Spill and Exposure Response Procedures

for Etiologic Agents and Recombinant DNA

Approved by the Institutional Biosafety Committee, 7/15/11

Spills and accidents/exposures should be immediately reported to the Principal Investigator and the Department of Occupational Safety and Environmental Health (OSEH) (763-6973).

This document covers the following:

- Large Spills Outside of the Biosafety Cabinet
- Small Spills Outside of the Biosafety Cabinet
- Spill in a Biosafety Cabinet
- Spill in the Laboratory
- Skin, Mucous Membrane, or Injury Exposure
- Extra reporting steps for rDNA exposures

Large Spills Outside of the Biosafety Cabinet

OSEH will respond to large spills (greater than 200 ml) of BSL-2 (or above) containment level material. Contact OSEH (763-6973) for help with large spill cleanup.

Small Spills Outside of the Biosafety Cabinet

1. Don double gloves and eye protection if not already wearing them.
2. Cover spilled material with an absorbent paper towel or Kimwipe. Once the absorbent material is in place over the spill, wet the material with a 10% solution of bleach (1:10 dilution of Clorox containing sodium hypochlorite) or other appropriate disinfectant.
3. Let stand 15-20 minutes, wipe up and wash surface with appropriate disinfectant.
4. Wipe down all equipment and surfaces which may have been splashed.

Spill in a Biosafety Cabinet

Note: ***Leave the cabinet turned on.***

1. Don double gloves, a lab coat, and eye protection if not already wearing them.

2. Cover spilled material with an absorbent paper towel or Kimwipe. Once the absorbent material is in place, wet material with 10% solution of bleach (1:10 dilution of Clorox containing sodium hypochlorite) or other appropriate disinfectant. Let stand 15-20 minutes, wipe up and wash surface with appropriate disinfectant.

3. If personnel are contaminated, remove potentially contaminated garments at the BSC and decontaminate garments by saturation with 70% ethanol or place in autoclave bag for autoclaving. Wash hands and other potentially exposed skin surfaces thoroughly with soap and water. Don fresh PPE, return to worksite, and spray walls, liners, and equipment with an appropriate disinfectant.

4. Spray or wipe container walls, other work surfaces and equipment with the appropriate disinfectant

5. If necessary, flood the work surface, drain pan and catch basin below the work surface with disinfectant. Allow at least 15-20 minutes contact time.

6. Soak up the disinfectant and drain the catch basin into a container. Lift the front exhaust grille and tray and wipe all surfaces. Ensure that no foreign materials are blown into the area below the grille.

7. If a 10% bleach solution is used on metal surfaces, rinse with water or 70% ethanol after decontamination is complete.

8. If the spill overflows into the interior of the cabinet, more extensive decontamination of the cabinet may be necessary. Contact OSEH (763-6973) for decontamination of the cabinet.

Spill in the Laboratory

1. If an infectious aerosol may exist outside of a biosafety cabinet, ***leave the room immediately, lock the door, post a warning sign and inform your supervisor.*** If clothing is contaminated, remove and turn the exposed side of fabric in on itself and place in autoclave bag or biohazard container. Wait at least 30 minutes before reentering the lab to allow dissipation of aerosol created by the spill. During this time, review clean-up procedures, assemble decontamination materials, PPE and contact OSEH (763-6973).

2. Don fresh gloves, a lab coat or tyvek suit, and eye protection.

3. Carefully lay disinfectant-soaked towels over the spill and pour more around the spill. Use more concentrated disinfectant if the volume of material will significantly dilute the disinfectant.

4. Allow 15-20 minutes contact time.

5. Use forceps to place sharp objects into a sharps container. Using a dustpan and dustbroom, tongs, etc., transfer all contaminated materials (paper towels, gloves, labware, etc.) biohazard waste containers and contact OSEH HazMat (763-4568) for removal.

6. Wipe surrounding surfaces with disinfectant to cover all splash areas. Wipe flat surfaces to remove any material that may have splashed out and settled on those surfaces.

7. Place all contaminated materials, including protective clothing, into an autoclave bag or biohazard waste container.

8. Wash hands with soap and warm water.

9. If a personnel exposure occurred, complete an Illness or Injury Report form (https://www.workconnections.umich.edu/illnessorinjury.php) summit to Work~Connections and report incident to OSEH (763-6973). See additional procedures noted below.

Skin, Mucous Membrane, or Injury Exposure to Etiologic Agents or Recombinant DNA

1. If there is an **agent-specific** protocol for exposure, follow that (e.g., HIV, Herpes B).

2. **In the case of skin contact or injury with a contaminated instrument:**

   a. Thoroughly wash area with soap and water. Do not squeeze the wound to induce bleeding.

   b. Avoid use of abrasive chemical soaps or disinfectant washes as they can cause skin abrasions and a possible additional route of entry for the agent.

   c. Cover the wound with a sterile dressing.

   d. For mucous membranes (e.g., eyes, mouth), flush for a minimum of 15 minutes.

3. Notify **UM-Occupational Health Services (OHS)** for evaluation of exposure following:

a. Contact with mucous membranes;

b. Contact with non-intact skin;

c. Percutaneous exposure; or

d. Any type of exposure that involves concentrated virus.

U-M Occupational Health Services -- Campus Employees
Mon-Fri 7:30 am – 4:30 pm
C380 Med Inn building
1500 East Medical Center Drive, Ann Arbor (734) 764-8021
After hours - go to UM Hospital Emergency Dept. – Urgent Care Clinic

4. Complete an Accident-Illness Report Form (https://www.workconnections.umich.edu/illnessorinjury.php) submit to Work~Connections and report incident to OSEH (763-6973).

For exposures* to recombinant DNA reporting must occur to:

- Principal Investigator or Director of Lab (immediately)
- Biosafety Officer (615-6480) (immediately)
- Complete an Accident-Illness Report Form (https://www.workconnections.umich.edu/illnessorinjury.php) submit to Work~Connections (within 24 hours)
- IBC (may be reported through the Biosafety Officer)
- NIH/OBA (report will be coordinated by the IBC)

*Note that in BL3 labs, spills and accidents which result in overt ***or potential*** exposures to organisms containing recombinant DNA molecules [must be] immediately reported to the Biological Safety Officer, Institutional Biosafety Committee, and NIH/OBA.

Any situation that poses a threat to an individual's health, safety, or welfare should be handled with the appropriate care including emergency response (911) if necessary.