

I. PRINCIPLE

Sharps injuries are one of the most common types of injury to be reported to Occupational Health services by healthcare staff. The greatest occupational risk for transmitting a blood borne pathogen is through parenteral exposure, e.g. a needle stick injury, especially those with hollow bores where blood may reside. Sharps is a term used to describe objects with sharp points or edges that can penetrate or cut the skin. If blood or other potentially infectious materials (OPIM) are present or may be present on the sharp, it is a contaminated sharp, and appropriate handling and disposal are required to minimize and prevent the risk of exposure to blood borne pathogens.

Examples of sharps that should be handled and disposed of in sharps containers include:

- **Needles** – hollow needles used for phlebotomy, or for injection of materials under the skin or in to other containers such as blood culture tubes
- **Lancets**, also called “fingerstick” devices – instruments with a short, two-edged blade used to get drops of blood for testing.
- **Broken contaminated glass tubes**
- **Used glass slides** – both stained and unstained glass slides containing bacteria, blood, or other potentially infectious material
- **Capillary tubes** – used for hematocrit testing
- **Glass Pasteur pipettes** – These are glass pipettes with a long, thin tip. They are rarely used in the BMS labs, but if used, should be disposed of in sharps waste

II. SCOPE

This policy applies to all students, non-students, and staff at the University of Wisconsin – Milwaukee that utilize restricted areas in the Department of Biomedical Sciences teaching labs. Restricted areas include B70, B76, B78, B80, B86, B88, and B90.

III. TRAINING

All staff and students that expect to work unsupervised in the BMS teaching labs must review this procedure, complete training by Lab Manager or PI, and fill out the Sharps Handling and Disposal Training Certificate/Annual Review Form, with a submission type of “Initial Training Certification”. After initial training, procedure must be reviewed annually and documented with the Training Certificate/Annual Review Form, submission type “Annual Procedure Review”.

See [BMS 1.0 Utilization of Space and Supplies](#) for guidelines on unsupervised student access to BMS teaching laboratories.

IV. PERSONAL PROTECTIVE EQUIPMENT (PPE)

A. Personal protective equipment is worn to protect against exposure to hazardous materials. Personal protective equipment used in the BMS labs includes, but is not limited to:

- a. Impermeable disposable gloves
- b. Fluid resistant Lab coat
 - . i. Lab coats should be buttoned completely
 - . ii. Sleeves should never be rolled up
 - . iii. Lab jackets are allowed, but not recommended due to short length
- c. Eye protection (safety glasses, safety goggles, face shield)
- d. Masks

B. The practice of universal (standard) precautions is an approach to infection control in which all blood, body fluids, and other potentially infected materials (OPIM) are treated as if known to contain blood borne pathogens such as Human Immunodeficiency Virus (HIV) and Hepatitis B Virus (HBV). This practice is to be observed by all students and staff working in the Department of Biomedical Sciences.

C. Failure of students to follow universal precautions and appropriate PPE guidelines may result in disciplinary action, including dismissal from any course or program in the Department of Biomedical Sciences.

See [Personal Protective Equipment and Dress Code](#) for more information.

V. RISK OF TRANSMISSION OF BLOOD BORNE VIRUSES

Human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV) are three of the most common bloodborne pathogens from which health care workers are at risk. Health care workers are potential exposed to these diseases through a percutaneous injury, in which the worker is injured by a sharps object, or through contact of mucous membrane or non-intact skin with blood, tissue, or other potentially infectious body fluids.

Human Immunodeficiency Virus (HIV)

Overview

Human immunodeficiency virus (HIV) disables the body's immune system until it is no longer capable of fighting infection. Once a person becomes immunocompromised, he or she can exhibit symptoms of weight loss, persistent low-grade fever, night sweats, and flu-like symptoms. The person is also more vulnerable to pneumonias, intestinal disorders, and fungal infections.

Risk of injury and transmission

The estimated risk of HIV infection from a sharps injury is about 0.3 percent (1 in 300). The CDC has reported 57 documented cases and 140 possible cases of HIV transmission to U.S. health care workers between 1981 and December 2006. Of the 57 documented cases, 48 were associated with percutaneous injury (puncture/cut injury).

Most of these cases involved nurses and lab technicians. Other researchers estimate that the number of cases of occupationally acquired infections is much higher.

Hepatitis B Virus (HBV)

Overview

Hepatitis B virus can cause serious liver damage and death. Symptoms include jaundice, fever, nausea, and abdominal pain. Approximately 5 to 10 percent of patients develop chronic infection with hepatitis B, which carries an estimated 20 percent lifetime risk of dying from cirrhosis and 6 percent risk of dying from liver cancer. The chance of becoming infected with hepatitis B from a sharps injury is estimated to be between 6 and 30 percent.

Risk of injury and transmission

National hepatitis surveillance data shows that approximately 400 health care workers became infected with HBV in 2001. This figure represented a 95% decline from the 17,000 new infections estimated in 1983. The decline was largely due to the widespread immunization of health care workers with hepatitis B vaccine and the use of universal precautions and other measures required by OSHA.

Hepatitis C virus (HCV)

Overview

Hepatitis C virus causes serious damage to the liver and can be fatal. Infection can occur without symptoms or only mild ones. Chronic hepatitis develops in 75 to 80 percent of infected patients, and 70 percent of these individuals get active liver disease. Of those with

active liver disease, 10 to 20 percent develop cirrhosis and 1 to 5 percent develop liver cancer.

Risk of Injury and Transmission

Although the prevalence of HCV infection among health care workers is similar to that in the general population (1% to 2%), health care workers have an increased occupational risk for HCV infection. According to the CDC, the average risk of infection after a needle stick or cut exposure to infected blood is approximately 1.8%. Although recent studies show an association between sharps injuries and HCV infection, the number of health care workers who have acquired HCV occupationally is unknown. However, of the total acute HCV infections that have occurred annually (ranging from 100,000 in 1991 to 36,000 in 1996), 2% to 4% have been health care workers exposed to blood in the workplace.

Sharps injuries can occur in any healthcare or academic setting. Injuries most often occur (CDC 2008):

- During use of a sharp device on a patient (41%)
- After use and before disposal of a sharp device (40%)
- During or after appropriate or inappropriate disposal of sharp devices (15%)

VI. SAFE HANDLING OF NEEDLE SHARPS

- A. Avoid re-sheathing needles manually and re-sheath as a last resort.
- B. To re-sheath safely, place sheath on a flat surface. Only re-sheath needles if a device is available to allow this to be done using one hand only. If such a device is not immediately accessible, the single handed scoop method may be used, i.e. the health care worker holds the barrel of the syringe and scoops the needle cap from a hard, flat surface on to the end of the needle. Only when the needle tip is covered should re-sheathing be completed with the other hand. Re-sheathing devices should be decontaminated regularly.
- C. In certain situations it may be necessary to remove the needle from the syringe. In this instance use either; needle-removing device located on some Sharp containers or re-sheath needle using technique described above and then remove needle. Needle forceps or other suitable devices should be readily available.
- D. Do not pass sharps from hand to hand.
- E. When using sharps during a procedure, ensure that they do not become obscured by dressings, paper toweling, clothing, arm tie, etc.

- F. Blood collection needles are equipped with safety shields that must be activated immediately after use, and needle sharps must be placed in a puncture proof hard sided red biohazard box as soon as the procedure is complete.
- G. Contaminated needles should never be left on a countertop.

VII. SAFE DISPOSAL OF SHARPS

- A. Never discard needles/syringes/sharps in a biohazard bag or regular trash
- B. Discard sharps at the point of used into a sharps container immediately following use
- C. Discard disposable needles and syringes wherever possible as a single unit, into sharps container.
- D. Never attempt to decant contents of a small sharps container into larger containers
- E. Never leave sharps laying around
- F. Never insert fingers or hand past the level of the lid of a sharps container
- G. Ensure sharps containers are free from protruding sharps
- H. Sharps containers should not be filled above the fill line. Containers should be replaced when $\frac{3}{4}$ full
- I. **ALWAYS inspect all biohazard bags before removal/transportation in case of inappropriate disposal of sharps.**

VIII. STORAGE AND TRANSPORTATION OF SHARPS CONTAINERS

- A. Ensure sharps containers are located appropriately off the floor
- B. Ensure sharps containers are stored safely, away from public areas, behind locking doors
- C. Sharps containers should be handled away from the body, and must be transported in an upright position. A cart must be used for transportation of sharps between rooms.
- D. Proper personal protective equipment, including a lab coat and gloves, must be worn at all times when handling sharps containers containing any contaminated materials.
- E. Sharps containers are disposed of through University Safety and Assurances. Sharp containers awaiting removal should be placed in Enderis Hall B76 in the Hazardous Waste Pickup area next to the door.

IX. FIRST AID

See the [Exposure Control Plan](#) for detailed information regarding determination of exposure, treatment, documentation, and follow up in cases involving potential exposure to blood and other potentially infectious diseases. Immediate actions following a potential exposure are as follows:

- A. If incident involves a needle stick or bleeding cut/laceration, flush the exposed area with copious amounts of water and clean wound with soap and water. Staff/student

should go to Norris Health Center or other hospital of choice if injury requires immediate medical attention.

B. If incident involves mucosal/ocular exposure, flush area with copious amounts of water. For ocular (eye) exposure, eyewash station should be used for a minimum of 10 minutes.

C. If incident involves contact with preexisting cuts or wounds, flush area with copious amounts of water and wash area with soap and water.

D. If incident involves contact with intact skin only, wash area with soap and water. This is not classified as an exposure, as defined in section V, and no further care or follow up is needed.

If serious injury occurs, immediately call 9911 from a campus phone, or 414-229-9911 from any cell phone to get emergency medical assistance.

X. REFERENCES:

CDC Bloodborne Infectious Diseases – Stop Sticks campaign. (2010, September 28).

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