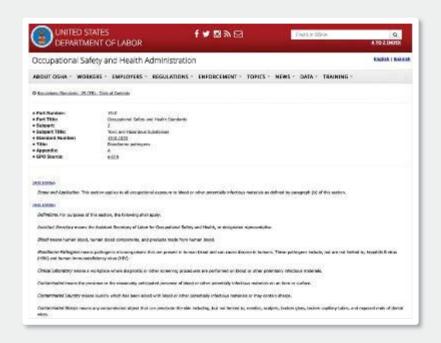
### Bloodborne Pathogens





### OSHA Bloodborne Pathogens Standard





- 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.



#### At Your Organization



#### 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

Sore throat

- Rash

Fatigue

- Night sweats

Swollen lymph nodes

- Muscle aches

- 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.



#### At Your Organization



#### 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



#### At Your Organization



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

Insert information here



#### At Your Organization



#### 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



## P

# 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:**





#### Work Practice Controls at Your Organization:





### Personal Protective Equipment at Your Organization:





### 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

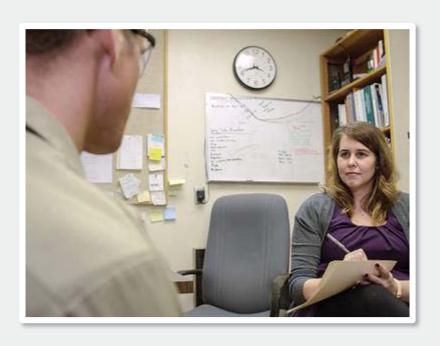




### Post-Exposure Follow-up



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 shortterm 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:



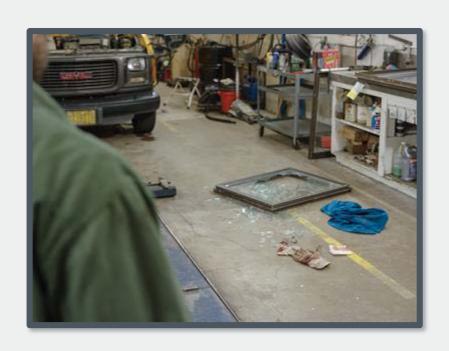


## Housekeeping



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





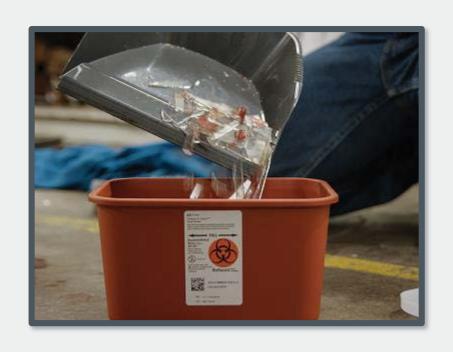


### Safe Containers



#### 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:

