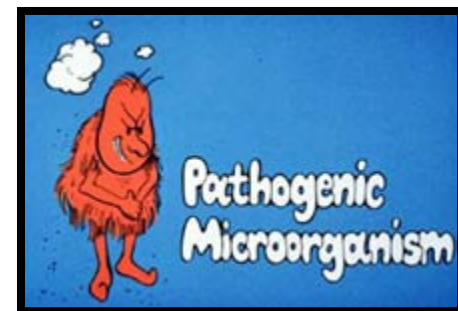


Protection From Bloodborne Pathogens

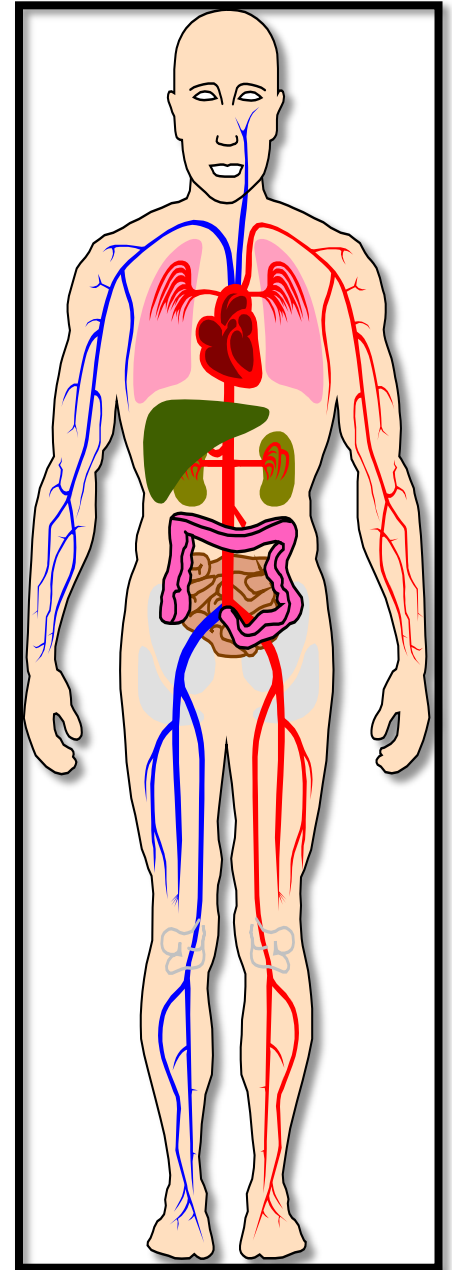
- For questions concerning this training topic contact: Environmental, Health, & Safety
- Monday – Friday; 8:00 am to 5:00 pm
361-825-5555

- **Definitions and Regulations**
- **Bloodborne Diseases**
- **Transmission of Bloodborne Diseases**
- **Exposure Control Plan**
- **Control Methods**
- **Hepatitis B Vaccination**
- **Emergency Procedures**
- **Exposure Incident Procedures and Follow-up**
- **Signs and Labels**



Definitions

- Bloodborne Pathogens: microorganisms that are present in blood or other potentially infectious materials (OPIM) and can cause disease
- Blood: includes human blood, human blood components, products made from human blood, and also medications derived from blood (e.g. immune globulins, albumin, etc.)



Other Potentially Infectious Materials *(OPIM)*

- **OPIM is an OSHA term that refers to:**

1. Human body fluids such as: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluid, tissue, or organ
2. Any unfixed tissue or organ (other than intact skin) from a human (living or dead)
3. HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Federal and State Regulations

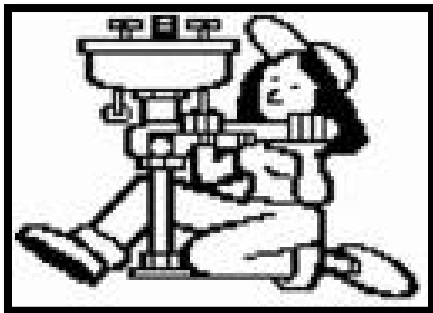
- Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulation (CFR) 1910.1030
- Texas Department of State Health Services (TDSHS) : Health and Safety Code, Chapter 81, subchapter H
- Prescribes safeguards to protect workers against the health hazards caused by bloodborne pathogens



OSHA/TDSHS Bloodborne Pathogen Standard

The standard is designed to protect workers whose job might expose them to bloodborne diseases.

- Physicians, nurses, paramedics
- Public safety workers
- Public service workers
- Sport Facility workers



Epidemiology and Symptoms of BBP Disease

- Hepatitis B Virus (HBV)
 - Causes serious liver disease
 - 10% of infected people become chronically infected
 - Transmitted by :
 - Blood (puncture wounds, needle sharing)
 - Contact with mucous membranes
 - Sexual contact
 - Vaccine available
- Symptoms
 - Jaundice
 - Fatigue
 - Abdominal pain
 - Joint pain
 - Loss of appetite
 - Nausea
 - Vomiting
 - About 50% of infected people are asymptomatic

Epidemiology and Symptoms of BBP Disease

- Hepatitis C Virus (HCV)
 - Causes serious liver disease
 - 85% of infected people become chronically infected
 - Annually up to 10,000 people die from hepatitis C related chronic liver disease
 - No vaccine available
- Symptoms
 - Most common symptom: extreme tiredness
 - “flu-like” symptoms: muscle and joint pain, nausea, loss of appetite, mild stomach pain
 - About 75% of people infected have no symptoms at all

Epidemiology and Symptoms of BBP Disease

- Human Immunodeficiency Virus (HIV)
 - Attacks immune system
 - Transmitted by direct contact with blood or mucous membranes
 - NOT transmitted by casual contact (drinking fountains, hugging, kissing, etc.)
 - Number of HIV-infected people who develop serious illness and die from Acquired Immune Deficiency Syndrome (AIDS) has decreased due to treatments
 - No vaccine available
- Symptoms
 - “flu-like” symptoms may occur during acute HIV syndrome but could be associated with other infection
 - Symptoms may take years to appear
 - Best way to find out is to get tested

Transmission of BBP Disease

- Bloodborne Pathogen Exposure
 - Puncture from a contaminated sharp object
 - Blood, human cells (primary or cell line), or OPIM (other potentially infectious material) splash to broken skin or mucous membrane of your eyes, nose, or mouth

Occupational Bloodborne Pathogen Transmission



Infection from a bloodborne pathogen can result in chronic infection, serious illness, and death

Exposure Control Program

- Employers must have an Exposure Control Plan (ECP) to eliminate or minimize occupational exposures.
- Outlines roles and responsibilities of EHS, Departments, Supervisors, and employees
- To become familiar with TAMU-CC's ECP employees should access it at <http://safety.tamucc.edu/H/blood.pdf>



Control Methods

- **UNIVERSAL PRECAUTIONS**- an approach to infection control to treat all human blood and certain human body fluids as if they were known to be infectious for HIV, HBV, and other bloodborne pathogens
 - Employees to observe Universal Precautions to prevent contact with blood or OPIM
 - Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids shall be considered potentially infectious materials

Control Methods



- **ENGINEERING CONTROLS**

- Reduce exposure by isolating work from exposure
 - Use biosafety cabinet (BSC) to protect against inhalation of BBP
 - Re-sheathable needles to decrease needle stick risk
 - “Sharps” disposal containers at the point of use
 - Secondary leak proof containers during transportation to prevent spills

Control Methods

Work Practice Controls: Practices to Decrease Risk of BBP Contamination

- Wear gloves whenever handling human-derived material
- Proper handling/disposal of material previously in contact with blood or OPIM (bandages, sharps, pipette tips, etc.)
- Place contaminated sharps (needles, scalpels, etc.) in designated sharps container immediately
- Minimize splashing when working with blood or OPIM
- Wash hands after any job involving blood or OPIM

Control Methods

Work Practice Controls: Practices to Decrease Risk of BBP Contamination

- Use eyewash and/or safety shower if needed after contact
- Never recap, bend, or remove needles from syringe
- No food, drink, smoking, applying cosmetics, or handling contact lenses
- No food/drink stored in areas where work is occurring
- No blood or OPIM stored outside of authorized lab areas

Control Methods

HOUSEKEEPING

- Keep worksite clean and sanitary
- Keep schedule of cleaning and decontamination procedures nearby
- Disinfectant
 - 10% bleach
 - Other EPA-registered antimicrobials:
 - <http://www.epa.gov/oppad001/chemregindex.htm>
 - Decontaminate reusable bins, pails, cans, etc.
 - Do not pick up broken glass with your hand. Use forceps or broom/dust pan to clean up broken glass

Control Methods



- Hand washing: One of the most important (and easiest) practices used to prevent transmission of bloodborne pathogens
 - Wash hands with soap & water immediately or ASAP after removal of gloves or other PPE
 - If you are away from the hand-washing facilities, use antiseptic cleanser in conjunction with clean cloth/paper towels. Then wash hands with soap and water as soon as feasible

Control Methods



Regulated Waste must be disposed of properly as biohazardous waste or sterilized thoroughly by autoclave



Non-Regulated Waste can be disposed of as solid waste

Control Methods



REGULATED WASTE

- Contaminated items that would release blood or OPIM in liquid or semi-liquid state if compressed
- Items that are caked with dried blood or OPIM and are capable of releasing these materials during handling
- Contaminated sharps
- Pathological and microbiological waste containing blood or OPIM



Control Methods

NON-REGULATED WASTE

- Mucus, sweat, tears,
- Urine, feces
- Nasal secretions
- Vomit

Unless the above material is visibly contaminated with blood or is difficult to differentiate.



Control Methods

Segregating Medical Waste



Control Methods

Personal Protective Equipment (PPE)

- Gloves
 - Water impervious (latex, nitrile, rubber)
 - Replace when visibly contaminated or torn (never re-use)
 - Utility gloves can be re-used if soaked in 10% bleach > 10 min
 - Before gloving, bandage any open cuts, sores, etc.
 - Remove gloves before exiting lab or touching public objects (phones, door handles, etc.)
 - When removing: Do not touch outside of glove with bare hands
 - Wash hands after removing



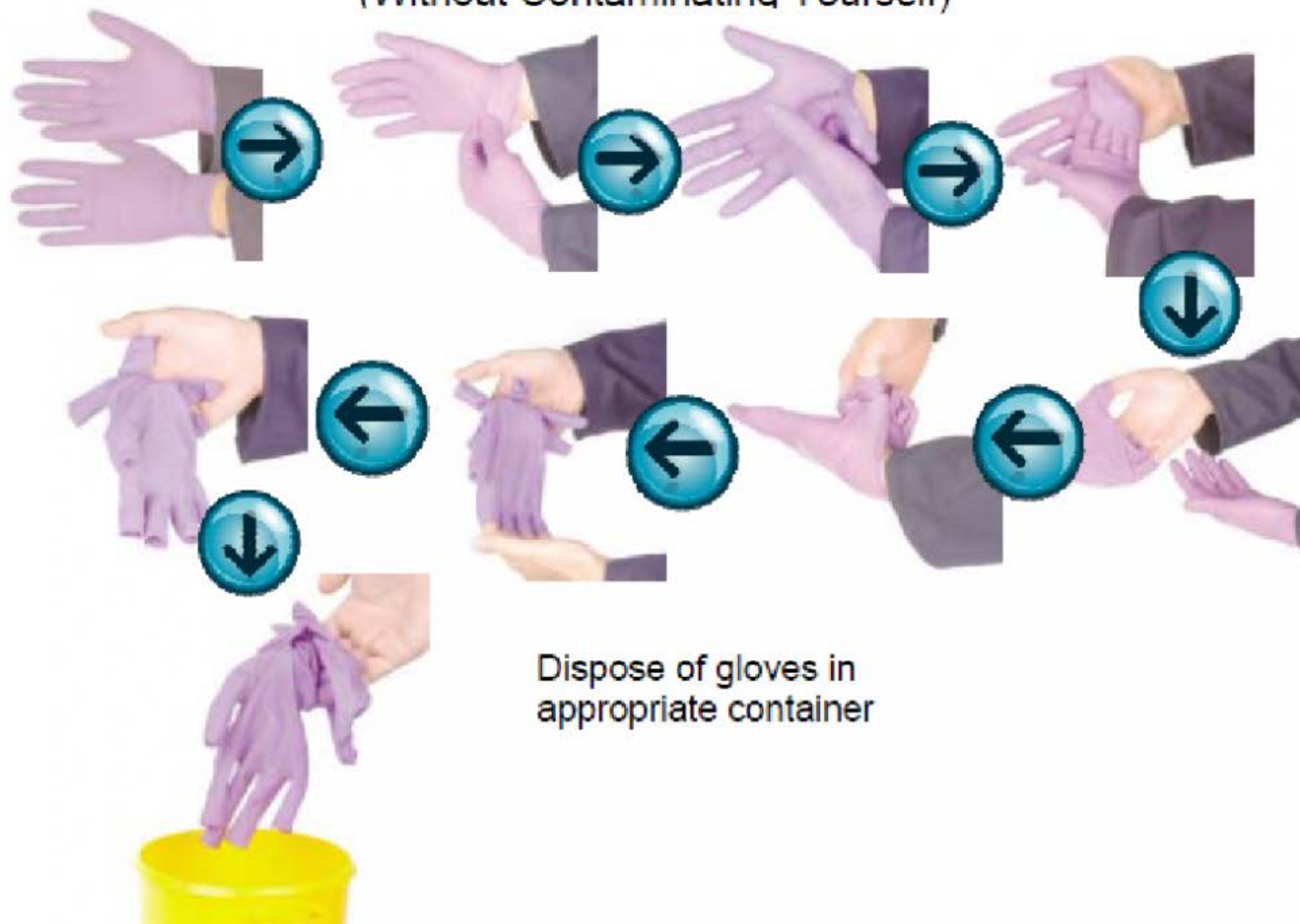
Control Methods

Personal Protective Equipment (PPE)

- Eye protection
 - Goggles and/or face shields
 - Wear if you're likely to generate splashes, spray, spatter or droplets of blood/OPIM
- Gowns/lab coats
 - Wear during use with blood/OPIM
 - REMOVE before exiting work area
- Mucous membrane protection: In absence of BSC
- Surgical cap/shoe covers: Not necessary unless gross contamination is expected
- Either be disposed of or decontaminated before re-use

How to Remove Gloves

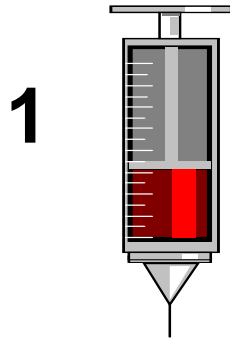
(Without Contaminating Yourself)



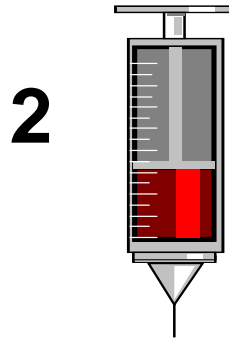
Hepatitis B Vaccine

- **All TAMU-CC employees who have a potential for exposure to BBP are eligible to receive the HBV vaccine at no cost to the employee**
- >90% of people vaccinated develop immunity to HBV
- Three injections in the arm over the course of 6 months
 - 0, 1, and 6 months: All three must be given for full effect
 - Non infectious yeast-based vaccine
 - Not recommend for people with allergies to baker's yeast
- Vaccine is not harmful if you're already immune to HBV

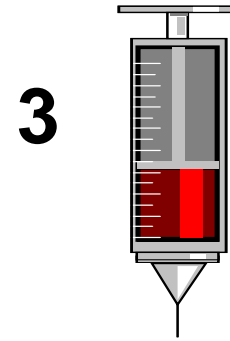
Hepatitis B Vaccination



First shot



Second shot:
1 month after
the first shot



Third shot: 6
months after
the first shot

Hepatitis B Vaccine

- **Declining the HBV Vaccine**

- If you decline, you must fill out a declination form
- Declination form kept on file at E, H&S
- You may change your mind after filling out declination form

- **Currently: Booster dose is not recommended**

- If a booster is ever recommended it will be at no cost to the employee

- **For more info:**

<http://www.cdc.gov/vaccines/hcp/vis/vis-statements/hep-b.html>

Emergency Procedures

- If life threatening call 911
- Report all accidents involving students, visitors, tenants, and employees regardless of the severity to the University Police Department (UPD) at ext. **4444** (361-825-4444)
- Injuries from sharps used or encountered in a health care setting that may be contaminated with human blood or body fluids will require the completion of the “Contaminated Sharps Injury Form” by E,H&S
(<http://safety.tamucc.edu/H/SharpsReportingForm.pdf>)

Emergency Procedures

- Employees must report accidents to their supervisor who will complete the Employer's First Report of Injury or Illness Form-1.
([https://hr.tamucc.edu/Time Leave/Workers Comp.html](https://hr.tamucc.edu/Time_Leave/Workers_Comp.html)).

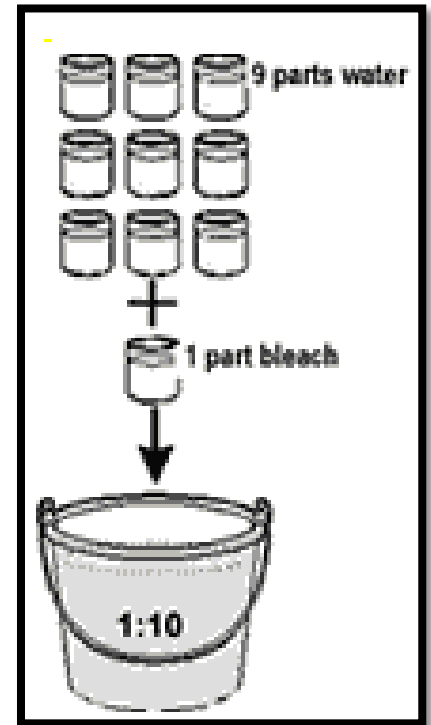
Emergency Procedures

Don't attempt to clean any area contaminated with blood or OPIM unless your job description requires that you do so:

- Call Facilities Services at ext. 2324 from any campus phone or 361-825-2324 for cleanup of the contaminated area
- Notify supervisor ASAP
- Contact facility manager for pick-up and disposal

Emergency Procedures

- Warn workers near the spill
- Wear PPE: Gloves, apron, goggles, and mask
- Pour or mist disinfectant over the entire area and cover with paper towels; Allow 15 minutes of contact time
- If using bleach, mix 10% solution (1 part of household bleach, 9 parts of water or 3/4 cup of bleach in a gallon container and fill it up with water). Leave solution on contaminated surface for at least 15 minutes
- If using OSHA approved disinfectant, follow manufacturer's directions



Emergency Procedures

Spill Response

- Pick up towels walking toward the center of the spill
- Dispose into plastic liner, then into a reusable container
- If broken glass/sharps: use device (brush, dustpan, etc.)
- Remove PPE and dispose into plastic liner
- Close liners and containers and wash hands, arms, face
- Place all ***soiled clothing*** in marked plastic bags for disposal or cleaning.

Post-Exposure

Exposure: Any direct contact with blood/OPIM at work

- Exposure incidents: Needle stick, splash in the eye, etc.
- Clean the site:
 - Wash needle sticks and cuts with soap and water
 - Flush splashes to the nose, mouth, or skin with water
 - Irrigate eyes with clean water, saline, or sterile solution
- Report the incident to your supervisor
- Immediately seek medical treatment

Post Exposure Evaluation

- Confidential medical evaluation
- Document route of exposure
- Identify source individual
- Test source individuals blood (with individuals consent)
- Provide results to exposed employee

Post Exposure

- TAMU-CC is required to establish and maintain a sharps injury log for the recording of percutaneous injuries from contaminated sharps. The information in the sharps injury log shall be recorded and maintained in such manner as to protect the confidentiality of the injured employee.



Signs and Labels

- Logo & Warning required to communicate the hazard



Hepatitis B Vaccination Form

- You may opt to decline or receive the vaccination series. In either case, you will need to complete the Hepatitis B vaccination form.
- Note that if you initially decline to participate in the Hepatitis B vaccination program, you may choose to receive the series at any time during your employment.
- To complete the Hepatitis B vaccination form, please visit: <https://www.tamus.edu/business/risk-management/safety/health-safety/hepatitis-b-vaccination-form/>

QUIZ

- **Click on the following link to take the online quiz.**
- **Call E,H&S @ Ext. 5555 for any Questions.**
- **You must pass with 100% correct.**
- **Good luck!**
- **<https://www.jotform.com/12821239254>**