CHAPTER 5

BLOOD BORNE PATHOGEN

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- OSHA, NIOSH, CDC
- Blood Borne Pathogen Standard
- Transmissions of Diseases
- Decontamination / Sterilization
- Biohazards

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OSHA, NIOSH, CDC

- **OSHA –** The U.S. Occupational Safety and Health Administration was established in December 1970 when Congress passed the "Occupational Safety and Health Act of 1970"
- OSHA creates and enforces safety standards for the workplace to ensure that all American workers have a safe work environment.
- It dictates that the employer is responsible for providing a work environment free of hazards that may cause injury or death.
- **NIOSH –** The National Institute for Occupational Safety and Health is the federal agency responsible for conducting research and making recommendations for the prevention of work-related injury and illness.
- **CDC –** The Centers of Disease Control and Prevention is one of 13 operating components of Department of Health and Human Services (DHHS) which is the principle agency in the United States government for protecting the health and safety of all Americans and for providing essential human services.

OSHA Occupational Safety and Health Administration
www.osha.gov
(800) 321-OSHA

CDC Workplace Safety and Health

NIOSH
www.cdc.gov/niosh
(800) 232-4636

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Blood Borne Pathogens Standard

- The standard provides requirements for employers to follow in order to ensure employees safety regarding occupational exposure to bloodborne pathogens.
- The standard includes a combination of engineering controls, work practice controls, personal protective equipment (PPE), appropriate training, Hepatitis A & B vaccinations, and the use of warning signs and labels.
- **Who is Covered by the Standard?**
- OSHA requires that anyone whose job involves being exposed to blood or body fluids be included. That includes:
  - Full Time
  - Part-time
  - Temporary
  - Volunteer
  - Contract Worker

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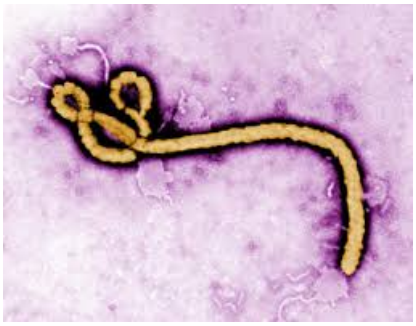
Blood Borne Pathogens

Bloodborne pathogens are infectious microorganisms in human blood, bodily fluids or OPIM that can cause disease in humans

Other Potentially Infectious Material (OPIM) may contain Bloodborne pathogens. Which may include these human body fluids:

- Saliva containing blood
- Semen
- Vaginal secretion
- Breast milk
- Amniotic fluid
- Cerebrospinal fluid
- Synovial (joint) fluid
- Pericardial (heart) fluid

- Urine or Vomit
- Blood, organs, or other tissue from infected animals
- Tissue, organ, or cell cultures
- Unfixed tissue (acne, burns, cuts, rashes or organs.
- Contaminated cultures or other solutions



- Hepatitis B can live for at least 7 days outside the body and may be transmitted on contaminated surfaces and personal items such as razors and toothbrushes

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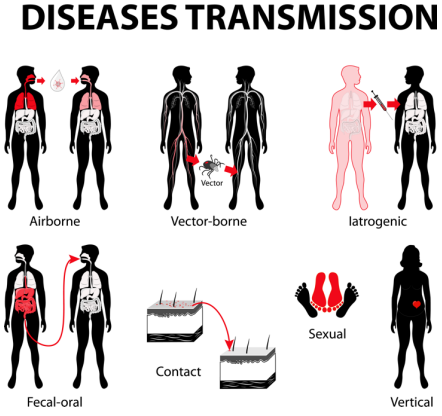
Transmission of Diseases

The microorganisms (bacteria and viruses) that cause diseases may be transmitted from one person to another by:

- Droplet contact - coughing or sneezing
- Direct physical contact - touching or sex
- Indirect contact – touching or using contaminated surfaces or items
- Airborne transmission - if the microorganism can remain in the air for long periods of time
- Fecal-oral transmission - from contaminated food or water
- Vector borne transmission - by insects or other animals

Disease can be transmitted in two ways:

- Horizontal– from one individual to another transmission can occur by either direct contact or indirect contact that allow the transmission of disease without physical contact.
- Vertical– passing a disease vertically from parent to child at birth. Breast milk can also be a mode of transmission however the risk is low.



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Modes of Transmission

Bloodborne Pathogens are most often transmitted when infected blood or OPIM (Other Potentially Infectious Material) encounters mucous membranes such as eyes, nose, mouth or non-intact skin.

Non-intact skin is not limited to:

- Cuts
- Abrasions
- Rashes
- Hangnails
- Wounds
- Burns
- Fever
- Blisters
- Open sores
- Cracked skin
- Acne

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Droplet Transmission

Also Known as the respiratory route, it is a typical mode of transmission among many infectious agents. If an infected person coughs or sneezes on another person the microorganisms suspended in warm, moist droplets, may enter the body through the nose, mouth or eye surfaces.

Diseases that are commonly spread by coughing or sneezing include (at least):

- Strep Throat
- Tuberculosis
- Measles
- Rubella
- Whooping Cough
- Bacterial Meningitis
- Chickenpox
- Common Cold
- Influenza
- Mumps

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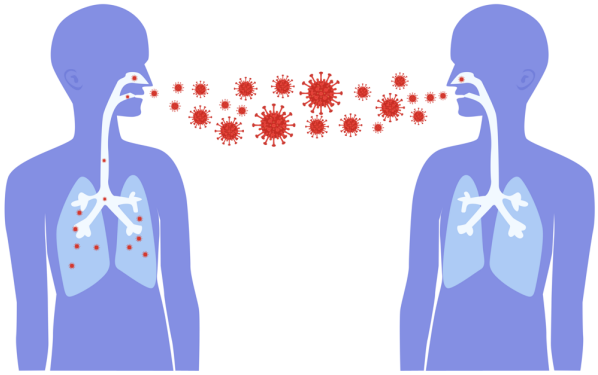
Airborne Transmission

These particular pathogens transmit through the air in particles small enough to suspend on dust. A simple sneeze can transmit the pathogen which can remain airborne for long periods of time whereas droplets are larger and do not remain airborne long.

- Anthrax
- Smallpox
- Influenza
- Tuberculosis
- Measles
- Chickenpox
- Meningitis



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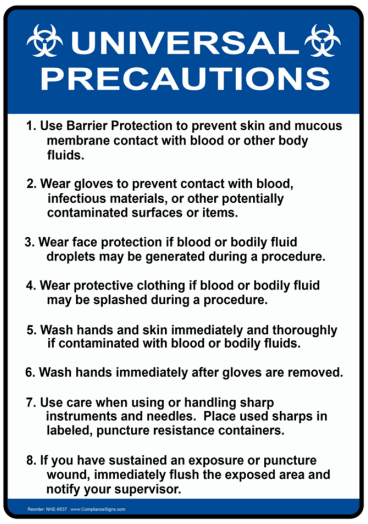
Universal Precautions

Universal Precautions describes using safety guidelines in which you treat all blood and OPIM as if they are infected.

- Always wear your PPE (gloves, masks, goggles).
- Body Substance Isolation (BSI) is an OSHA guideline to treat all body fluids and substances as infected. This aligns with Universal Precautions.
- OSHA considers body fluids such as nasal secretions, sweat, tears, urine and feces to be included.



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Razors

- Razors that are used to shave a patient are *never* to be recapped and are also considered a biohazard and are to be put in the sharp's container. Razors are disposable not re-usable.
- 73% of medical OSHA violations involved the Bloodborne Pathogens Standard

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Personal Protective Equipment (PPE)

- PPE refers to barrier equipment designed for use by an employee in order to reduce or eliminate risks.
- Examples:
  - Gloves
  - Goggles
  - Face Shields
  - Sleeves and aprons
  - Mask
  - Employer is responsible for providing and ***requiring*** the use of PPE.

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Exposure Controls

Engineering Controls

- Devices that identify, isolate, remove or reduce the BBP risk in the workplace.

Examples:

- Hand washing facilities
- Eyewash Stations
- Sharps Containers
- Labels
- Disinfectants
- PPE

Work Practice Controls

- Behavior, practices and procedures designed to minimize, reduce and eliminate the risk of exposure.

Examples:

- Proper handling of sharps
- Proper sharp disposal
- Proper disinfection
- Proper use of PPE
- Proper hand washing

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Hand Washing

- When possible, handwashing facilities must be provided for all employees.
- When not possible, antiseptic liquid may be provided until handwashing can be performed.
- Anti-bacterial soap should be used when washing hands.
- Wash front and back of hand including between fingers and under nails.
- Wash after removal of PPE.

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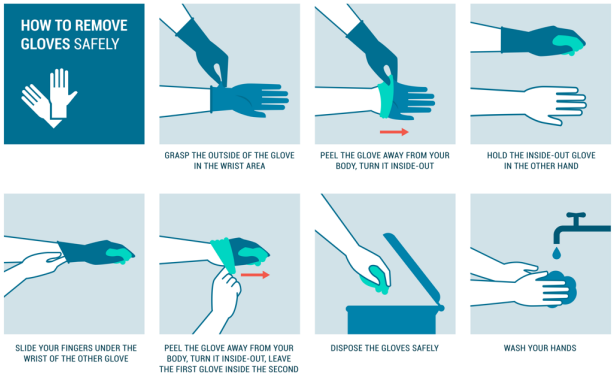
Use of Gloves

Gloves must be worn at any time when contact with blood, OPIM, mucous membranes or non-intact skin is expected by client contact or handling contaminated items

Reminder:

- Hands must be washed after their removal of gloves.
- Friction, chemicals and sweat can compromise the integrity of the glove.
- Except for utility gloves, single use gloves must never be reused.



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Decontamination / Sterilization

<u>Assume everything is contaminated, DISINFECT</u>:

- Anything you touched.
- Anything the patient may touch.
- Laser hand piece, any removal parts.
- After EVERY treatment.
- All surfaces in the treatment room.

- Appropriate disinfectant must be used.
- Kills HIV, Hep A,B,C – Hospital grade.
- Know the amount of time the disinfectant must be on the surface to Kill the germ.

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What Happens if I am Exposed?

DO NOT DELAY, TAKE IMMEDIATE ACTION!

1. Flush the area with water at least 20 min (mucous membranes).
2. Wash any exposed area with antibacterial soap.
3. Be gentle over sores and scabbed areas of the skin.
4. Report the incident to your supervisor.
5. Save any contaminated objects for testing (needles etc.)
6. Seek medical care ASAP.

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OSHA Requirements for Reporting an Exposure Incident

EXPOSURE REPORT FORM

1. Date and time of exposure
2. Your job title and classification
3. Your work location and where the exposure took place
4. The activity you were performing at the time of the exposure
5. Your training for that activity
6. Engineering controls – devices you were using at the time
7. Preventative work practice controls – handwashing, sterilization, handling and disposal of sharps
8. PPE you were utilizing at the time

EMPLOYER RESPONSIBILITIES

1. Ensure you know how to complete report form
2. Identify & document person, blood or source of OPIM
3. Obtain consent to test the source person's blood. unless the source is known to be infectious
4. Inform you of the test results
5. With your consent, test your blood as well
6. Provide arrangements for medical care and counseling as needed
7. Report form is kept in employee file and confidential

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OSHA Requirements for Employers to Prevent Exposure of BBP

1. Identify job position and individuals to receive training
2. Establish Engineering and Work Practice Controls
3. Specify PPE to be used
4. Requirement of use of Universal Precautions
5. Vaccinations – Hepatitis B, etc.
6. Review plan with new employees
7. Review and update plan annually

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Biohazards

Regulated Waste

- Blood, OPIM, liquid or dried.
- On any item that cannot be laundered.
- Includes gauze, sharps.
- Must be in clearly marked biohazard containers.
- Biohazard containers must be closeable, leak-proof containers built to contain all contents during handling, storing, transporting or shipping and be appropriately labeled or color-coded.
- Biohazardous waste must be collected and disposed of by specific companies.

Biohazard Warning Labels

Warning labels required on:

- Containers of regulated waste.
- Refrigerators and freezers containing blood or OPIM.
- Other containers used to store, transport, or ship blood or OPIM.
- Must be universal Biohazard label.
- Red bags or containers may be substituted for labels.

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