

# Bloodborne Pathogens Training: Preventing Disease Transmission

American Red Cross  
Training Module for Compliance  
with CCR, Title 8, Section 5193  
and 29CFR 1910.1030



# Preventing Disease Transmission

- **This training is one of the requirements for compliance with the California and federal Occupational Safety and Health Administration (OSHA) bloodborne pathogens standard.**
- **This training will enable you to:**
  - Describe how infections occur;
  - Identify how bloodborne pathogens are spread;
  - Identify tasks that have a potential for exposure to infectious materials;
  - Recognize the importance of handwashing and personal hygiene in reducing the risk of disease transmission;
  - Recognize the importance of personal protective equipment and understand the types of equipment available for use;
  - Identify engineering and work practice controls;
  - Identify biohazard signs and labels and;
  - Describe the emergency procedures for exposure incidents involving potential infectious materials.



# The Cal/OSHA Bloodborne Pathogens Standard

- A woman has cut her hand and arm with a knife while opening a box in the supply room. As the first trained person on the scene, you find the woman bleeding severely from her hand and arm. Blood is spurting from the wounds.
    - How would you respond to the situation?
    - What should you be concerned about?
1. The kinds of fluids that are present.
  2. Protecting yourself from the fluids.
  3. Touching the victim.
  4. Catching a disease.



# Key Points

- In 1991, OSHA (the Occupational Safety and Health Administration) issued the bloodborne pathogen standard (29CFR part 1910.1030) to protect employees by reducing or removing the hazards of bloodborne pathogens from the workplace.
- The regulation applies to all persons who have occupational exposure to blood or other potentially infectious materials (OPIM).
- Occupational exposure means reasonably anticipated contact with blood or other potentially infectious materials that may result from the performance of the employee's job duties.
- By providing safeguards, such as proper work practices, use of personal protective equipment and training such as this course, OSHA concluded that disease transmissions can be minimized or eliminated and lives saved.
- Safer medical devices along with training are the most effective means of reducing injury rates.



# Preventing Disease Transmission

Identify the types of jobs that would be covered by the OSHA bloodborne pathogen standard.

- Hospital laundry worker;
- Athletic trainer;
- Emergency medical technician;
- Collection worker or nurse at blood donation center;
- Police officer;
- Health care provider;
- Child care provider;
- Dental hygienist
- First aid provider;
- Sanitation/custodial worker.



# Preventing Disease Transmission

- And now, let's watch this...



# Preventing Disease Transmission

- Key Points:
  - A pathogen is a disease-producing organism that enters the body. (Basically, a pathogen is a germ!)
  - The skin and mucous membranes of the eyes, nose, and mouth help keep pathogens from entering the body. If germs enter the body, the body's immune system begins to fight the disease.
  - Most infectious diseases are caused by one of several types of pathogens. The most common are bacteria and viruses.
  - Bloodborne pathogens are bacteria and viruses present in blood and body fluids that can cause disease in humans.



# Preventing Disease Transmission

- You should be familiar with bloodborne pathogens that cause serious diseases. These include:
  - Hepatitis B – A liver infection caused by the hepatitis B virus, which may be severe or even fatal.
    - Symptoms include flu-like signals such as fatigue, abdominal pain, loss of appetite, nausea, vomiting and joint pain. Later stage symptoms include jaundice, a yellowing of the skin and eyes.
    - There are medications available to treat chronic hepatitis B infection; however, these medications work for only some people.
    - That is why prevention is so important. Hepatitis B vaccine prevents hepatitis B disease and it's serious consequences.





# Preventing Disease Transmission

– Hepatitis C – a liver disease caused by the hepatitis C virus. It is the most common chronic bloodborne infection in the United States.

- Symptoms are similar to hepatitis B infection, including fatigue, abdominal pain, loss of appetite, nausea, vomiting and jaundice.
- There is no vaccine for hepatitis C and no treatment after an exposure that will prevent infection.



# Preventing Disease Transmission

- HIV – a virus that attacks white blood cells, destroys the body's ability to fight infections and causes AIDS (acquired immunodeficiency syndrome).
  - You cannot tell if someone has HIV just by looking at her or him. A person infected with HIV may not feel or look sick. Only a blood test can detect the HIV antibody).
  - When the infected person shows signs of having certain infections or cancers, he or she may be diagnosed as having AIDS. AIDS is the end result of HIV infection.
  - Late-stage symptom may include fever, fatigue, diarrhea, skin rashes, night sweats, loss of appetite, swollen lymph glands and significant weight loss.
  - In the advanced stages, AIDS is a very serious condition. Victims with AIDS can get life-threatening infections and can die from these infections.



# Preventing Disease Transmission

- Now that we've discussed the bloodborne pathogens, hepatitis B virus, hepatitis C virus, and HIV, the virus that causes AIDS, let's look at the conditions necessary for a disease to be transmitted...



# Conditions Necessary for Disease Transmission

- A pathogen is present
- There is enough of the pathogen to cause disease.
- The pathogen passes through the correct entry site.
- A person is susceptible to the pathogen.



# How Bloodborne Pathogens Enter the Body

- **Direct Contact** – occurs when infected blood or body fluids from one person enter another person's body at a correct entry site.
- **Indirect Contact** – occurs when a person touches an object that contains the blood or another body fluid of an infected person, and that blood or body fluid enters the body through a correct entry site.



# Preventing Disease Transmission

- The Exposure Control Plan –

This segment of the program includes the video presentation “The Exposure Control Plan.”



# Preventing Disease Transmission

- Key Points:
  - The OSHA Bloodborne Pathogens standard requires employers to develop an exposure control plan (ECP).
  - An exposure control plan is a written document in which an employer specifies how the provisions of the standard will be met and which employees in the workplace are covered, to protect employees and minimize the risk of infection.
  - The purpose of the exposure control plan is to have an established system in place to help protect employees from infection. The plan requires the employer to identify who has occupational exposure. These persons will receive training, personal protective equipment and, if desired, vaccinations.
  - The exposure control plan should include the following elements:
    - Exposure determination;
    - Methods for implementing other parts of the OSHA standard and;
    - Procedures for evaluating details of an exposure incident



# Preventing Disease Transmission

- Precautions and Guidelines to Prevent Disease Transmission
  - Personal hygiene
  - Personal protective equipment
  - Engineering and work practice controls
    - Equipment cleaning and disinfecting



*Together, we can save a life*





# Preventing Disease Transmission

- Key points:
  - Immunizations are very important to prevention of disease. OSHA requires that employers make the hepatitis B vaccine series available at no cost to employees who have occupational exposure to blood or OPIM.
  - Precautions taken to isolate or prevent the risk of exposure to blood and other potentially infectious materials are known as *Universal Precautions*. *Body substance isolation (BSI)* and *standard precautions* are other approaches to infection control, which OSHA deems acceptable, that define all body fluids and substances as infectious.



# Preventing Disease Transmission

- Here's a video segment on Personal Protective Equipment (PPE).



# Preventing Disease Transmission

- Types of PPE
  - Gloves (latex, nitrile, vinyl) powdered and powder free.
  - Filtering facepiece respirators
    - N95 respirator
    - Non-rated face mask
  - Gowns and coveralls
  - Eye protection



# Preventing Disease Transmission

- Personal protective equipment is an engineering control. *Using* personal protective equipment is a work practice control. Let's look some video of other engineering and work practice controls in the workplace.



# Preventing Disease Transmission

- Engineering Controls:
  - Sharps disposal containers;
  - Self-sheathing needles;
  - Safer medical devices such as sharps with engineered sharps injury protections or needleless systems;
  - Biohazard bags and labels; and
  - Personal protective equipment.



# Preventing Disease Transmission

- Work Practice Controls (The things you do):
  - Place sharp items (e.g. needles, scalpel blades) in puncture-resistant, leakproof and labeled containers and have them at the point of use.
  - Perform all procedures in such a way that cuts down on splashing, spraying, splattering and producing droplets of blood or other potentially infectious materials.
  - Remove and dispose of soiled protective clothing as soon as possible.
  - Clean and disinfect all equipment and work surfaces possibly soiled by blood or OPIM.
  - Do not eat, drink, smoke, apply cosmetics or lip balm, handle contact lenses or touch your mouth, nose or eyes when you are in an area where you may be exposed to infectious materials.
  - Use alcohol-based hand rubs where handwashing facilities are not available.



# Preventing Disease Transmission

- Engineering and work practice controls will help protect you and others from contracting or transmitting disease.
- But what should you do if an exposure to blood or body fluids occurs?
- This next video segment has some interesting information:



# Preventing Disease Transmission

- Key points:
  - OSHA defines exposure incidents as a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral (e.g. needlestick, human bites, cuts or abrasions) contact with blood or OPIM that results from the performance of an employee's job duties.
  - If you have had an exposure incident, immediately take the following steps:
    - Wash needlesticks, cuts and exposed skin with soap and water.
    - Flush splashes of blood or OPIM to the nose, mouth, or skin with water.
    - Irrigate eyes with clean water, saline or sterile irrigants.
    - Report the exposure to your supervisor.
    - Follow the steps in the exposure control plan for confidential medical evaluation and follow-up by a health care professional.





# Preventing Disease Transmission

- Key points (continued)
  - If your exposure incident involves a needlestick injury, your employer needs to record information about the injury in the Sharps Injury Log. The following information must be provided:
    - The type and brand of device involved in the incident;
    - Location of the incident and;
    - Description of the incident.

66-201

## SHARPS INJURY LOG

Injury ID (Please leave blank.)      Facility ID (Please leave blank.)

Please complete a Log for each employee exposure incident involving a sharp.

Fill in the one circle corresponding to the most appropriate answer. Use block print and avoid touching lines.

Institution: _____		Department: _____	
Address: _____		Page # _____ of _____	
City: _____		State: _____ Zip Code: _____	
Date filled out: _____		By: _____ Phone Number: _____	
Facility injury ID# _____ month / day / year		Date of injury      Time of injury _____ : _____ o a.m.      o p.m.	
Description of the exposure incident: _____ _____ _____ _____		Job classification: <input type="checkbox"/> MD <input type="checkbox"/> Nurse <input type="checkbox"/> Medical assistant <input type="checkbox"/> Phlebotomist/Lab tech <input type="checkbox"/> Housekeeper/laundry <input type="checkbox"/> CNA/HHA <input type="checkbox"/> Student, type _____ <input type="checkbox"/> Other _____	
		Department/Location: <input type="checkbox"/> Patient room <input type="checkbox"/> Emergency dept. <input type="checkbox"/> Operating room <input type="checkbox"/> Procedure room <input type="checkbox"/> CCU/ICU <input type="checkbox"/> Home <input type="checkbox"/> Clinical laboratory <input type="checkbox"/> Medical/outpatient clinic <input type="checkbox"/> Service/Utility area (disp. rm./laundry) <input type="checkbox"/> Other _____	
Procedure: <input type="checkbox"/> Draw venous blood <input type="checkbox"/> Heparin/saline flush <input type="checkbox"/> Draw arterial blood <input type="checkbox"/> Cutting <input type="checkbox"/> Injection, through skin <input type="checkbox"/> Suture <input type="checkbox"/> Start IV/set up heparin lock <input type="checkbox"/> Unknown/not applicable <input type="checkbox"/> Other _____		Did the exposure incident occur: <input type="checkbox"/> During use of sharp <input type="checkbox"/> Disassembling <input type="checkbox"/> Between steps of a multistep procedure <input type="checkbox"/> After use and before disposal of sharp <input type="checkbox"/> While putting sharp into disposal container <input type="checkbox"/> Sharp left, inappropriate place (table, bed, etc.) <input type="checkbox"/> Other _____	
Body part: (check all that apply) <input type="checkbox"/> Finger <input type="checkbox"/> Face/head <input type="checkbox"/> Hand <input type="checkbox"/> Torso <input type="checkbox"/> Arm <input type="checkbox"/> Leg <input type="checkbox"/> Other _____		Identify sharp involved: (if known) Type: _____ Brand: _____ Model: _____ e.g., 18g. needle/ABC Medical "no stick" syringe	
Did the device being used have engineered sharps injury protection? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know Was the protective mechanism activated? <input type="checkbox"/> Yes - fully <input type="checkbox"/> Yes - partially <input type="checkbox"/> No Did the exposure incident occur: <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After activation			
Exposed employee: If sharp had no engineered sharps injury protection, do you have an opinion that such a mechanism could have prevented the injury? <input type="checkbox"/> Yes <input type="checkbox"/> No Explain: _____		Exposed employee: Do you have an opinion that any other engineering, administrative or work practice control could have prevented the injury? <input type="checkbox"/> Yes <input type="checkbox"/> No Explain: _____	

effective until 8/1/99 pending changes to BPP Standard      Sharps Injury Control Program (SHARPS)      10/28/98 sh inj log 17  
State of California - Department of Health Services, Occupational Health Branch/UCSF



# Preventing Disease Transmission

- Using the exercise on page 13 of your syllabus, read the scenarios, and formulate responses to the questions asked.
- We'll discuss the results in 5 minutes.



# Preventing Disease Transmission

- It is important for you to understand the contents of the exposure control plan at your workplace, and to know how to access it.
- Bloodborne pathogens are spread through direct and indirect contact with infected blood or other body fluids.
- The risk of exposure can be reduced or removed using a combination of engineering and work practice controls, personal protective equipment, hepatitis B vaccination, signs and labels, and other provisions.
- Thank you.

