UTHealth
The University of Texas
Health Science Center at Houston

UTHealth Emergency Response Plan for Biohazardous Materials Inclusive of Recombinant and Synthetic Nucleic Acids

Title: Biological Spill Response- Loss of Containment **Section:** Biological Safety

IBC Approval Date: February 2016 **Revision Date:** September 9, 2021

The following procedures are provided as a guideline to laboratory personnel for biohazardous material spill cleanup, inclusive of biological agents containing recombinant and synthetic nucleic acids (rDNA/sNA). For any spill, if you are not sure about the proper procedures or need assistance, call Environmental Health and Safety (EHS) at 713-500-8100. For after-hours spills call EHS at 713-500-5832. For all emergencies call UTPD at 911. If a spill is considered too large or too dangerous for laboratory personnel to safely clean up, secure the entire laboratory and contact EHS to obtain assistance. Bleach is recommended as a standard disinfectant for most biological agents, but not all of them, so it is your responsibility to know what disinfectants are effective against the particular agents used in your laboratory. Be sure to use a disinfectant registered with the Environmental Protection Agency (EPA) to ensure effectiveness. Disinfectants must be used at the appropriate dilution for the required minimum contact time – see the manufacturer's recommendations on the label or product information sheet for this information.

For Biological Spills inside of the Biosafety Cabinet (BSC):

1. Wait at least 5 minutes to allow the BSC to contain the aerosols before starting cleanup.
2. Wear a laboratory coat, safety glasses and disposable gloves during cleanup.
3. Allow the BSC to continue to run during cleanup.
4. Apply an appropriate disinfectant to the spill and allow adequate contact time (e.g. freshly prepared 10% bleach solution for 15 minutes contact time; or other EPA registered disinfectant at concentration and contact time recommended by the manufacturer).
5. Remove any glass or other sharps materials with tongs and place in sharps disposal container. Do NOT use your hands to remove sharps.
6. Wipe up spillage with disposable disinfectant-soaked absorbent materials (e.g. paper towels). Do NOT place your head inside of the BSC to clean the spill; keep your face behind the shield. Wipe spill from the perimeter of the spill inward.
7. Wipe walls, work surfaces, and any equipment inside the BSC with disinfectant-soaked paper towels.
8. Discard contaminated disposable materials in appropriate hazardous biological waste container(s) using appropriate biohazardous waste disposal procedures.

9. Place contaminated reusable items in biohazard bags or autoclave pans with lids before autoclaving and cleanup.
10. Expose non-autoclavable materials to disinfectant (at appropriate contact time) before removal from BSC.
11. Remove protective clothing used during cleanup and place non disposable items in a biohazard bag for autoclaving if necessary. Place disposable protective clothing in biohazardous waste container for disposal.
12. Run BSC for at least 15 minutes after cleanup before resuming work or turning off the BSC.
13. Wash hands with soap and water before leaving the area.
14. Note: If the spill overflows into the drain pan/catch basin under the work surface of the BSC, a more extensive decontamination of the BSC may be required. Contact EHS for assistance.

For Biological Spills outside of the Biosafety Cabinet (BSC) (Loss of containment):

1. Notify lab personnel of the spill and evacuate the lab; close the lab door once everyone has been removed. Put a notice on the door informing personnel of the spill and not to enter.
2. Allow the spill and any potential aerosols generated during the spill to settle for 30 minutes.
3. Assemble clean-up materials (disinfectant, paper towels, biohazard bags and forceps/tongs).
4. Put on appropriate PPE, including lab coat, shoe covers, gloves and eye/face protection.
5. Initiate spill cleanup with disinfectant as follows:
    a. Place paper towels or other absorbent materials over spill area
    b. Carefully pour disinfectant (fresh 10% bleach solution or other EPA registered disinfectant) around the edges of the spill and then onto the paper towels. Avoid splashing or generating aerosol droplets.
    c. Allow disinfectant to remain in contact with spill for an adequate contact time (e.g. 15 minutes for bleach).
    d. Apply more paper towels to wipe up spill
    e. Clean spill area with fresh towels soaked in disinfectant.
    f. Dispose of all towels or absorbent materials using appropriate biohazardous waste disposal procedures. If any sharp objects are present, use forceps and discard in a sharps disposal container.
    g. Remove protective clothing and segregate for disposal or cleaning.
    h. Wash hands with soap and water prior to leaving.

For Biological Spills inside the Centrifuge (Loss of containment):

1. Notify lab personnel of the spill and clear the immediate area of all personnel.
2. Wait 30 minutes for any potential aerosols to settle before attempting spill cleanup.

3. If a spill is identified after the centrifuge lid is opened, carefully close the lid, evacuate the laboratory and close the laboratory door. Remain out of the laboratory for at least 30 minutes. Put a notice on the door informing personnel of the spill and not to enter.
4. Wear a laboratory coat, safety glasses and disposable gloves during clean up.
5. Remove rotors and buckets to nearest BSC for cleanup.
6. Thoroughly disinfect the inside of the centrifuge.
7. Discard contaminated disposable materials using appropriate biohazardous waste disposal procedures. If any sharp objects are present, use forceps and discard in a sharps disposal container.
8. Wash hands with soap and water prior to leaving area.

For Biological Spills outside of the Laboratory (Loss of containment):

1. To prevent a spill, transport labeled biohazardous material in an unbreakable, well-sealed primary container placed inside of a second unbreakable, lidded container (cooler, plastic pan or pail) labeled with the biohazard symbol, biosafety level and contact information.
2. Should a spill occur in a public area, do not attempt to clean it up without appropriate PPE.
3. Secure the area, keeping people well clear of the spill. Place signage warning individuals to stay out of the area until spill cleanup occurs if needed.
4. Call the EHS main line at 713-500-8100 or the EHS hotline at 713-500-5832 for assistance in cleanup.
5. Stand by during spill response and cleanup activity and provide assistance only as requested or necessary.
6. Wash hands with soap and water prior to leaving.

For a Loss of Power to the Laboratory (Loss of containment)

1. If there is a loss of power to the laboratory, personnel should immediately stop all work, secure all biohazardous materials and contact Facilities, Planning and Engineering at (713)-500-FIXT (3489). Provide them with the following information:
    a. Name
    b. Location and extension
    c. Type of emergency (Power failure)
    d. Special direction (if any)
2. All lab access and work should be suspended until power is restored to the laboratory.
3. Place a notice on the door informing personnel of the loss of power and not to enter the lab.
4. If the entire facility is without power, all personnel should follow their department's Emergency Evacuation Plan (securing materials, placing perishables in refrigerators, close fume hood sashes/BSC sashes), then exit per their plan as soon as possible.

For a Loss of Ventilation in the Laboratory (Loss of containment)

1. In the event of any ventilation disruption (loss of negative airflow to the laboratory), notify personnel, stop all work, secure all biohazardous materials and evacuate the laboratory.
2. Place a notice on the door informing personnel of the loss of ventilation and not to enter the lab.
3. Notify Facilities, Planning and Engineering at (713)-500-FIXT (3489) and EHS at (713)-500-5832 to initiate return of ventilation to the appropriate level.
4. All laboratory work should be suspended until the appropriate ventilation (negative airflow) to the laboratory can be restored.

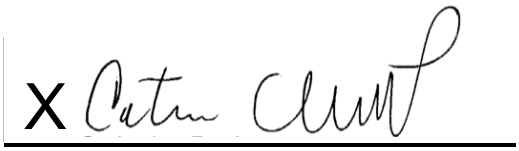
For a Loss of an Animal Exposed to Biohazardous Materials or recombinant or synthetic nucleic acid molecules

1. If there is a loss of an animal that has been exposed to biohazardous materials, secure the laboratory and attempt to catch the animal if possible.
2. Use a clean cage top for trapping the animal if necessary. If unable to do so, notify a member of the CLAMC staff immediately for any assistance.
3. DO NOT place the animal back in the cage with other animals. This animal may have acquired pathogens from the floor that could then contaminate the entire colony. Such animals should be placed in a new cage and then euthanized or the cage should be clearly labeled that it contains an escaped animal.
4. If you want to keep the animals, notify CLAMC Veterinarian so that they can arrange to place the animal through the quarantine procedure. If an animal is unable to be caught by hand, CLAMC will assist by setting up traps.
5. Any escape resulting in the loss of an infected animal, transgenic animal or animal injected with recombinant or synthetic nucleic acids higher must be reported to NIH/OSP.

Reporting:

It is the responsibility of all UTHealth personnel to report any significant spills, personnel exposures or unauthorized research using biohazardous agents and/or recombinant and synthetic nucleic acids material to Environmental Health & Safety. Initial reporting must be done as soon as possible via phone or email, and at the latest within 24 hours of the incident. If recombinant or synthetic nucleic acid research is involved, EHS will report the incident to the NIH Office of Science Policy (https://osp.od.nih.gov/biosafety-biosecurity-and-emerging-biotechnology/) as necessary. This will include an initial phone call or email report, followed by a full detailed written report within 30 days of the incident. See the Recombinant and Synthetic Nucleic Acid Molecule Incident Reporting Template for additional information.

This policy has been reviewed and approved by the Institutional Biosafety Committee.



Institutional Biosafety Committee Chair