



# Risk Management of Excreta in a Cancer Unit

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Although many legal and clinical requirements are in effect for the preparation and administration of the antineoplastic drugs, limited data exist on the potential cytotoxic risk to healthcare personnel from exposure of excreta (urine, feces, expectorations, saliva, perspiration, and vomiting) from patients. A preliminary risk analysis was conducted with a multidisciplinary work group. The objectives were to identify all potential hazards and accidental events that may lead to an accident related to the excreta management and to implement a global risk reduction and quality improvement policy. The findings revealed the potential risks of excreta contamination in health service and led to recommendations for the healthcare team to optimize working conditions, ensure public protection and occupational health, and promote environmental and employee safety.

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Occupational exposure to antineoplastic agents has been proven to cause reproductive toxic effects and chromosomal aberrations (Sorsa & Anderson, 1996). In addition, some antineoplastic drugs are genotoxic and may cause cancer (Burgaz et al., 2002; Cavallo et al., 2005; Dranitsaris et al., 2005; International Agency for Research on Cancer, 1987, 1990; Selevan, Lindbohm, Hornung, & Hemminki, 1985; Stucker et al., 1990). Acute adverse health effects such as skin rashes and hair loss have been reported (Krstev, Perunicic, & Vidakovic, 2003; Valanis, Vollmer, Labuhn, & Glass, 1993). Research into the ways in which hospital personnel are exposed to these hazardous drugs has led to heightened awareness in oncology nurses and pharmacists about the potential hazards and the subsequent safe handling of the preparation and administration of highly

concentrated antineoplastic drugs. However, little attention has been paid to other potential exposure events that may occur during nursing care and cleaning tasks involving treated patients. Because the dermal route represents the most significant point of entry into the body, surface contamination on the nurse's skin plays an important role in occupational exposure (Fransman, Vermeulen, & Kromhout, 2005; Sottani, Porro, Comelli, Imbriani, & Minola, 2010). Despite adherence to currently recommended handling procedures in all clinics, widespread contamination with antineoplastic drugs was found (Acampora et al., 2005; Connor, DeBord, & Pretty, 2010). Although many legal and clinical requirements are in effect for the preparation and administration of antineoplastic drugs, limited data exist on the potential cytotoxic risk of excreta, such as urine, feces, expecto-

rations, saliva, perspiration, and vomiting from treated patients (Cass & Musgrave, 1992; Kopp, Schierl, & Nowak, 2013).

To determine the scope of the real dangers for healthcare personnel who come in contact with excreta from patients treated with cytotoxic drugs, the authors conducted a preliminary risk analysis (PRA) to identify all potential hazards and accidental events that may lead to an accident related to excreta management, and to implement a global risk reduction and quality improvement policy.

## Methods

To determine the potential risks for excreta management in the hospital, a work group was formed with representatives from the pharmacy, risk management, care, occupational medicine, waste management, laundry, and hygiene departments, as well as from the cancer unit and the laboratory.

## Sample and Procedures

All patients were informed of the study's approach and personally identifiable information was kept confidential. The study was conducted for six months, from January to June 2010, and 300 patients were monitored and treated. The potential exposed persons (healthcare personnel and family members) to excreta from treated patients were identified. All contacts with excreta were recorded and the devices used to collect the excreta and associated wastes were listed. The day-to-day routines and interactions for each patient were observed and analyzed, including restroom use, room cleaning procedures, food procedures, contact with other healthcare personnel, and laundry service. When the patient used the toilet,