# Bloodborne Pathogen and Standard Precautions Training

***The Centers for Disease Control and Prevention*** (CDC) created Standard Precautions to help prevent the spread of infection during patient care. Standard Precautions incorporate infection control practices that help protect the patient as well as the healthcare worker. The precautions operate on the assumption that every person is potentially infected with an organism that can be transmitted in the healthcare setting. All blood, body fluids, secretions, excretions (except sweat), nonintact skin, and mucous membranes may contain infectious agents that can be given to others. Healthcare personnel should follow Standard Precautions while delivering healthcare to patients.

## Hand Washing

- Avoid touching surfaces around the patient unless necessary.
- Hand washing with an alcohol-based hand rub is preferred if hands are not visibly soiled or after removing visible material with non-antimicrobial soap and water.
- Use antimicrobial soap and water to wash your hands if:
- Your hands are visibly dirty, soiled, or contaminated
- You had contact with spores from infectious organisms
- Wash hands:
- Before contact with a patient
- Before moving from a contaminated area of a patient to a clean area of the patient
- After contact with blood, body fluids, secretions, excretions, mucous membranes, nonintact skin, wound dressings or contaminated items
- After removing gloves
- After contact with objects such as medical equipment that is around the patient
- Artificial fingernails should not be worn when caring for patients who are at high risk for infection.

## Personal Protective Equipment

Personal Protective Equipment includes disposable gowns, gloves, eye, and face protection.

**Gowns**

- Use to prevent contamination of clothing or skin during procedures and patient care activities where contact with blood or other body fluids is anticipated
- Gowns should not be reused.

**Gloves**

- Use for touching non-intact skin, mucous membranes, blood, body fluids, secretions, excretions, and contaminated items
- Use a new pair of gloves with each patient.
- Change gloves if moving from a contaminated area of a patient to a clean area of the patient.

**Mask, Goggles, Face Shield**

- Use during procedures and patient care activities that are likely to result in splashes or sprays of blood, body fluids, secretions, or excretions
- Use during lumbar procedures that involve placement of a catheter, or injection of material into spinal or epidural space

## Environmental Control

- Frequently clean and disinfect surfaces that are patients are near and frequently touched surfaces as these surfaces can easily be contaminated
- Use appropriate cleaning solutions that are Environmental Protection Agency registered.
- Child play toys used in waiting areas should be disinfected regularly.
- Handle fabric such as used sheets and towels carefully to avoid contamination with other objects or the air.

# Bloodborne Pathogen and Standard Precautions Training

## Respiratory Hygiene/Cough Etiquette

In addition to patients and healthcare workers, this element is also aimed at family members and friends with undiagnosed transmissible respiratory infections. People entering a health facility with signs of illness including cough, congestion, rhinorrhea, or increased production of respiratory secretions should take special precautions. Offices and hospitals should have posted signs with instructions for patients and visitors to:

- Cover their mouth/nose when coughing or sneezing.
- Use tissues and after use, throw them away in appropriate receptacles.
- Wash hands after coughing, sneezing, or blowing nose.
- Wear masks if they are coughing or have other symptoms as soon as they walk into the facility during a season where respiratory infections are common.
- Stay at least 3 feet away from other patients if they are having symptoms.

## Bloodborne Pathogens

**View OSHA Bloodborne Pathogens Presentation*

## DVD Instruction

**Delmar Video of Bloodborne Pathogen and Standard Precautions*

# Bloodborne Pathogens

## Introduction

Lesson objectives:

1. Define bloodborne pathogens.
2. Identify workers who are at risk of exposure to bloodborne pathogens.
3. Identify key aspects of a Bloodborne Pathogen Exposure Control Plan;
4. Describe methods for controlling exposure to bloodborne pathogens.
5. Describe steps to take when exposed to a bloodborne pathogen.

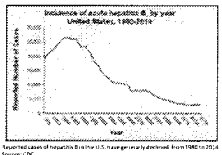
## Bloodborne Pathogens

What are **bloodborne pathogens**?

- Pathogenic microorganisms present in human blood that can lead to diseases
- Examples of primary concern
  - Hepatitis B (HBV)
  - Hepatitis C (HCV)
  - Human Immunodeficiency Virus (HIV)

## Bloodborne Pathogens

- Hepatitis B (HBV)
  - Over 12 million Americans are infected (1 in 20)*
  - Silent infection; symptoms include jaundice, fatigue, abdominal pain, loss of appetite, intermittent nausea, vomiting; may lead to chronic liver disease, liver cancer, and death
  - HBV can survive for at least one week in dried blood
  - Up to 40,000 people in US will become newly infected each year*



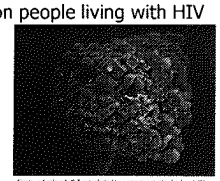
*Source: Hepatitis B Foundation

## Bloodborne Pathogens

- Hepatitis C (HCV)
  - Hepatitis C is the most common chronic bloodborne infection in the U.S.
  - Symptoms include: jaundice, fatigue, abdominal pain, loss of appetite, intermittent nausea, vomiting
  - May lead to chronic liver disease and death

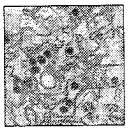
## Bloodborne Pathogens

- Human Immunodeficiency Virus (HIV)
  - HIV is the virus that leads to AIDS
  - HIV affects the body's immune system
  - HIV does not survive well outside the body
  - Estimated >1.1 million people living with HIV
  - Infected for life



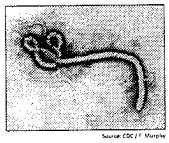
## Bloodborne Pathogens

- Other bloodborne diseases
  - Caused by viruses or bacteria
  - Circulate in blood at some phase; capable of being transmitted
  - Most are rare in the U.S.



Source: CDC / C Goldsmith

Zika Virus (left) and Ebola Virus (right) can be spread to workers through contaminated blood or infectious body fluids.



Source: CDC / F. Murphy

## Bloodborne Pathogens

- Examples
  - Hepatitis D (HDV)
  - Syphilis
  - Malaria
  - Babesiosis
  - Brucellosis
  - Leptospirosis
  - Arboviral Infections
  - Relapsing fever
  - Creutzfeldt-Jakob Disease
  - Human T-Lymphotropic Virus Type I
  - Viral Hemorrahagic Fever

## Risk of Exposure

Contamination sources:

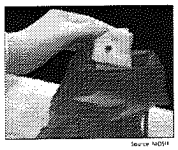
- Blood
- Other potentially infectious materials (OPIM)
  - Human body fluids
  - Any unfixed tissue or organ from human
  - Cultures, culture mediums, or other solutions
  - Experimental animal blood, tissues, or organs infected with HIV or HBV


Source: OSHA

## Risk of Exposure

Spread of bloodborne pathogens occurs through:

- Direct contact
- Indirect contact
- Respiratory transmission
- Vector-borne transmission

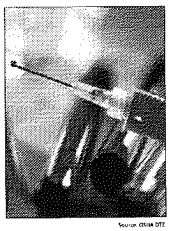


Source: NIOSH

## Risk of Exposure

How exposure occurs:

- Needlesticks
- Cuts from other contaminated sharps
- Contact of mucous membrane or broken skin with contaminated blood or OPIM



Source: OSHA DTE

## Risk of Exposure

Occupational exposures:

- Occupations at risk
  - First responders
  - Housekeeping personnel in some industries
  - Nurses and other healthcare personnel
- CDC estimates 5.6 million workers in healthcare and related occupations are at risk
- All occupational exposure to blood or OPIM places workers at risk

Source: OSHA

## Controlling Exposures

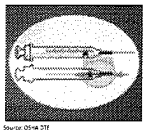
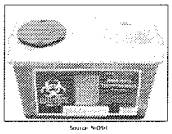
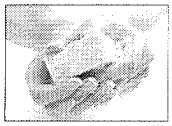
Observe standard precautions, such as:

- Treating all blood and bodily fluids as if they are contaminated
- Proper cleanup and decontamination

## Controlling Exposures

Engineering and work practice controls:

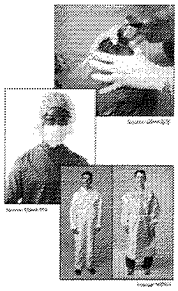
- Safer medical devices
- Sharps disposal containers
- Hand hygiene

## Controlling Exposures

PPE examples:

- Gloves
- Masks
- Aprons/Smocks/Gowns
- Face shields
- Mouthpieces
- Safety glasses
- CPR pocket masks



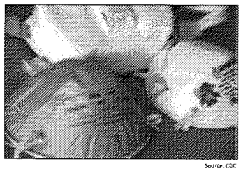
## Controlling Exposures

Employer's responsibilities:

- Perform hazard assessment
- Identify and provide appropriate PPE to employee at no cost
- Train employees on use and care
- Maintain/replace PPE
- Review, update, evaluate PPE program

## Controlling Exposures

- PPE selection
  - Safe design and construction
  - Fit comfortably
- Required PPE training
  - When it is necessary
  - What kind is necessary
  - Proper donning, adjusting, wearing, doffing
  - Limitations
  - Proper care, maintenance, useful life, disposal



## Controlling Exposures

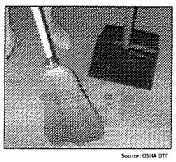
Employee's responsibilities:

- Properly wear PPE
- Attend training
- Care for, clean, and maintain
- Notify when repairs/replacement needed

## Controlling Exposures

Housekeeping:

- Written schedule for cleaning and decontamination
- Picking up broken glass
  - Not picked up by hands
  - Mechanical means only



## Controlling Exposures

Clean-up and decontamination:

- Wear protective gloves
- Use appropriate disinfectant
- Clean and disinfect contaminated equipment and work surfaces
- Thoroughly wash up immediately after exposure
- Properly dispose of contaminated PPE, towels, rags, etc.

## Controlling Exposures

- Regulated waste disposal:
  - Dispose of regulated waste in closable, leak-proof red or biohazard labeled bags or containers
  - Dispose of contaminated sharps in closable, puncture-resistant, leak-proof, red or

## Controlling Exposures

- Laundry
  - Contaminated laundry must be bagged or containerized at the location where it was used.

## Controlling Exposures

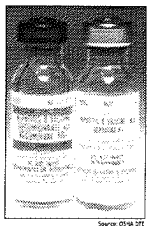
Training:

- Who
  - All employees with occupational exposure to blood or other potentially infectious material (OPIM)
  - Employees who are trained in first aid and CPR
- No cost; during working hours
- When
  - Initial assignment
  - Annually; or with new/modified tasks

## Controlling Exposures

Hepatitis B vaccination:

- Offered to all potentially exposed employees
- Provided at no cost to employees (within 10 days to employees with occupational exposure)
- Declination form



## Controlling Exposures

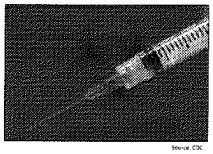
No vaccinations for:

- Hepatitis C
- HIV

## When Exposure Occurs

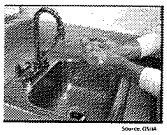
Exposure incident:

- Specific eye, mouth, or other mucous membrane, non-intact skin, parenteral contact with blood or OPIM that results from the performance of an employee's duties.



## When Exposure Occurs

- Immediate actions
  - Wash exposed area with soap and water
  - Flush splashes to nose, mouth, or skin with water
  - Irrigate eyes with water and saline



## When Exposure Occurs

- Report exposure immediately
- Direct employee to healthcare professional for treatment

## When Exposure Occurs

- Confidential medical evaluation and follow-up
  - Route(s) of exposure and circumstances
  - Source individual
  - Collect/test blood for HBV and HIV serological status
  - Post exposure prophylaxis (when medically indicated)
  - Counseling
  - Evaluation