in a designated disposal container – either a sharps container or biohazard labeled ‘red bag’. Take care to contain any liquids or loose material.

The symbol to the right is the symbol for a biohazard.

A biohazard is a material which represents a threat to cellular materials or living organisms.

If You Are Exposed:

1. Immediately:
   - Wash needle sticks and/or cuts with soap and water
   - Flush any contaminated splashes to the nose, mouth, or skin with water
   - Irrigate eyes with clean water, saline, or sterile irrigants

2. Obtain emergency care needed

3. Report the exposure:
   - To your direct supervisor/manager AND the Director, Facilities, Maintenance & EHS AND the HR Benefits Manager
   - If the exposure occurs off-site (ex. Sales reps in a healthare facility), also report the exposure to the department responsible for managing exposures **in that facility** (e.g. surgery suite, hospital occupational health, infection control). Obtain as much information as possible (patient name, procedures, date, etc.) where the exposure occurred.

Prompt reporting is essential because is some cases, post-exposure treatment may be recommended and should be started as soon as possible.

OSHA Standard 29 CFR 1910.1030

OSHA issued the Bloodborne Pathogens Standard 29 CFR 1910.1030 in 1991 to protect workers from the risk of occupation exposure to bloodborne pathogens. This standard covers workers in many occupations (first aid team members, production/maintenance personnel, housekeeping staff, healthcare workers, etc.

This training and the Bioventus Exposure Control plan meet the requirements of OSHA's Bloodborne Pathogens standard.

A complete copy of the standard and other information may be accessed at:

http://www.osha.gov/index.html

Your Responsibilities

- Fully understand your roles and responsibilities in the work area.
- Complete annual BBP training.
- Recognize where BBP hazards are present and take measures to protect yourself with PPE or other controls available.
- Use Universal Precautions every time you have the potential for a BBP exposure.
- In the event of a BBP exposure, report the exposure to your manager, the Director, Facilities, Maintenance and EHS, and the HR Benefits Manager.

BBP Contact Information

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Review

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