OSU Tulsa – Helmerich Research Center

LABORATORY EMERGENCY RESPONSE PROCEDURES

---POST CONTACT INFORMATION---

Campus Police (24hr.)..... (918) 594-8123
All Major Emergencies – Contact First

ALL MAJOR EMERGENCIES - Chemical, Medical, Police or Fire 9-911

Principal Investigator of Laboratory ..... (see posting outside of door)

Lab Manager, Zach Carpenter...……..……(918) 594-8607, cell (918) 606-3297

OSU-Tulsa Safety Officer, Matt Sharpe……..…..(918) 561-8391; cell (918)-830-1367

Medical First Responders, Nirmal Govindaraju.....(918) 594-8627
..... Aref Shahini…….……(918) 851-6503

Department Head, Dr. Raj Singh ..... ……. (918) 594-8650

Radiological Safety Officer, Jim Tucker..... …… (405) 744-7890; cell (405) 714-8041

Laser Safety Officer, JD Brown…….(405) 744-7228
..... Brandi Simmons…….……..(405) 744-3474

Oklahoma Poison Control Center **1-800-522-4611**

CHAPTER 1.0 - 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. In the event of an emergency, emergency response procedures should be implemented. These procedures may include evacuation of the facility if such action is deemed appropriate. If evacuation is necessary, stay together and move upwind from the facility at least 100 yards. Internal communication is very important during any emergency situation.

It is essential that all employees know how to act and react during the emergency. To accomplish this, it is necessary that people are familiar with the Emergency Response Procedures so that they can act responsibly and quickly. All incidents, regardless of severity, should be reported and investigated.

Oklahoma State University Tulsa
HRC - Laboratories
EMERGENCY RESPONSE PROCEDURES

Table of Contents

SECTION 1.1 - CHEMICAL SPILLS

All spills of hazardous chemicals shall be reported verbally to the Safety Officer, regardless of size and as soon as possible. A written report shall be prepared once the spill is remediated. The report shall include the date, time, location, chemical(s) and their volume, how the spill occurred, actions taken, names of all persons and their involvement, including any visitors who were exposed. A copy of this report shall be provided to the Safety Officer and the Principle Investigator (PI) and/or department chair (if the spill is major).

A. Major Emergency Spills (Stericycle Specialty Waste [Envirosolve], 918-587-9664, will be engaged to clean-up a major spill)

A chemical spill is classified as a Major Emergency Spill whenever it:

1. Causes personal injury or chemical exposure that requires medical attention;
2. Causes a fire or explosion hazard or uncontrollable volatility;
3. Requires a need for breathing apparatus of the supplied air, self-contained, or air purifying type to handle the material involved;
4. Involves or contaminates a public area;
5. Causes airborne contamination that requires local or building evacuation;
6. Causes a spill that cannot be controlled or isolated by laboratory personnel;
7. Causes damage to university property that will require repairs;
8. Involves any quantity of metallic mercury;
9. Cannot be properly handled due to lack of local trained personnel and/or equipment to perform a safe, effective cleanup;
10. Requires prolonged or overnight cleanup;
11. Involves an unknown substance; or
12. Enters the land or water.

Although the following tactics are prioritized in terms of usual preferred action sequences, each spill incident is unique and involves persons with varying levels of spill expertise and experience. Thus, for any individual incident, isolation of the spill and/or securing the area might best occur prior to or simultaneously with contacting campus security.

1. Don't panic! Always send for help first, *if possible*. Obtain the safety data sheet for responders, if you can do so safely.
2. If the spill presents an immediate danger, leave the spill site and warn others, control entry to the spill site, and wait for 24-hour clean-up response.
3. Remove contaminated clothing. Move to nearest water flushing facility. Flush skin/eyes with water at least 15 minutes; use soap for intermediate and final cleaning of skin areas.
4. Protect yourself. Remove injured person(s) to fresh air, if safe to do so. If a rescue is necessary, inform campus security when speaking to them of the incident.
5. Notify nearby persons and evacuate as necessary. Prevent entry, as necessary, by posting a guard in a safe area and/or shutting doors.

6. If flammable vapors are involved, do not operate electrical switches unless to turn off motorized equipment. Try to turn off or remove heat sources, where safe to do so.

7. If the substance involved is an unknown, then emergency spill response procedures are limited to self-protection, informing campus security when speaking to them of the incident, isolation of the chemical, and evacuating and securing the area involved.

8. Do not touch the spill without protective clothing.

9. 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 while placing toweling or other material under the door, moving nearby equipment to prevent further contamination, repositioning an overturned container or one that has a hole in the bottom or side, creating a dike by putting an absorbent around a spill.

10. Never assume gases or vapors do not exist or are harmless because of lack of smell. Know what the SDS warning is regarding vapors.

11. Increase ventilation by opening closed fume hood sashes to the 12 inch or full open position. Exterior doors may be opened to ventilate non-toxic vapors.

12. Use absorbents to collect substances. Reduce vapor concentrations by covering the surface of a liquid spill with absorbent.

13. Use methods of liquid or solid cleanup below if appropriate.

14. Describe incident in detail in writing and send a copy to the SO. If medical assistance is needed see Section 1.6.

B. Minor Spills

Minor spills are those spills which do not fit the requirements for Emergency Spills. They are small, incidental (confined to immediate work/activity area, not threatening to safety or health) spills or releases.

The following general procedures should be used for all minor spills:

1. Attend to any persons who may have been contaminated. If these persons require medical attention this is an Emergency Spill (See above).

2. Notify persons in the immediate area about the spill.

3. Evacuate all nonessential personnel from the spill area.

4. If the spilled material is flammable, turn off ignition and heat sources.

5. Avoid breathing vapors of the spilled material. If respiratory protection is necessary, this is an Emergency Spill (See above).

6. Leave on or establish exhaust ventilation if it is safe to do so.

7. Secure supplies to effect cleanup.

8. Don appropriate personnel protective equipment.

9. Spilled Liquids

   a. Confine or contain the spill to a small area. Do not let it spread.

b. For small quantities of inorganic acids or bases, use a neutralizing agent or an absorbent mixture (e.g., soda ash or diatomaceous earth). For small quantities of other materials, absorb the spill with a nonreactive material (such as vermiculite, clay, dry sand, or towels).

c. For small amount of nonreactive material, cover with absorbent and sweep (using non-sparking tools) into a collection container for hazardous waste disposal.

d. If nonhazardous, mop up the spill, wringing out the mop in a sink or a pail equipped with rollers.

e. Carefully pick up and clean any cartons or bottles that have been splashed or immersed.

f. If needed, vacuum the area with a HEPA filtered vacuum cleaner approved and designed for the material involved.

10. Spilled Solids

Generally, sweep spilled solids of low toxicity into a dustpan and place them into a container suitable for that chemical.

11. Dispose of residues according to safe disposal procedures. Remembering that personal protective equipment, brooms, dustpans, and other items may require special disposal procedures. (See the Chemical Hygiene Plan, Section 6.3 - "Waste Disposal and Effluent Control").

12. Report the chemical spill in writing as required above.

C. Mercury Handling and Spill Clean Up

1. Health Effects

The ACGIH has established a TLV of 0.05 mg/m^3, 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 into the body as well as through inhalation and ingestion into the skin. Mercury vapors are odorless, colorless, and tasteless. A quantity as small as 1 milliliter can evaporate over time, and raise vapor 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, the extremely difficult and time-consuming procedures required to properly clean spills, every effort should be taken to prevent accidents involving mercury. Always store mercury in unbreakable containers and stored in a well-ventilated area. When breakage of instruments or apparatus containing mercury is a possibility, 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. Transfers of mercury from one container to another should be carried out in a hood, over a tray or pan to confine any spills. 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® coating that will prevent shattering. 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. 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 by several brand names)
Viton	
Butyl Rubber	Neoprene

If mercury has been spilled on the floor, the workers involved in cleanup and decontamination should wear plastic shoe covers. Safety Officer 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, sprinkler 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 Safety Officer for removal of the mercury waste and contaminated items

SECTION 1.2 – NANOPARTICLES

Nanotechnology, the manipulation of matter at a nanometer scale to produce new materials, structures, and devices having new properties, may revolutionize life in the future. Although engineered nanomaterials present seemingly limitless possibilities, they bring with them new challenges for identifying and controlling potential safety and health risks to workers. Of particular concern is the growing body of evidence that occupational exposure to some engineered nanomaterials can cause adverse health effects.

A. Risk Management

Potential exposures to nanomaterials can be controlled in research laboratories through a flexible and adaptive risk management program. An effective program provides the framework to anticipate the emergence of this technology into laboratory settings;

1. recognize the potential hazards,
2. evaluate the exposure to the nanomaterial,
3. develop controls to prevent or minimize exposure, and
4. confirm the effectiveness of those controls.

B. Exposure Routes

Research demonstrates that inhalation is a significant route of exposure for nanomaterials.

1. Inhalation - Evidence from animal studies indicates that inhaled nanoparticles may deposit deep in lung tissue, possibly interfering with lung function. It is also theorized that nanoparticles may enter the bloodstream through the lungs and transfer to other organs.
2. Skin - Dermal exposure and subsequent penetration of nanomaterials may cause local or systemic effects. Ingestion is a third potential route of exposure.
3. Ingestion - Little is known about the possible adverse effects of ingestion of nanomaterials, although some evidence suggests that nanosized particles can be transferred across the intestinal wall.

C. Exposure Control

Exposure control is the use of a set of tools or strategies for decreasing or eliminating worker exposure to a particular agent. Exposure control consists of a standardized hierarchy to include (in priority order): elimination, substitution, isolation, engineering controls, administrative controls, or if no other option is available, personal protective equipment (PPE).

1. Substitution or elimination is not often feasible for workers performing research with nanomaterials; however, it may be possible to change some aspects of the physical form of the nanomaterial or the process in a way that reduces nanomaterial release.
2. Isolation includes the physical separation and containment of a process or piece of equipment, either by placing it in an area separate from the worker or by putting it within an enclosure that contains any nanomaterials that might be released.
3. Engineering controls include any physical change to the process that reduces emissions or exposure to the material being contained or controlled. Ventilation is a form of engineering control

that can be used to reduce occupational exposures to airborne particulates. General exhaust ventilation (GEV), also known as dilution ventilation, permits the release of the contaminant into the workplace air and then dilutes the concentration to an acceptable level. GEV alone is not an appropriate control for engineered nanomaterials or any other uncharacterized new chemical entity. Local exhaust ventilation (LEV), such as the standard laboratory chemical hood (formerly known as a laboratory fume hood), captures emissions at the source and thereby removes contaminants from the immediate occupational environment. Using selected forms of LEV properly is appropriate for control of engineered nanomaterials.

4. Administrative controls can limit workers' exposures through techniques such as using job-rotation schedules that reduce the time an individual is exposed to a substance. Administrative controls may consist of standard operating procedures, general or specialized housekeeping procedures, spill prevention and control, and proper labeling and storage of nanomaterials. Employee training on the appropriate use and handling of nanomaterials is also an important administrative function. Workers should not transport nanomaterials by ensuring the materials are completely contained in a sealed container.
5. PPE creates a barrier between the worker and nanomaterials in order to reduce exposures. PPE may include laboratory coats, impervious clothing, closed-toe shoes, long pants, safety glasses, face shields, impervious gloves, and respirators. PPE should be removed when leaving the research lab where nanoparticles are being utilized. Use good hygiene by washing hands after removing gloves.

D. Accidents Involving Dusts, Mists, Fumes, Vapors;

1. Notify all other persons to vacate the room immediately.
2. Hold breath and vacate room.
3. Shut off air conditioning by contacting Physical Plant or Campus Police.
4. Notify the Principal Investigator and the Safety Officer at once.
5. Ascertain that all doors giving access to the room are closed and post conspicuous warnings or guards to prevent accidental opening of doors.
6. Report at once all known or suspected inhalations of materials. Seek medical assistance.
7. The Safety Officer shall evaluate the hazard and the necessary safety devices for safe re-entry.
8. Determine the cause of contamination and rectify the condition.
9. Decontaminate the area.
10. Perform air survey of the area before permitting work to be resumed.
11. Monitor all persons suspected of contamination.
12. Prepare a complete history of the accident and subsequent activity related thereto for the records of the Safety Officer.

E. Injuries to Personnel Involving Nanoparticle Hazards

1. Wash minor wounds immediately, under running water, while spreading the edges of the gash. Seek medical assistance 1.6 "Medical Emergencies".
2. Report all accidents to personnel (wounds, overexposure, ingestion, and inhalation) to the Principal Investigator and the Safety Officer as soon as possible.
3. Permit no person involved in an injury to return to work without the approval of the Safety Officer and attendant physician.
4. Prepare a complete history of the accident and subsequent activity related thereto for the records of the Safety Officer.

SECTION 1.3 - RADIATION SPILLS

See “Radiation Safety Manual” section 7.0 for more information.

Emergencies” will generally be in the nature of spills, fires, or explosions, as a result of which radioactive materials are spread around the installation. In the event of such DISSEMINATION OF RADIOACTIVE MATERIALS, the following general procedures are given as a guide to be adapted to the specific nature of the emergency. All spills involving radioactive material shall be reported to Radiological Safety Officer (RSO).

A. Minor Spills Involving No Radiation Hazard to Personnel

1. Notify all other persons in the room at once.
2. Permit only the minimum number of persons necessary to deal with the spill into the area.
3. Confine the spill immediately.

   Liquid Spills:

   a. Don protective gloves
   b. Drop absorbent paper on the spill.

   Dry Spills:

   a. Don protective gloves.
   b. Dampen thoroughly, taking care not to spread the contamination.
4. Notify the Principal Investigator of the laboratory and the RSO as soon as possible.
5. Monitor all persons involved in the spill and cleaning.
6. Decontaminate the area
7. Permit no person to resume work in the area until a survey is made, and approval of the RSO is secured.
8. Prepare a complete history of the accident and subsequent activity related thereto for the records of the RSO.

B. Major Spills Involving Radiation Hazard to Personnel

1. Notify all persons not involved in the spill to vacate the room at once.
2. If the spill is a liquid, and the hands are protected, right the container.
3. If the spill is on the skin, flush thoroughly.
4. If the spill is on clothing, discard outer or protective clothing at once.
5. Shut off air conditioning units serving the laboratory.
6. Vacate the room.
7. Notify the Principal Investigator and the RSO as soon as possible.

8. Take immediate steps to decontaminate personnel involved, as necessary. Seek medical assistance.

9. Decontaminate the area per the recommendations of the RSO. (Personnel involved in decontamination must be adequately protected.)

10. Monitor all persons involved in the spill and cleaning to determine adequacy of decontamination.

11. Permit no person to resume work in the area until a survey is made and approval of the RSO is secured.

12. Prepare a complete history of the accident and subsequent activity related thereto for the records of the RSO.

C. Accidents Involving Radioactive Dusts, Mists, Fumes, Organic Vapors, and Gases

1. Notify all other persons to vacate the room immediately.

2. Hold breath and vacate room.

3. Shut off air conditioning by contacting Physical Plant or Campus Police.

4. Notify the Principal Investigator and the RSO at once.

5. Ascertain that all doors giving access to the room are closed and post conspicuous warnings or guards to prevent accidental opening of doors.

6. Report at once all known or suspected inhalations of radioactive materials. Seek medical assistance.

7. The RSO shall evaluate the hazard and the necessary safety devices for safe re-entry.

8. Determine the cause of contamination and rectify the condition.

9. Decontaminate the area.

10. Perform air survey of the area before permitting work to be resumed.

11. Monitor all persons suspected of contamination.

12. Prepare a complete history of the accident and subsequent activity related thereto for the records of the RSO.

D. Injuries to Personnel Involving Radiation Hazard

1. Wash minor wounds immediately, under running water, while spreading the edges of the gash. Seek medical assistance 1.6 “Medical Emergencies”.

2. Report all radiation accidents to personnel (wounds, overexposure, ingestion, and inhalation) to the Principal Investigator and the RSO as soon as possible.

3. Permit no person involved in a radiation injury to return to work without the approval of the RSO and attendant physician.

4. Prepare a complete history of the accident and subsequent activity related thereto for the records of the RSO.

SECTION 1.4 - BIOHAZARD SPILLS

A. Biological Spills

Biological spills outside biological safety cabinets may generate aerosols that can be dispersed in the air throughout the laboratory. These spills can be serious if they involve microorganisms that require Biosafety Level 2 containment. 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 or clean up the spill for at least 30 minutes. During this time, the aerosol may be removed from the laboratory via the exhaust ventilation systems or chemical fume hood, 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 principal investigator.

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.

B. Blood Spills

1. General Information

    a. Universal precautions must be observed. Refer to the "Bloodborne Pathogen Exposure Control Manual" 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 so they will not 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 on the outside of the glove and pulling toward the fingers so that the gloves come off as inside out. Double-bag gloves with other contaminated biomedical waste (such as towels).

b. If enough blood has been spilled to expect splashing during cleaning, call the Safety Officer. Additional protective equipment may be required.

3. Disinfectants

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

a. EPA-registered "hospital disinfectant" chemical germicides that have a label claim for tuberculocidal activity. These are chemical germicides that are approved for use as hospital disinfectants and are tuberculocidal when used at recommended dilutions.

b. Products registered by the Environmental Protection Agency as being effective against human immunodeficiency virus (HIV).

c. A solution of 5.25 percent sodium hypochlorite (household bleach) diluted between 1:10 and 1:100 with water (a 1:100 dilution of common household bleach yields 500 parts per million free available chlorine - approximately ¼ cup of bleach per gallon of tap water).

4. Cleaning Blood Spills on Hard Surfaces

To assure 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.

a. Isolate the area, if possible.

b. Wear gloves and other protective apparel as needed.

c. Remove visible blood with disposable towels in a manner that will ensure against direct contact with the blood. For example, put towels over the spill to absorb the liquid.

d. Place contaminated towels in a plastic waste disposal bag.

e. The area should then be decontaminated with an appropriate germicide applied according to manufacturer's directions.

f. All contaminated towels and gloves should be double-bagged for disposal and labeled with the biohazard symbol.

5. Cleaning Blood Spills on Carpeting

Use only a registered germicide. 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. 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.

SECTION 1.5 - LEAKING COMPRESSED GAS CYLINDERS

Occasionally, a cylinder or one of its component parts develops a leak. Most such leaks occur at the top of the cylinder in areas such as the valve threads, safety device, valve stem, and valve outlet.

If a leak is suspected, do not use a flame for detection; rather, a flammable-gas leak detector or soapy water or other suitable "snoop" solution should be used. If the leak cannot be remedied by tightening a valve gland or a packing nut, emergency action procedures should be affected. Laboratory workers should never attempt to repair a leak at the valve threads or safety device; rather, they should consult with the supplier for instructions.

If the substance in the compressed gas cylinder is not inert, or is hazardous, then use the procedures in Section 1.1 - "Chemical Spills".

If the substance in the compressed gas cylinder is inert, or non-hazardous, contact the supplier for instructions. Air Gas is the HRC Supplier for most compressed gas and the emergency contact is

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SECTION 1.6 - FIRES

1. If clothing catches fire STOP, DROP, and ROLL to smother the flames

2. Pull fire alarm or provide verbal warning to leave the building

3. Leave the building by nearest safe exit, go to area upwind of the fire. Secure critical research operations, close ventilation hoods, shut down equipment, turn off ignition sources, and close doors and windows, if time permits

4. If there is smoke or heat in area while leaving the building, keep low, crawling if necessary

5. Contact Fire Department by dialing 9-911, ensure that address of location is provided

6. Contact Campus Police

7. Contact Safety Officer

8. See Section 1.6 for procedures to obtain medical assistance if the fire causes serious injury

9. After warning other occupants to leave the building, an employee may choose to fight the fire, if the fire is small and can be extinguished using an available fire extinguisher, and where there is no danger to the employee

10. Occupants may go back into building only when someone in authority, such as the Fire Marshall, says it is safe to do so

SECTION 1.7 - MEDICAL EMERGENCIES

Personal injury is not uncommon in laboratories. These injuries are usually minor cuts or burns but can be as severe as acute effects of chemical exposure or incidents such as heart attacks or strokes. Prevention of injuries should be a major emphasis of any laboratory safety program. Proper training will help prevent injuries from glassware, toxic chemicals, burns and electrical shock.

The initial responsibility for first aid rests with the first person(s) at the scene, who should react quickly but in a calm and reassuring manner. If they choose not to supply first aid, they should immediately notify someone who will. If the injury appears to be severe the person assuming responsibility should immediately summon Campus Police, who will then summon additional medical assistance, if necessary by dialing 9-911 (be explicit in reporting suspected types of injury or illness, location of victim, and type of assistance required). Campus Police will send people to meet the ambulance crew at likely entrances of the building. The injured person should not be moved except where necessary to prevent further injury.

Campus Police personnel are trained in first response to a medical emergency.

All first aid, chemical exposures, and medical emergencies shall be reported as required in Section 1.7 (B) “Seeking Medical Care”.

A. <u>General</u>

1. “First aid” is defined as any one-time treatment and any follow up visit for the purpose of observation, treatment of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require what is termed as a “medical” injury by workers compensation.

2. First aid equipment should be readily available in or near each laboratory. See Section 1.7 (D) "First Aid Kits," for additional information.

3. Following any first aid, a nurse or physician qualified to handle the type of emergency should provide further examination and treatment. The instructions and phone numbers associated with emergency care and the Oklahoma Poison Control Center (1-800-522-4611) should be clearly posted.

4. It is recommended that each laboratory have at least one person trained in basic first aid and cardiopulmonary resuscitation, where possible, and training arranged by the associated department.

5. Someone (the supervisor, where possible) knowledgeable about the accident should always accompany the injured person to the medical facility and a copy of any applicable MSDS(s) shall accompany the victim.

6. Serious and minor injuries requiring medical assistance or first aid should always be reported to a supervisor and recorded on the "Employee Injury Report" (http://centernet.okstate.edu/fac_staff/clinics/forms.cfm) with a copy to the Safety Officer . Reasons for this are as follows.

   a. A minor injury may indicate a hazardous situation which should be corrected to prevent a serious future injury.

   b. It is important to document all injuries as having been "work related". Even a minor injury may later leads to serious complications, such as from an infected cut.

B. Seeking Medical Care – Reporting Workers Compensation Claims

Overview of Procedure

1. In case of an injury on the job, the first priority is treatment of the injury and notification of the supervisor and Campus Safety Officer.

2. Unless the injury requires immediate response by requesting Campus Police to call 911, all injuries on the campus will be treated by the OSU Health Care Center (HCC), located at 2345 Southwest Boulevard (21st street and Southwest Boulevard); if possible, please call ahead (918) 582-1980.

3. HCC is open from 8-5, Monday through Friday. If an injury occurs when the HCC is closed, the employee is to call the Oklahoma State University Medical Center (918) 587-2561, and request the Family Medicine Resident On-Call. The Family Medicine Resident On-Call will contact the employee to determine if an emergency room visit is necessary or if the employee's injury can wait until the HCC is open.

4. Employees must report injuries immediately to their supervisor, the Campus Safety Officer even if they do not require immediate medical attention.

5. If the employee cannot reach their supervisor, the employee is to contact another person in authority to assist in appropriate response and reporting.

6. The supervisor and employee should complete the supervisor/employee portion of the "Employee Injury Report" (http://centernet.okstate.edu/fac_staff/clinics/forms.cfm) prior to the employee reporting to the HCC; send a copy to the Safety Officer and fax the completed report to the Safety Office at (918) 561-1261 and take the report with employee to HCC.

7. The Supervisor should contact the Health Care Center at (918) 582-1980 to schedule the visit for the employee to be seen unless the injury is urgent, at which time the supervisor should escort the employee immediately to the Health Care Center or contact Campus Police to have them summon an ambulance.

8. Once treatment is complete, the employee is to return to their supervisor with a copy of their "Employee Injury Report and Certificate to Return to Work".

9. If the employee is medically unable to return to work, the employee will be required to make contact with their supervisor each day pending return to work.

10. Failure of the employee to comply with these procedures, or medical treatment prescribed by the medical provider, may result in corrective action and delay or forfeiture of benefits.

Health Care Center

1. Upon arrival, employees will check in at the front desk on the north end of the HCC.

2. The physician will examine and treat the employee.

3. The physician will determine whether the claim is “first aid only” requiring first aid or a more serious injury requiring OSHA reporting and filing with Broadspire, the third party workers’ compensation administrator.

4. The physician will complete the “Certificate to Return to Work” form and give it to the employee.

5. The physician will complete the medical portion *[To Be Completed By a Physician section]* of the Employee Injury Report form and indicate whether the injury is “first aid only” or “medical.’ The original of the completed Employee Injury Report will remain in the Employee Workers Compensation file with copies being provided to the Campus Safety Officer, employee and Human Resources.

6. HCC will bill the Campus Safety Officer for “first aid only” claims and Broadspire for claims involving medical treatment that is more serious.

C. Personal Protection During First Aid

1. 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 patients should be assumed to be infectious for HIV and other bloodborne pathogens.

2. Persons responding to a medical emergency should be protected from exposure to blood and other potentially infectious materials. Protection can be achieved through adherence to work practices designed to minimize or eliminate exposure and through the use of personal protective equipment (i.e., gloves, masks, and protective clothing), which provide a barrier between the worker and the exposure source. For most situations in which first aid is given, the following guidelines should be adequate.

   a. For bleeding control, with minimal bleeding and for handling and cleaning instruments with microbial contamination, disposable gloves alone should be sufficient.

   b. For bleeding control with spurting blood, disposable gloves, a gown, a mask, and protective eyewear are recommended.

3. After emergency care has been administered, hands and other skin surfaces should be washed immediately and thoroughly with warm water and soap if contaminated with blood, other body fluids to which universal precautions apply, or potentially contaminated articles. Hands should always be washed after gloves are removed, even if the gloves appear to be intact.

D. First Aid Kits

Location: Many laboratories have kits and there is an AED located on the wall on each floor by the main lobby restrooms.

1. The lab management is responsible for monitoring and maintaining the first aid kit(s) in the labs. Expired, discolored or deteriorating items shall be removed and replaced.

2. First aid kit contents should include items such as sterile gauze pads, bandages, scissors, antiseptic wipes or ointments, and a first aid card. All kits should also contain examination gloves for response to emergencies in which blood or hazardous chemicals are present. Pocket masks for CPR procedures are also recommended.

3. The following items are **not** recommended for use in a first-aid kit:

   a. Iodine - Tissue damage can be caused by improper use.

   b. Ammonia Inhalants - If an individual is unconscious, obtain help -- **do not use ammonia**.

   c. Tourniquet - Not required for minor bleeding; use the pressure technique until medical assistance is available. Tourniquets may be used to help stabilize certain injured areas.

4. Laboratories where ***high-voltage*** equipment is in use should have available an emergency electrical response board. This will contain an instruction card and a non-conductive stick to turn off the equipment and remove the shock victim from contact with the source. The PI is responsible to have available supplies and SOPs specific to work being performed.

5. Laboratories using material for which the immediate administration of an antidote or neutralizing agent is needed (e.g. using calcium gluconate gel for exposure to hydrofluoric acid) should be considered. The PI is responsible to have available supplies and SOPs specific to work being performed.

SECTION 1.8 - ACCIDENT REPORTING

ALL injuries shall be reported to laboratory management and the Safety Officer. Minor injuries many times are not reported because they are perceived to be embarrassing or that "careless actions" lead to the accident. However, at some later time minor injuries can sometimes lead to complications that become more serious. Liability and insurance matters will be handled more effectively if initial accident documentation exists. In addition, all minor accidents should be investigated by safety and management personnel. Taking corrective action as a result of a minor accident may keep a major incident from happening. Without knowledge of all minor accidents, the desirable investigation is circumvented.

Employees should understand that the purpose of reporting and documenting accidents is not to affix blame, but instead to determine the cause of the accident so that similar incidents may be prevented in the future.

SECTION 1.9 – THREAT ASSESSMENT GROUP

A group of people from OSU in Tulsa has been assigned as the Threat Assessment Group. The Threat Assessment Group is charged with meeting to discuss and determine mitigation of possible threats to the safety, health and well-being of OSU in Tulsa personnel, faculty and students. They may also meet after a major incident to discuss after action response.