

Chapter 6 – BIOHAZARD EMERGENCY RESPONSE PROCEDURES

This chapter is the biohazard emergency response guide for laboratory personnel at MU.

6.1 Introduction

Principal Investigators, laboratory supervisors, laboratory biological safety officers, and workers should use this document as a reference, to reduce the risk of exposure from a spill or release of Biological Safety Level 2 agents in their laboratory. For agents that have a higher level of risk please contact the EHS Biological Safety Professional.

Section 6.2 is a list of actions that need to be performed immediately and reviewed routinely, by all laboratory staff. Section 6.3 is a response guide that should be used as a reference during laboratory personnel training and for emergency preparedness activities.

6.2 Immediate Biohazard Emergency Response

6.2.1 Immediate Emergency Response Actions

If you drop, become aware of, or otherwise release a container of microorganisms:

- Hold your breath. Leave the room. Close the door behind you. Get assistance if available.
- Access the required biosafety kit/station outside the laboratory.
- Remove and place contaminated protective garments (including shoes) into a red biohazard bag at the door immediately after exiting.
- Place a warning sign on the door handle and isolate the area.
- Wash hands and face or, if facilities are available, shower. Use germicidal soap.
- Notify the supervisor responsible for the area immediately using emergency contact information on lab entry door.
- Call for assistance: Biosafety Professional (EHS), (882-7018) days, MU Police (882-7201) nights, weekends and holidays.

6.2.2 Follow-up Response and Disinfection Actions

When the above immediate actions are accomplished, disinfection and clean-up will be directed by the supervisor responsible for the area.

- Before reentering the affected area, wait a minimum of **30 minutes** to permit reduction of airborne particles by ventilation changes. Verify the biosafety cabinet is operational.
- Review available protective equipment/materials, required biosafety kit/station, and personnel resources. Develop and communicate response and decontamination clean-up plans.
- Use appropriate disinfecting solution (example: 1 part household bleach (5.25% sodium hypochlorite) and 9 parts water) to treat the spill area. To minimize aerosols, do not spray the disinfectant. Pour it gently, directing its flow into the spill area. Cover the area with absorbent paper or cloth. Allow **20 minutes** of contact time.
- If using an autoclave rather than chemical disinfection of materials: transfer all materials from the spill area to a deep autoclave pan including all cleanup supplies. Cover the pan with foil or other means for transfer to an autoclave. Remove the rubber gloves worn to that point, leave in the autoclave and don a fresh pair.

- Wash and mop the spill area and adjacent areas with disinfecting-detergent solution.
- Before leaving the immediate area, wash rubber boots with disinfectant solution, remove and bag respirator(s) (separately) and then remove cap, gown, and rubber gloves for appropriate disinfection or autoclaving. The boots should be exchanged for conventional disposable booties before leaving the area.
- Someone shall be assigned responsibility to ensure that all unwanted materials, equipment, and clothing are properly disinfected and accounted for. Replenish biosafety kit/station supplies for future use.

6.2.3 Air flow and Power Failures of Biosafety Cabinets

If airflow in a biosafety cabinet changes abruptly or the power fails more than momentarily while working with BSL-2 agents the following procedures are recommended:

- Terminate working with the agent, taking care not to create aerosols.
- Leave the laboratory and assure that others have also left.
- Secure the laboratory from entry by other personnel.
- If the agent poses a health hazard to humans, contact the Biosafety Professional (882-7018) or MUPD (882-7201).
- When power is restored wait **30 minutes** to reduce airborne particles, verify the operation of the biosafety cabinet, then disinfect the work area as necessary based on the activity that was in progress. Consult with the Biosafety Professional if there are any questions.
- Replenish biosafety kit/station and used resources (gloves, garments, disinfectants, etc.) outside the laboratory for future use.

6.3 Detailed Biohazard Emergency Response

6.3.1 General Comments on Emergencies

The preparation of emergency plans including reporting requirements for laboratories and facilities involved in biohazardous activities, including those involving recombinant or synthetic nucleic acid molecules is the responsibility of the laboratory Principal Investigator or supervisor. Consultation with EHS is encouraged to meet the following criteria.. The PI or supervisor must

- Develop and communicate specific emergency plans for their laboratory.
- Post and update emergency notification signage.
- Maintain a biohazard spill kit/station.

Principal Investigators or supervisors are responsible for training laboratory personnel in laboratory emergency procedures and how these procedures should be followed in their specific area. The following basic principles are useful in developing specific procedures for dealing with accidental spills or releases of biohazardous material:

- Render assistance to persons involved.
- Warn personnel of the potential hazards to their safety and evacuate the area if necessary.
- Control area to allow only authorized persons to enter. Do not allow re-entry to the area without proper controls/training or until hazards are eliminated. The incident commander, principal investigator, Biological Safety Professional and other expert personnel will determine re-entry procedures.

6.3.2 Reporting of Biohazard Emergency Incidents

Serious Biohazard Emergency Accidents

Examples:

- Fatality
- Hospitalization or medical treatment
- First aid treatment of any lab personnel
- Incidents (i.e. spills, personnel contamination, loss of containment) involving recombinant or synthetic nucleic acid molecules (See section 6.3.5 for accident investigation and reporting requirements)
- Fire, explosion and/or personal exposures.
- Biohazard exposure resulting in lost time or accidental release of biohazards with a potential for involving the public or exposure of non-involved persons.

If a serious accident occurs, call for assistance:

Ambulance (911) MUPD (882-7201) EHS (882-7018)

The following information should be provided:

- Where and what type of incident has occurred.
- Assistance needed, if not obvious.
- Nature and type of any injured or trapped persons.
- What has happened since the incident: e.g., building evacuation has been started, etc.
- Identity of caller and location from which he/she is calling, and who and where someone will be to meet and assist response personnel upon their arrival.

All Other Biohazard Accidents

Examples:

- Non-emergency fires, explosions, personnel exposures, injuries
- Failure of biohazard containment
- Releases of biohazard material
- Escape of or loss of containment of genetically modified or infected animals

Report as soon as possible to the Principal Investigator (PI) or supervisor. If not available, report to the acting PI or supervisor in their absence.

General Accident Reporting Procedures

- The person involved or someone on his/her behalf must immediately report the accident to his/ her supervisor, principal investigator or department head.
- The Principal Investigator or supervisor must report the employee injury or illness to the Worker's Compensation program on a "Report of Injury- UMWC3" form within 24 hours of the injury. If urgent care is needed, proceed directly to the "University Work Injury Services" (UWIS) at University Hospital Room GL-12 (update). For emergency care, the employee may proceed to the nearest medical facility for treatment.
- Students who have a non-emergency injury or made ill because of a biohazard activity should call 882-7481, or report to the Student Health Services.
- Each person involved in or supporting biohazard work shall report to his/her PI or supervisor:

- Each spill, release, near-miss (prevented potential) incident, accident, etc.
- Each unsafe condition observed having the potential for injuring or endangering the health of people and/or causing damage to property.
- The laboratory PI or supervisor for any biohazard accident shall contact the Biosafety Professional as soon as practically possible. The Biosafety Professional will coordinate the response to animal related accidents with the Office of Animal Resources (OAR).
- All external reports, other than those of an immediate nature such as summoning the fire department in case of a fire, are made by or through the Director of Environmental Health and Safety (882-7018).
- Incidents that result in an overt exposure to recombinant or synthetic nucleic acid molecules are reportable to NIH OBA immediately when those incidents occur under BL2 or higher containment.

6.3.3 Biohazard Emergency Response Procedure

6.3.3.1 Introduction

All biohazardous equipment, facilities, residue, or other material must be properly disinfected, contained, secured, and transported in a safe manner. The laboratory PI or supervisor is responsible for preplanning immediate actions and decontamination procedures to cope with a biohazard release through preparation of a Laboratory Specific Exposure Control Plan ([Section 4.3.5](#)). Preplanning includes, but is not limited to:

- Laboratory area and program survey
- Development of laboratory specific emergency plans
- Provide and maintain a biosafety kit/station (refer to [Appendix K](#))
- Training of laboratory personnel in emergency response procedures

6.3.3.2 Laboratory Area and Program Survey

The Laboratory Area and Program Survey include the following elements:

- A written assessment providing information on exposure prevention of personnel, environment, and property, with preparations to contain and disinfect the release.
- Types and levels of potential research program risks.
- Decontamination practices must be established for the type of biohazards involved and type of disinfectant needed for the biohazardous material.
- A good understanding of the air handling systems such as: HVAC units serving laboratory, supply/return vents, general lab air movement, air particulate filter types, laboratory hood, and biosafety cabinet ventilation.
- Layout of lab furniture, sinks, floor drains, and emergency equipment.
- Storage locations and security of biohazard materials.
- Primary and secondary routes for evacuation and an assembly area.
- Maintain a biosafety kit/station outside the laboratory area.
- Current information on the posted Emergency Notification Signage for the laboratory.
- Familiar and coordination with building specific Emergency Action Plan (see building coordinator).

Once there is a good understanding of these facts, appropriate action protocols can be developed.

6.3.3.3 Laboratory Specific Emergency Plan

Immediate action protocols are the step-by-step written procedures to be followed by laboratory workers immediately after the occurrence of a biohazard spill, release or exposure. The primary objectives are to protect personnel and prevent spread of the microorganism to the environment or property. The protocols should be brief, forceful and informative, leaving little room for ignoring or misinterpreting the required actions under the stress of the unanticipated event. Refer to the EHS Emergency Procedures Posting in your laboratory for additional information and emergency phone numbers.

The laboratory PI or supervisor is responsible for training laboratory personnel in laboratory specific emergency plans and specific responsibilities. A copy of the Laboratory Specific Emergency Plan and additional directives must be included in the written Laboratory Specific Exposure Control Plan (Section 4.3.5).

a. Biohazard Releases Outside Biological Safety Cabinets

Releases or spills outside biological safety cabinets are complex events. The amount released, the physical characteristics of the material, and how the release occurred are important factors in determining the area of involvement. Each release is composed of three somewhat overlapping fractions of the released material.

1. First is the bulk of the material that remains in a more or less confluent puddle.
2. Second is that portion separating from the main body of material in large drops or small streams.
3. Third is that portion which can separate from the main body in airborne particulates of various sizes.

The first two portions comprise the greatest bulk of material that must be disinfected. The third represents only a small portion of the overall bulk with small particles that remain airborne for relatively long time periods and transport easily to other areas.

The airborne particles emanating from a biological release are responsible for the initial passive phase of the disinfecting or decontamination procedure. The only required action, in the **30 minutes passive phase**, is to isolate the area and allow the occurrence of physical particulate settling with air dilution. Verify that the biosafety cabinet nearby is operating. This passive phase reduces airborne particles, per unit volume, permitting the actual disinfecting effort to proceed. During the passive phase, the required biosafety kit/station can be distributed, disinfection strategy decided, and entry team decontamination area staged.

The major components of the required biosafety kit/station are the containment biohazard bags and personal protective equipment. At a minimum laboratory personnel responsible for the disinfecting or decontamination of a spill should be provided a long-sleeve gown, and medium or heavy rubber gloves. Chemical resistant gloves may be needed due to the disinfectant used or chemicals associated with the release. The gown should be worn over conventional two-piece or jumpsuit type laboratory clothing. Knee-length rubber boots are also useful because they are more easily disinfected than conventional footwear and provide greater protection to the wearer against the chemical action of strong decontaminating solutions. Non-laboratory type outer garments should not be worn under the gown. This is not only to preclude potential removal of infectious materials from the laboratory on personal clothing, but also in recognition of the strong bleaching action of hypochlorites often used in disinfecting or decontaminating releases.

The **initial disinfecting or decontamination phase** can begin after 30 minutes with the proper personal protective equipment, tools and effective disinfectant (review compatibility with reactive chemicals involved in release) staged and donned. The objective is for the entry team to safely enter the spill area, survey extent of release and primary disinfecting or decontamination. Particular attention should be given to splash materials to avoid tracking around the laboratory. Starting from the outer perimeter of the area, encompassed by the splashed as well as the major bulk of the spilled material, liquid disinfectant should be gently poured around the spill area and allowed to flow into the spilled material. Paper towels soaked with the liquid disinfectant may be used to cover the area. Avoid spraying or pouring disinfecting solutions directly onto the spilled materials or

other splashing actions that may create airborne particles containing the released agent. The initial disinfecting or decontamination phase allows **20 minutes contact time** of the disinfectant with the spilled agent. Make sure that the amount and concentration of the disinfectant used is sufficient to overcome the inactivating action of proteinaceous media or tissues that may be intimately associated with the agent. A general rule of thumb for a disinfectant is a 10% solution of fresh prepared household bleach, which is adequate for most applications.

During the 20-minute disinfectant contact time, the surrounding area should be observed to locate other potential areas that may harbor the spilled agent. If these areas are extensive or cannot be readily reached with liquid disinfectant, consideration should be given to a follow-up disinfection with vaporous hydrogen peroxide gas (requires Biosafety Professional approval). Except in the case of the higher risk infectious agents, materials in difficult to reach with disinfectant solution may not pose a particular hazard for personnel. However, media and other suspending components may provide a haven for spore-forming fungi and bacteria growth that may subsequently prove troublesome in preserving the integrity of experiments.

The **follow-up disinfecting or decontamination phase** should begin after the 20-minute contact time.. Isolation of the area may be less important, unless the agent is suspected to have a high degree of infectious potential. Additional liquid disinfectant should be added immediately but gently to the absorbent surface covering; rubber gloves should be worn. Potentially contaminated objects should be wiped down with disinfectant and set aside. All nearby surfaces should be similarly wiped down. The absorbent surface covering should be gently rolled into a compact package, along with the rubber gloves, placed in a container of disinfectant solution or in an appropriate covered container for autoclaving. The investigator should then wash their hands and face with germicidal soap, change to fresh laboratory clothing, and bag used clothing for autoclaving. All laboratory personnel involved in the spill/release should place special attention to follow up housekeeping procedures, to assure complete disinfecting treatment of surfaces and proper removal of all disposable objects and material involved in the spill.

Decontamination of laboratory spills should also involve common sense. Obviously, all spills do not present the same degree of risk. The preceding discussion is most applicable to relatively large spills of biological materials or for those where a few viable particles may cause infection. Minor spills do occur, however, and may involve very small quantities of agent materials without involving container breakage or significant splashing. If standard aseptic techniques were being used in the laboratory, the spill should occur on a surface protected with an absorbent covering that has been dampened with an effective disinfectant.

b. Biohazard Releases In Biological Safety Cabinets

The function of biosafety cabinets is not only to provide a work area free from background contaminants, but also to contain any release of microorganisms or other infectious material. Potential contamination from routine procedures is normally dealt with following completion of an experimental procedure or at the conclusion of a work session. A biological spill occurring in the biological safety cabinet should be disinfected immediately and the cabinet airflow maintained. At all times there should be a supply of effective disinfectant within the cabinet so the operator does not have to withdraw their arms before proceeding with decontamination. If the operator's hands and arms have come into direct contact with the biological material, disinfectant should be liberally applied to them. (NOTE: Plastic over-sleeves prevent absorption of spilled materials by porous garments). The area of the spill should be gently flooded with disinfectant sufficient to cover the top tray, drain pans and catch basin below the work surface. While waiting for the elapse of **20 minutes** contact time, the walls, any work surface, equipment, and recoverable supplies not previously treated should be wiped down with a cloth or sponge saturated with disinfectant. Excess disinfectant from the tray and drain pans should be dumped into the cabinet base. Lift out the removable bench tray and perforated front grille. Wipe down all surfaces with disinfectant and replace in position. Place all used cleaning materials in a biohazard unwanted materials container. Discard used disinfectant liquid down the laboratory sink with copious amounts of water.

If the instruments or equipment contained in the biosafety cabinet is not compatible with a liquid disinfectant, problems in assuring penetration by the liquid disinfectant will require procedure modifications. The bulk of the spilled material should be gently flooded with disinfectant as before. Salvageable biological materials in intact containers should be surface disinfected and placed in a covered container. The secondary container is surface disinfected and removed to another biosafety cabinet to continue the experiment or to ready the materials for appropriate storage, pending continuation of the experiment. The contaminated safety cabinet is then disinfected by the paraformaldehyde gas procedure (requires Biosafety Professional approval). Alternatively, small instruments may be placed in plastic bags, the bags sealed, surface disinfected, and removed to an autoclave equipped for dry instrument sterilization. Wet chemical decontamination can then proceed as before.

Spills occurring in total containment cabinets need not be as disruptive for work schedules. Spills in these can usually be flooded with a liquid disinfectant, wiped up (taking care not to cut or otherwise damage gloves with broken glass or other sharp materials present), and cleaning materials placed in a covered container of liquid disinfectant. Remaining materials can be surface disinfected with adherence to aseptic techniques, and then the experiment can continue. Total decontamination of the cabinet may thus be delayed until the end of the work session.

c. Additional Laboratory Directives

Additional laboratory directives may be required: a) Location and type of release/spill alarm or notification system; b) How room dilution and local exhaust ventilation is handled; c) UV lamp precautions; d) Perimeter control for contaminated area; and e) Handling special research equipment. The Principal Investigator or supervisor should coordinate beforehand with medical personnel whose actions might require departure from protocol in the event that personal injury accompanies the mishap. Prominent display of the immediate action protocol, at strategic locations within the laboratory, is required if transient personnel frequently use the laboratory.

6.3.4 Re-entry after Biohazard Incidents

6.3.4.1 Introduction

The Biosafety Professional and/or EHS emergency responder(s) with assistance from the PI or supervisor will make the determination that an area is safe for reentry after a biohazard incident. Others are not to enter or reenter the area without the consent of the Biosafety Professional and/or EHS emergency responder(s) for any reason until the area is released. The Biosafety Professional and/or EHS emergency responder(s), if appropriate, will allow authorized people to re-enter and monitor, control, investigate, remove, rebuild, reinforce, and perform temporary fixes for the facility as necessary before others have access to the area.

Universal precautions shall be used when there is a potential exposure to body fluids or Biohazardous materials. A hazard evaluation of the site by the Biosafety Professional and/or EHS emergency responder(s) can identify areas of potential exposure to laboratory and cleaning personnel. The hazard evaluation will identify the hazardous areas to be decontaminated, followed by cleaning methods to remove the released material.

6.3.4.2 Criteria for Re-occupancy of Area

The Principal Investigator (PI) or supervisor, upon completion of appropriate decontamination procedures, should have assurance that the decontamination has been effective. The PI or supervisor defines the level of assurance required and the conditions under which a release or spill area can be released for normal

occupancy. Personal observation during the application of known effective chemical disinfectants in sufficient concentration and adequate contact times may be the criterion selected to allow research to continue following the release or spill of an agent having little human pathogen potential. Another PI or supervisor may delegate this responsibility to an appointed laboratory safety officer. This approach may be adequate for release or spills of low risk agents in properly isolated areas that allows air dilution and settling of airborne particulate before the decontamination process. A critical criterion affecting decisions to re-occupy facilities following a release or spill is personal knowledge by the PI, supervisor or safety officer that complete implementation of the prescribed disinfecting and decontamination procedure was accomplished. This criterion is usually adequate for releases or spills confined to properly operating Class II and Class III safety cabinets.

As the degree of potential hazard increases, the PI or supervisor may add a refinement, such as swab sample verification for surface contamination of residual viable agents following disinfecting. Alternatively, for gas disinfection procedures, strategically located cloth or paper patches seeded with resistant microorganisms, such as spores of *Bacillus stearothermophilus*, are effective indicators of disinfection efficiency. These refinements are not direct reading and will sacrifice some time due to incubation requirements that confirms status of viable indicator microorganisms. Accurate swab sampling for the agent will be achieved only if actual laboratory tests have established the reliability of sampling and assay methodologies, and quantitative relationships between sample recovery vs. actual level of contamination. Such methodologies are established and available for spores of indicator microorganisms, but their use during wet chemical disinfection may restrict selection of more effective chemical disinfectants with the more resistant spores. This may not be consistent with other laboratory restrictions on the use of disinfectants having the undesirable properties often associated with sporicidal contaminants. The spore indicators are, however, particularly effective for determining the efficiency of gaseous disinfecting procedures. Using spore indicators, with the **“no viable organisms present”** criterion, is recommended for determining when laboratory operations may resume following a major release or spill of biohazardous material in the open laboratory.

6.3.5 Accident Investigation

Accidents or spills of biohazardous materials (including recombinant or synthetically derived nucleic acid molecules) in laboratories and/or clinics and infections suspected to have resulted from work with infectious biohazards must be promptly reported to the EHS Biosafety Professional. Incidents that result in an overt exposure to recombinant or synthetic nucleic acid molecules are reportable to NIH OBA immediately when those incidents occur under BL2 or higher containment. The EHS Biosafety Professional will advise the Manager of Biosafety and IBC Chairman immediately after being notified of a laboratory exposure or spill. EHS Biosafety Professional, Manager of Biosafety, and IBC Chairman will:

- Immediately contact NIH OBA for serious adverse events or spills or accidents in BL2 or higher laboratories resulting in an overt exposure
- Contact additional IBC Committee Members with expertise that will be helpful during the accident investigation process, this group will be known as the IBC Accident Investigation Team.
- Schedule a meeting with the PI and lab staff involved to review procedures and understand incidents that lead to the exposure or spill.
- Complete and submit the NIH Incident Reporting document for spills or exposures within the timeline required by NIH OBA.
- Review/consider improvements to laboratory practices to assure improvements to avoid future incident of similar circumstances.
- Present the final NIH OBA Incident Reporting document to the full MU IBC during a convened meeting and discuss any additional recommendations.

Prompt and thorough investigations of these incidents can identify their causes so that appropriate actions can be taken to prevent similar occurrences. The PI, supervisor and laboratory personnel shall provide the IBC

Accident Investigation Team with all necessary information and support needed to successfully complete the accident investigation.

It is important the following incidents are investigated: any serious, unusual, or extended illness of a biohazard worker; any accident that involves ingestion, inhalation or dermal contact of infectious organisms; or inoculation of infectious agents and/or recombinant or synthetic nucleic acid molecules through the skin. If a potentially infectious organism or recombinant or synthetic nucleic acid molecules were to acquire the capacity to infect and cause disease in humans, the first evidence of this potential may be demonstrated as a laboratory-acquired infection. Verification that an infection is associated with such work or research will provide sufficient warning for re-evaluation of hazards and initiation of additional precautions to protect MU laboratory workers and the public.

The investigation for reporting of all accidents associated with infectious agents or recombinant or synthetic nucleic acid molecule research should establish the circumstances leading to the accident, including a review of techniques, procedures, types, and uses of equipment that may have been involved in the accident. The IBC Accident Investigation Team report to the Institutional Biosafety Committee (IBC) shall provide recommendations for preventing similar occurrences.

6.3.6 Risk Assessment Resources/Information

The laboratory supervisor should periodically review information developed from research conducted in the university laboratory, as well as that reported by other investigators, that may affect current concepts of risk factors associated with potential biohazards in the laboratory. Refer to [Section 4.3.3](#) for specific resources and information.

6.3.6.1 Laboratory Biological Safety Representative

Biological releases must be dealt with immediately and often require decisions that cannot be delayed by referral to "professional" safety personnel located some distance from actual laboratory operations. Designation of a Laboratory Biological Safety Representative, and a sufficient number of trained alternates from the research staff, is helpful in the management of complex laboratory operations. The representative will provide a constantly available on-site authority for dealing with the disinfection of biological spills, as well as other immediate questions of operational safety. This structure will help research groups with complex laboratory operations and transient work forces that lack on-site authority for dealing with the disinfection of biological spills. The EHS Biosafety Professional and the Institutional Biosafety Committee are available as a resource for clear and credible direction.

6.3.6.2 Decontamination Team

A team effort is the most effective way of meeting decontamination requirements arising from a biological spill or to accomplish periodic facility repairs or modifications. The knowledge of the PI, supervisor, and biohazard workers using their skills as a team will provide the most effective/efficient response to any emergency event in their laboratory. All the decontamination team members will need appropriate training, equipment, and supplies to handle emergency releases based on the specific emergency plan for the laboratory.

6.3.6.3 Accident Investigation Team

The MU Institutional Biosafety Committee can request that an Accident Investigation Team be formed consisting of four members appointed by the IBC (not necessarily from its membership). Three of these members shall be permanent and appointed University faculty/staff for a minimum of two years, the fourth shall be the head of the department or agency in which the laboratory or clinic being investigated belongs. Three permanent members shall consist of:

- Senior supervisory scientist familiar with toxicology, microbiology & who does/supervises mostly "bench work".
- Physician or veterinarian who has done research in addition to clinical work.
- EHS Biological Safety Professional or alternate.

The Team's overall responsibility is to make the University's laboratories and clinics safer places in which to work. This will be accomplished by:

- Reviewing techniques, kinds and uses of equipment involved in accidents or infections.
- Establishing the circumstances leading to and causing accidents, injuries, infections or other illnesses.
- Review facts and minimize assumptions to determine how similar incidents will be prevented in the future.

This investigation is in addition to supervisory investigations already required. The Team may however use the supervisory investigation and its recommendations as part of its overall evaluation of incidents but should also take a possibly broader look at circumstances. The Team will not assign responsibility or recommend disciplinary action. Recommendations will be made to the IBC and/or ACUC.

The Biosafety Professional will aid this Accident Investigation Team by:

- Selecting accidents/infections for further investigation.
- Coordinate, centralize, assist, and expedite the accident investigation process.
- Provide clerical assistance needed by the Accident Investigation Team.
- Contact Other Resources (MU Expert Microbiologists, State Health Department, etc.).
- Provide periodic status reports to the IBC.

6.3.7 Laboratory Biosafety Spill Kits

6.3.7.1 Required Information at the Laboratory Biosafety Spill Station

- a. Copy of the current "EHS Emergency Procedures Posting".
- b. Environmental Health and Safety (882-7018) - to report **ALL** biological material releases and Blood Borne Pathogen exposures.
- c.

Note: Label and place at a secure location near the main exit on the **outside** of the laboratory and keep accessible to all personnel. A Biosafety Spill Kit is required for all laboratories using recombinant or synthetic nucleic acid molecules and Biosafety Level 2 or higher agents. Annually check all supplies to determine if they are still usable. Refer to Laboratory Biosafety Spill Kit Checklist in [Appendix K](#).

6.3.7.2 Shelf Life of Disinfectants

After selection of a chemical disinfectant that is effective against the microbes or agent being investigated, refer to [Appendix H](#), the PI or supervisor will need to schedule regular procurement of bulk concentrate and maintenance of a working disinfectant supply in the laboratory. One way to assure a continuous supply is to maintain two sources of disinfecting solution, i.e., one for immediate use and the other reserved for emergency use (see biosafety spill kit/station). As the immediate-use supply is depleted, the emergency-use lot replaces it and a freshly prepared solution becomes the emergency-use supply. In small laboratories, effective shelf life of a disinfectant may be exceeded before the working supply is exhausted through normal activities. Supervisors

must devise schedules for disposal of ineffective residual disinfectants to be replaced with fresh solutions. Economics must not take precedence over assuring adequate quantities of disinfectants are available to cope with concentrated infectious microbes/agents spilled in the laboratory.