Blood borne Pathogens

What Are Blood borne Pathogens?

Blood borne pathogens are microorganisms such as viruses or bacteria that are carried in blood and can cause disease in people.

Types of Blood borne Pathogens

Blood borne Pathogens Include

- **Malaria**
- **Syphilis**
- **Brucellosis**
- **Hepatitis B (HBV)**
- **Human Immunodeficiency Virus (HIV)**

Hepatitis B (HBV)…

- ✓ is a virus that infection and inflammation of the liver
- ✓ is transmitted primarily through "blood to blood" contact
- ✓ can lead to serious conditions such as cirrhosis & liver cancer
- ✓ can survive in dried blood for up to seven days

No Cure for HBV

- There is no "cure" or specific treatment for HBV
- Many people develop antibodies to fight the disease which may prevent future infection

HBV Symptoms

- Mild flu-like symptoms
- Fatigue
- Possible stomach pain
- Loss of appetite
- Nausea
- Jaundice
- Darkened urine

Hepatitis B Vaccinations

Employees who have routine exposure to blood borne pathogens (such as doctors, nurses, first aid responders, etc) shall be offered the Hepatitis B vaccine series at no cost to themselves unless:

- **They have previously received the vaccine series**
- **Antibody testing has revealed they are immune**
- **The vaccine is contraindicated for medical reasons**

In these cases they need not be offered the series.

Vaccination Process

- Series of three shots.
- Second shot is given one month after the first
- Third shot follows five months after the second.

This series gradually builds up the body's immunity to the Hepatitis B virus.

Quiz Time!

Circle the correct answer below.

- Blood borne pathogens are:
  - airborne particles that are easily inhaled
  - microorganisms that are carried in blood
  - small larva that feed on animal carcass
- Hepatitis B (HBV) can survive in dried blood for up to seven days.
  - True
  - False

Human Immunodeficiency Virus (HIV)

- AIDS, or acquired immune deficiency syndrome, is caused by a virus called the human immunodeficiency virus, or HIV.
- It may be many years before AIDS actually develops.
- HIV attacks the body's immune system, weakening it so that it cannot fight other deadly diseases. AIDS is a fatal disease, and while treatment for it is improving, there is no known cure.

HIV and Direct Contact

The HIV virus is very fragile and will not survive very long outside of the human body. It is primarily of concern to employees providing first aid or medical care in situations involving fresh blood or other potentially infectious materials.

HIV Symptoms

Symptoms of HIV infection can vary, but often include:

- **Weakness**
- **Fever**
- **Sore throat**
- **Nausea**
- **Headaches**
- **Diarrhea**
- **White coating on the tongue**
- **Weight loss**
- **Swollen lymph glands**

Blood borne Pathogen Transmission

Blood borne pathogens are transmitted through contact with infected human blood and other body fluids such as:

- **Semen**
- **Vaginal secretions**
- **Cerebrospinal fluid**
- **Synovial fluid**
- **Pleural fluid**
- **Peritoneal fluid**
- **Amniotic fluid**
- **Saliva**

Skin Provides a Barrier

Unbroken skin forms an impervious barrier against blood borne pathogens. However, infected blood can enter your system through:

- **Open sores**
- **Cuts**
- **Abrasions**
- **Acne**
- **Any sort of damaged or broken skin such as sunburn or blisters**

Mucous Membranes

Blood borne pathogens may also be transmitted through the mucous membranes of the

- **Eyes**
- **Nose**
- **Mouth**

Quiz Time!

Circle the correct answer below.

1. Human Immunodeficiency Virus (HIV):
   a. attacks the central nervous system
   b. attacks the cardiovascular system
   c. attacks the body's immune system
2. In addition to the blood, blood borne pathogens may also be transmitted through the mucous membranes of the eyes, nose, and mouth.
   a. True
   b. False

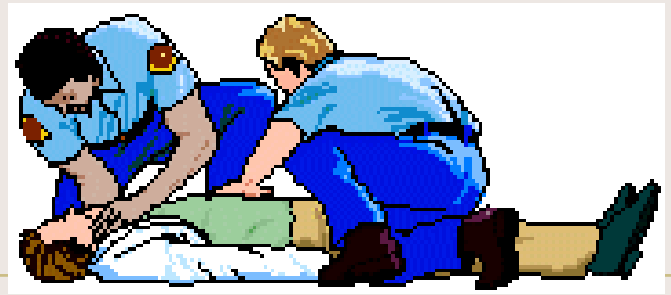
Signs & Labels

Warning labels must be placed on containers of regulated waste, refrigerators and freezers containing blood or other potentially infectious material; and other containers used to store, transport, or ship blood or other potentially infectious materials.

What is Regulated Waste?

- Any liquid or semi-liquid blood or other potentially infectious materials.
- Contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed.
- Items that are caked with dried blood or other potentially infectious materials

Emergencies



In an emergency situation, always use Universal Precautions

Minimize your exposure by wearing

- **Gloves**
- **Splash goggles**
- **Pocket mouth-to-mouth resuscitation masks**
- **Other barrier devices**

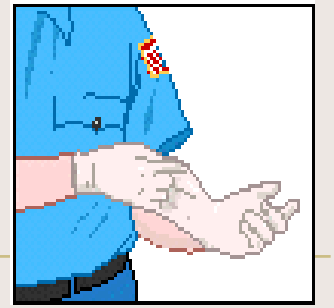
If you are exposed

- Wash the exposed area thoroughly with soap and running water.
- Use non-abrasive, antibacterial soap
- Flush mouth, nose, eyes for 15 minutes if blood is splashed in mucous membranes

Other Actions if Exposed

- Report the exposure to your supervisor
- Fill out an exposure report form
- Request blood testing & Hepatitis B vaccination

Personal Protective Equipment



The best protection against exposure is to ensure you are wearing the appropriate personal protective equipment (PPE). For example, you may have noticed that emergency medical personnel, doctors, nurses, dentists, dental assistants, and other health care professionals always wear latex or protective gloves. To protect yourself, it is essential to have a barrier between you and the potentially infectious material.

Rules to follow:

- Treat all blood or potentially infectious body fluids as if they are contaminated.
- Always wear personal protective equipment in exposure situations.
- Replace PPE that is torn or punctured.
- Remove PPE before leaving the work area.
- Properly disinfect or dispose of used PPE
- Wash hands immediately after removing PPE

Gloves

- Gloves should be made of latex, nitril, rubber, or other water impervious materials.
- Inspect gloves before use
- Double gloving can provide an additional layer of protection.
- If you have cuts or sores on your hands, you should cover these with a bandage or similar protection as an additional precaution before donning your gloves.
- Don’t touch the outside of used gloves

Goggles, Face Shields & Aprons

- Use goggles if there is a risk of splashing or vaporization of contaminated fluids
- Face shields provide additional face protection for the nose and mouth.
- Aprons protect

Contaminated Clothing

- Remove clothing that is contaminated with blood as soon as possible
- Use Universal Precautions when handling contaminated laundry
- Place clothing in approved & labeled bags or containers

Hand Washing

- Hand washing is one of the most important (and easiest) practices used to prevent transmission of blood borne pathogens.
- Wash hands or other exposed skin thoroughly as soon as possible following an exposure incident.
- Use antibacterial soap
- Don’t use harsh, abrasive soaps

Hygiene Rules

If you are working in an area where there is reasonable likelihood of exposure, you should never:

- **Eat**
- **Drink**
- **Smoke**
- **Apply cosmetics or lip balm**
- **Handle contact lenses**

Quiz Time!

Circle the correct answer below.

1. The best protection against exposure is to wash your hands with an abrasive soap.
   a. True
   b. False
2. If exposed to blood borne pathogens:
   a. wash thoroughly with an abrasive soap
   b. wash thoroughly with denatured alcohol
   c. wash with soap and running water

Food Rules

Do not keep food or drink in refrigerators, freezers, shelves, cabinets, or on counter tops where blood or potentially infectious materials are present.

Decontamination & Sterilization

All surfaces, tools, equipment and other objects that come in contact with blood or potentially infectious materials must be decontaminated and sterilized as soon as possible. Equipment and tools must be cleaned and decontaminated before servicing or being put back to use.

Decontamination

- Solution of 5.25% sodium hypochlorite (household bleach) diluted between 1:10 and 1:100 with water. The standard recommendation is to use at least a quarter cup of bleach per one gallon of water.
- Use Lysol or some other EPA-registered tuberculoid disinfectant. Check the label of all disinfectants to make sure they meet this requirement.

Spill Cleanup

- Carefully cover the spill with paper towels or rags
- Gently pour 10% solution of bleach over the towels or rags
- Let sit for 10 minutes
- Wear gloves to collect & dispose of waste

Precautions with Needles

- Recap needles only with a mechanical device.
- Use forceps, pliers, or broom and dust pan to move needles
- Never break or shear needles.
- Needles must be disposed in labeled sharps containers

Broken Glassware

- Broken glassware should be sterilized with an approved disinfectant solution before it is disturbed or cleaned up.
- Glassware that has been decontaminated may be disposed of in an appropriate sharps container
- Don’t pick up broken glassware with your hands

Summery

- Always know what you are working with
- Use proper PPE in situations with Blood borne Pathogens
- Report all suspected exposures
- Don't handle sharps or broken glass with your hands
- Properly dispose of pathogen waste, PPE and Sharps

Questions?

Please ask any questions you may have.

Phone (865) 974-5084

or email

safety@tennessee.edu

We want to ensure you have all the information you need and want.

Quiz Time!

Circle the correct answer below.

1. The standard recommendation for proper decontamination is:
   a. denatured alcohol
   b. one cup baking soda per one gallon of water
   c. a quarter cup of household bleach per one gallon of water
2. Never break or shear needles:
   a. True
   b. False