Oncology Nursing Society

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Ensuring Healthcare Worker Safety When Handling Hazardous Drugs

Joint Position Statement from the Oncology Nursing Society and the Hematology/Oncology Pharmacy Association

Hazardous drugs (HDs) are chemicals that demonstrate one or more of the following characteristics: carcinogenicity, genotoxicity, teratogenicity, reproductive toxicity, or organ toxicity. In addition, newer drugs with a structural or toxicity profile that mimics an agent known to be hazardous by one of the aforementioned criteria should also be treated as HDs (National Institute for Occupational Safety and Health [NIOSH], 2016). Any HD-handling activity can expose healthcare workers (HCWs), as documented in a multitude of case reports and studies. HD exposure is associated with acute symptoms (e.g., nasal sores, hair loss, skin rash), adverse reproductive outcomes (e.g., miscarriage), genetic changes (e.g., chromosomal aberrations, sister-chromatid exchanges), and an increased occurrence of cancer (Centers for Disease Control and Prevention [CDC], 2019).

The Occupational Safety and Health Administration (1986) acknowledged the occupational risks of HDs and issued recommendations for their safe handling more than 30 years ago, and updated guidelines from NIOSH and professional societies have been published (NIOSH, 2016; Polovich & Olsen, 2018; Power & Coyne, 2018). All guidelines address the need for HD-related policies and procedures, education and training, and safe handling precautions in settings in which HDs are present. Safe handling precautions include the use of engineering controls, safe work practices, and personal protective equipment (PPE). When used appropriately and consistently, recommended precautions reduce occupational HD exposure (NIOSH, 2004).

It is the position of the Oncology Nursing Society and Hematology/Oncology Pharmacy Association that:

- Settings in which HDs are present will establish evidence-based policies and procedures for safe handling that comply with regulatory requirements and standards.
- Settings in which HDs are present will ensure that PPE indicated for handling HDs is available to all staff to minimize exposure.
- Settings in which antineoplastic HDs are prepared and administered will provide and maintain primary engineering controls, such as exhausted biological safety cabinets and compounding aseptic containment isolators, in conjunction with secondary engineering controls, such as buffer rooms or segregated compounding areas, consistent with U.S. Pharmacopeia (USP) chapters.
- Settings in which antineoplastic HDs are administered will ensure the use of supplemental engineering controls at the point of compounding and administration when the dosage form allows.
- Settings in which HDs are present will provide education and training specific to each staff member whose work puts them at risk for exposure to HDs. Education, training, and competency evaluation will encompass the risks of exposure, including the reproductive and

developmental effects, recommended precautions for specific handling activities, safe handling of contaminated patient excreta, proper disposal of contaminated waste, and handling acute exposure.

- Settings in which HDs are present may use an Assessment of Risk to guide safe handling practices for certain dosage forms of HDs (U.S. Pharmacopeial Convention, 2016). An Assessment of Risk must be done within USP Chapter <800> parameters and based on available literature regarding the hazard risk of each HD.
- Settings in which HDs are present will protect the rights of staff who are trying to conceive, who are pregnant, or who are breastfeeding to engage in alternative duty that does not require HD handling.
- Settings in which HDs are present will ensure that patients who receive these drugs and their caregivers receive education about safe handling to minimize unintended exposure in both the institutional and home settings.
- Settings in which HDs are present will ensure that HD waste is disposed of according to regulatory guidelines and in a manner that protects staff and the environment.
- Settings in which HDs are present should engage in medical surveillance of staff.
- Settings in which HDs are present should conduct surface wipe testing as a measure of exposure control to aid in continuous process improvement for handling HDs.
- Our professional societies support and encourage continued research and the generation of new knowledge about the risks of HD exposure and the efficacy of risk-reduction strategies.
- Our professional societies will continue to explore evidence-based strategies for mitigation of risk associated with handling HDs and share recommendations with our respective members.
- Our professional societies recommend that standard-setting bodies or specialty organizations with a focus on employee safety or industrial hygiene provide a routinely updated list of medications that are considered hazardous to those handling them.
- Our professional societies recommend that manufacturers of products that support the safe handling of hazardous drugs (e.g., closed system transfer devices, PPE) validate the effectiveness of their products using available accepted testing protocols.
- Our professional societies support and encourage compliance with all NIOSH recommendations, USP compounding standards, and regulatory requirements.
- Our professional societies support and encourage advocacy efforts to make recommendations and standards into enforceable laws that best protect staff and the environment.

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References

Centers for Disease Control and Prevention. (2019). Occupational exposure to antineoplastic agents and other hazardous drugs: Recent publications, guidelines, review articles and surveys. http://www.cdc.gov/niosh/topics/antineoplastic/pubs.html

Connor, T.H., & McDiarmid, M.A. (2006). Preventing occupational exposures to antineoplastic drugs in health care settings. *CA: A Cancer Journal for Clinicians, 56*(6), 354–365. https://doi.org/10.3322/canjclin.56.6.354

National Institute for Occupational Safety and Health. (2004). Preventing occupational exposure to antineoplastic and other hazardous drugs in health care settings. Centers for Disease Control and Prevention. http://www.cdc.gov/niosh/docs/2004-165

National Institute for Occupational Safety and Health. (2016). *NIOSH list of antineoplastic and other hazardous drugs in healthcare settings, 2016*. Centers for Disease Control and Prevention. https://www.cdc.gov/niosh/docs/2016-161

Polovich, M., & Olsen, M. (2018). *Safe handling of hazardous drugs* (3rd ed.). Oncology Nursing Society.

Power, L.A., & Coyne, J.W. (2018). ASHP guidelines on handling hazardous drugs. *American Journal of Health-System Pharmacy*, *75*(24), 1996–2031. https://doi.org/10.2146/ajhp180564

U.S. Pharmacopeial Convention. (2016). USP General Chapter <800>: Hazardous drugs— Handling in healthcare settings. https://www.usp.org/compounding/general-chapter-hazardous-drugs-handling-healthcare