

The Official Newsletter of the Oncology Nursing Society

Are We Handling Chemotherapy Safely?

By Josie Howard-Ruben, RN, MS, OCN®,
CHPN, Contributing Editor

A fictional nurse picks up her patient's chemotherapy from a delivery bin. She unzips the plastic bag and reaches inside. Pulling aside a colleague to verify the dose, she momentarily sets the infusion bag on the desk at the station. Next, she reaches into a glove box, pulls on a pair of exam gloves, and then dons the gown left hanging at the bedside by the previous shift. She hurriedly checks the implanted port site, and because the tubing was not primed with saline under a hood, she takes the chemo bag and spikes it at the bedside with the existing IV tubing. A drop of fluid splashes her cheek, and she lifts her shoulder to wipe away the moisture. Snapping off her gloves, she tosses them into the chemo bucket, heads out of the room, and rushes off to document that the chemo was hung on time.



To maintain the currency of their safe-handling knowledge, Bev Caraher (left) and her colleague Melissa Leaverton participate in a unit-based, mentor-preceptor component and an additional unit-based annual competency program.

(see "Safe Handling," page 4)

Congratulations to the Society's Newest Officers

ONS's newest leaders will take office at the closing of the 2004 Congress on May 1. Look for more information about the new leaders in the May issue.

- **Secretary:** Laura Benson, RN, MS, ANP, AOCN®
- **Directors-at-Large:** Ruth Canty Gholz, RN, MS, AOCN®, and Julie Painter, RNC, MSN, OCN®
- **Nominating Committee Members:** Catherine Glennon, RN, MHS, OCN®, CNA, and Susan Sturgeon-Walker, RN, BS, OCN®

In This Issue

Head to Congress for
"The Ride of Your
Life"—page 3

Find out if you are
following guidelines
for controlling
exposure to
hazardous drugs—
page 4

Share ONS's many
safe-handling
resources with your
nursing colleagues—
page 8

Take "A Closer Look"
at the medical waste
revolution—page 11

Are You Protected When Administering Chemotherapy?

The Occupational Safety and Health Administration offers the following guidelines for controlling occupational exposure to hazardous drugs (HDs). For more information, visit www.osha.gov/dts/osta/otm/otm_vi/otm_vi_2.html#4.

- **Gloves:** Latex gloves should be used for the preparation of HDs. Thicker, longer latex gloves that cover the gown cuff are recommended for use with HDs. Gloves with minimal or no powder are preferred because the powder may absorb contamination. Because all gloves are permeable to some extent and their permeability increases with time, they should be changed regularly (i.e., hourly) or immediately if they are torn, punctured, or contaminated with a spill.
- **Gowns:** A protective disposable gown made of lint-free, low-permeability fabric with a closed front, long sleeves, and elastic or knit closed cuffs should be worn. The cuffs should be tucked under the gloves. If double gloves are worn, the outer glove should be over the gown cuff and the inner glove should be under the gown cuff.
- **Eye and face protection:** Whenever splashes, sprays, or aerosols of HDs may be generated that can result in eye, nose, or mouth contamination, chemical-barrier face and eye protection must be provided and used. Eyeglasses with temporary side shields are inadequate protection. ♦

In a worst-case scenario, our imagined nurse—a virtual poster child for unsafe work practices—has left a trail of environmental contamination in her wake, possibly exposing herself and others to a hazardous drug.

When many of us started in oncology, the notion of safe handling was a concept that we hadn't really addressed. As research studies in this area were published, however, changes in how antineoplastic drugs were handled and administered underwent a sea of change, with a resultant transformation in practice. Oncology nurses today have at their fingertips a wealth of information about safe handling, including guidelines and guidance from professional organizations and federal agencies. Reducing exposure to hazardous drugs—a construct that includes not only chemotherapy but also other agents such as antivirals and antibiotics like pentamidine—is an underpinning of any safe-handling standard.

The risks of exposure to hazardous drugs have been documented elsewhere, and researchers continue to study the issues of potential teratogenicity, infertility, mutagenicity, and carcinogenicity associated with chemotherapeutics. Although the risk to nurses from handling these agents is considerably reduced by safe handling and proper personal protective equipment (PPE), the unsettling fact is that not all nurses administering hazardous drugs are following safe-handling standards and some may not be implementing the safest work practices.

"We have nurses in oncology who are very familiar with safe-handling practices, and we have others who have received only on-the-job training and who are unaware of some of the risks associated with hazardous drugs," says **Martha Polovich, RN, MN, AOCN®**, an oncology clinical nurse specialist at Southern Regional Medical Center in Riverdale, GA, and the instructor for the first online ONS Safe Handling of Hazardous Drugs Course. Moderating the course gave Polovich the opportu-

nity to interact with 50 nurses from 29 states and 1 from Canada and to learn that "safe-handling practices vary considerably from one place to another."

A long-awaited National Institute for Occupational Safety and Health (NIOSH) Alert, tentatively titled "Reducing Occupational Exposures to Antineoplastic and Other Hazardous Drugs in Healthcare Settings," aimed at promoting the health and welfare of those who handle hazardous drugs soon will be released. Polovich served as an ONS representative on the working group for the alert, meeting since 2000 with about 50 other experts from various fields, including nurses, pharmacists, and representatives from pharmaceutical companies, labor unions, the Joint Commission on Accreditation of Healthcare Organizations, and government agencies such as the Occupational Safety and Health Administration (OSHA), NIOSH, and the U.S. Food and Drug Administration.

Tom Connor, PhD, a research biologist at NIOSH, co-chairs the NIOSH Working Group on Hazardous Drugs. Although the alert will not feature radical changes from current practice, Connor says, "There are new developments in the science, and we are trying to keep the exposure of healthcare workers to these hazardous drugs as low as possible."

When research studies have aimed to look for environmental contamination, they have generally found it, says Connor, who reported on the level of environmental contamination by cytotoxic drugs in six cancer centers in the United States and Canada (Connor, Anderson, Sessink, Broadfield, & Power, 1999). Biological safety cabinets, countertops, and floors in the vicinity of drug preparation and tables, chairs, and floors in administration areas were swiped and then tested for specific drugs by a variety of industrial hygiene methods. Evidence of the presence of cytotoxic drugs was detected in 75% of the pharmacy samples and 65% of the administration area samples.

"In the drug administration area, the bedside tables, floors, arms of chairs, and infusion pump all were areas where evidence of contamination has been found," Connor says. "Even with intact vials in boxes, you may find contamination and another possible source of exposure."

"The Connor article was a real eye opener," says Susan Martin, DNSc, RN, AOCN®, an oncology nursing consultant, acknowledging that there is a lot we don't know about in terms of the impact of handling chemotherapeutic agents on healthcare workers. "Mounting evidence suggests that handling the drugs during pregnancy can potentially have risks," she says. Although OSHA guidance indicates that medical surveillance is advisable for employees who handle hazardous drugs, Martin says that she believes that limited medical monitoring is occurring in many areas, particularly in the outpatient area. "If there is any type of medical surveillance, it usually is taking place at the time of employment. We are not systematically looking at reproductive issues, and if we don't have that information, how can we really know the effects?"

Emphasizing that the overall risk of adverse outcomes with cytotoxic drug exposure is low, Polovich

notes that pregnant oncology nurses and nurses actively trying to conceive should consider alternative duty. "Nurses may be exposed before they know that they are pregnant," she says, adding that literature in the United States is scant about hazardous drug exposure in early pregnancy or during breastfeeding.

Concern about safe practices in chemotherapy administration extends beyond oncology to other clinical areas. Susan Newton, RN, MS, AOCN®, an oncology advanced practice nurse in Dayton, OH, says that one issue concerning her is that chemotherapy is being administered in many settings outside oncology units.

"There is a lot of cross-training being done in nursing, and the patients receiving chemotherapy are being treated in all areas of the hospital. It used to be that this occurred infrequently enough so that one of the oncology nursing staff could go to another unit to administer drugs, but now the volume of giving these drugs for other dis-



Susan Newton took this photograph of her colleague, ONS member Joyce Marrs, demonstrating the proper use of personal protective equipment when mixing chemotherapy.

eases is increasing, making that more difficult."

Newton has seen many variations in how PPE is used in the workplace and urges oncology nurses to take the lead in educating administrators about safe-handling practices.

"Nurses don't seem to be wearing goggles as often as they should, and one area in which many may not be compliant is handling excreta," she says. "Everybody, from the nurse administering the drug down to housekeeping staff, needs to know about safe handling."

Many practitioners have turned to the ONS guidelines for direction on safe handling and the proper use of PPE and as the basis of their chemotherapy administration standards. Bev Caraher, MSN, APRN-BC, AOCN®, CHPN, an oncology clinical nurse specialist at Northwestern Memorial Hospital (NMH) in Chicago, IL, says that only chemotherapy-validated RNs can administer parenteral chemotherapy at NMH. The ONS Chemotherapy and Biotherapy two-day didactic program and examination, incorporating safe handling and PPE content, is one aspect of that validation.

"In addition to the ONS course, nurses participate in a unit-based, mentor-preceptor component and an additional unit-based annual competency program to maintain the currency of their knowledge," says Caraher, adding that even selected housekeeping staff participate in the program as one facet of their training.

New Chemotherapy Administration System Reduces Level of Environmental Contamination

If you are a nurse who administers chemotherapy and are worried about exposure, a new system is on the market called PhaSeal®. Developed by Carmel Pharma (Mölnådal, Sweden) and distributed by Baxa Corporation (Englewood, CO), PhaSeal is a completely sealed and needle-free system used for preparation, administration, and waste handling. In a research study titled "Using a Closed System Protective Device to Reduce Personnel Exposure to Antineoplastic Agents," researchers from the University of Utah reported reducing employee exposure and surface contamination in the chemotherapy infusion center of the Huntsman Cancer Institute by using PhaSeal. Specifically, this study reported that after using the PhaSeal system for six months, the presence of both cyclophosphamide and ifosfamide was reduced to undetectable levels in the urine of employees who administered these drugs. Additionally, the study reported that the drug contamination initially detected on infusion center surfaces was significantly reduced following implementation of the PhaSeal system. For more information, visit the PhaSeal Web site at www.phaseal.com/siteUS/default.asp.

* Description of product does not indicate or imply endorsement by ONS or the ONS News. ♦

(see "Safe Handling," page 6)

YOU TELL US

Did Your Practices Change While You Were Pregnant?

Ambulatory Care Nurse Continued to Administer Chemotherapy Throughout Pregnancy

I worked in the ambulatory care setting during both of my pregnancies. My first pregnancy was in 1992, and the office in which I worked had no policy for pregnant nurses. After the oncologists discussed the situation, they decided that I would not be permitted to mix chemotherapy or administer methotrexate. I administered chemotherapy throughout the pregnancy, wearing a mask for all IV pushes. I was able to work until the day I went into labor.

My second pregnancy was in 2002, and I was working in a different oncology practice. Again, no policy was in place for pregnant nurses. I always have been very cognizant and outspoken regarding safety of chemotherapy administration. Having read the ONS Guidelines and taken the ONS Chemotherapy and Biotherapy Trainer course, I did not feel that my pregnancy should have precluded me from administering chemotherapy. I did, however, feel strongly about not mixing and changing any bags that would risk exposure.

Although my nurse manager made it clear that I was not to mix chemotherapy, my colleagues decided to develop a policy of their own. They would not permit me to change chemotherapy bags or administer IV push drugs. I was extremely fortunate to have such a

I did feel strongly about not mixing and changing any bags that would risk exposure.

cooperative staff that enabled me to again work until the day I went into labor.

Pregnancy poses a difficult situation for the nurse who struggles with uncertainties of exposure, the coworkers who may feel that they have to do extra work, and the management that must set guidelines for the office. Unfortunately, not enough clear data exist to enable a universal policy to be made. When an oncology nurse decides that she wants to continue to administer chemotherapy during pregnancy, all involved must be willing to work together, discussing each person's concerns, and work out a plan that is agreeable to all parties while stressing the safety of the pregnant nurse. I feel fortunate that I was able to continue to work during my pregnancies and feel blessed to have worked with such supportive staffs.

*Deborah R. Gomer, BSN, RN, OCN®
Oncology Case Manager
Quality Oncology
Sunrise, FL*

Future "You Tell Us" Questions

August: Describe a situation in which you experienced an ethical dilemma and how you handled it. (May 18)

September: How do you handle situations in which your patients speak a different language than you? (June 15)

Submissions should be no more than 150 words and may be edited. Send responses by the deadlines listed in parentheses to Senior Staff Editor Sharon Dougherty, 125 Enterprise Drive, Pittsburgh, PA 15275-1214 (412-859-6163, fax: sharon@ons.org, e-mail: ☐)

Safe Handling

(continued from page 5)

Other organizations have adopted ONS guidelines (see page 8). "Our admixing standard specifically requires staff to wear chemotherapy gloves and a protective disposable gown made of a lint-free, low-permeability fabric with a closed front, long sleeves, and elastic or knit closed cuffs," says **Kathleen Shuey, MS, RN, AOCN®, APRN-BC**, a nurse manager of education and admixture implementation at U.S. Oncology in Albuquerque, NM. Shuey says that all nurses who mix or administer chemotherapy are expected to use universal precautions and PPE and mix agents in a biologic safety cabinet, as the ONS guidelines suggest.

Polovich says that nurses who participated in ONS's online course on safe handling seem to be motivated to adopt best practices in their work settings. "All of the nurses who participated in the class wanted to make positive changes in their workplace and were looking for guidance and support to do so," she says. Nurses enrolled in the course "were eager to gain practical knowledge about occupational exposure. Oncology nurses are so focused on their patients that they often forget to be concerned about their own health and welfare."

Connor, T.H., Anderson, R.W., Sessink, P.J., Broadfield, L., & Power, L.A. (1999). Surface contamination with antineoplastic agents in six cancer treatment centers in Canada and the United States. *American Journal of Health-System Pharmacy*, 56, 1427-1432.



*Contributing Editor
Josie Howard-Rubens,
RN, MS, OCN®, CHPN,
is a clinical development
specialist in oncology in the Organizational Development
Department at Advocate Health
Care in Park Ridge, IL.*