Blood Borne Pathogen Training

Why is this training required?

OSHA estimates that 5.6 million workers are at risk of exposure to blood borne pathogens. The OSHA standard is available at [www.osha.gov](http://www.osha.gov) search “blood borne pathogen”

This training should help you to become aware of what the dangers are and how you can protect yourself.
What can you do to minimize your risk? These 5 points will be discussed in this training

1. What are Bloodborne Pathogens?
   The Exposure Control Plan

2. Observe Standard (Universal) precautions
   Biosafety Level 2 Containment and Practices

3. Follow the Standard Operating Procedures – SOP - in your lab

4. Make use of personal protective equipment - PPE

5. Report all accidents, spills and exposure incidents to your research advisor.
1. Blood Borne Pathogen Training

- F&M has an **Exposure Control Plan** that contains valuable information about risks, exposure potential and prevention and procedures to follow in the event of an exposure.
- There is a copy of the Exposure Control Plan in your lab.
- The Exposure Control Plan is available at the Environmental Health and Safety web page: search “Exposure Control Plan”
What are Blood Borne Pathogens?

- **Blood borne pathogens** are disease-causing bacteria, viruses & protozoa that are carried in human blood, blood products and **OPIM**.

- Pathogens include but are not limited to:
  - Hepatitis B
  - Hepatitis C
  - Human Immunodeficiency Virus – HIV
What is OPIM?

• OPIM or Other Potentially Infectious Material or includes:
  • body fluids such as saliva, semen, cerebrospinal fluid, etc.
  • any body fluids that are visibly contaminated with blood
  • human (and nonhuman primate) fixed or unfixed cells, tissues or organs

• In a research laboratory setting, OPIM also includes human and nonhuman primate cells that are being grown in tissue culture.
Pathogens include but are not limited to:

- Hepatitis B
- Hepatitis C
- Human Immunodeficiency Virus - HIV
Hepatitis B virus

- 10,000 new cases in the US every year and an estimated 2 million carriers
- Transmitted through blood to blood contact, unprotected sex, needles, piercings and tattooing.
  - Not transmitted casually
- Causes chronic inflammation of the liver, often leading to jaundice, cirrhosis and liver cancer
- Life long infection, with no cure
- There is a vaccine!
Hepatitis B Virus Vaccine

• There is a 3 shot vaccine that is protective.
  – You probably have received it. If not, you may consider receiving it now at no charge.
  – You may decline to be vaccinated, but in order to do so you must complete a declination statement and file it with Human Resources or Appel Health.
    • Students MUST have received the vaccine in order to work in BSL2 labs
  – You can change your mind later and accept vaccination, at no cost to you
Hepatitis C virus

- Causes chronic inflammation of the liver, often leading to jaundice, cirrhosis and liver cancer
- Life long infection, with no cure
  - Most common reason for liver transplant
- There is no vaccine.
Human Immune Deficiency Virus - HIV

• This virus infects and destroys cells of the immune system resulting in an acquired immunodeficiency syndrome or AIDS.

• There are drugs available that are often very successful in slowing or preventing the onset of AIDS. There is no cure or vaccine.
How are Blood Borne Pathogens Transmitted?

• Transmission occurs from one host to another through contact with infected
  – Blood and other body fluids
  – Tissues
  – OPIM:

  Human cells in tissue culture
Blood-borne pathogens may be introduced into a new host by:

– Broken skin
  • Cuts, abrasions, rash, acne
  • Needlesticks
– Any body opening or membrane
  • For example, eyes, nose or mouth
  • Droplets and aerosols
What is OPIM?
What is OPIM?

- OSHA defines OPIM as
  - Certain human body fluids
  - Any fixed or unfixed tissue or organ from a human (living or dead)
  - Human cell lines
What are bloodborne pathogens? Give an example.
What are Blood Borne Pathogens?

• *Blood borne pathogens* are disease-causing bacteria and viruses that are carried in the host’s blood and OPIM.

• Pathogens include but are not limited to:

  - Hepatitis B
  - Hepatitis C
  - Human Immunodeficiency Virus – HIV
How are blood borne pathogens transmitted?
Blood-borne pathogens may be introduced into a new host by:

- Broken skin
  - Cuts, abrasions, rash, acne
  - Needlesticks
- Any body opening or membrane
  - Droplets and aerosols
What can you do to minimize your risk? These 5 points will be discussed in this training

1. What are Bloodborne Pathogens?
   The Exposure Control Plan

2. Observe Standard (Universal) precautions
   Biosafety Level 2 Containment and Practices

3. Follow the Standard Operating Procedures – SOP - in your lab

4. Make use of personal protective equipment - PPE

5. Report all accidents, spills and exposure incidents to your research advisor.
What can you do to protect yourself from blood borne pathogens?

2. Observe Standard Precautions:
   
   • Assume that **all** human tissues and cells, living or dead, are infectious.
   • Treat all human tissues and cells as if they are known to be contaminated with blood borne pathogens.
   • Observation of Standard Precautions will help to prevent contact with blood and OPIM and reduce the risk of exposure to bloodborne pathogens.
2. Standard Precautions, con’t

• Be aware of warning signs: the biohazard symbol
  • has a fluorescent red or orange background with the universal biohazard symbol in black
  • is used to alert workers to the presence of potentially biohazardous materials, such as OPIM

• Be aware of labeling procedures
  • Lab doors
  • Waste containers
  • Any equipment that could be contaminated with human samples or OPIM
2. Standard Precautions, con’t

Understand Biosafety Level practices: BSL-1 and BSL-2

The Biological Safety Level assigned to a lab describes the practices and containment that are appropriate for the biohazardous materials that are used or stored in the lab.

Biosafety level 2 practices are appropriate when infectious agents, such as bloodborne pathogens are assumed to be present. **BSL2 precautions are more fully explained in the BSL2 training module.**

<table>
<thead>
<tr>
<th>Biosafety Element</th>
<th>Biosafety Level 1</th>
<th>Biosafety Level 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristics of the biohazardous material</td>
<td>Not known to consistently cause disease in healthy adults - <em>E. coli</em>, plasmid cloning vectors</td>
<td>Associated with human disease which is rarely serious and for which preventive or therapeutic interventions are often available. <em>Salmonella</em>, lentiviral vectors, human cells and tissues</td>
</tr>
<tr>
<td>Planned manipulations</td>
<td>Standard Microbiological Practices</td>
<td>BSL-1 practices plus Biosafety manual defining: Restricted access, Biohazard warning signs, “Sharps” precautions, Biowaste practices, Medical surveillance &amp; Spill Clean-up</td>
</tr>
<tr>
<td>Primary containment and protection</td>
<td>PPE: gloves, lab coat and eye protection are used</td>
<td>BSL-1 protection plus: Physical containment for splashes/ aerosolization; Biosafety Cabinets: aka “tissue culture hoods”</td>
</tr>
<tr>
<td>Facilities design (secondary containment)</td>
<td>Handwashing sink, emergency shower and eyewash, autoclave</td>
<td>Same as BSL1</td>
</tr>
</tbody>
</table>
What can you do to minimize your risk? These 5 points will be discussed in this training

1. What are Bloodborne Pathogens? The Exposure Control Plan
2. Observe Standard (Universal) precautions Biosafety Level 2 Containment and Practices
3. Follow the Standard Operating Procedures - SOPs- in your lab
4. Make use of personal protective equipment - PPE
5. Report all accidents, spills and exposure incidents to your research advisor.
3. Standard Operating Procedures

• Description of the “rules of the lab”.
  – A copy is in your lab – ask where it is and review it!
  – It will help you to recognize and reduce hazards

• SOP’s serve as a resource to train new lab staff, supplement recurrent training and as a valuable reference in the event of an emergency.
3. What information is in the Standard Operating Procedures?

- NEVER eat, drink, apply cosmetics or lip balm, handle contact lenses in the lab. Do not store food or drinks in refrigerators in lab areas.

- Wash hands with a non-abrasive soap or antiseptic hand cleanser frequently
  - Before you eat, drink, apply cosmetics, handle contact lenses
  - Before and after using the rest room
  - After you remove gloves
What information is in the Standard Operating Procedures?

- **Needles and Sharps Precautions**
  - Because percutaneous exposure (through the skin) is a primary route of transmission of bloodborne pathogens, **extreme caution** should be taken with contaminated needles or sharps.
  - Sharps include items such as razor blades, scalpel blades, broken glass and plastic tips
  - Needles/contaminated sharps:  
    - Must never be bent, recapped or removed unless there is no alternative
3. What information is in the Standard Operating Procedures?

• Needles and Sharps Precautions – Broken Glass
  – Wear gloves
  – Do NOT attempt to pick up pieces of broken glass with your gloved hands. The risk of being cut is too great.
  – Use tongs or a brush and dust pan-or even 2 pieces of stiff cardboard- to collect broken glassware.
3. What information is in the Standard Operating Procedures?

- **Proper Disposal of Needles, Sharps and Broken Glass**
  - Contaminated sharps must be placed in hard walled plastic containers labeled with the biohazard symbol.
  - If the sharps or pieces of broken glass are too large for the sharps container, the items must be placed in a puncture resistant container (such as a cardboard box) lined with a biohazard bag, clearly marked "GLASS AND SHARPS".
3. What information is in the Standard Operating Procedures?

- **Biohazardous Waste Management**
  - All solid biohazardous waste must be placed in red biohazard bags
    - These will be incinerated or steam sterilized before disposal.
  - All liquid biohazardous waste must be sterilized by autoclaving or treatment with approved disinfectant before drain disposal.
3. What information is in the Standard Operating Procedures?

- How to control splashes, aerosols and droplet production
- Remember, bloodborne pathogens may be transmitted by membrane exposure to droplets and aerosols

Use of a biological safety cabinet
Use of sealed centrifuge rotors
What can you do to minimize your risk? These 5 points will be discussed in this training

1. What are Bloodborne Pathogens?
   The Exposure Control Plan
2. Observe Standard (Universal) precautions
   Biosafety Level 2 Containment and Practices
3. Follow the Standard Operating Procedures — SOP— in your lab
4. Make use of personal protective equipment - PPE
5. Report all accidents, spills and exposure incidents to your research advisor.
4. Use of Personal Protective Equipment

The minimum PPE required for the BSL-1 and BSL-2 laboratory is gloves, safety glasses (or goggles) and buttoned lab coats.

Additional PPE such as surgical masks or face shields may be required for procedures with a high probability for splashes, splatters and droplets or aerosol generation.
4. Use of Personal Protective Equipment

The minimum PPE required for the BSL-1 and BSL-2 laboratory is gloves, safety glasses (or goggles) and buttoned lab coats.

Additional PPE such as surgical masks or faceshields may be required for procedures with a high probability for splashes, droplets or aerosol generation.
Proper Use of Gloves

• Gloves should NOT to be worn outside of the work area.
  – DO NOT wear gloves to open doors or touch equipment (i.e. keyboards or door handles) that others will be handling without gloves.

• Gloves must be replaced as soon as possible after they become contaminated, torn, punctured or compromised.
  – Be extremely careful when using a flame- do not catch the gloves on fire!

• Disposable gloves cannot be reused.

• Gloves must be removed CORRECTLY prior to washing hands and leaving the laboratory.
  – With both hands gloved, pinch the top of one glove, carefully pull it off so that it is inside out and hold it in the gloved hand.
  – Using the ungloved hand, grab the inside top of the second glove and pull it off so that it is inside the first glove.

• PPE must be disposed of as biohazardous waste.
Proper Use of Lab Coats and Goggles

• Lab coats should be BUTTONED to protect your street clothing
• You must NOT take potentially contaminated lab coats home.
  • Handle soiled lab coats as little as possible, using gloves.
  • Place soiled lab coats in autoclavable bags; they may be laundered and reused after sterilization
• Eye/face protection should be used if splashes or sprays are a possibility when working outside a biosafety cabinet.
What are Standard Precautions?
What can you do to protect yourself from blood borne pathogens?

2. Observe Standard Precautions:
   - Assume that all human tissues and cells, living or dead, are infectious.
   - Treat all human tissues and cells as if they are known to be contaminated with blood borne pathogens.
What color are biohazard waste bags?
What types of materials go into biohazard waste bags?
3. What information is in the Standard Operating Procedures?

- **Biohazardous Waste Management**
  - All solid biohazardous waste must be placed in red biohazard bags
    - These will be incinerated or steam sterilized before disposal.
  - All liquid biohazardous waste must be sterilized by autoclaving or treatment with approved disinfectant before drain disposal.
3. What information is in the Standard Operating Procedures?

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  - Contaminated sharps must be placed in hard walled plastic containers labeled with the biohazard symbol.
  - If the sharps or pieces of broken glass are too large for the sharps container, the items must be placed in a puncture resistant container (such as a cardboard box) lined with a biohazard bag, clearly marked "GLASS AND SHARPS".
What is a standard operating procedure?
What is a standard operating procedure?

• Description of the “rules of the lab”
  – Recognize and reduce hazards
  – NEVER eat, drink, apply cosmetics or lip balm, handle contact lenses in the lab.
  – Wash hands with a non-abrasive soap or antiseptic hand cleanser frequently
  – Dispose of sharps, broken glass, and all potentially biohazardous waste properly
  – When to use PPE
  – Control of aerosol / droplet production
Hazard Recognition / Reduction

• Think before you do anything
  • What could happen? What is the worst thing that could happen?
  • What can I do to prevent it?
  • What will I do if I can’t prevent it?
What can you do to minimize your risk? These 5 points will be discussed in this training

1. What are Bloodborne Pathogens? 
   The Exposure Control Plan
2. Observe Standard (Universal) precautions
   Biosafety Level 2 Containment and Practices
3. Follow the Standard Operating Procedures — SOP - in your lab
4. Make use of personal protective equipment - PPE
5. **Report all accidents, spills and exposure incidents to your research advisor.**
5. What should you do in the event of a spill?

• Every lab member working at BSL-2 must follow the proper protocol in the event of a biohazardous spill to
  • contain the contamination
  • minimize exposure to others

• Be familiar with your lab’s Standard Operating Procedure for spills and exposures.

• Household bleach at a 1/10 dilution is a very effective disinfectant. Other effective commercial disinfectants may be available in your labs.
5. What to do in the event of a spill

- Use appropriate PPE: gloves, goggles and lab coat
- If there is broken glass, it should be cleaned up using tongs or a dust pan and placed into either a sharps container or a biohazard bag that is inside a cardboard box.
5. What to do in the event of a spill cont’d

• Small spills should be treated with disinfectant-soaked absorbent material for at least 10 minutes
  – 10% bleach and paper towels are fine
  – If you are pouring disinfectant onto the spill, avoid generating splashes and aerosols.

• The paper towels should be placed in biohazard bag.

• Repeat the disinfection process.
5. What to do in the event of a spill, con’t

- All PPE should be placed into biohazard waste and hands thoroughly washed before leaving the lab.
- Report the incident to your PI immediately.
  - Complete an Incident and Accident Report Form
  - If the spill is large and/or you need assistance, contact the Biosafety Office

[Images of biohazard waste and hands washing]
5. What to do in the event of an exposure

• Follow the procedure in your lab’s SOP and the F&M Exposure Control Plan.
  • Wash the affected area with disinfectant for 5-15 minutes.
  • For membrane exposure (eyes, nose, mouth) flush with water for 15 minutes.
  • Cover the wound.
Blood-borne pathogens may be introduced into a new host by:

– Broken skin
  • Cuts, abrasions, rash, acne
  • Needlesticks

– Any body opening or membrane
  • For example, eyes, nose or mouth
  • Droplets and aerosols
5. What to do in the event of an exposure

- Report the incident to your PI immediately and to the Biosafety Officer (Dr. Frielle – LSP 332E, 358-4600, dfrielle@fandm.edu)
- Exposure may require an immediate evaluation by a medical practitioner.
  - Go to Appel Health or Lancaster General Hospital
- Complete a Laboratory Incident and Accident Report Form - found in the back pocket of the Biosafety Manual notebook.
- Complete a Blood and Body Fluid Exposure form – found in Appendix C of the F&M Exposure Control Plan and in the back pocket of the Biosafety Manual notebook.
If you have any questions.... ever

• Ask your research advisor
• Check out the lab SOP, F&M Biosafety Manual and/or the F&M Exposure Control Manual
• Ask the Biosafety Officer
  — Dr. Frielle
  — LSP332E
  — 358-4600
  — dfrielle@fandm.edu
Summary: Hazard Recognition / Reduction

• Think before you do anything
  • What could happen? What is the worst thing that could happen?
  • What can I do to prevent it?
  • What will I do if I can’t prevent it?
What should you do in the event of an exposure?
What to do in the event of an exposure

• Follow the procedure in your lab’s SOP and the F&M Exposure Control Plan.
  • Wash the affected area with disinfectant or flush for 5-15 minutes.
• Report the incident to your PI immediately and to the Biosafety Officer
• Exposure may require an immediate evaluation by a medical practitioner.
• Do the paperwork
  – Complete a Laboratory Incident and Accident Report Form
  – Complete a Blood and Body Fluid Exposure form
What should you do in the event of a spill?
What to do in the event of a spill

• Use appropriate PPE: gloves, goggles and lab coat
• If there is broken glass, it should be cleaned up using tongs or a dust pan and placed into either a sharps container or a biohazard bag.
• Small spills should be treated with disinfectant for 10 minutes, cleaned with absorbent material like paper towels. The paper towels should be placed in biohazard bag. Repeat the disinfection process.
What to do in the event of a spill, con’t

• All PPE should be placed into biohazard bag and hands thoroughly washed before leaving the lab.

• Report the incident to your PI immediately.
Who can answer your questions?
If you have any questions.... ever

• Ask your research advisor
• Check out the lab SOP, laboratory safety plan or the F&M Exposure Control Manual
• Ask the Biosafety Officer
  – Dr. Frielle
  – LSP361
  – 358-4600
  – dfrielle@fandm.edu
3. What information is in the Standard Operating Procedures?

• **Needles and Sharps Precautions**
  • Because percutaneous exposure (through the skin) is a primary route of transmission of bloodborne pathogens, **extreme caution** should be taken with contaminated needles or sharps.
  • Needles/contaminated sharps:
    • Must never be bent, recapped or removed unless there is no alternative
    • Must never be sheared or broken
What to do in the event of an exposure

• What is an exposure?
  – Any specific eye, mouth, other mucous membrane, non-intact skin or parenteral contact (needlestick, broken glass) with blood or OPIM
Contaminated

“means the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface”.

Research Laboratories and Production Facilities

Contaminated materials that are to be decontaminated at a site away from the work area shall be placed in a durable, leakproof, labeled or color-coded container that is closed before being removed from the work area.

Access to the work area shall be limited to authorized persons. Written policies and procedures shall be established whereby only persons who have been advised of the potential biohazard, who meet any specific entry requirements, and who comply with all entry and exit procedures shall be allowed to enter the work areas and animal rooms.
• Each laboratory shall contain a facility for hand washing and an eye wash facility which is readily available within the work area. An individual should not have to walk through doors to access the sink or eyewash.
1:10 dilution of household bleach

20 minute contact time

Disinfect
Remember Your Sharps Precautions During a Spill

Contaminated broken glassware is cleaned up by mechanical means (e.g. tongs, forceps, pieces of cardboard).
**Definitions**

*Other Potentially Infectious Materials*

“means ......

(1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, 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 fluids;

(2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and

(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”. 

#3 Personal Protective Equipment (PPE)

Anything that is used to protect a person from exposure to blood or body fluids. Includes Latex or Nitrile gloves, goggles, CPR mouth barriers, aprons, and respirators.

* Always check PPE for defects or tears before using.
* If PPE becomes torn or defective, remove and get new. Dispose of gloves when they are defected in any way.
* Remove PPE before leaving a contaminated area.
* Do not reuse disposable equipment.

**NEVER** clean blood or address open wounds without wearing gloves.
For the Purpose of Making an Exposure Determination, OSHA Defines OPIM as:

Other Potentially Infectious Material

This includes:

- Certain human body fluids
- Any unfixed tissue or organ except intact skin from human (living or dead)
- Human cell lines
Direct contact
Contact of the skin and mucus membranes with human blood and / or body fluids is the primary exposure route. Broken skin and percutaneous inoculations are chief routes of entry into the body. This is of particular importance if there is a skin condition or abrasion that is unprotected while handling blood and / or body fluids.
Epidemiology

Droplets

generated from sprays, splatters of blood/body fluids generated from spills or certain types of laboratory activities can result in deposition on the skin, or allow introduction of blood/body fluids into eyes, nose or mouth with the possibility of further penetration of mucus membranes and conjunctiva by pathogens. Secondary contact can be made with contaminated surfaces resulting in direct contact-like exposures.
Epidemiology

Aerosols
If the droplets are fine enough, falling between 1-5 μ in diameter, the exposure that results is caused by an AEROSOL, (think of a fog) which can remain suspended for 30 minutes or more and allow inhalation of the micro-droplets deep into the alveoli of the lung. From the alveoli, many pathogens can penetrate through alveolar cells and vascular walls to enter the blood stream and disseminate to other organs in the body.
Epidemiology

**Needle-sticks**, bites and scratches during animal handling, cuts or lacerations all present routes of entry if the item is contaminated or the wound is contaminated subsequently with human blood / body fluids.
Exposure risk

- Routine work that involves exposure to human tissue or cells
- Cleaning up a spill or broken glassware
- Handling waste products
- Administering first aid
Hand washing breaks the “hand-to-mouth and “hand-to-object” transfer of pathogens. It also removes deposited organisms after spills / splatter of contaminated droplets onto skin.

Droplets are a major concern, and can be present on upper arms, backs of hands and even on faces depending on the size and distribution of the droplet.
Hazard Recognition / Reduction

SAFETY ROTOR CAP
Hazard Recognition / Reduction

Proper use of a biosafety cabinet (BSC) reduces the release hazard of aerosols generated during specimen / aliquot preparations.

The areas marked with blue arrows show the internal air flow patterns that entrain and carry the aerosols to HEPA filters ([VVV] areas). These filters trap and contain the infectious agent within the cabinet.

As long as the cabinet’s integrity is maintained, especially the HEPA filter, there is virtually no risk
Hazard Recognition / Reduction
Hazard Recognition / Reduction

Reduction of “sharps” use, substitution of self-sheathing needles, and safe disposal of sharps into puncture-proof containers reduces the risk of sustaining a puncture wound or a cut with a contaminated device.

Resheathing needles must be eliminated as much as possible. If resheathing must occur, a one-handed technique or use of Kelly clamps is suitable to protect against inadvertent needle sticks.
Hepatitis B

Life long infection Causes liver inflammation – scarring of the liver, can lead to conditions like cirrhosis and liver cancer

Transmitted -

Blood to blood or blood to mucus membrane contact

Contaminated needles

Human bites

Mothers to babies at birth

Sexual contact.
**Vaccine** - 3 shots vaccine. You do not need booster after the 3 shot series. People can decline.

**Prevention** - Vaccination, Hand washing (15 secs.) Safe sex, Don’t share personal items, 10:1 bleach soln. PPE

**Facts:**

1. Virus can survive for up to a week in dried blood
2. A teaspoon of infected blood may contain over a billion HBV particles
3. HBV is 10 times more common than HIV in the U.S.

It's estimated that 1 out of 20 people in the US are infected
1—1.25 million Americans are chronically infected
Hepatitis C

Causes liver inflammation, can lead to conditions like cirrhosis and liver cancer


According to NIOSH Hep C is the most common BBP in the US. Reason – injection drug use and sexual exposure.

Vaccine - NONE

Prevention - Hand washing (15 secs.) 10:1 bleach soln. PPE
HIV

Human Immune Deficiency Virus – This virus is not a disease it can lead to AIDS because it attacks the body’s immune system

* HIV does not survive well outside the body
* No threat on contracting HIV through casual contact

Transmitted – Contaminated blood. Blood to blood or blood to mucus membranes contact, contaminated needles, and sexual contact. Infected blood used in transfusions or infected organs donated before March 1985.

Vaccine - NONE

According to the CDC It is estimated that 1 out of 250 people in the US are infected with HIV
Spills, Exposure Reporting and Vaccinations

Any needlesticks, lacerations or other puncture wounds caused by “sharps” while working with human source specimens, require immediate attention in the MSMC Employee Health Service or Emergency Department (after hours and weekends), whether the sharp is contaminated or not.

These incidents also must be reported to the Biosafety Officer as required by OSHA.
• All activities involving other potentially infectious materials shall be conducted in biological safety cabinets or other physical-containment devices within the containment module. No work with these other potentially infectious materials shall be conducted on the open bench.
Warning Signs and Labeling Procedures

OSHA specifies the design and colors of the Universal Biohazard Symbol. This signage must be used when a bloodborne pathogen is cultured or handled in production quantities in a laboratory as described in Section 29 CFR1910.1030 (e).