Healthcare hazardous waste training for small quantity (SQG) and large quantity (LQG) generators

Minnesota Technical Assistance Program

UNIVERSITY OF MINNESOTA

Who is the audience for this training?

- Healthcare staff working in medium to large-sized locations that have been identified as SQG or LQG waste generators.

- "Staff" includes anyone who:
  1) Packages or prepares hazardous materials, such as the person who oversees the hazardous waste program at your site.
  2) Any employee who dispenses, delivers, or comes into contact with pharmaceuticals, facility or lab chemicals, or other hazardous wastes (such as batteries and electronics).
  3) Job titles may include physicians, nurses, nursing assistants, medical assistants, therapists, pharmacists, laboratory and surgical technicians, maintenance workers, environmental services staff, clinic administrators, administrative assistants, and so on.

What will I learn?

At the conclusion of the learning program the participant will be able to:

- Dispose of uncontrolled pharmaceutical waste.
- Dispose of other chemical wastes, batteries, and electronics.
- Dispose of infectious waste.
- Know what to do in the case of a hazardous waste emergency (large or small spill).

What is hazardous waste?

- The Federal Environmental Protection Agency (EPA) defines Hazardous Waste as: Any material because of its quantity, concentration, or chemical, physical, or infectious characteristics may cause harm to human health, or the environment if improperly treated, stored, transported or disposed of.

- The hazardous waste regulatory and enforcement agency in our state is the Minnesota Pollution Control Agency (MPCA). In the Twin Cities, the seven metro counties are in charge of hazardous waste enforcement.

- All healthcare facilities in Minnesota are subject to unannounced hazardous waste inspections by county, state, or federal regulators. Typically, SQG and LQG generators are inspected annually.

Why are there laws to regulate healthcare hazardous waste?

- Numerous scientific studies have determined that the hazardous properties found in some pharmaceuticals are polluting our environment and our ground water.

- Publicly owned treatment works (POTWs) do not effectively treat waste pharmaceuticals, thus creating an issue for both humans (who can develop resistance to common antibiotics) and declining ecosystem health.

What might be hazardous here?

Many items in healthcare are hazardous waste. This may include:

- Pharmaceuticals (partial vials, expired, etc)
- Disinfectants and cleaning chemicals
- Laboratory kits and chemicals
- Aerosol cans and hand sanitizer
- Batteries, electronics, light bulbs and medical equipment
- Any material bearing the words “poison, poisonous, toxic, lethal, fatal, or deadly” or with a “skull & crossbones” graphic

How do I dispose of it - pharmaceuticals?

- Pharmaceuticals generally get collected in a black “RCRA” waste box (pictured).
- Your black box should be kept in a medication prep area or soiled utility room (out of reach of patients/visitors).
- Draw up your medications as usual. If any unusable portion remains in the vial, dispose of it in the black box.
- Pills, creams, and other types of pharmaceuticals can also be disposed of in your black box.

How do I dispose of it – unused and unexpired pharmaceuticals?

- Ask your manager or inpatient pharmacy if your facility participates in something called “reverse distribution.”
- Reverse distribution is when you send unopened, unexpired, and unused pharmaceuticals back to the manufacturer or wholesale pharmacy (usually for financial credit).
- If you do not use a reverse distributor, then you must throw your unusable items into the black box.

Are all pharmaceuticals hazardous?

No! However…

- If you only want to collect items that have been deemed to be hazardous, then the state requires that you FORMALLY EVALUATE YOUR WASTE STREAM.

What is an evaluation?

- You must create a list of all waste generated at your facility and indicate, via an evaluation process (testing, research, etc) whether it is or is not a hazardous waste.
- More information about waste evaluations can be found on MnTAP's healthcare hazardous waste webpage.

(optional slide if you evaluate)…

If your facility does evaluate pharmaceuticals, the hazardous ones should be indicated by the pharmacy. This may be on the label or via an automated dispensing system.

- Step 1: Take note if it is indicated as a “hazardous waste”
- Step 2: If you use a partial dose, place the remaining amount in the black hazardous waste container
- Step 2: Close the lid! (it’s the law)

Are empty containers hazardous?

- Generally, no! Empty containers such as vials, packaging, blister packs, IV's, and syringes are *not* considered hazardous.

- "Empty" rule of thumb: All you can get out by reasonable means and less than 3% by volume.

- Hazardous waste can be as much as 15x the cost of regular trash; only use a black box when you *must* do so.

Exception to the “empty” rule

There are four p-listed (**acutely toxic**) drugs. Not only do the left-over medications (if there are any) go into a black box, but so do the packaging they come in. This includes the foil wrappers, blister packs, vials, or any other packaging type.

1. Warfarin (Coumadin)
2. Physostigmine
3. Arsenic Trioxide
4. Nicotines (unused)

Can I dispose of medications for our patients?

- In general, it is unlawful to accept medication back from patients. Some counties *do* allow residents to drop off medications, so patients should check with their county for more details on local program availability.

- You may also print and give patients hand-outs created by the MPCA describing how to safely dispose of medication and needles (we have provided a link to those hand-outs at the end of this training).

- If a patient leaves a medication in a way that is out of your control, consult your supervisor for guidance.

How do I dispose of it – chemicals and laboratory wastes?

- Unused, unwanted or outdated chemicals should be placed in the hazardous waste storage area and contain the words “hazardous waste” somewhere on the container. Containers must be dated, and tightly closed, before being left in the hazardous waste storage area.

- Care should be taken when storing incompatible wastes near one another; for example, acids and bases should be stored with some distance between them. You should use secondary containment (like a plastic tote) for storing all hazardous wastes.

- The hazardous waste vendor will evaluate, sort and dispose of the hazardous chemicals correctly. Remember that empty containers can go into the regular trash or recycling.

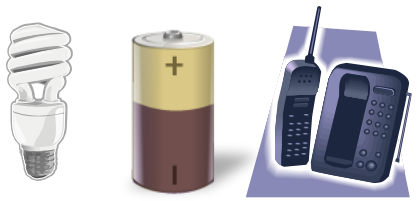
- *Good tip:* When in doubt, let the vendor check it out!

How do I dispose of it – batteries, electronics, and light bulbs?

- All batteries (including alkaline and rechargeable) should be collected for proper recycling. Place in an appropriate collection bin at your facility; if you don't have one, you can make one by simply labeling any pail or a box to say "waste batteries for recycling."

- Anything with a circuit board should also be collected by placing items in the hazardous waste storage area. For large items (computers or medical equipment) contact your Biomed or IT department for assistance with proper donation or disposal.

- Fluorescent and other types of light bulbs must also be collected as universal (hazardous) waste in a *closed* container.



How do I dispose of it – infectious waste?

There are generally three types of infectious waste generated at healthcare facilities:

1. Sharps waste is defined as any item with projections capable of piercing the skin.

- All sharps must be disposed of in properly designated containers.
- Examples include needles, syringes with needles, glass blood waste tubes, retractable insertion stylets, and insulin pen needles.

How do I dispose of it – infectious waste?

2. Biohazard (red bag) waste is appropriate for (1) blood waste, (2) laboratory waste, and (3) regulated human body fluids. This includes blood *saturated* items such as gauze, sponges, or dressings. It also includes live or attenuated vaccines that are infectious to humans, certain laboratory wastes, disposable suction canisters, or IV bags containing blood.

- Red bag waste does NOT include gowns or gloves (unless saturated with blood), gauze, or band-aids. Red bag waste can be as much as 5x the cost of regular trash; only use a red bag when you *must* do so.

- For example, most of these items could have gone in regular trash →

How do I dispose of it – infectious waste?

3. Pathological (yellow bag) waste is appropriate for (1) human tissues and body parts removed during surgery or autopsy intended for disposal, and (2) trace chemotherapy waste.

- Yellow bags signify that the waste is *incinerated* as opposed red bag waste which is autoclaved (steam sterilized).
- In laboratory settings such as in pathology or histology or the morgue, this is required for all large tissues and body parts.
- In the case of trace chemotherapy, this includes anything that was used in the administration of antineoplastic agents, such as disposable gowns and gloves used by the staff, and the back-flushed bags of infused chemotherapy. Bulk chemotherapy belongs in a black box.

Special waste topics

- **Clinics:** IUDs (intra-uterine devices) are usually hazardous waste in Minnesota. When removed from a patient, they should be placed in a sealed urine cup or other small container, and then into your black box.
- **Clinics and Endoscopy:** Cidex and glutaraldehyde, if expired and unused, are hazardous wastes. The *used* liquid is not a hazardous waste, however, best practice would be to neutralize these chemicals before sewering (several low-cost neutralizers exist on the market).
- **Operating rooms:** If you are using lead-based sterilization indicator tape, pouches, or arrows, you'll need to dispose of it as hazardous waste. Lead-free sterilization tape can go into the regular trash.
- **Imaging departments:** Many media contrasts and other items are hazardous waste; ensure you are following all applicable state laws by checking in with your hazardous waste disposal vendor.

Emergency preparedness

If there has been a chemical or biological spill at your facility, please note the following:

- Do not attempt to clean spills beyond your capability. If it is rapidly spreading beyond your control or is an unknown substance, call for emergency help.
- Do not clean spills without hazard knowledge of the spilled material and proper protective equipment; immediately notify your supervisor if there has been a spill.
- Manage spill response materials (spill kit contents or paper towels) as hazardous. If you do not know where your spill kit(s) are located, contact your supervisor.
- For large spills (typically more than 5 gallons) you should call your hazardous waste disposal company or your facility first responder.
- Five general rules to follow in the event of a spill:
  - EVACUATE (leave spill area, alert others)
  - CONFINE (close doors, isolate the spill with absorbent material)
  - REPORT (to your supervisor or facility manager)
  - SECURE (until help arrives)
  - ASSIST (provide information about the spilled material)

Storage area inspection log, emergency contact list, and secondary containment

According to state and county laws, your facility is required to inspect your hazardous waste storage area weekly. You are also required to post an emergency contact list in this area.

For these and other free templates, checklists, and hazardous waste training tools, please visit our website at www.mntap.umn.edu and search for "waste training programs designed for healthcare."

Thank you!

- Please take time to document your training today; we have a template available on our website.

- For free technical assistance on this or other topics, please call 612-624-1300 or email us at mntap@umn.edu.