

Safe Handling of Hazardous Drugs: Are You Protected?

**Susan Nixon, RN, BSN, OCN®,
and Lisa Schulmeister, RN, MN, APRN-BC, OCN®, FAAN**

Oncology nurses handle hazardous drugs when they administer medications to patients in inpatient and outpatient settings. Guidelines for the safe handling of hazardous drugs have been in place since the late 1980s; however, confusion still remains about the proper handling of the substances. Institutional policies vary and the use of personal protective equipment is inconsistent. In an effort to provide a safe working environment, nurses should be aware of the potential health risks of handling hazardous drugs and adhere to recommended guidelines to prevent occupational exposure.

Nurses routinely administer medications that are categorized as hazardous, such as chemotherapy, biotherapy, antibiotics, immunotherapy, hormones, and other drugs. Administering hazardous drugs places nurses at risk for occupational exposure and creates a potential health risk to all staff members caring for patients. The occupational risk from handling hazardous drugs has been documented in the literature since the 1980s, and guidelines from the Occupational Safety and Health Administration (OSHA) were published in 1986 in an effort to protect healthcare workers from possible exposure (OSHA, 1999).

Although the recommended guidelines for handling hazardous drugs have not changed significantly since the late 1980s, more information about the potential for occupational exposure has become available (Blecher, Glynn-Tucker, McDiarmid, & Newton, 2003). A number of studies have been conducted to better elucidate the risk. In a study by Hedmer, Georgiadi, Bremberg, Jonsson, and Eksborg (2005), chemotherapy agents prepared in a biologic safety cabinet (BSC) were detectable in wipe samples from the counter, floor, and refrigerator where the agents were handled or stored. The findings suggest that, although proper equipment was used to prepare chemotherapy, chemotherapy residue on surfaces outside the BSC was still found. In a study in South India where no guidelines were in place, nurses prepared and administered hazardous drugs without any personal protective equipment (PPE) and damage to the DNA of their lymphocytes was documented (Rekhadevi et al., 2007). The studies suggest that the risk of exposure to hazardous drugs extends beyond the BSC and the potential for adverse health issues exists.

The purpose of this article is to review the guidelines recommended for practice when healthcare professionals are handling hazardous drugs and caring for patients after they have received those drugs, the education and training recommendations for staff who handle hazardous drugs, and the recommended guidelines to monitor healthcare workers through surveillance programs.

At a Glance

- ◆ Chemotherapy residue is found on work surfaces where chemotherapy agents are handled and stored.
- ◆ Personal protective equipment use decreases the risk of exposure to hazardous drugs such as chemotherapy.
- ◆ All healthcare workers with the potential to be exposed to hazardous drugs should be monitored in a surveillance program.

Exposure to Hazardous Drugs

Medications are routinely handled by healthcare providers as a part of their daily patient care routine. Numerous medications are considered hazardous because of their mechanisms of action and can create an occupational risk to healthcare workers through exposure. Drugs are defined as hazardous if studies of animals or humans indicate that an exposure to the drugs creates a health risk (National Institute for Occupational Safety and Health [NIOSH], 2004; OSHA, 1999) (see Figure 1). The electronic version of *NIOSH Alert* lists the drugs that meet the criteria to be labeled as hazardous (NIOSH). This list is revised routinely, and updates can be found on the Centers for Disease Control and Prevention (CDC) Web site at

Susan Nixon, RN, BSN, OCN®, is a charge nurse at St. Joseph Medical Center in Tacoma, WA; and Lisa Schulmeister, RN, MN, APRN-BC, OCN®, FAAN, is a self-employed oncology nursing consultant in River Ridge, LA. The authors were participants in the 2008 *Clinical Journal of Oncology Nursing* Writing Mentorship Program. (Submitted October 2008. Accepted for publication November 7, 2008.)

Digital Object Identifier:10.1188/09.CJON.433-439