Blood Borne Pathogens Training

Objectives
- Explain the epidemiology, symptoms, and transmission of bloodborne pathogen disease
- Define the OSHA bloodborne pathogen standard
- Review the pharmacy’s exposure control plan
- Identify tasks and other actives that may involve exposure to blood and other potentially infectious material (OPIM)
- Describe what constitutes an exposure incident
- Discuss the use and limitations of engineering controls, work practices, and PPE

Objectives Continued
- Describe the efficacy and safety of the hepatitis B vaccine
- Identify the procedure to follow if an exposure incident occurs including reporting and medical follow-up
- Describe the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident
- Explain the pharmacies system of signs and labels to identify hazardous materials

Infectious Diseases
- Acinetobacter
- Varicella
- Clostridium difficile
- Clostridium sordellii
- Creutzfeldt-Jakob
- Ebola
- GI infections
- Hepatitis A, B & C
- HIV/AIDS
- Influenza
- MRSA
- Mumps
- Norovirus
- Parvovirus
- Poliovirus
- Pneumonia
- Rubella
- SARS
- S. pneumoniae
- Tuberculosis
- VISA
- VRE

Human Immunodeficiency Virus
- Virus that can lead to Acquired Immune Deficiency Syndrome (AIDS)
- There is no cure for HIV or AIDS
- Cannot reproduce outside the body
- CDC estimates over 1 million people were living with virus at the end of 2008
  - This represents an increase from 2006

Modes of Transmission of HIV
- Common
  - Unprotected sexual activity
  - Sharing needles, syringes, rinse water, or other equipment used to prepare illicit drugs for injection
  - Being born to an infected mother
- Less common
  - Being stuck with an HIV contaminated needle or other sharp object
  - Blood transfusions, blood products, or other organ / tissue transplant contaminated with HIV
Hepatitis C

- Most common chronic bloodborne infection in the United States
- 3.2 million persons infected with 17,000 new cases each year
- No vaccine available
- Transmission
  - Injection drug use (most common)
  - Receiving blood products
  - Needle stick
  - Birth to an HCV-infected mother

Sings and Symptoms of HCV

- Fever
- Fatigue
- Dark Urine
- Clay-colored stool
- Abdominal pain
- Loss of appetite
- Nausea
- Vomiting
- Joint Pain
- Jaundice

*Average time from exposure to symptoms is 4 to 12 weeks

An estimated 800,000–1.4 million persons in the United States have chronic HBV infection.

How is HBV Transmitted?

- Activities that involve percutaneous or mucous contact with infectious blood or body fluids
  - Sexual contact
  - IV drug use with shared needles or syringes
  - Birth from an infected mother
  - Contact with blood or open sores of an infected person
  - Needle stick or sharp instrument exposures
  - Sharing razors or toothbrushes with infected person

Signs and Symptoms of HBV Infection

- Fever
- Fatigue
- Loss of appetite
- Nausea
- Vomiting
- Abdominal pain
- Dark urine
- Clay-colored bowl movements
- Joint Pain
- Jaundice

Hepatitis B Vaccine

- Indicated for all healthcare providers at risk for exposure to blood or blood-containing body fluids
- All pharmacists who administer immunizations should have a record of or receive the Hepatitis B series
  - Must document if they refuse or have a contraindication to the vaccine
  - Do not have to complete series to start providing immunization services
- Contraindications include life-threatening allergy to yeast, or any component of the vaccine or anyone who is moderately to severely ill when a dose is scheduled
More on the Hepatitis B Vaccine

• About 90% effective
• 3 dose series 1 ml IM at 0, 1, and 6 months
• Studies show that protection may last at least 20 years possibly lifelong
• Adverse effects include injection site soreness (1 out of 4) and fever greater than 99.9 (1 out of 15)
• More than 100 million people in the United States have received this vaccination
• **Must be provided to pharmacists who administer medications at no charge**

Definitions

• Occupational exposure is defined as reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee’s duties
• OPIM: other potentially infected materials
• ECP: exposure control plan
• PPE: personal protective equipment

OSHA Blood Borne Pathogen Standard

• Established to protect employees who work in occupations where they are at risk of exposure to blood or other potentially infectious materials
• Applies to pharmacists who provide clinical services involving blood and / or needles

Pharmacy’s ECP and How to Obtain

• Purpose is to eliminate or minimize occupational exposure to bloodborne pathogens in accordance with OSHA standard 29 CFR 1019. 1030, “Occupational Exposure to Bloodborne Pathogens”
• Your pharmacy’s program administer will provide you with a copy

ECP Includes

• Determination of employee exposure
• Implementation of various methods of exposure control
  – Universal precautions
  – Engineering and work practice controls
  – PPE
  – Housekeeping
• Hepatitis B vaccination
• Post exposure evaluation and follow up
• Communication of hazards to employees and training
• Recordkeeping
• Procedures for evaluating circumstances surrounding exposure to incidents

Who is at risk?

• Anyone who may come into contact with blood or OPIM (i.e. administering vaccines, point of care testing)
  – Pharmacists
  – Pharmacy Interns
  • Only covered under ECP if being compensated
Methods of Implementation and Control

• Universal Precautions
• Engineering Controls
• Work practices
• Bloodborne pathogen training must be completed at time of initial employment and reviewed annually

Universal Precautions

• Method of control to protect employees from exposure to all human blood and OPIM
• Requires that all human blood and body fluids be treated as if known to be infectious for HIV, HBV, or other bloodborne pathogens

Engineering Controls

• Controls that isolate or remove the bloodborne pathogen hazard from the workplace
• Examples
  – Sharps containers
  – Retractable syringes
  – Syringe shields
  – Needleless injectors

Work Practices

• Controls that reduce the likelihood of exposure by defining the manner in which a task is performed
• Examples:
  – No eating or drinking in areas where there can be exposure to blood or OPIM
  – Wash hands or use hand sanitizer after performing tasks where employee could be exposed

Contaminated Needles

• Bending, recapping, or removing contaminated needles is **prohibited**
• Only under certain circumstances
  – Only when no alternative is feasible
  – Must be listed in ECP
  – If you have to recap a needle use the “one handed” technique
• There is no mention of this practice in this pharmacy’s ECP therefore **never** bend, recap or remove any contaminated needles

Personal Protective Equipment

• Provided to employees at no cost
• It is located in all areas where tasks are performed that may put employee at risk
• PPE that may be used in pharmacy
  – Lab coats
  – Gloves
All employees using PPE Must

- Wash hands immediately or as soon as feasible after removing gloves or other PPE.
- Remove PPE after it becomes contaminated and before leaving the work area.
- Used PPE may be disposed of in **sharps containers or appropriately labeled containers**.
- Wear appropriate gloves when it is reasonably anticipated that there may be hand contact with blood or OPIM, and when handling or touching contaminated items or surfaces; replace gloves if torn, punctured or contaminated, or if their ability to function as a barrier is compromised.

Continued

- Utility gloves may be decontaminated for reuse if their integrity is not compromised; discard utility gloves if they show signs of cracking, peeling, tearing, puncturing, or deterioration.
- Never wash or decontaminate disposable gloves for reuse.
- Wear appropriate face and eye protection when splashes, sprays, spatters, or droplets of blood or OPIM pose a hazard to the eye, nose, or mouth.
- Remove immediately or as soon as feasible any garment contaminated by blood or OPIM, in such a way as to avoid contact with the outer surface.

Biohazard Symbol

- This symbol will be placed on all containers that contain materials contaminated with blood or OPIM
- Pre-printed on most sharps containers

Housekeeping

- Must disinfect surfaces that may have been contaminated by blood or OPIM
- Use cleaners certified by the EPA to kill HBV, HCV, and HIV
  - If not available use solution mixture of bleach (1 part bleach : 10 parts water)
- Wear PPE while cleaning

Definition of Exposure Incident

- A percutaneous injury or contact of mucous membrane or non-intact skin with blood, tissue or other body fluids that are potentially infectious
- Examples
  - Needle stick or cut with sharp object
  - exposed skin coming into contact with blood or OPIM

If an exposure incident is to occur

- Stay calm!
- Clean wound with hot water and soap
- Contact the pharmacist in charge at the store
- Provide exposed employee with medical evaluation and follow-up
  - Employer will be responsible for any expense incurred
Continued

– Identify the source individual (if possible)
  • Obtain consent from source and arrange for them to be tested as soon as possible for HIV, HCV, and HBV (if the source is known to be positive, testing is not necessary)
  • Send source’s results to exposed employees healthcare provider
  • Provide the exposed employee with the results of the source patient (if permissible)
– Complete sharps injury log
– Evaluate cause of the injury and if needed construct an action plan to prevent further similar incidents

Additional Questions

If you have any questions or comments please feel free to call Eric Crumbaugh, PharmD at 501-372-5250 or email at eric@arrx.org

References

• CDC website www.cdc.gov (accessed February 2012)
• OSHA website www.osha.gov (accessed February 2012)