

BSL-2 Biological Spill Response

The following procedures are for remediation of spills involving infectious biological agents (that are non-select agents) at the University of Georgia

Prevention of personnel exposure is the primary goal in the containment and cleanup of a spill involving infectious biological agents. A biological spill shall be followed by prompt action to contain and clean-up the spill. The degree of risk produced by the spill depends on the volume of material spilled, the potential concentration of organism in the volume of material spilled, the normal route of transmission of the organism, and the disease hazard produced by the organism.

Laboratories should have a biological spill kit prepared and maintained for use at any time. Basic equipment for a spill kit includes concentrated disinfectant appropriate for the agent(s) used in the laboratory, a container for reconstituting the concentrated disinfectant (if appropriate), paper towels or absorbent pads, additional PPE relevant to the risk of the agent(s) such as gloves and respiratory protection (sealed in a ziplock baggie or similar container), biohazard bags, forceps or tongs and a small brush/dust pan to pick up sharps, broken glass and wetted materials, and agent appropriate spill caution signage. It is important to note the expiration date of the disinfectant to be certain that effectiveness is not compromised.

The following procedures are response guidelines for handling different types of biological spills in the BSL-2 laboratory. Post these single page guidelines at the biosafety cabinet and throughout the laboratory for quick reference.

Spill Kit Example Diagram



For spills of human blood or other potentially infectious materials (OPIMs)

(For blood or other material with a high organic content and low concentration of infectious microorganisms)

1. Wear gloves, eye protection and a labcoat (or Tyvek)
2. Cover the spill with paper towels or absorbent pads and flood with an appropriate disinfectant, or place disinfectant-soaked paper towels over the spill.
3. Allow for appropriate contact time.
4. Gather absorbent materials and place into a biohazard bag. Collect any sharp objects with a mechanical device and place in a sharps container.
5. Wipe down the spill area with disinfectant solution, removing all visible blood or OPIMs.
6. Spray the spill site with disinfectant and allow for appropriate contact time.
7. After the contact time, wipe the area down with disinfectant-soaked paper towels. Discard all disposable materials used to decontaminate the spill and any containment PPE into a biohazard bag and autoclave appropriately. Decontaminate any reusable items with disinfectant.
8. Wash your hands.

Spill of agent **INSIDE** of a Biosafety Cabinet (BSC)

1. Keep BSC operational.
2. Immediately cover the spill with absorbent pads.
3. Flood with appropriate disinfectant.
4. Utilize additional absorbent material and more disinfectant as needed.
5. Allow disinfectant solution to flow onto spill, careful to minimize generation of aerosols while assuring adequate contact.
6. Allow disinfectant appropriate contact time.
7. Remove contaminated outer clothing (gloves, sleeve covers) and place in biohazard bag for autoclaving.
8. Wash hands and arms thoroughly as needed and don new PPE as needed.
9. Collect disinfected absorbent material and place in biohazard bag.
10. Wipe up spill area with paper towels soaked in disinfectant.
11. Wipe down walls, work surfaces, and equipment within the BSC with the disinfectant.
12. Check to see if any material has leaked through the grille of the cabinet. If so, a more extensive decontamination procedure is necessary:
 - ☣ Wipe down all items within the cabinet and remove them from the cabinet.
 - ☣ Ensure that the drain valve is closed and flood tray top, drain pans, and catch basin with an appropriate disinfectant.
 - ☣ Allow disinfectant to sit for an appropriate contact time.
 - ☣ Lift out tray and remove exhaust grille work.
 - ☣ Clean top and bottom surfaces with sponge/cloth soaked in decontaminating solution.
 - ☣ Replace grille tray and grille work.
 - ☣ Drain disinfectant solution from cabinet into a collection vessel. This can be disposed of into the sanitary sewer.
13. Place all waste materials into a biohazard bag and autoclave.
14. Remove PPE, thoroughly wash hands and exit following standard protocol.

Spill of agent **OUTSIDE** of a Biosafety Cabinet (BSC)

1. If wearing respiratory protection, locate spill kit. Quickly place absorbent pads on the spilled area and gently flood with liquid disinfectant, working from the outside inward. Leave the area. *If not wearing respiratory protection, immediately leave the area.*

If possible, disinfect and or remove any potentially contaminated PPE before leaving the laboratory, place it in a biohazard bag and wash any apparently contaminated body parts with soap and water. Exit the laboratory following standard exit protocols.

2. Post signage on all lab entry doors to keep personnel from entering the spill area. Do not allow anyone to enter the area unless cleared to do so by the Principal Investigator (PI) or Office of Biosafety (OBS). Report the incident to the lab supervisor, PI and/or Office of Biosafety.
3. Allow at least 20 minutes for any potential aerosols to settle. If the spill has not been treated at this point, re-enter the area wearing appropriate PPE (including respiratory and eye protection). Place absorbent material on the spill area and gently flood it with liquid disinfectant.
4. Allow for the appropriate contact time with the disinfectant, further soak absorbent material with freshly prepared disinfectant. Work from outside the absorbent material to the center being careful to minimize splashing or potential formation of aerosols. Allow for additional adequate contact time.
5. Collect disinfected materials placed on the spill area in a biohazard bag. Utilize tools such as tongs to pick up those materials. Broken glass and sharps should be placed in a sharps container.
6. Wipe up the general splash area surrounding the spill with disinfectant soaked paper towels – including walls, work surfaces, and equipment.
7. Remove gloves and other contaminated clothing and place in biohazard bag for autoclaving.
8. Autoclave all waste materials according to standard protocol.
9. Remove remaining PPE, thoroughly wash hands and exit following standard protocol.
10. Provide detailed information to the PI and OBS for an incident report.