Health Professionals and Allied Employees

Preventing Occupational Exposure to Anitneoplastic and Other Hazardous Drugs in Healthcare Facilities

NIOSH Adds New Drugs to its List

For patients, the benefits of drug therapies, outweigh the risks of the side effects. But healthcare workers must be protected from the toxic effects of these powerful chemical substances.

What are hazardous drugs?

Hazardous drugs are those used for cancer chemotherapy, antiviral drugs, hormones, some bioengineered drugs, and other miscellaneous drugs. NIOSH defines hazardous drugs as those that cause skin rashes, cancer, infertility, miscarriage, damage to a developing fetus or birth defects, organ toxicity, and genetic damage.

How are healthcare workers exposed?

Preparation, administration, clean-up, and disposal of these drugs exposes millions of healthcare workers to hazardous drugs. The health risk depends on how much exposure healthcare workers have to these drugs and how toxic they are. Procedures that generate aerosols or dust increase the risk of exposure through inhalation and skin contact. Some examples of high risk activities include reconstituting powered drugs, expelling air from syringes, and handling of non-coated tablets.

What is the NIOSH list?

NIOSH is the National Institute for Occupational Safety & Health, within the federal Centers for Disease Control. In 2004 NIOSH published an alert to increase awareness of healthcare workers and employers of the risks posed by hazardous drugs and to provide guidance on how to protect healthcare workers: http://www.cdc.gov/niosh/docs/2004-165/pdfs/2004-165.pdf The list was updated in 2010 and then again in 2012. In 2012 NIOSH added 26 and removed 15 drugs that were no longer available or considered

hazardous. The current list includes 167 hazardous drugs This list is in Appendix A of the NIOSH document: http://www.cdc.gov/niosh/docs/2012-150/pdfs/2012-150.pdf

What about Hazard Communication?

The OSHA Hazard Communication standard 29 CFR 1910.1200 requires covered employers to keep a list of all hazardous chemicals in the workplace, develop a written hazard communication program, maintain safety data sheets, label chemical substances, and provide training to employees as well as provide access to union representatives and employees to the hazard information. Healthcare employers must include hazardous drugs in their hazard communication program. Note that NIOSH encourages employers to develop their own list of hazardous drugs as the NIOSH list may not be all inclusive. To accomplsh this, employers should assess whether new products meet the NIOSH criteria for hazardous drugs.

What control measures should be used?

NIOSH recommends a thorough substance specific hazard assessment before any healthcare workers are assigned to work with hazardous drugs. Primary prevention may be achieved through use of engineering controls such as Class II or III biological safety cabinets[1] (BSC), compounding aseptic containment isolators, closed system transfer devices, and needless systems. Administrative controls include written policies, work practices, and procedures to reduce risks. Personal protective equipment (PPE) is the least desirable control measure but may be an essential element in worker protection.

- Respirators and protective clothing should be selected based on a substance specific risk assessment.
- Understand the proper use and limitations of PPE.
- Take care in wearing and removing PPE to avoid damaging it or contamination.
- Ensure PPE fits properly and is appropriate for handling hazardous drugs.
- Make sure PPE and respiratory protection programs are in writing and comply with OSHA, NIOSH, and manufacturer's instructions.
- Employers must provide training on respiratory protection and PPE when its use is required.

Detailed information on glove, gown, eye and face, sleeve, hair, and shoe, and respiratory selection and use is available in 2004 NIOSH guideline: http://www.cdc.gov/niosh/docs/2004-165/pdfs/2004-165.pdf#page=37

[1] See Biosafety in Microbiological and Biomedical Laboratories (BMBL) 5th Edition for detailed information: http://www.cdc.gov/biosafety/publications/bmbl5/

What type of gloves should be used?

Some gloves allow for the hazardous drugs to quickly penetrate the material the gloves are made of. For example, polyvinyl chloride exam gloves provide little to no protection. NIOSH recommends changing gloves every 30 to 60 minutes depending on the substance.

What type of gowns should be used?

Proper gowns protect healthcare workers from splashes or spills of hazardous drugs. Gowns should not have seams or openings that allow hazardous drugs to pass through them. Disposable polyethylene coated propylene or other laminate materials are more protective than non-coated gowns.

What about respiratory protection?

For most activities requiring respirators, NIOSH recommends an N-95 respirator as the minimum protection. However, these respirators provide no protection against gases or vapors, and little protection against liquid spills.

What other PPE issues should be addressed?

Eye and face protection should be used whenever there is a potential for splashing to the face and eyes. Use sleeve, hair, and shoe coverings of coated materials to prevent exposure to hazardous drugs. Do not wear PPE and respirators in non work areas to avoid contaminating them. Use proper procedures for removal and disposal of all PPE.

Why does NIOSH recommend a medical surveillance program for healthcare workers exposed to hazardous drugs?

A medical surveillance program tracks the health status of healthcare workers who are exposed to hazardous drugs. The goal is early identification of any indicators that workers are being overexposed so that a) changes can be made to increase worker protection and b) workers can receive appropriate medical referrals and interventions to prevent development of irreversible disease. Elements of the program include:

- Medical and reproductive health history
- Physical examination
- Laboratory studies

- Biological monitoring[2]

Washington State is First to Issue Regulations

Washington State has passed a Hazardous Drugs regulation, WAC 296-62-50005, that applies to all healthcare facilities. It requires:

1. a written Hazardous Drugs Control Program
2. a hazard assessment to determine the appropriate precautions to be taken
3. use of engineering controls such as closed systems, ventilated cabinets, and safer needle devices.
4. Assessment and provision of personal protective equipment.
5. Procedures for sanitation, decontamination, labeling, storage, and control.
6. Training

What is to be done?

If you work with hazardous drugs, your HPAE representatives can work with you to assess whether your employers program conforms to the NIOSH recommendations. For example, unions and workers have a right to copies of employers written health and safety programs. If there are gaps, HPAE Locals may address them through the negotiated labor/ management or Health & Safety Committees. You also may consult your HPAE representative about filing a grievance or a complaint with OSHA.

Speak out for health and safety!

[2] Biological monitoring includes specific methods for evaluating chemical exposures by sampling a workers blood, urine, breath, saliva, or hair to detect specific chemical agents or their metabolites.