
XII. SPILL CONTROL/EMERGENCY RESPONSE

During the course of normal laboratory operations there is always the potential for an emergency situation to arise. These emergencies can be the result of a chemical spill, fire, or the need for medical assistance. Internal communication is very important during any emergency situation. It is essential that all employees know how to react during the emergency.

The range and quantity of hazardous substances used in laboratories require preplanning to respond safely to chemical spills. Spills involving hazardous materials will require different tactics depending on the magnitude of the spill; the material's toxicity, reactivity, and flammability; routes of entry of the material into the body; and the promptness with which the spill can be safely managed.

A. Spill Prevention

The best way to address a spill is to prevent it from happening in the first place. Many spills can be prevented or controlled by careful planning and proper use of safety equipment and procedures. Measures to prevent spills include the following.

1. Caps and covers for containers should be securely in place whenever the container is not in immediate use.
2. Utilize a compatible/suitable container for chemicals and wastes collected in other than the original container. In instances of corrosive wastes or halogenated solvents, the use of metal containers is often unsuitable, even if the solvents were originally shipped in metal containers. In these instances, plastic carboys (high density polyethylene) or lined metal containers may be more suitable. See the MSDS for specific information.
3. Weekly container inspection can prevent leakage from spills due to improper chemical containers. Containers of all types should be free of rust, deformation, and any sign of chemical leakage.
4. Allow only limited quantities of chemicals and solvents to be stored in the laboratory. Large drums or multiple bottles of such chemicals should be stored away from the laboratory. Chemical containers should not be stored on the floor. See Section IV.R., "Chemical Storage" for more information.
5. Employees should use the proper technique when transporting hazardous materials from storage to the laboratory or from one laboratory to another. See Section IV.Q., "Chemical Handling-Transportation of Chemicals" for further information.

B. Departmental Responsibilities

1. Departments whose materials are involved in the spill are responsible for spill cleanup. Each laboratory should have pre-existing plans and

materials to clean up all spills that occur in that laboratory.

2. Where the extent of the spill or the specific hazards associated with the spill go beyond the department's ability to promptly and safely manage the spill, the department should notify emergency services by dialing 911. Remember to always give the location of the spill so responding personnel know where to go.
3. In addition, emergency services (911) shall be contacted whenever a chemical spill occurs that:
 - a. causes personal injury or chemical exposure that requires medical attention,
 - b. causes a fire hazard,
 - c. requires a need for a respirator to handle the material involved,
 - d. involves or contaminates a public area,
 - e. causes airborne contamination that requires local or building evacuation,
 - f. cannot be controlled or isolated by laboratory personnel,
 - g. causes damage to University property that will require repairs,
 - h. cannot be properly handled due to lack of trained personnel and/or equipment to perform a safe, effective cleanup,
 - i. requires prolonged or overnight cleanup,
 - j. involves an unknown substance, or
 - k. enters the land or water.
4. When the University of Oklahoma Police Department (OUPD) is contacted for spill response, the department is responsible for providing on-site assistance to responders to provide information and other assistance.
5. When spill clean-up is beyond the ability of the department or the EHSO, an outside vendor will be contacted to perform the cleanup and disposal and the invoice(s) associated with the spill will be forwarded to the department for payment.
6. The laboratory supervisor should report all chemical and biological spills to the EHSO.

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- a. Any spill which can result in an exposure of persons outside the facility (outside of the building) must be reported immediately to the EHSO. This could include spills in parking lots, on loading docks, and spills which release greater than 1 pound outside the building through the ventilation system or fume hood for extremely hazardous substances. For a list of extremely hazardous substances, contact the EHSO.
 - b. Waste materials generated as a result of a chemical spill cleanup must be disposed of through the EHSO. Waste materials generated as a result of a biological spill must be properly decontaminated by the department or sent via an appropriate biomedical waste vendor for disposal.
7. In the event an employee receives a potentially hazardous exposure to a hazardous substance, or the employee is exhibiting signs or symptoms of overexposure to a hazardous chemical, the employee should notify their supervisor or hazard communication designated coordinator, who should coordinate with the EHSO to obtain the appropriate MSDS and secure medical attention.
- a. Goddard Health Center (during hours) and Norman Regional Hospital (after hours) are recommended facilities for any occupational injury or exposure as they have the expertise and training to address such incidents, however, employees may choose any health care professional they wish.
 - b. The employee's supervisor must complete and sign a Form 2, *Employers' First Notice of Injury* and fax it to the OU Department of Risk Management (DORM) at 405/325-7238 within 24 hours of the incident. The supervisor must also complete the *Supervisor's Report of On-the-Job Injury/Illness*. The employee must complete an *Employee's Report of On-the-Job Injury/Illness*. Copies of these forms may be obtained from the DORM website at: <http://www.ou.edu/risk/forms.htm>

C. Minor Chemical Spills

Minor spills are defined as small chemical leaks that usually are detected early and present no immediate danger to personnel or the environment. As a general rule, spills of 4 liters or less will be considered a minor spill, depending on the chemical(s) involved. Spills of highly toxic, reactive, highly volatile or corrosive materials less than 1 liter should generally be considered a minor spill. These spills can be safely corrected with the advice of knowledgeable laboratory or supervisory personnel. General procedures are as follows.

1. Don't panic, but react quickly. Spills must be addressed immediately.

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2. Never assume gases or vapors do not exist or are harmless because of lack of smell.
 3. Do not touch the spill without protective clothing.
 4. Notify nearby persons and evacuate as necessary. Protect yourself, then remove injured person(s) to a safe place, if safe to do so.
 5. Know the locations of the emergency shower and eyewash ahead of time.
 6. If personnel are contaminated, remove contaminated clothing. Flush skin/eyes with water at least 15 minutes (up to 30 minutes is highly recommended); use soap for intermediate and final cleaning on skin areas. Forcibly hold eyelids open to ensure effective wash under eyelids. Make sure chemicals have not accumulated in shoes. Obtain medical attention for the victim.
 7. Identify or characterize the substance(s) involved. Refer to the MSDS for spill clean-up procedures.
 8. Where the spill does not present immediate personal danger, try to control the spread or volume of the spill. This could mean shutting a door, moving nearby equipment to prevent further contamination, repositioning an overturned container or one that has a hole in the bottom or side, or creating a dike by putting an absorbent around the spill.
 9. If the vapors are non-toxic, increase the ventilation. Open fume hood sashes to the 12 inch or full open position. Exterior doors may be opened to ventilate nontoxic vapors.
 10. If flammable vapors are involved, turn off ignition and heat sources if safe to do so. Do not operate electrical switches unless to turn off motorized equipment.
 11. Close doors to the affected area.
 12. Once the spill is identified, if clean-up procedures can be handled safely by departmental personnel, proceed with spill clean-up procedures and clean-up kits designated on the MSDS or in departmental standard operating procedures. Such procedures generally follow these steps.
 - a. Contain the spill by slowly sprinkling absorbent, starting at the edges, surrounding the spilled material, and move toward the center of the spill.
 - b. Collect residue, place in container, and call EHSO for disposal information.
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- c. Clean the spill area with soap and water.
- d. Report the spill to the EHSO in writing.

D. Major Chemical Spills

Major chemical spills are defined as accidental chemical discharges that present an immediate danger to personnel and/or the environment. General spills of greater than four liters or spills of highly toxic, reactive, highly volatile or corrosive materials over 1 liter should be considered a major spill. Under these circumstances, leave the spill site immediately and send for help. Management of these spills is the responsibility of specially trained and equipped personnel. The EHSO will assess the situation and determine if the situation be handled in-house or if an outside contractor should be utilized. General procedures are as follows.

1. Notify and evacuate all persons in the area immediately and notify emergency services at 911. Remember to always give the location of the spill, so responding personnel know where to go. Emergency services will notify the appropriate persons/departments including the EHSO.
2. Know the locations of the emergency shower and eye wash ahead of time.
3. Remove injured persons, if safe to do so. Remove contaminated clothing. Flush skin/eyes with water at least 15 minutes (up to 30 minutes is highly recommended); use soap for intermediate and final cleaning on skin areas. Forcibly hold eyelids open to ensure effective wash under eyelids. Make sure chemicals have not accumulated in shoes. Obtain medical attention for the victim.
4. If the spilled material is flammable, turn off ignition and heat sources, if safe to do so.
5. Close doors to the affected area. Do not allow re-entry.
6. Assist response personnel by providing requested information, including identification and quantification of material spilled.

E. Blood Spills

1. General Information
 - a. Universal precautions must be observed. Refer to Section VI. J, “OU Laboratory Bloodborne Pathogen Exposure Control Plan (Procedures for Working with Human Blood or Other Potentially Infectious Material)” or the departmental Bloodborne Pathogen Exposure Control Plan for more information. Cleaning of blood spills should be limited to those persons who are trained for the

task.

- b. If an untrained person encounters a spill, he/she should limit access to the area and immediately call the person(s) assigned to this duty.
- c. Only disposable towels should be used to avoid the difficulties involved in laundering.
- d. If a spill involves broken glassware, the glass should **never** be picked up directly with the hands. It must be cleaned up using mechanical means, such as a brush and dustpan, tongs, or forceps.

2. Personal Protective Equipment

- a. Persons who clean blood spills should wear disposable gloves of sufficient strength not to tear during cleaning activities. If the gloves develop holes, tears, or splits, remove them, wash hands immediately, and put on fresh gloves. Disposable gloves must never be washed or reused. Remove gloves one at a time by grasping the wrist opening and pulling toward the fingers so that the gloves come off inside-out. Contaminated gloves and other personal protective equipment should be disposed of as biomedical waste.
- b. If enough blood has been spilled to expect splashing during cleaning, utilize a face shield and protective clothing. If this is not available, contact the EHSO.

3. Disinfectants

Read and follow all manufacturer's handling instructions. All spills of blood and blood-contaminated fluids should be properly cleaned using any of these three types of disinfectants:

- a. EPA-registered "hospital disinfectant" chemical germicides that have a label claim for tuberculocidal activity,
- b. products registered by the EPA as being effective against human immunodeficiency virus (HIV), or
- c. a solution of 5.25 percent sodium hypochlorite (household bleach) diluted approximately 1:10 with water.

4. Cleaning Blood Spills on Hard Surfaces

To enhance the effectiveness of any sterilization or disinfection process, surfaces

must first be thoroughly cleaned of all visible blood or soil before a germicidal chemical is applied for disinfection. Procedures are as follows.

- a. Alert people in immediate area of spill.
- b. Put on appropriate disposable gloves (i.e., nitrile, natural rubbers, latex gloves) and other protective equipment. This may include a lab coat, disposable shoe covers, safety goggles, mask or full face shield.
- c. Pre-Cleaning
 - (1) Cover spill with paper towels or other absorbent materials.
 - (2) Carefully pour a freshly prepared 1:10 dilution of household bleach (1/2 cup of bleach to 1 quart of water) or other EPA-registered disinfectant around the edges of the spill and then into spill. Avoid splashing.
 - (3) Use paper towels to wipe the spill, working from the edges into the center.
 - (4) Collect all paper towels and place in biohazard or opaque bag on which a biohazard label can be placed on the outside.
- d. Disinfection
 - (1) Clean up the spill area again with fresh paper towels soaked in disinfectant or spray.
 - (2) Follow the manufacturer's recommended contact time or allow twenty minutes of contact time in the absence of manufacturer recommendations.
- e. After the spill has been absorbed, collect all disposable personal protective equipment, paper towels, gloves, etc. and place in biohazard or opaque bag on which a biohazard label can be placed on the outside.
- f. Place biohazard bag in proper storage container for later pickup by vendor. Disposal must follow procedures outlined in Section VIII., "Biomedical Waste Disposal."
- g. Notify people in the immediate area of the spill that clean up has been completed.

5. Cleaning Blood Spills on Carpeting

Use only a registered germicide as discussed in the Section XII.E.3., "Disinfectants." Read and follow manufacturer's instructions. Do not use chlorine bleach solution on carpet.

- a. Isolate the area, if possible.
- b. Wear gloves and other appropriate apparel.
- c. Procedures for small spills on carpets (smaller than a quarter) are as follows.
 - (1) Soak the spill with enough disinfectant to cover the spot.
 - (2) Let dry at least overnight to ensure that the spot is disinfected.
 - (3) Shampoo carpet, if needed, or use 3% hydrogen peroxide to remove discoloration.
- d. Procedures for larger spills are as follows.
 - (1) Pour disinfectant on the spot and let stand at least 30 minutes to allow some disinfection to take place. Blot up excess liquid with disposable towels.
 - (2) Soak the area with additional disinfectant. Allow to dry overnight. Contact Custodial Services to shampoo carpet, if needed, or use 3% hydrogen peroxide to remove discoloration.
- e. All contaminated towels and gloves should be double-bagged and labeled with the biohazard symbol.
- f. Disposal must follow procedures outlined in Section VIII., "Biomedical Waste Disposal."

F. Biological Spills

Biological spills outside biological safety cabinets will generate aerosols that can be dispersed in the air throughout the laboratory. These spills can be very serious if they involve microorganisms that require Biosafety Level 3 containment, since most of these agents have the potential for transmitting disease by infectious aerosols. To reduce the risk of inhalation exposure in such an accident, occupants should leave the laboratory immediately. The laboratory should not be reentered to decontaminate and clean up the spill for at least 30 minutes. During this time, the aerosol will be removed by the laboratory exhaust ventilation systems such as biological safety cabinets or chemical fume hoods, if present.

1. Spills on the Body
 - a. Remove contaminated clothing.
 - b. Vigorously wash exposed area with soap and water for one minute.
 - c. Obtain medical attention (if necessary).
 - d. Report the incident to the laboratory supervisor.

2. Biosafety Level 1 Organism Spill
 - a. Wear disposable gloves.
 - b. Soak paper towels in disinfectant and place over spill.
 - c. Place towels in a plastic bag for disposal.
 - d. Clean up spill area with fresh towels soaked in disinfectant.

3. Biosafety Level 2 Organism Spill
 - a. Alert people in immediate area of spill.
 - b. Put on protective equipment. This may include a laboratory coat with long sleeves, back-fastening gown or jumpsuit, disposable gloves, disposable shoe covers, safety goggles, mask or full-face shield.
 - c. Cover spill with paper towels or other absorbent materials.
 - d. Carefully pour a freshly prepared 1 to 10 dilution of household bleach around the edges of the spill and then into the spill. Avoid splashing.
 - e. Allow a 20-minute contact period.
 - f. After the spill has been absorbed, clean up the spill area with fresh towels soaked in disinfectant.
 - g. Place towels in a plastic bag and decontaminate in an autoclave.

4. Biosafety Level 3 Organism Spill
 - a. Do not breath; leave the room immediately and close the door.
 - b. Notify others in the room to evacuate immediately, and assist

others if necessary.

- c. Remove personal protective equipment in the airlock or access zone, turn potentially contaminated clothing outward, remove gloves last, and wash any exposed skin areas with antiseptic soap and warm water.
- d. Call emergency services at 911 and alert them of the situation.
- e. Warn others not to enter the contaminated area. Place an appropriate sign on the door.
- f. Wait at least 30 minutes to allow dissipation of aerosols created by the spill.
- g. Put on a long sleeved gown, gloves, appropriate respirator, and rubber boots, if required, before re-entering the room.
- h. Cover the spilled area with paper towels or disinfectant soaked paper towels.
- i. Slowly pour appropriate decontaminant solution around the spill and allow to flow into the spill. Avoid splashing or the creation of aerosols during this step.
- j. Let stand at least 15-20 minutes to allow adequate contact time.
- k. Using an autoclavable dust pan and squeegee, transfer all contaminated materials (paper towels, glass, liquid, gloves, etc.) into a deep autoclave pan, and autoclave promptly.
- l. Repeat the decontamination procedures beginning with step h.
- m. The dust pan and squeegee should be placed in an autoclave bag and autoclaved as well.

G. Mercury Handling and Spill Clean Up

1. Health Effects

The ACGIH has established a Threshold Limit Value (TLV) of 0.025 mg/m³, based on an 8-hour day and 40-hour week. The TLV for mercury also carries a "skin" notation, which indicates that metallic mercury can be absorbed through the skin as well as inhaled in the air. Mercury vapors are odorless, colorless, and tasteless. A quantity as small as 1 milliliter can evaporate over time, and raise levels in excess of allowable limits. Mercury poisoning from exposure by chronic inhalation can cause emotional disturbances, unsteadiness, inflammation of the mouth and gums, general fatigue, memory loss, and headaches. In most cases

of exposure by chronic inhalation, the symptoms of poisoning gradually disappear when the source of exposure is removed. Improvement, however, may be slow and complete recovery may take years.

2. Storage and Handling

Because of the health effects of mercury, and the extremely difficult and time consuming procedures required to properly clean spills, every effort should be taken to prevent accidents involving mercury.

- a. Always store mercury in unbreakable containers and stored in a well-ventilated area.
- b. When breakage of instruments or apparatus containing mercury is a possibility, if at all possible the equipment should be placed in an enameled or plastic tray or pan that can be cleaned easily and is large enough to contain the mercury.
- c. Transfers of mercury from one container to another should be carried out in a hood over a tray or pan to confine any spills.
- d. If at all possible, the use of mercury thermometers should be avoided. If a mercury thermometer is required, many are now available with a Teflon[®] or other coating that will prevent shattering.
- e. Always wash hands after handling mercury to prevent skin absorption or irritation.

3. Air Monitoring

Any mercury spill has the potential to generate airborne concentrations in excess of regulated levels. Contact the EHSO at 5-5147 for air monitoring of the spill area before cleanup to determine the airborne concentration. Large spills or spills with elevated vapor levels may dictate cleanup by a qualified contractor.

4. Protective Clothing

For small spills, a laboratory coat, safety glasses, and gloves should be used. Gloves made of the following have been rated as excellent for protection against elemental mercury:

Chlorinated polyethylene (CPE)	Polyvinyl Chloride (PVC)
Polyurethane	Nitrile Rubber, (also known
Viton	by several brand names)
Butyl Rubber	Neoprene

If mercury has been spilled on the floor, the workers involved in cleanup and

decontamination should wear plastic shoe covers. The EHSO should be called immediately if a spill is extensive enough to require workers to kneel or sit where mercury has been spilled since Tyvek[®] or similar impermeable clothing will be required.

5. Spill Kits

Special spill kits are available from a variety of sources. If a spill kit is purchased, follow the manufacturer's directions. Alternatively, a kit can be assembled with the following components:

- a. protective gloves,
- b. mercury suction pump or disposable pipettes to recover small droplets,
- c. elemental zinc powder (or commercial amalgam material),
- d. dilute sulfuric acid (5-10%) in spray bottle,
- e. sponge or tool to work amalgam,
- f. plastic trash bag,
- g. plastic container (for amalgam), and
- h. plastic sealed vial for recovered mercury.

6. Clean-Up Procedures

- a. Wearing protective clothing, pools and droplets of metallic mercury can be pushed together and then collected by a suction pump.
- b. After the gross contamination has been removed, sprinkle the entire area with zinc powder. Spray the zinc with the dilute sulfuric acid.
- c. Using the sponge, work the zinc powder/sulfuric acid into a paste consistency while scrubbing the contaminated surface and cracks or crevices.
- d. To minimize contamination of housekeeping items, stiff paper may be used to assist in cleaning up the amalgam.
- e. After the paste has dried, it can be swept up and placed into the plastic container for disposal.

- f. Rags, shoe covers, sponges, and anything used for the cleanup should be placed in the trash bag to be disposed of as contaminated material.

7. Waste Disposal

Call EHSO for removal of the mercury waste and contaminated items.

Source: American Conference of Governmental Industrial Hygienists, *2001 Threshold Limit Values for Chemical Substances and Physical Agents*

H. Cytotoxic/Antineoplastic and Other Hazardous Drug Spills

1. General Procedures

- a. Spills and breakages of hazardous drugs (HDs) should be cleaned up immediately by a properly protected person trained in the appropriate procedures.
- b. The area should be identified with a warning sign to limit access to the area.

2. Personnel Contamination

Contamination of protective equipment or clothing, or direct skin or eye contact should be treated by:

- a. immediately removing the gloves or gown,
- b. immediate cleansing of the affected skin with soap and water,
- c. for eye exposure, flooding of the affected eye at an eyewash fountain or with water or isotonic eyewash designated for the purpose for at least fifteen minutes,
- d. obtaining medical attention immediately, and
- e. documenting the exposure as described in Section XII.K., "Injury/Exposure Reports".

3. Clean-up of Small Spills

- a. Spills of less than 5 ml or 5 gm outside a biological safety cabinet should be cleaned up immediately by personnel wearing gowns, double latex gloves, and splash goggles.
- b. An approved respirator should be used for either powder or liquid spills where airborne powder or aerosol is or has been generated.

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- c. Liquids should be wiped with absorbent gauze pads; solids should be wiped with wet absorbent gauze. The spill areas then should be cleaned (three times) using a detergent solution followed by clean water.
 - d. Any broken glass fragments should be picked up using a small scoop (never the hands) and placed in a sharps container. The container should then go into a HD disposal bag, long with used absorbent pads and any other contaminated waste.
 - e. Contaminated reusable items, such as glassware and scoops, should be washed twice with detergent by a trained employee wearing double latex gloves and a gown.
 - f. Protective goggles and respirators should be cleaned with mild detergent and water after use.
4. Clean-up of Large Spills
- a. For spills of amounts larger than 5 ml or 5 gm, the area should be isolated and aerosol generation avoided.
 - b. Liquid spread should be limited by gently covering with absorbent sheets or spill-control pads or pillows.
 - c. If a powder is involved, damp cloths or towels should be used.
 - d. Protective apparel, including respirators, should be used as with small spills when there is any suspicion of airborne powder or that an aerosol has been or will be generated.
 - e. Chemical inactivators should be avoided in this setting.
 - f. All contaminated surfaces should be thoroughly cleaned three times with detergent and water. All contaminated absorbent sheets and other materials should be placed in an HD disposal bag.
 - g. Protective goggles and respirators should be cleaned with mild detergent and water after use.
5. Spills in Biological Safety Cabinets
- a. Extensive spills within a biological safety cabinet (BSC) necessitate decontamination of all interior BSC surfaces after completion of the spill cleanup.
 - b. If the HEPA filter of a BSC is contaminated, the unit should be labeled and sealed in plastic until the filter can be changed and

disposed of properly by trained personnel wearing appropriate protective equipment.

6. Spill Kits

- a. Spill kits, clearly labeled, should be kept in or near preparation and administrative areas.
- b. The MSDS for the drug should include sections on emergency procedures, including appropriate personal protective equipment.
- c. It is suggested that kits include chemical splash goggles, two pairs of gloves, utility gloves, a low-permeability gown, two sheets (12"x12") of absorbent material, 250-ml and 1-liter spill control pillows, a sharps container, a small scoop to collect glass fragments, and two large HD waste disposal bags. Absorbent sheets should be incinerable.

7. Waste Disposal

Disposal of all HD contaminated materials should follow the procedures outlined in Section V.I.1. "Hazardous Drug Waste Disposal".

Source: OSHA Instruction CPL 2-2,20B CH-4, *Controlling Occupational Exposure to Hazardous Drugs*

I. Fires

Fires have the potential of being one of the most common emergencies in the laboratory. This is largely due to the many flammable materials, particularly liquids, used in the laboratory. In the event of a fire, the following guidelines should be implemented.

1. All employees should know in advance:
 - a. where the fire alarm pull boxes are in your area,
 - b. where all exit routes are in your area,
 - c. where the extinguishers are located, and
 - d. to use the stairwells, not elevators.
2. Types of Fires and Extinguishers
 - a. There are five different types of fires:
 - (1) Type A - ordinary combustibles such as wood, cloth, paper, rubber and many plastics
 - (2) Type B - flammable liquids, such as gasoline, oil, grease,

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- tar, oil-based paint, lacquer, and flammable gas
 - (3) Type C - energized electrical equipment, including wiring, fuse boxes, circuit breakers, machinery and appliances
 - (4) Type D - combustible metals such as magnesium and potassium
 - (5) Type K - kitchen, grease fires
- b. The majority of fire extinguishers on campus are ABC and intended to fight these A, B, and/or C types of fires. There are also halon, water, carbon dioxide, and clean agent fire extinguishers located on campus.
 - c. To operate a fire extinguisher, remember **PASS**:
 - (1) **P**ull the pin
 - (2) **A**im the discharge toward the base of the flames
 - (3) **S**queeze the handle
 - (4) **S**weep from side to side
 - d. Do not aim the fire extinguisher directly onto the source, as it may spread the flames.
 - e. Many fire extinguishers discharge their contents at a rate of 8-15 seconds.
- 3. Procedures for Clothing on Fire
 - a. Drop to the floor and roll (Stop, Drop, and Roll)
 - b. Smother the fire with a blanket, rug or heavy coat.
 - c. Immediately call or have someone call emergency services at 911.
 - d. Assist the victim until help arrives.
 - 4. Procedures for a Small Fire
 - a. Immediately call or have someone notify emergency services at 911. Remember to always give the location of the spill, so responding personnel know where to go.
 - b. If the fire is small enough, use a nearby fire extinguisher to control and extinguish the fire. Don't fight the fire if these conditions exist:

- (1) the fire is too large or out of control,
- (2) if the atmosphere is toxic, or
- (3) if personal injury could result.

5. Procedures for a Large Fire

- a. Assist any person in immediate danger to safety, if it can be accomplished without risk to yourself.
- b. Immediately activate the building fire alarm system by pulling a fire alarm box. This will automatically notify OUPD and the Norman Fire Department. It is best to have them respond and not be needed than to arrive too late for potential rescue.
- c. Give verbal alarm and evacuate the building immediately. Proper evacuation procedures are as follows.
 - (1) Exit via stairwells. Do not use elevators.
 - (2) Doors and, if possible, windows should be closed as the last person leaves a room or area of a laboratory.
 - (3) Once outside, personnel should proceed to a pre-determined designated meeting area at least 150 feet from the affected building(s). Supervisors should take a head count to account for all personnel.
 - (4) Avoid inner courtyards.
 - (5) Keep roadways and walkways clear for emergency vehicles.
 - (6) Remain upwind from smoke, vapors, and fumes.
 - (7) Wait for further instruction from OUPD or emergency personnel. Do not re-enter the building until instructed to do so by Campus Police and Public Safety or properly identified emergency personnel.

J. Medical Emergencies

1. Emergency Telephone Numbers

- a. Post a copy of the OU Emergency Procedures brochure in a conspicuous place. This has emergency telephone numbers, locations of medical treatment facilities, and other emergency

procedures.

- b. If a department has special dialing instructions, such as to get an outside line or to call another campus phone, these instructions should be clearly indicated on or near the telephone, along with instructions for reaching emergency services.

2. Employee Protection During Emergencies

- a. OSHA requires adherence to "universal precautions" when employees respond to emergencies which provide potential exposure to blood and other potentially infectious materials. "Universal precautions" stresses that all blood or blood contaminated body fluids be assumed to be infectious for HIV and other bloodborne pathogens.
- b. Persons responding to a medical emergency must protect themselves through the use of personal protective equipment as follows.
 - (1) For bleeding control with minimal bleeding, disposable gloves alone should be sufficient.
 - (2) For bleeding control with the potential for spurring blood, disposable gloves, a gown, a mask, and protective eye wear are recommended.

3. First Aid

- a. It is recommended that each department have at least one person trained in basic first aid and cardiopulmonary resuscitation. This person should also receive bloodborne pathogen training and the opportunity to receive the hepatitis B vaccine.
- b. First aid equipment should be readily available and located in a conspicuous place. See Section XI.D., "First Aid Kits" for additional information.

4. Animal Bites

- a. While wearing gloves to assist the victim, carefully massage the wound and apply gentle pressure to encourage bleeding.
- b. Rinse the wound under warm running water for 15 minutes and continue massaging the site.
- c. Wash the wound and surrounding area with povidine-iodine swabstick for 5 minutes; continue to rinse periodically.

- d. Pat the injury dry using sterile gauze pads.
- e. Cover the wound with a pad and secure it with gauze and tape.
- f. Seek medical attention.

5. Medical Treatment

- a. Following any first aid, a nurse or physician qualified to handle occupational injuries and illnesses should provide further examination and treatment to ensure that infection or other unseen injuries are addressed and treated.
- b. For injuries requiring treatment beyond first aid, someone knowledgeable about the incident should accompany the injured person to the medical facility and a copy of any appropriate MSDSs shall accompany the victim if hazardous materials are involved.
- c. Any time a laboratory employee develops signs or symptoms associated with a hazardous chemical to which the employee may have been exposed in the laboratory, where exposure monitoring reveals an exposure level routinely above the action level, or whenever an event takes place in the work area such as a spill, leak, explosion or other occurrence resulting in the likelihood of a hazardous exposure, the affected employee should seek a medical consultation an occupational physician. Contact the EHSO to assist in the arrangement of such a consultation.
- d. Goddard Health Center (during hours) and Norman Regional Hospital (after hours) are recommended facilities for any occupational injury or exposure as they have the expertise and training to address such incidents, however, employees may choose any health care professional they wish.

6. Follow-up Procedures

- a. After emergency care has been administered, hands and other skin surfaces should be washed immediately and thoroughly with warm water and soap. Hands should always be washed after gloves are removed, even if the gloves appear to be intact.
- b. After an emergency that involves blood is over, clean up of blood may be required. Do not assume that housekeeping personnel will clean up the spill. If no one in the department has received training per the bloodborne pathogen standard, contact the EHSO at 325-5147.

K. Injuries, Illnesses and Exposure Reporting

All occupational injuries, illnesses and exposures must be reported to the laboratory supervisor, who must ensure the proper documentation and reporting. Minor injuries many times are not reported because they are perceived to be embarrassing or that "careless actions" caused the accident. However, minor injuries can sometimes lead to more serious complications that only become evident at a later time, or they may indicate a hazardous situation which should be corrected to prevent a future, serious injury. The procedure for reporting all occupational injuries, illnesses and exposures is as follows:

1. The employee's supervisor must complete and sign a Form 2, *Employer's First Notice of Injury and OU Supervisor's Report of On-the-Job Injury/Illness*. These forms must be faxed to DORM at 405/325-7238 within 24 hours of the incident.
2. The employee must complete an *OU Employee's Report of On-the-Job Injury/Illness*.
3. Copies of these forms may be obtained from and should be filed with the OU Department of Risk Management.