

# Nurse Adherence to Safe-Handling Practices: Observation Versus Self-Assessment

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**Background:** Chemotherapy medications place nurses at risk for occupational exposure, a primary nursing safety concern. No literature was available on adherence to following chemotherapy handling practices and nurses' perceptions of safe-handling practices.

**Objectives:** The aims of the pilot study were to examine actual and subjective ambulatory oncology nurse adherence to chemotherapy safe-handling guideline recommendations that prevent chemotherapy exposure.

**Methods:** A prospective, comparative mixed-methods study was used to compare objective and subjective nurse behaviors of expected safe chemotherapy handling—specifically, micro-ethnography and questionnaires. Fisher's exact test was used to assess differences in the rates of observations and questionnaire responses.

**Findings:** Twenty-two cases of chemotherapy handling were observed, and 12 of 33 nurses completed self-assessments. Of observed practices, nurses completed three behaviors 100% of the time (disposing of gloves in a chemotherapy-approved container after initiating chemotherapy, discarding the chemotherapy bag and tubing after disconnecting chemotherapy infusions, and washing hands after chemotherapy was administered). When objective and subjective behavior adherence were compared, three behaviors were carried out with greater frequency than what nurses perceived on questionnaires (double gloving and gowning when disconnecting chemotherapy and properly discarding chemotherapy). Two behaviors were carried out with less frequency than nurses provided on questionnaires (double gloving and protecting work surfaces during administration).

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Oncology nurses routinely administer medications that are categorized as hazardous, such as chemotherapy, placing them at risk for occupational exposure. Strong evidence exists in the literature concerning potential adverse health effects associated with occupational exposure. Healthcare workers with exposure had increased cancer occurrence; adverse reproductive outcomes, including infertility and miscarriage; fetal defects when exposed during pregnancy; chromosomal damage; and symptoms such as nausea, allergic reactions, and contact dermatitis (Bouraoui et al., 2011; Dranitsaris et al., 2005; Durrieu, Rigal, Bugat, & Lapeyre-Mestre, 2004; El-Ebiary, Abuelfadl, & Sarhan, 2011; Fransman et al., 2007; Hemminki, Kyyrönen, & Lindbohm, 1985; Mader, Kokalj,

Kratochvil, Pilger, & Rüdiger, 2009; McDiarmid, Rogers, & Oliver, 2014). In this article, chemotherapy refers to antineoplastic agents administered via the parenteral route for the treatment of cancerous conditions, excluding biotherapy.

The National Institute for Occupational Safety and Health (NIOSH) and the American Society of Health-System Pharmacists (ASHP) define hazardous drugs as having certain characteristics, including carcinogenicity, teratogenicity, reproductive toxicity, organ toxicity at low doses, and genotoxicity. To date, no processes are available to determine if a certain level of chemotherapy exposure is safe; therefore, limiting exposure in all forms is recommended (NIOSH, 2004, 2014; Polovich, Olsen, & LeFebvre, 2014). As new evidence has emerged, recommendations for personal protective equipment have evolved.