

| | |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TITLE: | IBC04-Biological Incident and Spill Clean-up Procedure |
| OVERVIEW: | This policy describes the procedures necessary to handle a biological incident involving spills of biohazardous agents on campus. |
| APPLIES TO: | All individuals handling biohazardous agents either within the laboratory or by transport on campus outside the laboratory. |
| DEFINITIONS: | <p><i>Biohazardous materials</i> - materials of biological origin that have the capacity to produce deleterious effects on humans or animals including: 1] recombinant DNA molecules; 2] micro-organisms containing recombinant DNA molecules; 3] micro-organisms classified as risk group 2 (RG-2), RG-3, or RG-4; 4] biological products derived from RG-2, RG-3, or RG-4 microorganisms; 5] diagnostic specimens (includes blood and other body fluids); 6] clinical/medical waste derived from the medical treatment of humans or animals or from biomedical research, and 7] animal / human body parts.</p> <p><i>Major spill</i> – spill that spreads rapidly, presents an inhalational hazard, endangers people or the environment, and/or involves personal injury or rescue and should be handled as an emergency by the UNMC Security Dispatch..</p> <p><i>Minor spill</i> - spill with low potential to aerosolize, presents no inhalational hazard and no endangerment to people or the environment.</p> <p><i>Risk Group 2 (RG-2) agent</i> - biological agent that is associated with disease which is rarely serious and for which preventive or therapeutic interventions are available. (low to moderate individual risk and low community risk).</p> <p><i>Risk Group 3 (RG-3) agent</i> - biological agent that is associated with serious or lethal disease for which preventative or therapeutic interventions may be available (high individual risk but low community risk).</p> <p><i>Risk Group 4 (RG-4) agent</i> - biological agent that is associated with serious or lethal disease for which preventive or therapeutic interventions are not usually available (high individual risk and high community risk). The UNMC does not allow research to be conducted on RG-4 organisms; however, specimens from patients with the potential to have a RG-4 agent present may be handled.</p> |
| PROCEDURES: | See IBC04-Form1 for abbreviated procedures to handle spills within the laboratory and IBC04-Form2 for reporting of a biological adverse event to the IBC (refer also to IBC24, Reporting of Research |

Related Adverse Event).

The disinfectant used for decontamination may vary dependent on the biohazardous agent involved (an approved IBC protocol should list the appropriate agent). **In most cases, a fresh diluted 10% bleach solution would be an acceptable agent.**

The procedures outlined are generally for minor spills that can easily be contained. Major spills whether inside or outside the laboratory require the notification of the UNMC Security Dispatch (559-5555).

For individuals with known or potential exposure to a RG-2 or RG-3 agent, immediately contact the medical call center by using the OUCH pager (*9-888-OUCH [6824]) or by direct dial to 9-OUCH. The individual will be given advice as to the next steps based on approved protocols. A surveillance program and post-exposure follow up plan will be instituted.

Spill Inside the Laboratory Involving a Known RG-2 Agent.

- a) Clear the spill area of all personnel.
- b) Wait a minimum of 10m for aerosols to settle before entering the spill area.
- c) Wear lab coat, gloves, and a safety goggle (if warranted) to initiate the clean-up.
- d) Cover spill with paper towels or other absorbent material and flood with a disinfectant e.g., 10% bleach.
- e) Allow to stand for at least 20m contact time to ensure germicidal action of the disinfectant.
- f) Remove broken glassware with forceps or broom and dustpan and dispose in the sharps container. Do not pick up a contaminated sharp object with your hands.
- g) Pick up the paper towels and any other absorbent material and dispose in a biohazard bag for decontamination.
- h) Wipe off any residual spilled material and reapply the disinfectant before final clean-up. Allow at least 20m contact time.
- i) Wipe equipment with an equipment- compatible disinfectant and allow at least 20m contact time. Rinse with water where necessary.
- j) Remove gloves.
- k) Wash hands with soap and water.
- l) Reopen the area to general use only after the spill clean-up and decontamination are completed.
- m) Inform personnel and laboratory supervisors about the spill and successful clean-up as soon as possible.

Spill Inside the Laboratory of a Known RG-3 Agent.

- a) Stop work immediately.
- b) If a spill has contaminated clothing, remove the clothing prior to exiting the contaminated area. DO NOT remove N-95 respirator mask.
- c) A clean lab coat, booties and gloves must be put on prior to exiting the contaminated area. The contaminated clothing is bagged and is decontaminated by autoclaving (contaminated clothing is not to be removed from the containment facility.) Wash as much of the material as possible off the skin with soap and water.
- d) Notify others to leave, close the door, and post a warning sign on the entrance to the laboratory. No reentry is to occur for at least 60m.
- e) Notify the Principal Investigator or Laboratory Supervisor and Manager of the area concerning the incident.
- f) If a small spill occurred and the spill is contained to a small area, the spill may be cleaned up using an appropriate disinfectant and personal protective equipment.
- g) For large spills contact Security Dispatch at 559-5555 (who will then contact either the Institutional Biosafety Officer or HAZMAT when appropriate.)
- h) Whole room decontamination (if involving the room) or biological safety cabinet (BSC) decontamination (if contained) may be necessary. An assessment of the affected area will be conducted in consultation with the Biosafety Officer or other on call biosafety professional.

Spill Inside the Biosafety Cabinet of a Known RG-2 Agent

- a) Wear lab coat and gloves during clean-up and allow BSC fan to remain on during the entire clean-up procedure.
- b) Soak up spilled material with disposable paper towels and apply appropriate disinfectant with a minimum of 20m contact time before beginning clean up procedures.
- c) Wipe up spillage and disinfectant with disposable paper towels.
- d) Wipe the walls, work surface and any equipment in the cabinet with a disinfectant soaked paper towel. Allow at least 20m contact time.
- e) Discard contaminated disposable materials in biohazard bag and autoclave before discarding as waste.
- f) Gloves should be changed after the work surface is decontaminated and before placing clean absorbent toweling in the BSC.
- f) Run BSC at least 15m after final clean-up and before resuming work.
- g) Inform all users of the BSC, as well as the laboratory supervisor about the spill and successful clean-up as soon as possible.

Spill Inside a Centrifuge of a RG-2 Agent.

- a) Clear the area of all personnel and wait for aerosol to settle for at least one-half hour before attempting to clean-up the spill.
- b) Wear a lab coat, safety goggle, and gloves during the clean-up.
- c) Remove rotors and buckets to the nearest BSC.
- d) Thoroughly disinfect the inside of the centrifuge using an appropriate disinfectant. Allow 20m contact time.
- e) Rotors may require steam sterilization for a thorough decontamination.
- f) Inform users of the centrifuge, as well as the laboratory supervisor about the spill and successful clean-up as soon as possible.

Incident or Spill Outside the Laboratory of Known or Unknown Biohazardous Agent

(Always transport biohazardous material in an unbreakable well-sealed primary container placed inside a leak proof, closed and unbreakable secondary container, labeled with the biohazard symbol.)

Follow the “Biological Incident or Spill Outside the Laboratory Decision Tree”(IBC04-Form3) to determine how to handle the situation. Generally, incidents/spills involving blood/body fluids, concentrated culture medium, and/or animal/human parts can be handled by the individual involved or by Environmental Services personnel. The exceptions are situations that may cause personal and/or environmental concerns or those involving spills of chemical/radioactive agents or of a specimen potentially containing a RG-4 pathogen.

Spill Inside the Laboratory of an Unknown Agent

(This involves the spill of a diagnostic specimen within the clinical laboratory.)

Follow the “Biological Incident/Spill Outside the Laboratory Decision Tree” (IBC04-Form3) to determine how to handle the situation. An “Incident Report” is completed in consultation with the manager or supervisor.

Spill of Radioactively Labeled Biological Material

A spill involving both radioactive and biological materials requires emergency procedures that are different for the procedures used for either material alone. As a general rule, disinfect the microorganism using a chemical disinfectant, then dispose of all clean-up materials in a separate bag labeled to indicate that the radioisotope is mixed with a chemically disinfected microorganism. Do not use bleach solutions as a disinfectant on materials that contain iodinated compounds because radioactive iodine gas may be released. **Before any clean-up is**

| | |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <p>started, the Chemical and Radiation Safety Office and the Biosafety Officer or the biosafety professional on-call should be contacted for assistance. The Radiation Safety Officer will coordinate the clean-up. It is important that the officer be informed of the radioactive agent and the biological agent present so the proper clean-up procedure can be initiated.</p> |
| <p>RECORD KEEPING:</p> | <p>Incident reports are to be filled when biological incident or spill occurs that involves the contamination of personnel and/or the environment. Refer to IBC04-Form2 for reporting of spills, and to IBC24, Reporting of Research Related Adverse Events, which includes biohazardous spills.</p> |
| <p>OTHER INFORMATION:</p> | <p>Biohazardous spills with RG-2 and RG-3 agents involving contamination of clothing will require removal of the contaminated clothing (which can be done in a private area), washing with soap and water the exposed skin, and decontamination of the clothing with an appropriate disinfectant. In some cases, washing the clothing with hot soapy water will be appropriate. All clothing is to be decontaminated on campus and should not be taken home until after the decontamination process.</p> <p>In situations where an individual has been exposed to a biohazardous agent e.g., skin contact, splash to eyes, or inhalation, the following protocol should be followed:</p> <ol style="list-style-type: none"> 1. Provide immediate first aid (Wash eyes with copious amounts of water, wash skin with copious amounts of soap and water, remove soiled clothes and wash skin with soap and water, etc.) 2. Notify supervisor 3. Immediately contact the medical call center by using the OUCH pager (*9-888-OUCH [6824]) or by direct dial to 9-OUCH. The individual will be given advice as to the next steps based on approved protocols. <p>Specimens containing a potential RG-4 agent (from patients within the Patient Care Biocontainment Unit) are handled according to established laboratory policies and procedures.</p> |
| <p>REFERENCES:</p> | <p>CDC. 2007. Biosafety in Microbiological and Biomedical Laboratories. USDHHS/CDC/NIH, 5th edition, Washington, DC, U.S. Government Printing Office.</p> <p>CLSI. March 2005. Protection of Laboratory Workers from Occupationally Acquired Infections; Approved Guidelines – Third Edition. M29-A3; Vol. 25, No. 10.</p> |

| | |
|----------------|-------------------------------------------------------------------------------------------------------------|
| | NCCLS. April 2004. Clinical Laboratory Safety; Approved Guidelines-Second Edition. GP17-A2, Vol.24, No. 13. |
| STATUS: | Updated: March 24, 2015 |