

Infection Control

Blood Borne Pathogens





Why Take This Training?

- A woman has cut her hand and arm with a knife while opening a box in the mailroom. As the first 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? Would you have any concerns about contracting a disease?

How Infections Occur

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.

How Bloodborne Pathogens are Spread

- For ANY disease to be spread, including bloodborne diseases, the following conditions **MUST ALL** be met:
 - A pathogen is present
 - There is enough pathogen present to cause disease
 - The pathogen passes through the correct entry site
 - A person is susceptible to the pathogen

If any one of these conditions is missing, an infection CANNOT occur.

Contact Types

○ **Direct Contact**

- Occurs when the infected blood or body fluids from one person enters another person's body at a correct entry site.
 - Example: Infected blood splashing in the eye or directly touching the body fluids of an infected person

○ **Indirect Contact**

- Occurs when a person touches an object that contains blood or another body fluid of an infected person, and that infected blood enters another person's body at a correct entry site.
 - Example: A person picks up blood-soaked bandages with bare hands and the pathogens enter through a break in the skin.

Disease-Causing Agents

○ **Bacteria**

- DO NOT depend on other organisms for life and can live outside the human body
- Can usually be killed or weakened by antibiotics
- Include: Tetanus, meningitis, scarlet fever, strep throat, tuberculosis, gonorrhea, syphilis, Chlamydia, toxic shock syndrome, Legionnaire's disease, diphtheria, food poisoning, Lyme disease, anthrax

○ **Viruses**

- DO depend on other organisms to live and reproduce
- Cannot be killed by antibiotics
- Include: Hepatitis, measles, mumps, chickenpox, meningitis, rubella, influenza, warts, colds, herpes, HIV (the virus that leads to AIDS), genital warts, smallpox

Pathogens That Cause Serious Diseases..

<u>Disease</u>	<u>Signs and Symptoms</u>	<u>Mode of Transmission</u>	<u>Infective Material</u>	<u>Medications</u>
Hepatitis A (VIRUS)	Symptoms similar to those of influenza	Indirect contact: Oral-fecal route	Oral ingestion of fecal contaminants. Food Contaminated by infected food handlers. Contaminated water or contaminated shellfish	Vaccines are available for prevention, and are typically given to high risk populations and people traveling to certain foreign countries.
Hepatitis B (VIRUS)	Jaundice, fatigue, abdominal pain, loss of appetite, nausea, vomiting, joint pain	Direct and indirect contact	Blood, semen	Vaccines are available for prevention. Medications available to treat chronic hepatitis B infection; however, these medications work only for some people.
Hepatitis C (VIRUS)	Jaundice, fatigue, dark urine, abdominal pain, loss of appetite, nausea	Direct and indirect contact	Blood, semen	There is no vaccine against hepatitis C.
Tuberculosis (BACTERIA)	Progressive fatigue, lethargy, nausea, anorexia, weight loss, irregular menses, low-grade fever, cough, blood-streaked sputum, chest tightness, dull ache in chest	Airborne	Sputum: When a person with active TB coughs, laughs, sneezes, whistles or sings, droplets become airborne and may be inhaled	Multiple drugs are available for treatment of tuberculosis. These drugs include INH, RIF, PZA, EMB, SM, Amikacin, and Priftin.
HIV (VIRUS)	May or may not be signs and symptoms in early stage. Late-stage symptoms may include: fever, fatigue, diarrhea, skin rashes, night sweats, loss of appetite, swollen lymph glands, significant weight loss, white spots in the mouth, vaginal discharge and memory or movement problems	Direct and possibly indirect contact	Blood, semen, vaginal fluid, breast milk	There is no vaccine against HIV.

Standard Precautions

YOU SHOULD CONSIDER ALL FLUIDS AND SUBSTANCES INFECTIOUS

- **Follow precautions and safe practices EACH TIME you prepare to provide care or clean up spills**
 - **Personal hygiene**
 - **Personal protective equipment**
 - **Things we USE, Things we DO**
 - **Equipment cleaning and disinfecting**

Personal Hygiene

Hand washing: the #1 way to prevent disease transmission.

1. Wet hands with water
2. Apply liquid soap to hands
- 3. Rub hands together vigorously for at least 20 seconds, covering all surfaces of the hands and fingers
 - Use soap and warm running water
 - Scrub nails by rubbing them against the palms of your hands
 - You should be able to sing Happy Birthday twice!
- 4. Rinse hands with water
- 5. Dry hands thoroughly with a paper towel
- 6. Turn off the faucet using the paper towel

You should wash your hands frequently, especially before and after eating, drinking, smoking, applying cosmetics or lip balm, handling contact lenses or touching your mouth, nose or eyes.

Personal Protective Equipment (PPE)

- Includes all specialized clothing, equipment and supplies that keep you from directly contacting infected materials.
 - Disposable Gloves
 - Gowns
 - Masks
 - Shields
 - Resuscitation devices and breathing barriers

REDUCE YOUR RISK OF EXPOSURE!

Things you USE to reduce risk of exposure:

- Puncture resistant containers for 'sharps'
 - Leak-proof and prominently labeled containers
 - Disposable needles and syringes should be used
 - Placed in areas NOT accessible to client's or the public while awaiting trash collection or disposal
- Biohazard bags and labels
- PPE's (Personal Protective Equipment)

○ Things you DO to reduce risk of exposure:

- HAND WASHING
- Placing sharp items in labeled containers
 - Needles will NOT be recapped, purposely bent or broken or removed from disposable syringes or otherwise manipulated by hand
- Cleaning all possibly soiled equipment
- Using alcohol-based hand rubs when hand washing is not available (not to be used to replace hand washing)



"Pathogen free is how I want to bee!"

Equipment Cleaning and Disinfecting

- Spill Clean Up
 - Wear single use gloves and other PPE's
 - Clean up spills immediately or ASAP after the spill occurs using disposable absorbent material
 - Dispose of absorbent material in biohazard container
 - Do not pick up sharps with your hands (use broom and dust-pan). Clean up visibly soiled areas
 - Flood the area with disinfectant solution, and allow it to stand for 10 minutes
 - *OSHA recommends a fresh mixture of one part bleach per 10 parts water*
 - Use appropriate material to absorb solution and dispose of it in the biohazard container
- Keep work areas clean and sanitary

Infectious Waste

- Infectious waste will be disposed of according to the Department of Public Health standards
- Wastes which require disposal are:
 - Vaccines
 - Sharps
 - Liquid human waste, including blood and blood products and body fluids, but not including urine or materials stained with blood or body fluids
- Urine, stationed excretions, feces, liquid waste can be flushed down the toilet if safe sewage treatment is in effect

Environment

Bagging

- Disposable materials soiled with body fluids not under the category of infectious waste, shall be enclosed in an impervious bag prior to disposal in a regular bagged receptacle for disposal to sanitary landfills or incinerator.

Clothing or linen soiled with body fluids shall be collected when removed and placed in an impervious red bag.

Laundry

- Linen or clothing soiled with body fluids shall be transported in impervious bags from the site of removal to laundry area and handled as little as possible with gloves,
- Linen or clothing will be washed with a detergent or in water at least 71 degrees centigrade for 25 minutes. If the temperature is lower than 71 degrees centigrade, bleach solution should be used according to procedure instructions.

Dishes

- Dishes should be carried directly to dish washing area or bagged if visibly contaminated. Soap and hot water (71 degrees Celsius) should be used for cleaning with appropriate bleach solution and rinsed.
- Staff handling these dishes should wear gloves and should wash their hands after removing the gloves and before handling clean dishes of food.



It is **YOUR** responsibility to protect yourself and to protect **OUR CLIENTS!**

- *Therefore, direct care staff who have exudative lesions or weeping dermatitis shall refrain from all direct client care or handling food items until the condition resolves.*

If you have an exposure incident..

- Exposure incidents involve contact with blood or other potentially infectious materials through a needle stick, broken or scraped skin or the mucous membranes of the eyes, nose or mouth. Take these steps immediately:
 - Wash needle stick injuries, cuts and exposed skin with soap and water
 - Flush splashes of blood or other potentially infectious materials to the nose and mouth with water
 - Irrigate eyes with clean water, saline or sterile irrigants
 - Immediately report exposure incident to your supervisor (can be critical to the success of post exposure treatment)
 - Follow up with health care professional for medical evaluation

References:

- Ignatavicius, D., & Workman, L. (2005). *Medical-surgical nursing: critical thinking for collaborative care*. Philadelphia, PA : Elsevier Health Sciences.
- Kee, J., & Hayes, E., & McCuiston, L. (2006). *Pharmacology: a nursing process approach*. Philadelphia, PA : Elsevier Health Sciences.
- American Red Cross (2003). *Bloodborne pathogen training: together we can save a life*. Yardley, PA : Staywell.
- Barry County Community Mental Health Authority (2010). *Safety and infection control policy*. Hastings, MI