Biology and Medical Department
ES&H News Letter

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Winter Safety Tips

Winterize Your Home

Take the time now to get your home ready for the winter season by following these tips:

- Have your heating system checked by a professional annually. This will ensure that your system is working safely and efficiently which, in turn, will save you money. If you heat by wood, clean your fireplace or stove. Have your chimney flue checked for any buildup of creosote and then cleaned to lessen the risk of fire.
- Make sure your home is properly insulated. If necessary, insulate walls and attic. This will help you to conserve energy and reduce your homes power demands for heat.
- Caulk and weather-strip doors and windowsills to keep cold air out.
- Install storm windows or cover windows with plastic from the inside. This will provide an extra layer of insulation, keeping more cold air out.
- Inspect and flush your water heater.
- Clean gutters. Leaves and other debris will hamper drainage.
- Replace batteries of smoke, heat and carbon monoxide detectors. If you did not do it when you set the clocks back, do it now.
- To keep pipes from freezing:
    - Wrap pipes in insulation or layers of old newspapers
    - Cover the newspapers with plastic to keep out moisture
    - Let faucets drip a little to avoid freezing
    - Know how to shut off water valves

If The Lights Go Out

If you lose electrical service during the winter, follow these tips:

- Call your utility first to determine area repair schedules. Turn off or unplug lights and appliances to prevent a circuit overload when service is restored. Leave one light on to indicate power has been restored.
- To help prevent freezing pipes, turn on faucets slightly. Running water will not freeze as quickly.
- Protect yourself from carbon monoxide poisoning:
    - **DO NOT** operate generators indoors; the motor emits deadly carbon monoxide gas.
    - **DO NOT** use charcoal to cook indoors. It, too, can cause a buildup of carbon monoxide gas.
    - **DO NOT** use your gas oven to heat your home -- prolonged use of an open oven in a closed house can create carbon monoxide gas.

- Make sure fuel space heaters are used with proper ventilation.
- Keep refrigerator and freezer doors closed as much as possible to help reduce food spoilage.

Generator Safety

Electric generators can provide you with piece of mind and convenience when you are faced with a temporary loss of electric service. Follow these safety guidelines when operating a generator:

- Before installing a generator, be sure to properly disconnect from your utility electrical service. If possible, have your generator installed by a qualified electrician.
- Run generators outside, downwind of structures. NEVER run a generator indoors. Deadly carbon monoxide gas from the generators exhaust can spread throughout enclosed spaces. Install a carbon monoxide detector.
- Fuel spilled on a hot generator can cause an explosion. If your generator has a detachable fuel tank remove it before refilling. If this is not possible, shut off the generator and let it cool before refilling.
- Do not exceed the rated capacity of your generator. Most of the small, home-use portable generators produce from 350 to 12,000 watts of power. Overloading your generator can damage it, the appliances connected to it, and may cause a fire. Follow the manufacturers instructions.
- Keep children away from generators at all times.

Fire Safety

Wood-burning stoves, fireplaces and heaters can add a cozy glow, but make sure you are using them safely.

- Always keep a screen around an open flame.
- Never use gasoline to start your fireplace.
- Never burn charcoal indoors.
- Do not close the damper when ashes are hot.
- When using alternative heat sources such as a fireplace, woodstove, etc. always make sure you have proper ventilation. Keep curtains, towels and potholders away from hot surfaces.
- Have your chimney checked before the season for creosote buildup -- and then clean it.
- Have a fire extinguisher and smoke detectors ... and make sure they work! Establish a well-planned escape route with the entire family.

Road Safety

When winter storms strike, do not drive unless necessary.

- If you must travel, make sure you car is stocked with survival gear like blankets, a shovel, flashlight and extra batteries, extra warm clothing, set of tire chains, battery booster cables, quick energy foods and brightly-colored cloth to use as a distress flag.
- Keep your gas tank full to prevent gasoline freeze-up.
- If you have a cell phone or two-way radio available for your use, keep the battery charged and keep it with you whenever traveling. If you should become stranded, you will be able to call for help, advising rescuers of your location.
- Make sure someone knows your travel plans.

Snow Blower Safety

Do you have a snow blower? Did you know that most snow blower injuries happen because the operator did not read the operating instructions?

So, read your owners manual and follow these tips:

- Never leave your snow blower running and unattended.
- Make sure the discharge chute is not aimed at passing motorists or pedestrians.
- Never put your hands into the discharge chute or augers to clear stuck snow and ice.
- Never add fuel when the engine is running and hot.
- Make sure you know how to turn the machine off quickly.

Useful Tip – Before you start shoveling snow (especially very wet snow), spray your shovel with PAM Cooking Spray. This will help the snow slide off easier. This also works with snow blower impellers.

Protecting Pets

Winter is a time we should pay close attention to the safety of our pets. Here are some safety tips to follow:

- Ingesting anti-freeze can be fatal for your dog or cat. It has a sweet taste and even a tiny amount can cause severe kidney damage and even death. If you spill some, soak it up immediately. (Clay kitty litter works well. Discard the litter once the anti-freeze has been absorbed.)
- Pets that live outdoors should be fed a bit more in the winter because they need the extra calories to stay warm. They also should have fresh water put out a couple of times a day, or consider a special bowl that prevents the water from freezing.
- If your pet goes outdoors, be aware of the temperature. Pets can get frostbite very easily on the ears, tail and paws.
- When walking your dog, check the paws to make sure that ice is not building up between the toes and that salt from the roads is not irritating the skin.
- If your dog is a swimmer, keep it on a leash around open water or unstable ice. Hypothermia can set in quickly and the dog may be unable to get out of the water.
- Before you start your car, you should honk the horn to make sure that a cat has not decided to nap in a warm spot under the hood of the vehicle.
- If decorating for the holidays, keep ornaments out of the reach of your pets. Remember that poinsettias, holly, mistletoe and other plants can be toxic if ingested.

Turn Off and Unplug

by Denise Monteleone

Not all electrical devices stop using electricity when they are turned off. Some items continue to use “Standby Power” or "Phantom Energy”. The definition of “Standby Power” is the power consumed by a product when in the lowest power consuming mode. This typically occurs when the product is switched off or not performing its primary purpose. Examples are appliances that have a lighted up displays, glowing clocks, power tools, battery chargers and just about anything that has a remote control to start them up. Appliances such as televisions, computer monitors, and DVD players can also draw power whenever they're plugged into an outlet. Altogether, Standby Power can account for about 10 percent of an individual home's electricity use. This may add up to as much as a month of free electricity every year. Consider plugging bundled devices- TV, DVD player, and DVR, or computer, monitor, and printer- into the same power strip (if it is rated for the entire electrical load of the appliances)and then turning off the power strip when not in use for long periods of time. At work, turn off office lights when at lunch and consider unplugging any equipment that is not used for long periods of time, close all office windows and turn down the heat. Before buying new electronics, first check the information from the Federal Energy Management Program at the U.S. Department of Energy and only buy “ENERGY STAR” items.

Related links:

http://www1.eere.energy.gov/femp/technologies/standby_faq.html#G2

http://standby.lbl.gov/summary-table.html

http://www.energysavers.ghttp://www.energysavers.gov/your_home/space_heating_cooling/index.cfm/mytopic=12300ov/tips/

Needle and Sharps Safety

During FY 2010, there were several incidents of needle sticks reported to the Occupational Medicine Clinic. One involved uncapping of a tightly fitting needle cap, another involved a needle dangling from an experimental apparatus and two involved work with rodents.

What are needle stick injuries?

Needle stick injuries are wounds caused by needles that accidentally puncture the skin. Needle stick injuries are a hazard for people who work with hypodermic syringes and other needle equipment. These injuries can occur at any time when people use, disassemble, or dispose of needles. When not disposed of properly, needles can become concealed and injure other workers who encounter them unexpectedly.

What are the hazards of needle stick injuries?

Accidental punctures by contaminated needles can inject hazardous and/or radioactive fluids into the body through the skin. There is potential for injection of hazardous drugs, but injection of infectious fluids, especially blood, is by far the greatest concern. Even small amounts of infectious fluid can spread certain diseases effectively.

How do needle stick injuries occur ?

A needle stick injury is the result of an accident with a needle. Several studies show that needles cause injuries at every stage of their use, disassembly, or disposal. But there is disagreement as to why the accidents are so common among health care workers or why simple solutions fail to solve the problem.

Laboratory staff usually experience 90 percent of all injuries during animal and research procedures. Equipment design, nature of the procedure, condition of work, staff experience, recapping/uncapping, and disposal have all been mentioned as factors that influence this occurrence.

Nature of Procedure

Critical situations during laboratory procedures include:

- Withdrawing a needle from a the animal.
- Attempting to perform a tail vein injection on a live unrestrained animal
- Pulling a needle out of the rubber stopper of a vacuum tube which can jab the hand in a rebound reflex.

Injuries commonly occur when workers try to do several things at the same time, especially while disassembling or disposing of needles.

Staff Experience

New staff or students tend to have more needle stick injuries than experienced staff.

Recapping and Uncapping

Recapping and uncapping can account for 25 to 30 percent of all needle stick injuries of laboratory staff. Often, it is the single most common cause.

It is extremely dangerous to hold a needle in one hand and attempt to cover it with a small cap held in the other hand. Injuries occur three different ways:

- the needle misses the cap and accidentally enters the hand holding it.
- the needle pierces the cap and enters the hand holding it.
- the poorly fitting cap slips off of a recapped needle and the needle stabs the hand.
- Tight fitting caps require additional force to remove. Once removed, the “cap hand” makes contact with the needle on a rebound reflex.

Several agencies have recommended that workers avoid recapping needles before disassembly or disposal. Despite this, some health care workers have continued the practice even when informed of the dangers. In some cases, inappropriate training or force of habit may be responsible.

Guidelines from OSHA recommend that workers do not recap (or bend or cut) needles but dispose of them directly into approved, puncture-proof containers.

If recapping is necessary and uncapping becomes more difficult, safety devices are available. Contact Bea Pyatt or Bob Colichio for additional information.

Disposal

Needle stick injuries commonly occur when workers dispose of needles. They occur when staff use special containers for needles and sharps. They also occur when needles are disposed of improperly in regular garbage or lost in the workplace.

Special Containers

Up to 30 percent of needle stick injuries of nursing and laboratory staff occur when workers attempt to dispose of needles using sharps containers. Accidents occur at every step:

- while carrying the needle to the disposal container, especially when the needle is uncapped and mixed with other trash.
- while placing the needle into the disposal container, especially if the container is overfilled.
- while emptying disposal containers instead of sealing them for disposal.

Virtually all needle stick injuries of maintenance and custodial staff are from needles that have either been lost in the workplace or thrown into regular garbage. Janitors and garbage handlers can also experience needle stick injuries or cuts from "sharps" when handling trash that contains needles or scalpels.

How can needle stick injuries be prevented?

Preventing needle stick injuries is the most effective way to protect workers from the infectious diseases that needle stick accidents transmit. A comprehensive needle stick injury prevention program would include:

Needle Substitution

If, in fact hypodermic needles are not a necessity for the work you are doing, please refrain from using them. For example, I've witnessed several individuals in the past that use hypodermic needles (sans the syringe) as dissection pins. "T-Handle" dissection pins offer great control and the blunter and wider needle point is more forgiving in case of accidents.

Equipment Design

Safer innovative devices using protected needle devices or needle-free systems with self-sealing ports would alleviate many of these injuries. There is accumulating evidence suggesting that syringes with safety features reduce needle stick injuries.

Employee Training

To reduce needle stick injuries, an effective program must include employee training. Workers need to know how to properly use, assemble, disassemble, and dispose of needles. Workers need to understand the risks associated with needlestick injuries and know the proper means to prevent them. Specifically, the training programs should address:

- Risk of injury.
- Potential hazards.
- Recommended precautions for use and disposal of needles.
- Proper reporting of injuries.
- The importance of tetanus vaccinations where appropriate.

Recommended Guidelines

The following guidelines deal specifically with needle safety:

- Needles, scalpel blades and other sharp instruments--workers should consider these as potentially infectious or contaminated and handle them with care to prevent accidental injuries
- Disposable needles and syringes, scalpel blades, and other sharp items--workers should place these in puncture-resistant containers located near the area of use. They should avoid overfilling the containers because accidental needlestick injuries may occur.
- Recapping--Workers should not recap needles by hand or purposely bend, break, or remove them from disposable syringes or otherwise manipulate them by hand

Recommended Guidelines

In situations where recapping is considered necessary, develop safe approaches which workers can follow. Workers should never move an exposed needle tip towards an unprotected hand.

Single-Handed Scooping

Recapping can be safe when people lay the cap on a flat surface and scoop it onto the tip of a syringe held in one hand. They must keep the free hand away from the sheath and well behind the exposed needle.

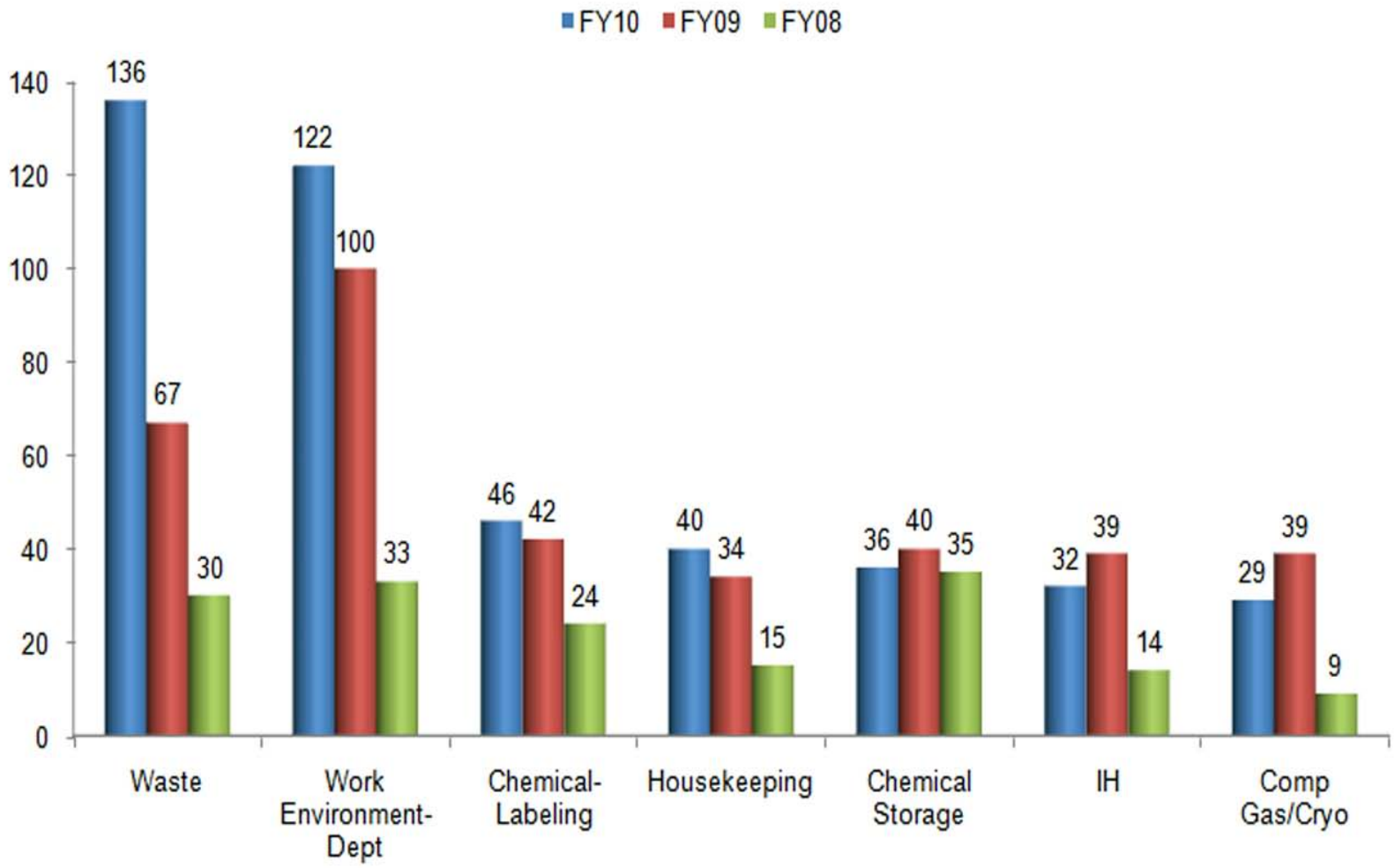
Recapping/Uncapping Devices

Several devices are available for recapping needles safely. Some devices permit single-handed recapping by parking a needle cap on a flat surface. Other devices are designed to protect the hand that holds the cap during two-handed recapping procedures. As yet, most products have not received independent testing and the two-handed recapping process remains a cause for concern. Recapping devices require further investigation. They may provide a practical solution for situations where recapping is considered necessary.

Tier 1 Inspection Results for FY 2010

by Bob Colichio

The chart below reflects the "Top 7" categories for most of the findings discovered during Tier 1 Safety Inspections for the Biology and Medical Departments over the past 3 years.



To further break it down, I've listed several examples of the types of deficiencies we've discovered in each of the categories:

Waste
The majority of these findings were associated with open/unattended sharps containers. Although not a regulatory requirement, we find it a good practice to keep the sharps container "wheel" in a closed (not locked) position, especially if it's on the floor, to prevent used sharps from falling out if accidentally knocked over. We've also discovered several incidents of open empty chemical bottles in fume hoods. Another deficiency also noted in large numbers were overflowing sharps containers and glassware recycling containers.

Work Environment – Dept
Deficiencies noted in this group were refrigerators/freezers not labeled "For Chemicals Only – No Food", obstructed eyewashes or safety showers and trip hazards caused by equipment and electrical cords.

Chemical – Labeling
We still find this problem quite a bit where chemical bottles are labeled with a chemical formula instead of the name (ie; ETOH instead of Ethyl Alcohol or Ethanol).

Housekeeping
A large number of these findings have to do with equipment and supply storage in the labs and general cleanliness and clutter throughout. Always keep benches, chemical hoods, floors, aisles, and other work surfaces clear of all material not being used.

Chemical Storage
Chemicals not stored within secondary containment in case of leakage. Incompatible chemicals being stored together (ie; acetic acid and nitric acid) and corrosives being stored on shelves above eye level.

Industrial Hygiene
Mercury thermometers being used where they could be replaced by alcohol or other spirit filled thermometers. (An event that happened here at BNL several years ago where a mercury thermometer was knocked off a table and broke on the floor resulted in approximately $10K in manpower, monitoring and cleanup costs). Un-encapsulated lead being used as weights or doorstops.

Compressed Gases/Cryogens
Unsecured gas cylinders, missing safety caps and incorrect "Empty/In Use/Full" tags. Liquid Nitrogen Dewars missing Cryogen Safety Postings.