

Bloodborne Pathogens

Introduction

- Research shows that using safety precautions such as handling all blood and other body fluids as infectious, disposing of sharps safely, and using sharp safety devices have all decreased the number of exposures to bloodborne pathogens
- Prevention can occur only when the facility and health care workers work together as a team
- In order to decrease the spread of disease caused by bloodborne pathogens and other potentially infectious material (OPIM), it is important to know how these diseases are spread, what controls are in place, and your role in this process

Most Common Bloodborne Pathogens and Diseases

- Hepatitis B Virus (HBV)
 - Causes Hepatitis B
- Hepatitis C Virus (HCV)
 - Causes Hepatitis C
- Human immunodeficiency virus (HIV)
 - Causes Acquired immune deficiency syndrome (AIDS)

HBV and Hepatitis B

- Attacks the liver
- One out of 12 Americans will be infected by HBV during their lifetime
- The risk of infection can be decreased with the completed HBV vaccine series (three injections)
- Most people infected recover completely
- Symptoms may take as long as 12 weeks to develop
- Symptoms include:
 - Jaundice
 - Enlarged liver
 - Abdominal pain
 - Loss of appetite
 - Nausea

HCV and Hepatitis C

- Attacks the liver
- About 70% of infected individuals display no symptoms
- The virus can remain in the body for a long time before symptoms appear
- Symptoms are very similar to HBV
- 85% of HCV infected patients are chronically infected
- There is no current vaccine for HCV

HIV and AIDS

- HIV attacks and destroys white blood cells. Over time, the lack of white blood cells decreases the ability of the body to respond to other disease-causing pathogens
- Some infected people can lead seemingly healthy lives for many years until the immune system is finally compromised
- In most cases HIV leads to AIDS
- There is no current vaccine to stop the spread of HIV
- The only treatments that exist are designed to control symptoms

Testing for Exposure

- HBV, HCV, and HIV can be detected through blood tests
- With each of these viral infections, tests will not show a positive result right away
- The type of pathogen and your response to that pathogen determine how long you will have to wait for results

Ways that Bloodborne Diseases Are Spread

- Via contact with an infected person's blood or other potentially infectious material (OPIM)
- Routes of infection include:
 - Sexual contact
 - IV drug use
 - Mother-to-baby infection
- Health care workers are at risk when exposed to an infected person's blood or OPIM:
 - Contaminated sharps
 - Splashes onto broken skin or reaches the mucous membranes

Importance of Immunization

- Immunization for the HBV has been proven to be very effective if the series is completed
- However, vaccination is not enough to guard against HCV and HIV
- Thus, it is important to follow standard safety measures

Safety Guidelines

- The Occupational Safety and Health Administration (OSHA) requires employers in the health care field to develop an exposure control plan
 - The plan provides protection for all health care workers who might be exposed to pathogens found in blood and other potentially infectious material (OPIM)
- The plan is updated yearly to include:
 - Changes in technology that reduce or eliminate exposure
 - Documentation that safer medical devices are adopted

Standard Precautions

- To put it simply, Standard Precautions means treating all blood and other OPIM as though infected
- Incorporates both Universal Precautions and Body Substance Isolation Practice to protect against risk of infection by all pathogens
- Remember: All body fluids present a potential risk for infection
- This practice does not protect against airborne diseases

Personal Protective Equipment (PPE)

- Special clothing and equipment to protect against contact with bloodborne germs and OPIM
- Ensure PPE fits properly
- Always remove between patients
- Immediately dispose of after each use
- PPE includes:
 - Gloves
 - Masks
 - Eye protection
 - Face shields to protect workers' mucous membranes
 - Gowns to protect workers' skin and clothing from becoming soiled
 - Resuscitation bags

Safe-Work Practices

- To decrease the risk of coming into contact with the pathogens in blood and OPIM, health care workers should:
 - Know and follow their facility's procedures, including:
 - Using PPE
 - Maintaining proper hygiene
 - Cleaning up spills properly
 - Obeying engineering and work practice controls
 - Properly working with medical devices
 - Properly discard all cleaning materials

Safe-Work Practices (cont.)

- To decrease the risk of coming into contact with the pathogens in blood and OPIM, health care workers should:
 - Always use the required PPE especially in the following scenarios:
 - Wear a mask and eye protection when you could get splashed in the face by OPIM
 - Use a CPR mask when performing CPR
 - Wear a gown any time you have contact with blood or other body fluids (including when you handle dirty laundry)
 - Use gloves any time you have contact with blood or body fluids
 - Practice proper hand hygiene:
 - Use an approved alcohol-based rub or wash with soap and water
 - Remember that wearing gloves does not replace hand hygiene
 - Remove your gloves prior to leaving a patient's room
 - Use hand hygiene after removing your gloves

Sharps Safety

- There are more than 600,000 sharp related injuries per year
- Always use sharps safety devices or needleless systems, when available
- Always follow recommended sharps disposal practice
- Never attempt to:
 - Bend or break needles
 - Remove needles from sharps containers

What to Do if Exposed

- DO NOT PANIC
- Wash needle-stick or sharps injury immediately with soap and water
- Do not use caustic solutions, such as bleach
- Flush mucous membranes with generous amounts of water
- Flush eyes with clean water, saline, or sterile irrigants
- Report the incident to designated person immediately
- Whether or not a health care worker contracts the disease depends on many factors:
 - Type of exposure
 - How many pathogens are present in the infectious material
 - Type of blood borne pathogen present
 - The individual health care worker's current health status

What to Do if Exposed (cont.)

- Each member of the health care team has a role in protecting himself or herself or others from transmissible disease
- It is your responsibility to know policies and procedures that address blood and OPIM

Blood & Body Fluid Exposure Protocol

Employee Responsibility

- Immediately cleanse the wound
- Report the incident to charge nurse/nursing supervisor in charge of the source patients' location.
- Complete “On the Job Injury/Accident Report” form
- Have charge nurse/nursing supervisor review and sign form
- If necessary, change into replacement scrub clothing
- Soiled clothing should be placed in a red bag for cleaning by Environmental Services
- Report to Emergency Room.
- Review Flagler Health Policy: Management of Accidental Blood or Body Fluid Exposure/Contamination E-EH-4023

Charge Nurse/Nursing Supervisor Responsibility

- Read accident report, clarify, if necessary and sign form
- Call the emergency room and notify them that employee is being sent for treatment
- If necessary, obtain replacement scrub clothing for employee
- Send employee to the emergency room
- Order post exposure bloodwork on source patient. Please have drawn ASAP for results to be available for treating practitioner
- Obtain written consent for HIV test, if unable to obtain consent, may use existing blood in the lab

Nurse Practitioner/Emergency Department Responsibility

- Cleanse/ treat wound
- Order post exposure bloodwork for employee. Call the laboratory for the blood draw results from source/employee
- Assure “On The Job Injury-Form” is complete
- If the employee has not been vaccinated with hepatitis B vaccine or has been deemed a non-responder, initiate Hepatitis B vaccine and Hepatitis B Immune Globulin (HBIG) ASAP
- If the source patient poses high risk of HIV transmission, the treating practitioner should discuss the option of antiretroviral prophylaxis per CDC guidelines

Nurse Practitioner/Emergency Department Responsibility Continued

- Counsel employee and give the employee the medication information sheets explaining the side effects of the antiretroviral medications
- Follow the “Management of Accidental Blood or Body Fluid Exposure/Contamination E-EH-4023.”
- If the employee elects to have antiviral treatment the employee should schedule a follow-up appointment with “Employee Health”.
- Have employee Sign acknowledgment that they have received information on the antiretroviral medications and have been given the opportunity to ask questions
- The Employee Health Nurse will complete Hepatitis A-B-C follow up.
- Treatment for Hepatitis can be started within a two week timeframe.

Infection Control/ Employee Health Nurse Responsibilities

- If necessary, order further tests on patient's serum, i.e.: Hepatitis-C using Recombinant ImmunoBlot Assay (RIBA)
- Obtain test results
- Perform follow-up testing as recommended
- Review the "On the Job Injury" report
- Schedule follow-up with employee for counseling and other action as necessary
- Maintain employee health records for the time of employment plus thirty years

Laboratory Responsibility

- The source patient's frozen serum is kept until results are returned

Non-Employee Blood/Body Fluid Exposures (students, contracted employees)

- Immediately cleanse the wound
- Report the incident to their supervisor
- If necessary, change in to replacement scrub clothing. Soiled clothing should be placed in a red bag for cleaning by Environmental Services
- Report to the emergency room
- Complete the “On the Job Injury Report”
- Follow their company/school policy on blood/body fluid exposures