OBJECTIVES
LEARN

• Identify Hazards of Bloodborne Pathogens
• Identify Protections for These Hazards
• Discuss the Bloodborne Pathogens Standard
WHAT PATHOGENS?

• Many Different Pathogens
  • Viruses
  • Bacteria
  • Parasites
  • Other Microorganisms
MAJOR CONCERNS ARE VIRUSES

- Hepatitis B (HBV)
- Human Immunodeficiency Virus (HIV)
- Hepatitis C (HCV)
WHAT ARE BODY FLUIDS OF CONCERNS

- Blood
- Semen
- Vaginal Secretions
- Breast Milk
- Body Samples
- Fluids with Visible Blood
- Almost Every Fluid
HOW DOES OCCUPATIONAL EXPOSURE OCCUR?

• Needle Sticks, Contaminated Sharps, Broken Glass

• Lacerations or Other Skin Breaks

• Splashes to Mucus Membranes Eyes, Nose, Mouth
WORKERS EXPOSED

- Healthcare Workers
- Funeral Homes, Embalming
- First Aid Workers
- Industrial Accidents, Clean-ups
- Maid and Janitorial Work
OSHA STANDARD
1910.1030

Specific Standard to Address Bloodborne Pathogen Exposure in the Workplace

- Exposure Control Plan
- Engineering Controls
- Cleaning, Laundry, Waste Disposal
- PPE
- Medical Evaluations and Procedures
- Training/Labeling
- Sharps Log
STANDARD COVERS EMPLOYEES “REASONABLY ANTICIPATED” TO HAVE EXPOSURE

- Healthcare Workers
- Dental Workers
- Funeral Home Workers
- Assigned First Aid Staff
- Maids/Janitors or Others Who Clean Blood or Body Fluids
EXPOSURE CONTROL PLAN REQUIRED UNDER STANDARD

- Exposure Determination
- The schedule and method of implementation for
  - Methods of Compliance,
  - HBV Vaccination and Post-Exposure Follow-up
  - Communication of Hazards to Employees
  - Recordkeeping
- Procedure for the Evaluation of Exposure Incidents
HBV

- 2.2 Million in US Have Chronic Infection
- 19,800 New Cases in 2013
- Some People Asymptomatic
- Symptoms: Fever, Muscle Ache, Jaundice
- Approximately 1/3 Cases by Needle stick but Contact with Damaged Skin also Important
- Vaccination Available
HIV

• 37,600 New HIV infections in 2014 (CDC)
• HIV Infection Causes Acquired Immunodeficiency Syndrome (AIDS)
• Infectious For Life
• No Vaccination Available Some Treatments May Increase Latency Period
STAGES OF HIV INFECTION

Patients are Contagious in All Stages

- Stage 1 – Acute HIV Infection: Flu Like Illness
- Stage 2 – Latency: HIV Active but Suppressed Activity, Can Last 10 Years or More
- Stage 3 – AIDS: Subject to Opportunistic Infections
HIGH RISK FOR HIV

Requires a High Virus Load

- Deep Injury Especially with a Sharp With Visible Blood
- Injury with Needle Used in Vein or Artery from a Patient
- Blood is From a Patient With AIDS
HEPATITIS C (HCV)

- 19,800 New Cases in 2013 (CDC)
- Usually Transmitted by Needlestick
- Some People Asymptomatic
- Symptoms: Fatigue, Joint Pain, Belly Pain, Itchy Skin, Sore Muscles, Dark urine, Jaundice,
- No Vaccination Available But New Treatments Available
EXPOSURE CONTROL PLAN

• Prepared for all Employees with Exposure
• Available for Employee Review
• Healthcare Workers
• First Aid
• Janitorial/Maid Services
EXPOSURE PLAN INCLUDES

• Engineering Controls
• Work Practices
• Vaccination Procedures
• Follow-up for Needlestick or Other Exposures
CONSIDER ALL INFECTIOUS UNIVERSAL PRECAUTIONS

- Hand Washing and Sanitizer
- PPE
- Safe Waste Disposal
- Cleaning Procedures
- Handling of Laundry
- Needle Stick Prevention
UNIVERSAL PRECAUTIONS

• Treat Fluids From all Sources as Infectious
• Treat as Exposure
  • Contact with Most Fluids Except Sweat
  • Contact with Mucus Membranes
  • Contact with Damaged Skin
WHEN IS HAND HYGIENE NECESSARY

- Before and After Exposure
- After Removal of Gloves or Other PPE
- Before and After Restroom Use
- Before and After Meals
- After Sneezing or Coughing
HANDWASHING

Handwashing

- Turn on Water
- Wet Hands Apply Soap
- Rub Palms, Backs of Hands, Fingers, Nails, Between Fingers

- Rinse – Fingertips Pointing Downward
- Dry Hands Discard Paper Towel
- Turn Off Faucet with Clean Paper Towel
HAND HYGIENE ALCOHOL GEL

• Dispense Press Pump

• Rub Palms, Backs of Hands, Fingers, Nails, Between Fingers Until Dry,
<table>
<thead>
<tr>
<th>Handwashing</th>
<th>Gel</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Effective for Soiled Hands</td>
<td>• Effective only on Clean Hands</td>
</tr>
<tr>
<td>• Slow Process</td>
<td>• Quick Process</td>
</tr>
<tr>
<td>• Requires Water</td>
<td>• No Water Required</td>
</tr>
<tr>
<td>• Excessive Handwashing May Dry Skin</td>
<td>• Excessive Use Can Dry Skin</td>
</tr>
</tbody>
</table>
PPE

Gloves, Masks, Eye Protection, Face Shields, Gowns, Aprons

• Required When Exposure is Expected – Potential Spray, Splash, Drip with Blood or Other Potentially Infectious Material (OPIM)

• Protects Skin, Eyes, Mouth, Nose, Rest of Body and Also Prevents Clothing Contamination
MASKS

• Prevent Droplet and Large Particle Contamination
• Use Certified Respirator in Lieu of Surgical Mask if Concern is Inhalation
GLOVES

• Disposable or Washable?
• Latex Allergy is Common
• Assure that have Correct Sizes
• Wash Hands After Removing
• Use Correct Doffing Procedure
PPE POCKET MASKS FOR CPR

- Filter and Facepiece
- One Way Valve
- Cleaned and Replace Valve After Use

Check with Red Cross for Current CPR Recommendations.
DOFFING – REMOVING GLOVES

Remove PPE To Avoid Outer Contamination

• Glove Removal – Use One Protected Hand to Grasp the Other Gloves Outer Surface and Pull Off
• Hold the Glove in the Gloved Hand
• Reach Fingers of Ungloved Hand and Pinch the Inner Side of Glove, Pull Down Over Other Glove and Discard
• Wash Hands
WASTE DISPOSAL

• Visible Blood or OPIM
• Sharps – Puncture Proof Container
• Sealed, Labeled Bags or Containers

Check With Trash Hauler and Health Department for Disposal Requirements Offsite.
CLEANING AND DISINFECTION

- **Cleaning** is Required Before Disinfection
- Disinfectants
  - Follow Manufactures Instruction for Mixing and Contact Time
- Sanitization – EPA Defines as Killing 99.9% of All Bacteria, Virus and Fungi
BLOOD OR OPIM SPILLS

Wear Necessary PPE

• Pick Up Visible Material
• Clean with Disposable Materials and Detergent
• Apply Disinfectant Following Mfg. Instruction
• Allow to Air Dry
LAUNDRY

- Minimize all Handling and Agitation
- Some Hospitals Use Bags that Dissolve in Wash
- Bag at Point of Use
- Wet Laundry in Plastic Bags
BIOHAZARD SYMBOL
FIRST AID

• Have Someone Assigned to Call for Help
• Remember Universal Precautions
• Try to Have Injured Person Help
• Use Gloves
• Don’t Expose Yourself to Sprays
• Wash Off any Blood or OPIM ASAP
• Report to Supervisor for Follow-up
HBV VACCINATION FOR REASONABLY EXPECTED EXPOSURE

• Offered Within 10 Days of Employment
• Declination Form for Refusal
• During Working Hours at No Cost
HBV VACCINATION SAFETY

• Most Claims of All Vaccination Hazards are Bogus

• Serious Reactions are Rare While HBV is Serious

• Mild Symptoms Can Occur

• Effective in 90% of People

• Since 1985 90% Reduction in HBV
WHAT IS AN EXPOSURE INCIDENT

- Contact with Intact Skin Not Considered Incident but Must Treat
- Wash With Soap and Water
- Flush Splashes to Nose, Mouth, Eyes
- Report Incident
MEDICAL EVALUATION

• Within 24 Hours
• Document Exposure
• Test Source if Possible
• Written Findings to Employee
• Risk Counseling and Post-Exposure Treatment
• Follow Current US Public Health Service Guidelines
TRAINING

• During Working Hours No Charge to Employees
• Initial Assignment and Annually
• Retraining if Job Tasks Change Exposure
• Maintain Records for 3 Years
TRAINING REQUIREMENT

• Copy of the Standard, Explanation of Its Contents;
• A General Explanation of the Epidemiology and Symptoms
• Modes of Transmission
• Exposure Control Plan
• Methods to Prevent or Reduce Exposure
• Personal Protective Equipment

• Information on HBV Vaccine
• Actions in Emergency
• Procedure to Follow if an Exposure Occurs
• Post-Exposure Evaluation and Follow-Up
• Signs and Labels
• Interactive Questions
SAFETY DEVICES

- Where Available Must Use
- Activate on Hard Surface
- Dispose in Sharps Container

International Sharps Injury Prevention Society
SHARPS DISPOSAL CONTAINERS

- Red or Biohazard Labeled
- Puncture proof
- Covered Secure Lid
- Proper Disposal
- Do Not Overfill
WORK PRACTICES

- Do Not Eat, Drink, Apply Make-up or Smoke in Areas Where there is Exposure to Blood or OPIM
- Do Not Store Food in Specimen Refrigerator or Storage Areas
- Recapping, Breaking of Sharps Prohibited
- Do Not Reach into Sharps Containers
- Do Not Use Hands to Pick-up Broken Glass
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