



Hospital Waste Management

Summer 2013

Special points of interest:

- **Which Jobs Do You Assess for Your Hazardous Drug Control Plan?**
- **CRE—The new Superbug of antibiotic resistance**
- **Stericycle Adopts WHO Protocol for CJD Waste Inactivation**

Inside this issue:

- Stericycle Adopts New Protocol for CJD—Infected Waste **2**
- Ecology Targeting Instruments that Discharge Effluent Directly to the Sewer **2**
- Using Resert XL HLD or Rapacide PA in Endoscopy? **3**
- L&I Delays Implementation of Hazardous Drug Rule **3**
- New *Hospital Waste* Newsletter Format **4**

Hospital Waste

Which Jobs Should You Assess for Your Facility's Hazardous Drug Control Plan?

All Washington healthcare facilities must develop and implement a Hazardous Drug Control Plan by January 1, 2015. An important element of that plan must be Job Hazard Assessments and a PPE Assessment, according to the rule. But which jobs at your facility do you assess?

Jobs which handle hazardous drugs include:

- Pharmacy Techs who unpack and stock drugs;
- Pharmacists who pull drugs for orders;
- Pharmacists who compound IV infusions;

- Retail pharmacists who re-pack drugs for out-patients;
- Oncology nurses
- ER nurses who administer methotrexate for ectopic pregnancies;
- Ob-Gyn nurses who administer prostaglandins or oxytocin to ripen a cervix;
- Environmental Services staff who collect drug waste containers.

You may have others who handle chemotherapy and other hazardous drugs. For each of these jobs you must develop a Job Hazard Assess-

ment. Hazard Assessments, according to the Hazardous Drug Rule, should include sections on:

- potential drug exposures;
- types of drugs handled;
- volume, frequency, packaging and form of drugs;
- equipment maintenance;
- decontamination and cleaning; waste handling;
- spill response,
- engineering controls,
- PPE, and
- administrative controls.

You should include a sketch

(Continued on page 3)

CRE: The New Superbug Plaguing Hospitals & Patients

Healthcare-associated infections (HAIs) have been a major concern in hospitals for decades. A relatively new superbug, CRE, or carbapenem-resistant *Enterobacteriaceae*, is resistant to nearly all antibiotics and has a 50% fatality record. It is a family of germs including *Klebsiella* and *Escherichia coli* (*E. coli*), that can become carbapenem-resistant by producing en-

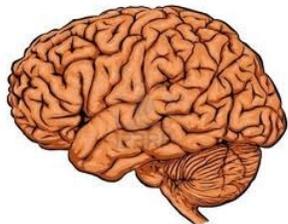
zymes that can break down and render carbapenem ineffective.

CRE have been found to transfer their invulnerability to other bacteria, which means that other very common bacteria have the potential to become resistant to most antibiotics.

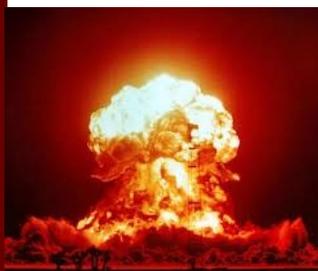
CRE has been defeated by fogging patient rooms with

hydrogen peroxide and thorough cleaning with bleach. Even sink drains must be removed, treated with bleach, then re-installed.

Healthy people generally do not contract CRE infections; rather, patients on ventilators, urinary or intravenous catheters are most susceptible.



Instrument reagents preserved with sodium azide form explosive crystals in contact with metal sewer pipes.



Stericycle Adopts New Protocol for CJD Infected Waste

Creutzfeldt-Jakob Disease (CJD) is the human form of transmissible spongiform encephalopathy, a mysterious and normally deadly form of brain degeneration. CJD is thought to be transmitted by prions, small proteinaceous living organisms which cause scrapie-like tissue damage.

Prions are unusually resistant to inactivation by heat, formalin or exposure to ultraviolet light or x-rays.

Stericycle has adopted a protocol developed by the World Health Organization (WHO) for its clients to inactivate CJD waste before it is transported or handled by Stericycle staff.

The new protocol involves adding sodium hypochlorite (bleach) to waste before autoclaving. After cooling, it can be managed like other regulated medical waste.

Tissue that should be managed in this fashion for a CJD pa-

tient includes brain, CSF, eye, kidney, liver, lung, lymph nodes, placenta, spinal cord and spleen.

The “WHO Infection Control Guidelines for Transmissible Spongiform Encephalopathies” can be downloaded at: <http://www.who.int/csr/resources/publications/bse/whocdscsgraph2003.pdf>

Ecology Targeting Clinical Instruments that Discharge Effluent Directly to the Sewer Without Pre-treatment

Ecology inspectors have increasingly been targeting automated clinical instruments that discharge their effluent waste directly to the sewer without pre-treatment. Sometimes the questions come regarding effluent waste in general, while for other inspectors there’s a specific, targeted reagent.

A common reagent preservative—sodium azide—is of special concern to Ecology inspectors. While several instrument manufacturers use sodium azide as a reagent preservative, one of those instruments—Siemens Centaur—has caused headaches and expensive waste capture and disposal.

Sodium azide (NaN_3) is colorless, odorless and highly toxic. Solutions containing sodium azide form highly explosive lead and copper azide crystals in contact with metal pipes and should never be discharged to the sewer. Solutions of sodium azide are not

explosive, but discarded sodium azide product carries the federal waste code P105.

There is no simple method of treating or mitigating sodium azide’s toxicity or explosivity in effluent. Most clinical instruments are installed to automatically discharge their effluent directly to the sewer through flexible hose to a floor drain.

If your instruments use reagents preserved with sodium azide, expect that Ecology inspectors may require you to cease discharging effluent to the sewer and manage it as a hazardous waste.

Other inspectors are simply asking laboratories to characterize the effluent waste from their instruments. The federal Water Pollution Control Act of 1972 (commonly known as the Clean Water Act), prohibits the discharge of hazardous waste directly to the sewer. Inspectors have the duty to question every sewer discharge

to determine if hazardous waste is entering the system.

Characterizing automated instrument effluent is difficult; understandably, manufacturers are loath to divulge exact reagent chemical concentrations and regard them as proprietary.

Two methods of determining effluent composition are to 1) book designate the effluent or 2) to capture effluent samples and have them analyzed by a laboratory. The first method relies upon knowledge of the concentration of initial reagents and calculations to assess the final concentrations. Online package inserts, MSDSs, and laboratory maintenance logs can help with effluent characterization.

The second method will involve GC/MS, HPLC, FT/IR, UV and perhaps other analyses to identify effluent chemicals.

Job Hazard Assessments (cont.)

(Continued from page 1)

of the work area where hazardous drugs are handled.

To obtain a simple, 3-page tool for conducting Hazardous Drug Job Hazard Assessments according to L&I's guidelines, contact Alan Jones at Hospital Waste Management, 425.883.0405 or by e-mail at alanbjones@frontier.com. We can also

conduct job hazard assessments for you; the work product will be provided as a file that can be inserted directly into your facility's Hazardous Drug Control Plan when you're ready to write that document.

Although implementation of the Hazardous Drug Rule training and plan provisions has been delayed a year, it isn't

too early to compile the components for your facility plan now. The Hazardous Drug Advisory Committee has not set a date when they expect to have a plan template available for hospitals, pharmacies and veterinary clinics to use. It is quite possible that there will be little time to build plans with all the required components if facilities delay until the last moment.

Using Resert XL HLD or Rapacide PA in Endoscopy? Both wastes must be neutralized before discharge to the sewer

Washington hospitals have been converting to new products for cold-sterilizing endoscopes because they've understood that the waste solutions can be discharged to the sewer without neutralization. This is not correct: in nearly all cases, waste Resert XL or Rapacide PA solutions must be either neutralized before discharge or managed as dangerous waste.

Resert XL HLD is composed of hydrogen peroxide and 2-furoic acid. As a product it has a pH = 2.2 to 2.6.

Rapacide PA, Part A is composed of hydrogen peroxide, acetic acid and peroxyacetic acid, among other chemicals. As a product it has a pH = 0.5 to 1.1.

Waste liquids with a pH of less than 5.5 (or greater than 12.0) may not be discharged to the

sewer in Washington without written permission from the wastewater treatment authority because they designate as corrosive dangerous wastes.

Neutralization can be accomplished using any base such as sodium carbonate, sodium bicarbonate, or a weak solution of sodium hydroxide.

L&I Delays Implementation of Hazardous Drug Rule

The Washington Department of Labor & Industries Division of Occupational Safety & Health has elected to delay by one year implementation of the Hazardous Drug Rule (WAC 296-62-500). This delay was granted in response to requests from both the business and labor chairs of the Hazardous Drug Advisory Committee. The committee has been meeting regularly to

establish protocols and templates for the new rule, but there is still much work to be done.

On January 1, 2015 healthcare facilities with patient contact must have in place a written Hazardous Drug Control Plan (HDCP) to limit the risk of exposure of their employees to hazardous drugs as defined by the NIOSH Hazardous Drug List. Employee training must

be completed by July 1, 2015.

Healthcare facilities should still compile Job Hazard and PPE Assessments as elements of their HDCPs.

You can view the rule directive delaying implementation at <http://www.lni.wa.gov/safety/rules/policies/pdfs/dd1320.pdf>



There are several elements needed to compile a Hazardous Drug Control Plan. Don't delay building those elements now.





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While every effort was made during the development of this newsletter to insure accuracy, we make no warranties or certifications. We encourage you to contact the references listed or Alan B. Jones for further information about any topic mentioned in the newsletter.

New Hospital Waste Newsletter Format

If you're a long-time reader of *Hospital Waste* you won't recognize the format in this issue of the newsletter. It was time for a change.

The new format should be quicker to read in the limited time that most healthcare professionals have to devote to staying up with all the changes that occur every year.

If you love it, hate it, or are ambivalent about the new format, I'd love to hear from you. If the new format is universally despised I'll change it

back to the more familiar format that's been a staple since *Hospital Waste* was first published in the summer of 1999.

You can always download past issues of *Hospital Waste* from our website <http://www.hospitalwastemgmt.com>. You can also search the entire archive for articles on a specific topic, then download just that issue.

Thanks for reading the newsletter!

