

ONCOLOGY NURSING SOCIETY

Safe Handling of Hazardous Drugs

SECOND EDITION

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ing mechanisms, and many do not have a lid, which can potentially result in aerosolization during flushing. Some facilities require the toilet to be covered with a plastic-backed absorbent pad while flushing. The HCW should wear PPE while handling the pad and dispose of it properly.

Double flushing at home may be useful in situations where there is insufficient volume or pressure to clear the toilet after use (Polovich et al., 2009). Nurses should discuss the topic with patients prior to discharge and ultimately allow them to determine whether the additional flush is warranted. When family members handle patients' contaminated excreta, they should wear gloves.

In addition to donning PPE, nurses and supportive personnel should consider other ways to reduce exposure to HDs found in body fluids. Such measures may include

- Using patients' weights rather than intake and output to monitor fluid status
- Weighing urinary output collected in drainage bags rather than measuring volume to reduce the risk of splashing when transferring urine into a second container before disposal
- Encouraging men to sit on toilet seats rather than standing to reduce the risk of droplet contamination
- Encouraging use of toilets rather than urinals and bedpans when feasible to decrease the possibility of spillage
- When applicable, collecting drainage of pleural, peritoneal, and other body fluids in a closed system that can be disposed of intact
- If possible, using disposable ostomy pouches rather than rinsing and reusing them
- Protecting the skin of incontinent patients from their own excreta. The metabolites of drugs found in the urine or stool may be damaging to the skin. Cleanse the skin with soap and water and apply a moisture barrier to the perineal and perirectal areas following each urination or stool. Apply a clean disposable diaper.
- Using a Vacutainer® (Becton, Dickinson and Co.) system when collecting blood samples to reduce the chance of blood exposure when transferring blood from a syringe to a specimen tube.

Linen Handling

Linens contaminated with HDs pose a health risk for HCWs, family members, and other caregivers who come in contact with them. While the HD exposure may be less when handling contaminated linens than when handling a drug during the preparation and administration phases, some drugs are excreted unchanged in the urine and the safe level of HD exposure is unknown. When considering linen handling, two main considerations exist. First, there is a need to prevent linen contamination. Second, linens contaminated with HDs should be handled safely to reduce occupational exposure and workplace contamination.

Figure 9 identifies ways to reduce the contamination of linens with HDs. These methods focus on using disposable items and fabrics that are less permeable to fluids than traditional cloth linens. Particular attention should be paid to these practices when patients are incontinent. Disposable items that are contaminated with even trace amounts of HDs should be discarded as HD waste (OSHA, 2002).

In the event that linens do become contaminated with HDs as a result of an HD spill or contact with body fluids that may contain residual HDs because of incontinence, vomiting, or diaphoresis, the linens require spe-

Figure 9. Ways to Reduce Linen Contamination With Hazardous Drugs

- For incontinent patients, both children and adults, disposable, plastic-backed, leak-resistant diapers are preferred to cloth diapers that are intended for washing and reuse.
- Use plastic- or vinyl-covered pillows rather than cloth-covered pillows to make cleaning easier in the case of hazardous drug contamination.
- Discourage the use of bedpans and bedside urinals, which are prone to spilling. Instead, encourage ambulatory patients to use the bathroom facilities.
- Use plastic- or vinyl-treated chairs that can be easily decontaminated rather than upholstered chairs that cannot be readily cleaned.

cial handling. OSHA (1995) specifies that linens contaminated with HDs should be double bagged, first in a specially marked bag and then in labeled impervious bags. In the laundry facility, the outer impervious bag should be removed and discarded after the inner bag containing the contaminated linens is placed directly into the washing machine. The laundry bag and contents should be prewashed alone before a second washing with other laundry (OSHA, 1995). The current handling recommendations from NIOSH specify that workers who handle linens of patients who have received HDs in the past 48 hours, and in some instances for up to seven days, should wear two pairs of disposable gloves and a disposable gown (NIOSH, 2004).

Some hospitals and laundry services do not require the HD-contaminated laundry to be double bagged because they treat all linens as potentially hazardous or biohazardous waste. To that end, they double wash and bleach all linens, and laundry personnel don full PPE for handling all linens. OSHA (2002) requires employers to ensure that employees wear appropriate PPE, such as gloves, gowns, face shields, and masks, when handling linens contaminated with blood-borne pathogens. OSHA does not set specific standards for handling linens contaminated with HDs, instead referring to the standard on blood-borne pathogens (OSHA, 1992/2008). In organizations where all laundry is handled as contaminated, the laundry must be bagged in an impervious bag to prevent environmental contamination resulting from soak-through and leakage. Nurses working in settings where all linen waste is not double bagged should investigate to ensure that appropriate care is being taken in the laundry department to protect the employees and the environment.

The current standard for handling HD-contaminated linens is to adhere to recommendations in the blood-borne pathogens standard as described previously. The Association for Linen Management (formerly the National Association of Institutional Linen Management), however, proposes strict double bagging of all hospital laundry of patients who have received HDs in the past 48 hours (up to seven days in specific instances). The association proposes a three-step process that includes recognizing potentially contaminated linen, education and training, and work practice recommendations. The proposal specifies that HD-contaminated linens should not be mixed with biohazardous (red-bagged) linens and that a separate color code should be used to designate the linens as hazardous (Association for Linen Management, 2009).

For most patients receiving HDs, home linens can be handled the same as other household laundry. Special handling should be implemented if an HD spill occurs in the home or if laundry becomes contaminated with the excreta of the person receiving HDs. In the home, patients should handle their own contaminated linens when feasible. Family members or caregivers should don chemotherapy gowns and double gloves if they are handling contaminated linens. Contaminated linens in the home should be double washed with hot water and detergent separately from other household laundry. Bleach should be used when feasible, considering the fabric, for its role in deactivating HDs. Whenever possible, the contaminated items should be placed directly into the washing machine to avoid contamination of any intermediary storage container. If the contaminated laundry cannot be washed immediately, placing the items in a plastic bag prevents contamination of a laundry basket or storage container. The plastic bag should be disposed of immediately in the household trash after the linens are placed in the washing machine to prevent spreading contamination. A common-sense approach to handling HD-contaminated linen will prevent further environmental contamination in both the homecare and healthcare settings.