



Bloodborne Pathogens Training

About This Course

- Course addresses the “Occupational Exposure to Bloodborne Pathogens” standard.
- OSHA’s Bloodborne Pathogens is a federal OSHA standard (29 CFR 1910.1030) that prescribes safeguards to protect workers against the health hazards from exposure to blood and other potentially infectious materials, and to reduce their risk from this exposure.

Need for a Safety Standard



- OSHA estimates that 8 million workers in the health care industry and related occupations are at risk of occupational exposure to bloodborne pathogens including, but not limited to HIV (the virus that causes AIDS), Hepatitis B, and Hepatitis C
- According to the Centers for Disease Control (CDC), 100,000 Americans have died from AIDS and over 1 million Americans are infected with HIV
- About 65 cases of HIV infection due to occupational exposure occur each year
- About 8700 healthcare workers are infected with Hepatitis B each year
- About 200 healthcare workers die from Hepatitis B each year
- One milliliter of blood can contain over 100,000,000 infectious doses of Hepatitis B virus
- 60-70% of the individuals infected with Hpetitis C virus show no discernable symptoms
- According to the CDC, Hepatitis C virus is the most common chronic bloodborne infection in the US

Introduction to BBP

INTRODUCTION TO BBP

Introduction to Bloodborne Pathogens

- “Bloodborne Pathogens’ are microorganisms such as viruses or bacteria that are present in human blood and that cause disease in humans.
- These pathogens include, but are not limited to:
 - Hepatitis B (HBV)
 - Hepatitis C (HCV)
 - Human Immunodeficiency Virus (HIV)
 - Malaria
 - Brucellosis
 - Syphilis
 - West Nile Virus

Other Potential Infectious Material (OPIM)

- In addition to human blood, bloodborne pathogens can also be found in Other Potentially Infectious Materials (OPIM) including the following body fluids (especially because of their potential to be contaminated with blood):
 - Blood Products (such as plasma or serum)
 - Saliva
 - Semen
 - Vaginal Secretions
 - Skin tissue and/or cell cultures
 - Any other bodily fluid that is visibly contaminated with blood

Other Potential Infectious Material (OPIM) cont.

- The following body fluids are not expected to be infectious sources of bloodborne pathogens unless they are visibly contaminated with blood:
 - Vomit
 - Tears
 - Sweat
 - Urine
 - Feces
 - Nasal Secretions
- Note: *Since you may not always be able to tell whether a bodily fluid has been mixed with blood, it is best to treat ALL bodily fluids as potentially dangerous.*

Occupational Exposure

- Occupational Exposure means reasonably anticipated skin, eye, mucous membrane or potential contact with blood that may result from the performance of an employee's duties
- Reasonably anticipated exposure includes the potential for exposure as well as actual exposure to blood or other potentially infectious materials (OPIM). It includes exposure to blood or OPIM (including regulated waste) as well as incidents of needlesticks
- This definition does not cover "Good Samaritan" acts which results in exposure to blood or OPIM

Transmission of Bloodborne Pathogens

- Bloodborne pathogens can be transmitted when infectious blood or OPIM is introduced into the bloodstream of a person
- Transmission of bloodborne pathogens in the workplace can occur through infected blood or OPIM being introduced through:
 - Non-intact skin (acne, scratches, cuts, bites, blisters, or wounds)
 - Contact with mucous membranes found in the eye, nose or mouth
 - Contaminated sharps/needle injuries

The OSHA Bloodborne Pathogen Standard

- OSHA published the Occupational Exposure to Bloodborne Pathogens Standard on Dec. 6, 1991. The purpose of this standard is to protect workers by limiting occupational exposure to blood and other potentially infectious materials.
- In 200, the Needle stick Safety and Prevention Act (Public Law 106-430) mandated that OSHA clarify and revise the Bloodborne Pathogens Standard to address the implementation of safer needle devices. OSHA published the revised standard in the Federal Register in Jan. 2001. The revised standard became effective in April 2001.
- The Bloodborne Pathogen standard is located in Title 29 of the Code of Federal Regulations (29 CFR 1910.1030)

Who is Covered by the Standard

- All employees who could be “reasonably anticipated” to face contact with blood or Other Potentially Infectious Materials (OPIM) as the result of performing their assigned job duties are covered by the Bloodborne Pathogen Standards.

Preventative Measures

Universal Precautions

- A Universal Precaution is the prevention strategy by which all blood and potentially infectious materials are treated as if they were in fact infectious
- Treat all human blood and bodily fluids as if they are infectious
- Must be observed in all situations where there is a potential for contact with blood or other potentially infectious materials

Engineering & Work Practice Controls

- These are the primary methods used to control the transmission of HBV and HIV. Engineering and work practice controls should be the first line of defense in keeping workers safe
- When occupational exposure remains after engineering and work practice controls are put in place, personal protective equipment (PPE) must be used
- Employers must obtain input from non-managerial employees who are potentially exposed to injuries from contaminated sharps in the identification, evaluation, and selection of engineering and work practice controls

Controls

- These controls reduce employee exposure by either removing the hazard or isolating the worker
- Controls reduce the likelihood of exposure by altering how a task is performed
- All procedures involving blood or other potentially infectious materials shall be performed in such a manner as to minimize splashing, spraying, spattering and generation of droplets of these substances
- Mouth pipetting/suctioning of blood or other OPIM is prohibited

Preventative Measures

- Eating, drinking, smoking, applying cosmetics or lip balm, handling contact lenses are prohibited in work areas where there is a reasonable likelihood
- Food and drink shall not be kept in refrigerators, freezers, shelves, cabinets or on countertops or benchtops where blood or OPIM are present

Preventative Measures cont.

- Contaminated broken glassware:
 - Shall not be picked up directly with hands
 - Shall be cleaned up using mechanical means such as a brush and dust pan, tongs or forceps (tools must be decontaminated after use)
 - Shall be placed into a sharps container for proper disposal
 - Do not bend or break sharp objects
 - Contaminated reusable sharps shall not be stored or processed in a manner that requires employees to reach by hand into containers where these sharps have been placed

Personal Protective Equipment

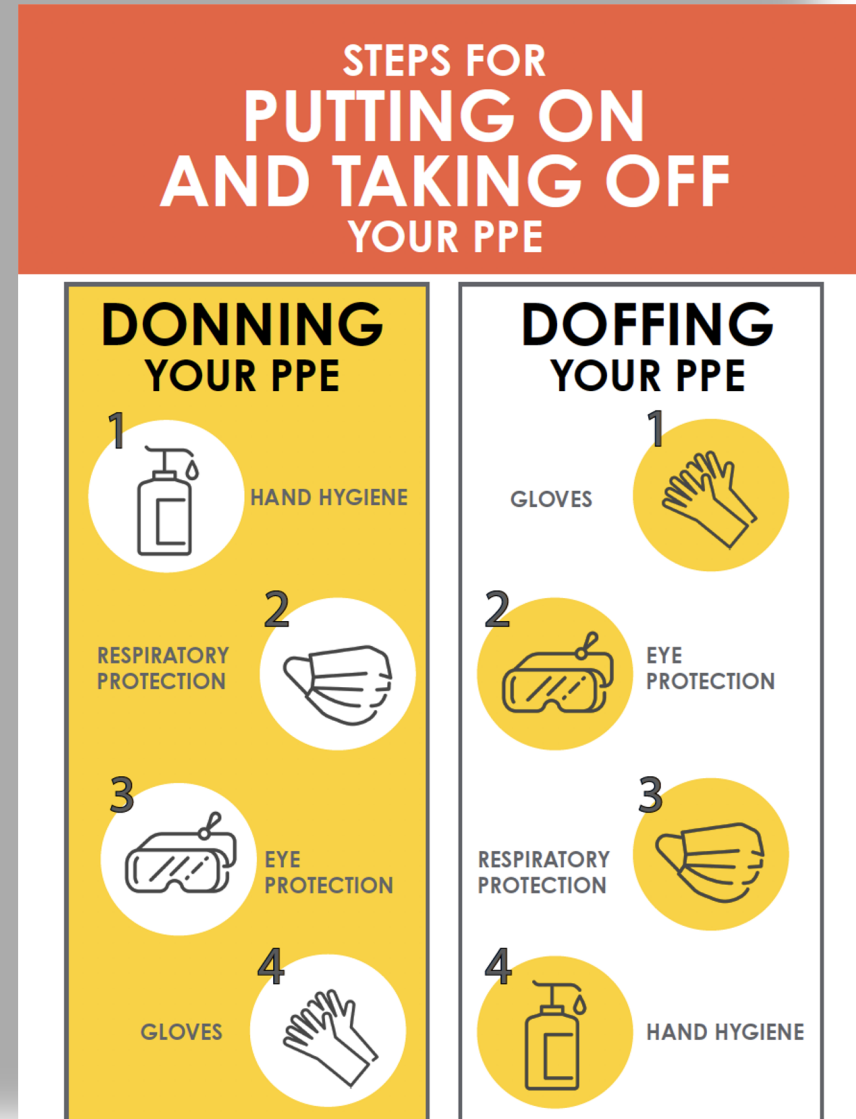
PPE (Personal Protective Equipment)

- Engineering and work practice controls should be the first line of defense in keeping workers safe
- When occupational exposure remains after engineering and work practice controls are put into place, PPE must be used



PPE cont.

- All PPE shall be removed prior to leaving the work area
- When PPE is removed it shall be placed in an appropriately designated area or container for storage, washing, decontamination or disposal



PPE Equipment

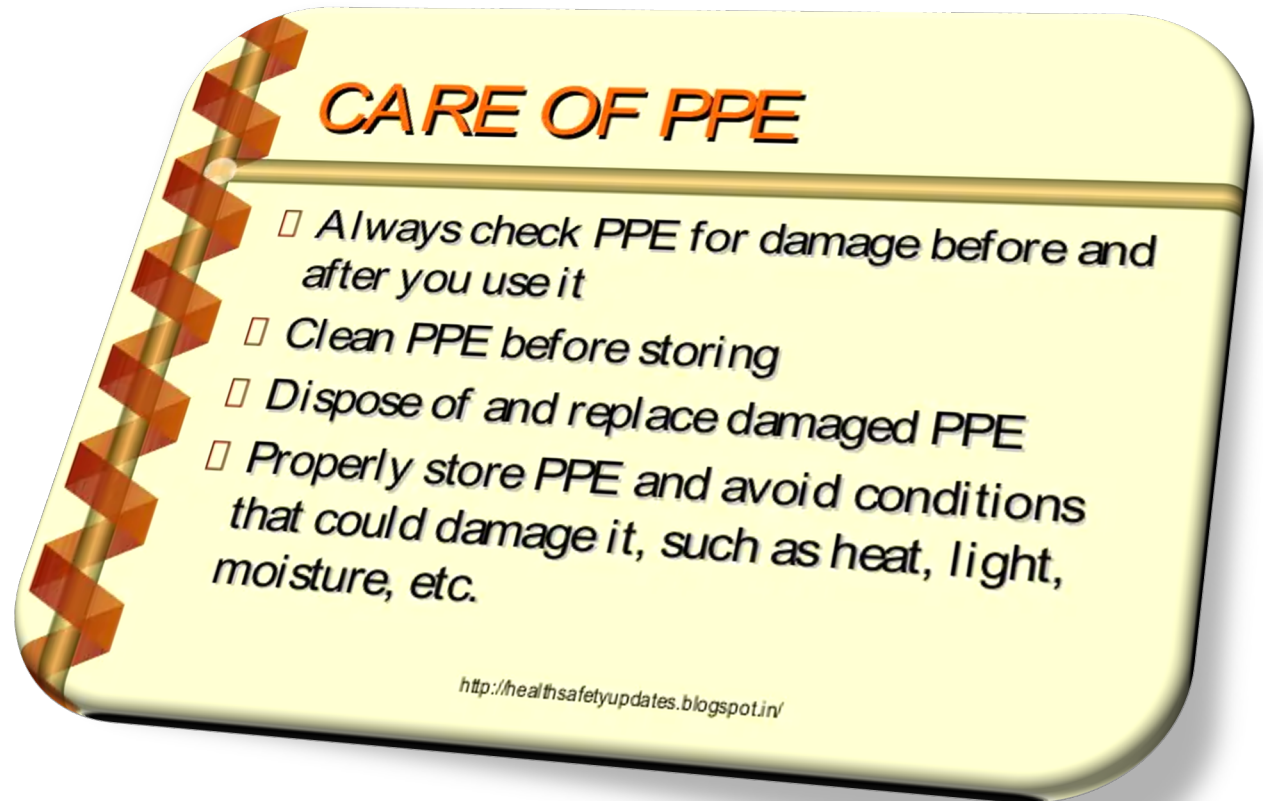
- Including but not limited to:
 - Gloves
 - Gowns/Safety Garments
 - Boots
 - Face Shields
 - Eye Protection/Goggles

Removing Gloves

- Remove the glove by grasping outside at wrist, pull inside out
 - With ungloved hand, grasp on inside at the wrist and pull inside out over hand
- Gloves shall be worn when it can be reasonably anticipated that the employee may have:
 - Hand contact with blood
 - Hand contact with OPIM
 - Hand contact with Mucous membrane
 - Hand contact with non-intact skin
 - Handle or touch contaminated items or surfaces

PPE Maintenance

- Utility gloves may be decontaminated for re-use if the integrity of the gloves is not compromised.
 - *However, they must be discarded if they are cracked, peeling, torn, punctured or exhibit other signs of deterioration or when their ability to function as a barrier is compromised*
- All personal protective equipment must be carefully checked before use, to ensure that it is in good condition
- PPE may not be used if damaged beyond repair
- PPE must be properly cleaned, laundered repaired and disposed of
- PPE must be removed when leaving the area or upon contamination



Cleaning Up

cleaning up

Procedures

- Determine and implement method for decontamination:
 - Location
 - Type of Surface
 - What needs to be cleaned
 - How to clean

Disinfection

- Effective use of disinfectants is important factor in preventing potential risks
 - More effective in reducing microbial load
- Meticulous disinfection and hand washing will prevent transmission
- Work surfaces must be decontaminated with an appropriate disinfectant:
 - After completion of a task or procedure
 - When surfaces are contaminated
 - At the end of the work shift
- In the US, to comply with OSHA's rule on bloodborne pathogens, a blood spill must be cleaned using a disinfectant



Disposing

- Protective coverings used to cover equipment and environmental surfaces shall be removed and replaced as soon as feasible when they become contaminated, or at the end of the work shift.
- The standard requires that warning labels be attached to:
 - Containers of regulated waste
 - Refrigerators and freezers containing blood or OPIM
 - Other containers used to store, transport or ship blood or OPIM
 - Contaminated equipment prior to shipping
 - Red bags or containers may be substituted for labels
 - Labels should be as close as possible to container that prevents their loss or unintentional removal

Signs

- Universal biohazard symbol shall be posted on all access doors
- Employee shall post signs at the entrance to work areas that designate a pathogen or possible OPIM
- These signs shall be fluorescent orange-red or predominately so, with lettering and symbols in a contrasting color

Exposure Procedure

- Bloodborne pathogen Exposure Control Log
- Incident Report Form
- Post Exposure Referral to Health Provider
- Sharps Injury Log
 - At a minimum the log must contain:
 - Type of Brand of device involved
 - Department or area of incident
 - Description of Incident

Post Exposure

post exposure

What To Do if an Exposure Occurs

- Promptly wash or flush the affected area, irrigate eyes with water or saline
- Report the exposure to your supervisor
- Get medical attention from a healthcare professional
- Serious exposures will require the attention of drug therapists that are believed to be most effective when given within a few hours of the exposure
- Treatment should begin as soon as possible after exposure, within 24 hours. The CDC currently recommends treatment within 2 hours of exposure

What to do in Case of a Spill or Accident that Results in an Exposure

- Report event immediately to your supervisor, laboratory director or other responsible person
- All spills shall be immediately contained and cleaned up by an appropriate professional staff or others properly trained and equipped to work with potentially infectious materials
- Proper PPE must be used
- Equipment and tools must be cleaned and decontaminated before servicing or being put back in use. Use a solution of $\frac{1}{4}$ cup of bleach per one gallon of water
- Cover spill with paper towel or rags, then gently pour bleach solution over towels/rags and leave for at least ten minutes
- Wash exposed area with EPA approved disinfectant

Post Exposure Follow-Up

- Document routes of exposure and how exposure occurred
- Record injuries from contaminated sharps in a Sharps Injury Log
- Obtain consent from the source individual and the exposed employee and test blood as soon as possible after the exposure incident

Summary

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Summary

- OSHA's Bloodborne Pathogens standard prescribes safeguards to protect you against the health hazards from exposure to blood and other potentially infectious materials, and to reduce your risk from this exposure
- Implementation of this standard not only will prevent Hepatitis B cases, but also will significantly reduce the risk of workers contracting AIDS, Hepatitis C or other bloodborne diseases
- The best precaution against contamination is to have safeguard work practices in place to eliminate the exposure to the hazard. When that is not possible, then the use of PPE is absolutely necessary