BLOODBORNE PATHOGEN EXPOSURE CONTROL

University of Southern Maine Environmental Health and Safety
Purpose

- This presentation provides employees and students with important information regarding potential exposure and safeguards to bloodborne pathogens in the workplace.

- If you are receiving this training it means that you are potentially at risk of exposure.
What are Bloodborne Pathogens?

- According to OSHA Standard 1910.1030, "Bloodborne Pathogens" means pathogenic microorganisms that are present in human blood and can cause disease in humans.

- These pathogens include, but are not limited to, hepatitis B & C viruses and human immunodeficiency virus (HIV).
History

- In the 1980s and early 1990s, the public became increasingly concerned with the discovery of HIV/AIDS and the likelihood for exposure to bloodborne pathogens in the workplace.

- The Federal OSHA Bloodborne Pathogen Standard (1910.1030) was finalized in late 1991.
The standard was revised by the Needlestick Safety and Prevention Act of 2000.

This Act set forth in greater detail (and made more specific) OSHA's requirement for employers to identify, evaluate and implement the use of safer medical devices.
Who is Covered Under the Bloodborne Pathogen Standard?

- All employees and/or student workers who could be occupationally exposed to blood or Other Potentially-Infectious Materials (OPIM).
- Occupational Exposure means: reasonably anticipated contact to the skin, eye(s), or mucous membranes, with blood or other potentially infectious materials that may result from the performance of an employee's duties.
Responsibilities: **UEH&S**

- Serves as administrative coordinator of the Program.
- Develops training materials and guidelines.
- Provide training and assistance.
- Coordinate investigations of exposure incidents.
Responsibilities: Dept. Supervisors

- Develop, maintain, and implement Department Specific Exposure Control Plans.

- Ensure employees are trained prior to engaging in tasks with potential exposure.

- Maintain copies of employee training records and training materials.
Responsibilities: Dept. Supervisors

- Ensure exposed employees/student workers seek prompt first aid or medical attention for exposure incidents.
- Report exposure incidents according to established USM procedures.
Employee Responsibilities:

- Comply with requirements of this program and their Department Exposure Control plan.
- Seek prompt first aid or medical attention for exposure incidents.
- Report exposure incidents to their supervisors/department heads.
Jobs with Potential Exposure

- Will have Occupational Exposure:
  - Medical Doctors
  - Dentist
  - Nurses
  - Nurses Aides
  - Physician Assistants
  - Clinical Workers
  - Mortuary Workers
  - EMTs/ParaMedics

- May have Occupational Exposure:
  - Ph.D.s
  - Post Doctoral Fellows
  - Research Technicians
  - Housekeeping Staff
  - Animal Handlers
  - Veterinarians
  - Engineering Staff
Groups at Risk at USM

- Contracted Physicians
- Nurses
- Custodians
- Athletic Trainers, Students, Coaches, Lifeguards
- Law Enforcement
- Environmental Services
- Biomedical Laboratory Workers
- Residential Life Staff
- Hazardous Waste Services
- Recycling & Rubbish Crews
- Plumbers
- Emergency Responders
- Others as determined
Substances covered under the OSHA Standard

- **BLOOD:**
  - Human Blood
  - Blood Products
  - Blood Components

- **OTHER POTENTIALLY INFECTIOUS MATERIALS (OPIM):**
  - Unfixed human tissue or organs
  - Hepatitis or HIV containing cells, or experimentally infected animals
  - Saliva in dental procedures
  - Any fluid that is visibly contaminated with blood
  - Human body fluids
Bloodborne Diseases

There are numerous diseases associated with bloodborne pathogen exposure:

- Human Immunodeficiency Virus (HIV)
- Hepatitis B Virus
- Hepatitis C Virus
- Syphilis
- Malaria
- Babesiosis
- Brucellosis
- Leptospirosis
- Arboviral Infection
- Relapsing Fever
- CJD
- HTLV-1
- Viral Hemorrhagic Fever
Hepatitis B (HBV)

- After exposure it can take 1-9 months before symptoms become noticeable.
- Symptoms can be very much like a mild “flu” – stomach pain, nausea, fever, etc.
- “Carriers” may not experience any effects for years
- Vaccination series is available and encouraged for those who could have Occ. exposure.
Hepatitis C virus (HCV) has been found in all parts of the world. Transmission most commonly through parenteral exposure (break in skin).

Common examples of exposure types:
- receiving a blood transfusion from an infected source
- sharing intravenous drug needles with an infected individual.
AIDS, or acquired immune deficiency syndrome, is caused by a virus called the human immunodeficiency virus, or HIV.

Once a person has been infected with HIV, it may be years before AIDS actually develops.

AIDS attacks the body’s immune system, weakening it so that it cannot fight other deadly diseases.
Symptoms of HIV infection:
- weakness, fever, sore throat, nausea, headaches, diarrhea, a white coating on the tongue, weight loss, and swollen lymph glands.

An infected person may carry the virus for years before symptoms appearing.
Routes of Transmission

- **Skin puncture**
  - Needle-stick or sharp objects
  - Most common in health care workers

- **Broken or non-intact skin**
  - Rashes, hang nails, cuts, punctures, abrasions, acne, cold sores, sunburn

- **Contact with mucous membranes of eyes, nose, and mouth**
  - Spills, splashes, sprays of infectious materials
Protection from Bloodborne Pathogens

- Universal precautions
- Signs and labels
- Hepatitis B vaccine
Universal Precautions

- All human blood and OPIM are treated as infectious.
- Always avoid direct contact.
- Take the precautions sited in the following slides.
Universal Precautions

✓ **Engineering controls:** This includes vapor hoods, biosafety cabinets, and glove-boxes.

✓ **Administrative practices:** Procedures for handling blood and OPIM.

✓ **Personal protective equipment (PPE):** Gloves, surgical mask, face shield, laboratory coat, etc.
Personal Protective Equipment (PPE)

- Gloves
- Face mask, or face shield
- Goggles
- Lab coat or gown
- Head coverings
- CPR barrier devices
Personal Protective Equipment (PPE)

- General requirements for handling PPE
  - Remove PPE when damaged or contaminated and prior to leaving the work area;
    - PPE should not leave the workplace.
  - Place damaged or contaminated PPE in a designated area or container for cleaning, laundering, repair or disposal.
  - Departments must clean, launder, repair or replace PPE at no cost to the employee/student.
Gloves

➢ The most important means of protection:
  • **Inspect** to insure that gloves are not defective.
  • **Replace when contaminated** or as soon as feasible.
  • **Do not reuse** disposable gloves.
Gloves

- **Cover cuts and sores** with a bandage before donning gloves.
- **Remove** gloves when you leave the work area.
- **Dispose** of gloves in the medical waste container.
- **Wash** your hands after you remove your gloves.
Proper Steps for Removing Gloves

1. Begin by pulling the glove off from the fingers toward the palm.
2. Continue to pull the glove off, keeping the palm facing outward.
3. Avoid touching the outside of the glove with your hand.
4. Place the glove into a biohazard bag or designated waste receptacle.
5. Wash your hands thoroughly with soap and water.
6. Check your hands and gloves for any remaining contaminants.
Signs and Labels

BIOHAZARD
Signs and Labels

- Signs and labels
  - used to warn employees that a room or container may contain blood or OPIM.

- At USM you may find signs and labels in the Science Building, Health Services, and the Athletic Centers.

- You should avoid contact with labeled containers unless you are wearing gloves.
Signs and Labels

- **Biohazard warning labels must be:**
  - Red or fluorescent orange
  - Imprinted with biohazard symbol
  - Affixed to medical waste containers, refrigerators, freezers, incubators etc.
  - Where infectious materials are stored or used

- **Biohazard Signs:**
  - Must be posted on lab doors where work with human blood or OPIM is performed.
  - Must post names of infectious agents used in the lab.
  - Must list emergency contact person(s).
Sharps Containers
Sharps Containers

- Sharps such as syringes, hypodermic needles and *contaminated* broken glass must **not** be discarded in regular trash.
- This ensures that anybody emptying the trash container such as a custodian is not injured by the sharp.
- **Sharps must be placed in a sharps container.**
- **Uncontaminated broken glass goes in broken glass boxes.**
Sharps Containers

Sharps containers must be:

- Easily accessible
- Located close to the area where sharps are used
- Puncture-resistant
- Closable
- Leak proof
- Closed before removal or replacement
- Kept in an upright position to prevent spilling contents
- Replaced when ¾ full.
Disposing of Waste

- Put all contaminated towels and waste in a red color-coded or labeled leak-proof container. Dispose of it as regulated waste.
Housekeeping

- If you have not been trained to clean up blood or OPIM do not attempt to do so.
- Contact Environmental Services to request that a custodian perform the clean up.
- All equipment and work surfaces that came in contact with infectious materials must be cleaned and disinfected.
- Broken glassware and sharps must be cleaned up using mechanical means.
Housekeeping

- Minimize splashing, spraying, spattering, and generation of droplets of blood/OPIM.
- Keep work areas free from unnecessary items and free from contamination.
- Regularly replace protective coverings on equipment and working surfaces.
- Dispose or decontaminate items as soon as feasible.
Housekeeping

- Decontaminate equipment prior to storage, service, or shipping.

- When decontamination of equipment is not feasible, equipment must be labeled with the biohazard symbols and a statement identifying the nature and extent of contamination.
Cleanup kit for Blood/OPIM
Personal Hygiene and Facilities

- The following are prohibited in work areas where blood or OPIM may be present:
  - Storage or consumption of food and drink items.
  - Storage or use of cosmetics, contact lenses, or medications.
Personal Hygiene

- **Hand washing** is also critical to reducing the spread of pathogens.
  - Employees are required to wash hands with soap and running water immediately after contact with blood or OPIM.
  - Hand washing facilities must be made accessible to employees.
  - If hand washing facilities are not accessible, hand cleaner may be used as a temporary measure.
Emergency Procedures

- If you get blood or OPIM on open skin or in your eyes:
  - Wash contaminated area with soap and water for 15 minutes
  - Flush mucous membranes (eyes) with water thoroughly

- Notify your supervisor of the incident and have an incident form filled out.

- Call University Environmental Health & Safety (5406)
Post-Exposure Follow-up

- An evaluation of the exposure incident to determine risk of infection.

- Complete the Bloodborne Pathogen Exposure Follow-Up Form available through UEH&S (Appendix C of written program).

- Collection of blood serum and serological testing of the exposed employee and source individual (if possible).

- All follow-up activity concerning the employee and the source individual is kept strictly confidential.
Post-Exposure Follow-up

- Post-exposure prophylaxis when medically indicated. Safeguard for high risk situations.

- Counseling concerning signs and symptoms of infection and precautions to take until infectious status is known.

- Notification of all test results with appropriate treatment and counseling if required.
• **End of Course Quiz:**
  ◦ Who do you notify if you are exposed to someone else's blood? ________________
  ◦ True or False – Hep C is contacted by sharing dirty socks? ________________
  ◦ The *Needlestick Safety & Prevention Act* was revised when? ________________
  ◦ Treating all body fluids as infectious is practicing what? ________________
  ◦ *Sharps* are otherwise known as? ________________
  ◦ True or False – Hand washing is critical to reducing the spread of pathogens. __________
  ◦ Name:____________________ Date:________________
If you have questions regarding this presentation on Bloodborne Pathogens, you should contact John Reed:

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'That's All Folks
Thank You