Training Requirements

- Required for personnel who may be exposed to bloodborne pathogens (BBP):
  - Researchers and lab employees
  - Healthcare workers
  - First responders
  - Custodial staff
- Initial training
- Annual refresher
- Whenever new tasks are to be implemented
- Training should be documented

If any links do not work, try coming back to the slide and selecting that link first.

BBP Sources

- Human and Non-Human Primates
- Blood
- Other Potentially Infectious Materials (OPIM)
  - Body fluids such as vaginal secretions and seminal fluid (saliva, urine, and vomit/emesis are considered low risk unless visibly contaminated with blood)
  - Unfixed Tissues
  - Human Cell Lines (may contain):
    - Latent viruses
    - Hepatitis B
    - Mycoplasma

Transmission of BBP

- Transmission: primarily through blood (600-800K exposures annually in U.S.)

- Dermal - Fluid to blood contact through open wound or broken skin (sores, acne, blisters)

- Eye and Mucous Membrane - Splash of contaminated fluid into the eye, nose or mouth

- Injection - Exposure by contaminated sharp object or syringe

Bloodborne Diseases

- Primary
  - Hepatitis B & C
  - Human Immunodeficiency Virus (HIV —— AIDS)
- Others:
  - Syphilis
  - Malaria
  - Lyme Disease
  - Prions
  - Ebola

For this training, the focus will be on the primary bloodborne diseases with occupational exposure risk.

Hepatitis

- Hepatitis - "inflammation of the liver"
  - There are many types of Hepatitis. As an example, Hepatitis A may be passed through contaminated food. For purposes of bloodborne pathogens, we will learn more about Hepatitis B (HBV) and Hepatitis C (HCV).
- Hepatitis B & C attack and replicate in the liver cells
  - HBV is the most common
- Two Disease Outcomes:
  - self-limited acute hepatitis
  - chronic HBV infection

Hepatitis B

- Hepatitis B (HBV)
  - Infection symptoms
    - Jaundice
    - Nausea
    - Arthritis
    - Rash
    - Fever
  - Carriers of HBV
    - May have no symptoms initially (1-6 month incubation)
    - Can be infectious to others
    - Risk of chronic liver disease and liver failure in later life
  - There is a vaccine to help prevent HBV infection

For more information about HBV infection, click here to link to the CDC website.

Hepatitis C

- Hepatitis C (HCV)
  - Incubation period of 2 - 22 weeks (average is 6-9 weeks)
  - Mild, flu-like symptoms in most cases
  - 50% of cases progress to chronic hepatitis
  - Liver cancer may develop as a result of HCV infection
  - NO vaccine is available

For more information about HCV infection, click here to link to the CDC website.

HIV

- HIV 1 and 2: Human Immunodeficiency Virus
- Attacks immune system; found in all tissues. May progress to Acquired Immunodeficiency Syndrome (AIDS)
- NO vaccine. There is antiviral treatment to help manage HIV infection. Currently there is no cure.
- Symptoms
  - Severe weight loss
  - Diarrhea
  - Weakness
  - Fever
  - Neurologic disorders
  - Opportunistic infections

For more information about HIV infection, click the hyperlink to the CDC website. In English and in Spanish.

Exposure Risks

- HIV is able to survive (viable) on a surface for several hours if dry and may live for weeks if wet such as in a used syringe or needle
- HBV & HCV are more concerning since they are able to survive on surfaces, when dry, longer and may be more resistant to chemical disinfectants
  - one milliliter of blood: 100 million viruses
- Risk of transmission from contaminated needles:
  - HIV: 0.3% (relatively rare; 57 workers)
  - HCV: 1.2%
  - HBV: 30%

Standards/Rules

- The Centers for Disease Control (CDC) recommends using Universal Precautions to help prevent illness.

"All human blood and certain body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens"

TREAT AS IF INFECTIOUS

Exposure Control Plan

All covered employees need to be familiar with the University's Exposure Control Plan. In addition, laboratories need to create their own lab specific biological safety manuals.

If you have questions about the Exposure Control Plan or need assistance in developing a plan for your lab, contact Environmental Health & Safety (EHS).

Engineering Controls & Work Practices

- Reduce exposure by:
  - removing the hazard where possible
  - isolating the worker from the exposure
- Follow Biosafety Level 2 or Universal Precautions
- Substitute plastic for glassware where feasible
- Use safe sharp devices
  - Safety needles
  - Retractable scalpels
  - Coated capillary tubes
- Do not consume personal food or beverages in labs or work areas where BBP contaminated materials may exist
- Do not store personal food or beverages in refrigerators/freezers where BBP contaminated materials may be stored

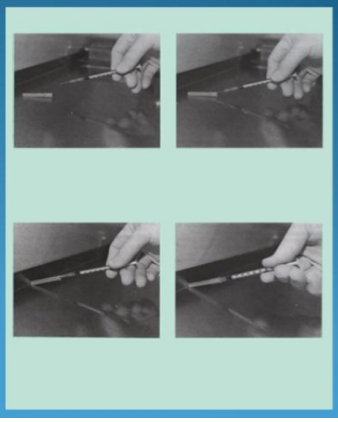
Engineering Controls & Work Practices

- Never re-cap, bend, or remove used needles from syringes
- Sharps Containers
  - do not overfill; request new sharps container when ¾ full
  - keep in close proximity to your work

For more information on safe handling of needle devices visit the National Institute of Occupational Safety & Health website. In English and in Spanish.

Engineering Controls & Work Practices

- One Handed Re-Capping Method
  - Non-contaminated needles may be re-capped (but only if necessary)



Engineering Controls & Work Practices

- Never pick up contaminated glass by hand
  - Use tongs, cardboard, or hand broom
- Contaminated glass goes in the sharps container

Engineering Controls & Work Practices

- Hand washing with soap and water after:
  - Removing gloves
  - Leaving the work area
  - Contact with contaminated material
- Irrigate eyes with water for several minutes, if exposed

Personal Protective Equipment

- Gloves
- Face Shields
- Lab Coats
- Considerations:
  - impermeable
  - re-usable vs. disposable
  - keep in lab

Expect the Unexpected - Accidents Are NOT Planned

Housekeeping

- Written cleaning schedule
- Use appropriate disinfectant
  - CDC recommends an Environmental Protection Agency (EPA) registered "hospital disinfectant" or 1:10 bleach and water solution
- Plastic-backed paper may be helpful to place on work surfaces in advance of work to minimize spread or leakage of spills

Labels

- Label waste containers, and all other containers used to store, ship, or transport blood or OPIM
- Label contaminated equipment and locations where contaminated equipment may be stored. Examples: centrifuges, refrigerators, freezers

Back Next

Waste

- Keep waste and contaminated items in closed containers
- All sharps go in sharps containers and are picked up by EHS
- Disposal options
  - Put in biohazard bags (EHS pickup)
  - Autoclave (follow autoclave procedures)
  - Disinfectant (use appropriate disinfectant and contact time)
- NOTE: All waste produced by UT Health Austin/Health Transformation Building will be managed by EHS

Spills

- Follow department procedures
- Wear Personal Protective Equipment (PPE)
- Cover and disinfect contaminated areas (allow 20 minute contact time)
- Dispose of all contaminated materials as biohazardous
- Contact EHS if needed

Post Exposure Procedures

- Wash wound with soap and water
- Tell Supervisor
- Call EHS at (512) 471-3511 ASAP
- Non UT Health Austin employees contact *Health*Point Occupational Health Program
- UT Health Austin Employees contact or present to WorkLife Clinic, Health Transformation Building, 1601 Trinity St., 9th floor (512-495-5900)
  - For after hours UT Health Austin employees should present to Dell Seton Medical Center at the University of Texas Emergency Department located at 15th and Red River St.
- Post exposure medical follow-up may include:
  - HBV/HCV and HIV initial blood testing
  - Antiviral medications
  - Repeated blood testing may continue for at least six months

Post Exposure Procedures

- Lab Animal & Biomedical Occupational Health Services (LABOHSP)

- *Health*Point – Occupational Health Program (OHP)
  - Program through Human Resources
  - Confidential
  - SSB Building, 3rd floor. Room 3.202
  - 512-471-4OHP (471-4647)
  - HealthPoint.OHP@austin.utexas.edu
- *UT Health Austin* – WorkLife Clinic
  - Health Transformation Building, 1601 Trinity St., 9th floor
  - 512-495-5900

Project Review

Research projects at the University are reviewed to determine occupational and environmental hazards, including bloodborne pathogens.

- Institutional Biosafety Committee
  - Biosafety form
- Environmental Health and Safety
  - Lab evaluation

Transportation and Shipping

- When transporting materials that may contain BBP on campus:
  - Do not use public transportation
  - Use sealed leak-proof containers
  - Use biohazard labels
- When shipping materials that may contain BBP:
  - BBP materials are regulated
  - The person shipping the materials must be a Certified Shipper; special training required
  - EHS can assist with shipping requirements

Recordkeeping

- Documentation to keep on file:
  - Lab, healthcare setting or department procedures and emergency place
  - Annual BBP training
  - Exposure reports

Questions

- If you have questions or would like to learn more about BBP procedures, please speak to the instructor following this class. If taking the online version, please contact the Environmental Health & Safety (EHS) department.
  - EHS website: http://ehs.utexas.edu/
  - EHS 24 Hour Hotline Phone Number: 512-471-3511
- UT Health Austin Employees should contact WorkLife Clinic at 512-495-5900 for questions or to schedule a Hepatitis B vaccination series
  - WorkLife website: https://uthealthaustin.org/clinics/worklife
- All other UT Austin Employees should contact *Health*Point Occupational Health Program if there are questions or would like to schedule a Hepatitis B vaccination
- If you have questions about occupational health services, including scheduling your Hepatitis B vaccination series, contact the *Health*Point Occupational Health Program.
  - OHP website: http://sites.utexas.edu/wellness/
  - OHP Phone Number: 512-471-4OHP (4647)
  - OHP Appointment Email: HealthPoint.OHP@austin.utexas.edu