

# UNIVERSITY OF TOLEDO

SUBJECT: HAZARDOUS MATERIAL SPILL PROCEDURES

Procedure No: HM-08-013

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## PROCEDURE STATEMENT

The procedures described in this policy shall be followed in order to allow for proper clean up and protection of the University of Toledo employees in the event of a hazardous material spill (incident) occurring on any property owned or leased by the University.

## PURPOSE OF PROCEDURE

To identify proper procedures, ensure corrective actions are instituted and to document compliance with OSHA, ODH, NRC, JC and EPA regulations.

## PROCEDURE

**If at anytime you do not feel comfortable cleaning up any spill involving hazardous materials (or the spill involves large volumes of liquids to the environment) at the University of Toledo, call 419-530-2600 to report the following information:**

1. **Type of material spilled.**
2. **Amount of material spilled.**
3. **Location of spill.**

Six major varieties of spills involving hazardous materials at the University of Toledo can occur under a number of different circumstances; they can be grouped into one of the following categories and found in the listed appendices:

1. Appendix A – Chemotherapeutic and Hazardous Drugs
1. Appendix B - Chemical Hazardous Materials
2. Appendix C - Infectious Hazardous Materials
3. Appendix D - Radioactive Hazardous Materials
4. Appendix E – Mercury Spill Procedure
5. Appendix F – Emergency Procedures Involving Suspected Fentanyl Containing Substances and Analogues

The Environmental Health and Radiation Safety Department will have responsibility for assisting in the event of Chemical, Infectious and Chemotherapeutic Hazardous Material Spills, while the Radiation Office will be responsible for all spills of Radioactive Hazardous Materials.

**Note:** (For specific information on each spill procedure see the attached copies of written spill procedures)

In the event that a spill/hazardous material incident occurs each staff member, student, or faculty member should be able to refer to this policy, or the spill kit itself for specific instructions on how to deal safely with a spill involving any of these hazardous materials.

Each individual, depending on the severity of the spill/hazardous material incident has the opportunity to either utilize appropriate spill clean up materials (in the form of a kit), or call in assistance from trained personnel in response to a spill at the University.

A “Code Orange” ([EP-08-003](#)) will be called in the event of a large number of individuals are contaminated during a spill that require decontamination prior to treatment in the Emergency Department from on or off of the campus of the University of Toledo.

A Hazardous Material Incident Report (Appendix F) shall be completed following the clean up of the spilled material providing information on the details of the spill, corrective actions taken as well as any follow up that may be required.

A copy of the Hazardous Materials Incident Report is to be sent to the responsible individual for the department in which the spill/incident occurred, along with any pertinent recommendations that need to be instituted.

The Environmental Health and Radiation Safety Department will consider any hazardous materials incidents requiring extensive follow-up open and Environmental Health and Radiation Safety Supervisors will not sign off as complete until follow-up is completed.

The Environmental Health and Radiation Safety Department will perform a quarterly review of hazardous material incidents to analyze emerging spill trends and common occurrences. This information will be made available to the University of Toledo Safety and Health Committees upon request or as warranted.

**Attachments**

- Appendix A - Chemotherapeutic and Hazardous Drugs
- Appendix B - Chemical Hazardous Materials
- Appendix C - Infectious Hazardous Materials
- Appendix D - Radioactive Hazardous Materials
- Appendix E – Mercury Spill Procedure
- Appendix F - Emergency Procedures Involving Suspected Fentanyl Containing Substances and Analogues
- Appendix G - Hazardous Material Incident Report

Source: Safety & Health Committee

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## **Appendix A    Emergency Procedures Involving Chemotherapeutic and Hazardous Drugs**

1. Inform individuals in area to keep clear of spill area, posting signs if necessary.
2. Contact 419-530-2600 for spill response by EHRS. Non – EHRS personnel should not attempt to clean up a chemotherapeutic or hazardous drug spill.
3. EHRS will locate, open and remove contents of Chemo Spill Kit located in zip-lock bag. Each kit will include, at a minimum:
  - 2 Each Chemo Gown (blue in color)
  - 1 Pair Latex Chemo-Safe glove - Medium
  - 1 Pair Latex Chemo-Safe glove - Large
  - 30 Each Paper towels
  - 1 Each Small scoop
  - 1 Each Large Chemo bag (yellow)
  - 1 Each Zip-lock Chemo bag
  - 1 Each Spill clean up procedure

Note: If sharps are involved, bring a chemotherapy sharps container to the area of the spill.

4. EHRS responders don chemo-safety gown, gloves and half-face APR/safety goggles when attending to a spill that can be contained using a spill kit. For spills larger than what can be contained using a spill kit, responders shall use a full-face or powered-air purifying respirator equipped with organic vapor and particulate combination cartridges. Pull cuffs of second pair of gloves over cuffs of gown so no skin is exposed. (If a splash risk is present wear protective eyewear.)
5. Contain the spill and absorb liquid with the paper towels.
6. Discard the used paper towels in the small yellow zip-lock bag.
7. If pieces of broken glass or sharps are present use disposable scoop to remove.
8. Discard broken glass and sharps to chemotherapy sharps container and wipe down the area with an appropriate drug destruction agent. Please contact the UTMC Pharmacy at (419) 383-3898 for drug destruction/cleanup suggestions.
9. Once spill is cleaned up, remove outer chemosafety gloves, chemo-safety gown and place in small yellow zip-lock bag.
10. Seal yellow zip-lock bag closed.
11. Place small yellow zip-lock bag in large yellow waste bag.
12. Remove inner chemo-safety gloves to large yellow disposal bag.
13. Close the large chemotherapy waste bag, expelling the air in the bag away from you. Tie a knot, or tape the waste bag.
14. Discard the large yellow bag to a chemotherapy waste container located in the department, or contact Environmental Services (419-383-5353) to request a red bin labeled with a yellow sticker.
15. Once spill clean up is complete contact Environmental Services to have the area thoroughly cleaned with hospital approved disinfectant.
16. Order a new chemotherapy spill kit from Central Service at 419-383-3884 (HSC).

## **Appendix B    Emergency Procedures Involving Chemical Hazardous Materials** **Chemical Spill Procedure**

**\*\*Note:** If at anytime you feel you are not qualified, or are unsure of yourself, call and report any chemical spills to the 419-530-2600 so that trained spill personnel may be involved in the clean-up procedure.

### **REMEMBER**

1. Protect yourself first, personal protective equipment.
2. Protect the people around you, evacuate?
3. Protect against contamination of equipment.

### **PROCEDURE**

1. **Small spills** less than one gallon of relatively non-hazardous materials (i.e., isopropyl alcohol)
  - a. Assess the situation and determine types of materials involved.
  - b. Put on appropriate personal protective equipment.
  - c. Apply suitable absorbent materials (i.e., paper towels)
  - d. Dispose of all waste materials to suitable waste stream. Contact Safety & Health for disposal instructions at (419) 530-3600.
  - e. Call Environmental Services to mop area with plain water.
  - f. Report all spills to 419-530-2600. The report should include:
    - exact location of the spill, and names of all employees involved
    - date, time, and a short, detailed summary of the spill
    - procedure used to clean-up spill
    - this information will be logged as a hazardous material incident.
2. **Large spills** or for more hazardous materials (i.e., mercury or formaldehyde)
  - a. Report all spills to 419-530-2600. EHRS will be notified by dispatch.
    - (1) Tell them what has been spilled.
    - (2) Size of spill.
    - (3) Location of spill.
  - b. Remove nonessential personnel, evacuate if necessary.
  - c. Restrict area to traffic, close doors.
  - d. Wait for trained clean-up personnel from Environmental Health and Radiation Safety to arrive.
  - e. Assist in any way possible with spill clean-up.
  - f. A decision will be made between University of Toledo Police and Environmental Health and Radiation Safety to call an outside contractor if the spill represents a serious threat to the health and safety of patients, visitors, faculty, staff, students or volunteers.
  - g. For large volume spills, or floods inside university buildings that are contaminated with chemicals the MC emergency response trailer can be utilized along with guidance from the Environmental Health and Radiation Safety staff members.
  - h. Discharge of large volumes of liquids to the sanitary, or storm water systems requires approval of Environmental Health and Radiation Safety staff and the City of Toledo.

### **LOCATIONS OF CHEMICAL SPILL KITS (MC)**

PLANT OPERATIONS	HazMat Building - Eastern Compartment
BOWMAN-ODDY BUILDING	Ground Floor - Chemistry Stockroom

**LOCATIONS OF CHEMICAL SPILL KITS (HSC)**

DOWLING HALL	Ground Floor	- Interior Dowling Hall Emergency Generator - Exterior Dowling Hall Emergency Generator - Central Distribution Area
HEALTH EDUCATION BUILDING	Ground Floor	- Room 021
FACILITIES SUPPORT BUILDING		Near Emergency Generator
HOSPITAL	Ground Floor	- Pathology Lab

Note: Many small chemical spill kits/supplies are located in laboratories and generators are not captured in this inventory.

Note: To prevent inadvertent spills of hazardous materials - UT facilities and construction should not move or otherwise manipulate hazardous materials (eg. Moving chemicals to access a portion of a chemical exhaust hood or sink). These chemical materials must be moved by the Principal Investigator or designee. In the event that the PI or designee are no longer employed at UT – or otherwise significantly unavailable – movement of chemicals should be conducted by EHRS staff.

All listed spill supplies are inventoried by the Environmental Health and Radiation Safety Director or designee after each use as part of the incident follow-up procedure. Missing, outdated or damaged supplies are appropriately replaced, and the Environmental Health and Radiation Safety Department will monitor the type and number of supplies maintained on the spill carts to ensure that they are consistent with the needs of the area as provided. Continuing need for replacement of supplies/equipment beyond what is expected or requests for additional supplies will be brought to the attention of the Environmental Health and Radiation Safety Director.

## **Appendix C**    **Emergency Procedures Involving Infectious Hazardous Material** **Infectious Spill Procedure**

For emergency assistance with large spills (greater than one gallon):

Contact the Environmental Health and Radiation Safety Department through dispatch at 419-530-2600.

During a spill or release of potentially infectious materials (beyond internal capabilities to safely manage) Environmental Health and Radiation Safety may direct University of Toledo Police to secure assistance from external agencies.

These agencies include (but may not be limited to):

Health Department (419) 213-4100

Ohio Department of Health (888) 411-4142

EPA 419-352-8461 or (800) 282-9378 for major spills.

All areas of the Institution treating, packaging, or otherwise handling infectious waste will implement procedures listed below subsequent to a spill of infectious waste (for definition of infectious waste, see Disposal of Infectious Waste Policy, [HM-08-019](#)).

1. A spill kit is to be maintained in a ready-access area in all central areas of waste generation, storage, packaging and in autoclave areas.
2. The spill kit will include (minimum):
  - Liquid impermeable disposable gown
  - Disposable gloves
  - Shoe covers
  - Red disposable infectious waste bags
  - Scoop and brush
  - Small roll boundary tape
  - Paper towels or other absorbent materials

**No Disinfectant will be included. Use approved disinfectant for spilled agent. If there is no accessible disinfectant, contact Central Supplies or EVS (419-383-5353) to request some.**

### **For Management of Infectious Material Spills at University of Toledo:**

1. Limit access to the spill area to only authorized personnel.
2. Apply protective barriers as appropriate (for example, if splashing is anticipated, protective eyewear should be worn with an impervious gown or apron).
3. If the spill does not contain any sharps (i.e., broken glass), the visible material should first be removed with disposable towels or other appropriate means that ensure against direct contact with potentially infectious fluids.
4. If a liquid spill includes sharps (i.e., broken glass) absorbent powder should be used to solidify the liquid, then visible material should be removed using a no-touch technique (i.e., a dustpan and sweeping tool).
5. The area of the spill should then be decontaminated with the University-approved disinfectant.
6. Any absorbent materials used in disinfecting the area, as well as other supplies and refuse from the spill, shall be placed in a red bag and disposed of as infectious waste.
7. Soiled nondisposable items will be cleaned and disinfected according to accepted practices, for reuse.
8. Hands will be washed after spill clean up.
9. Notify the Environmental Health and Radiation Safety Department (419-530-3600) to replenish the spill kits.

10. Report all spills to 419-530-2600. The report should include:
- exact location of the spill, and names of all employees involved
  - date, time, and a short, detailed summary of the spill
  - procedure used to clean-up spill
  - this information will be logged as a hazardous material incident.

For Management of Major Spills (Greater Than One Gallon):

1. Limit access to the spill area to only authorized personnel.
2. Contact the Environmental Health and Radiation Safety Department through dispatch.
3. Complete steps 2-10 under Management of Minor Spills.

**LOCATIONS OF INFECTIOUS SPILL KITS**

HOSPITAL	6th Floor	Room 6127 (dirty utility room)
	5th Floor	Room 5169 (dirty utility room) Room 5127 (dirty utility room)
	4th Floor	Room 4169 (dirty utility room) Room 4127 (dirty utility room)
	3rd Floor	Room 3119 (dirty utility room) Room 3169 Room 3203 (dirty utility room) Room 3259 Room 3204
	2nd Floor	Operating Room 2239 (dirty utility room) Recovery Room 2190 (custodial) Clinic 2120 (nurses station) Clinic 2152 (2 Spill Kits) Frozen Section Lab
	1st Floor	Emergency Department 1264 (dirty utility room) Radiology 1236 (custodial) Cardiovascular Labs (dirty utility closet) MRI (supply closet across from computer room) Hospital Outpatient Lab
	Ground Floor	Pathology Immunohistochemistry Pathology (inside caged area under hood) Pathology 0107 Mycobacteriology Pathology Sendouts Hemodialysis DH loading dock (IW storage area) Autopsy
KOBACKER / CAPH	Nurses Station (exam room in cabinet)	

RUPPERT HEALTH CENTER	Pediatric Clinic (break room 1313) Outpatient Lab (1220A)
HEALTH EDUCATION BUILDING	HEB 032 Path Lab (by chemical spill kit) HEB 048 Located under table by autoclave HEB 238 Located under sink
BLOCK HEALTH SCIENCE BUILDING	HSB 029 Under lab sink HSB 331 Located on shelf by autoclave
DOWLING HALL	Room 1759 Ortho Clinic (under sink) Room 0020M Room 0070 (Pool) Blood Draw (1001A)

Note: In addition, all Biosafety Level Two (or higher) labs on campus must have a biosafety spill kit. These spill kits are not reflected in this inventory.



## **Appendix D    Emergency Procedures Involving Radioactive Hazardous Material** **Radioactive Spill (decontamination) Procedure**

### HOSPITAL PATIENT AREAS

In case of a spill of radioactive materials in the patient areas of the hospital contain the spill with towels or blankets, secure the area, hold any contaminated persons until monitored by Radiation Safety. Report all spills to 419-383-2600 (HSC).

### RESEARCH LABORATORY AREAS

In the research laboratory areas decontamination shall be accomplished by the Approved User and/or his laboratory personnel under the direction of the Radiation Safety Office. Decontamination procedures depend upon source type, strength, chemical and physical properties, and total area contaminated. Report all spills to 419-530-2600.

### PROCEDURES

1. Decontamination of any area shall be accomplished by working from the outer edges towards the center.
2. Make full use of protective clothing, footwear, gloves, masks, etc. to reduce the possibilities of personnel contamination for those conducting the decontamination procedures.
3. Do not wear protective clothing, etc. outside of a designated change area.
4. Handle all equipment used in decontamination and all run-off solutions as ones which are potentially contaminated.
5. Make provisions for the disposal of all used cleaning materials and equipment as well as other contaminated articles in the area. Therefore, always bring the necessary collection receptacles to the area in question, not vice versa.
6. Make full use of available instrumentation for monitoring, choosing the most effective for your purposes.
7. Make a complete record of the decontamination operations.
8. After decontamination has been completed, do not permit any work or occupancy within the area(s) until approval has been obtained from the Radiation Safety Office.
9. Monitor each step of the decontamination operation just as if it was a separate, unrelated incident.
10. Suggested agents for removal of contamination from various surfaces can be found in appendix #10 of the Radiation Safety Manual.

## **Appendix E    Emergency Procedures Involving Mercury Hazardous Materials** **Mercury Spill Procedure**

Do not attempt to clean up a mercury spill yourself. Mercury spills must be cleaned up by trained personnel using specialized equipment. Even small thermometers contain enough Mercury to present a significant hazard if cleaned up improperly.

1. Restrict access and do not allow anyone to walk through the spill area – this can spread mercury contamination to adjacent areas.
2. Protect floor and sink drains from mercury contamination if applicable.
3. Report all spills to 419-530-2600 to allow trained responders to be involved. Let University of Toledo Police know the location of the spill, if the spill is in a residential area, or an instructional/research area, if it located on tile, or carpet, and the approximate amount of mercury that was spilled.

## **Appendix F    Emergency Procedures Involving Suspected Fentanyl Containing Substances and Analogues**

### **Response to a Minimal Risk Event (solid):**

Minimal risk is suspected when fentanyl may be present, but no fentanyl containing products are visible. Utilize standard precautions, including the use of gloves, to prevent potential contamination. Reassess as necessary to determine if additional protective measures are necessary.

Minimal risk is also suspected if small amounts of drugs in pill form are present on an overdosed patient or other person. Utilize skin and eye protection to prevent exposure. Do not handle pills. Contact UTPD at extension 419-530-2600. Double glove if handling pills is necessary. Dispose of materials that have made contact with suspected fentanyl as incinerable infectious waste (red bag/bin with red sticker).

### **Response to a Moderate Event (powder):**

Moderate risk occurs when minimal quantities of powder drug are present on an overdosed patient or suspect. If you encounter any powder assume it is fentanyl. If it is contained in an open baggy, do not attempt to seal the baggy by releasing the air in it as it will become airborne. Don proper PPE immediately (Double gloves, gown and PAPR). Contact UTPD at extension 419-530-2600 to attend the scene to assess the situation.

If the patient is contaminated, carefully assist the patient in removing clothing. Minimize contact with clothing. Avoid performing tasks such as shaking clothing or bedding to avoid aerosolizing powders. Carefully bag contaminated clothing and bedding for disposal as incinerable infectious waste (red bag/bin with red sticker).

In the event of visible powder on the patients, or a spill within a patient room, the room should be closed, patient relocated to a clean environment and room decontaminated by EHRS prior to reoccupancy. Contact 419-530-2600 to report the spill.

Remove PPE prior to leaving the suspected contaminated area. PPE should be disposed as incinerable infectious waste (red bag/bin with red sticker).

Hands and other unprotected skin must be washed with soap and water after glove removal. Hand sanitizer should not be used. Avoid touching your face, using the restroom, and/or eating and drinking before removing PPE and washing hands.

Health and community care workers should not encounter situations with large quantities of white powder present in the environment, unless entering a private dwelling where drugs are being sold or produced. If this level of contamination were present, immediately exit the site and advise security and law enforcement.

### **Cleanup Procedures for Suspected Fentanyl Containing Substances and Analogues:**

- UTPD and/or affected departments should isolate the spill area upon discovery.
- Two EHRS and one Public Safety Emergency Responder (with training and availability of Narcan) is necessary for response.
- Minimum EHRS personal protective equipment includes:
  - Half or Full Face Air Purifying Respirator or PAPR with HEPA filters (depending on quantity and type of spilled material)
  - Indirectly vented goggles, if half face Air Purifying Respirator is utilized
  - Tyvek or liquid impermeable Tyvek (depending on type of spilled material)
  - Double nitrile gloves changed each 10 minutes
  - Spray bottle containing freshly prepared 1% OxyClean Versatile Stain Remover (5g/500ml water)
  - Paper or other disposable towels
- To clean the spill:
  - Responders apply Oxyclean solution to the spill area
  - Wait 15 minutes
  - Scrub wetted areas using towels and dispose of materials in biohazard bin labeled for pathological waste incineration.

**Appendix G Hazardous Materials Incident Report**

**Incident No.:**

**Actual Date:**

**Actual Time:**

**Record Date:**

**Employee Filing Report:**

**Location:**

**Cause:**

**Material:**

**Detail:**

**Corrective**

**Action:**

**Follow-up:**

**Notified:**

**Attachment:**

**Reviewed:** \_\_\_\_\_

**cc:**

H. Lorenz