



SAFE HANDLING Q&A

CLEANING RECOMMENDATIONS WITH HAZARDOUS DRUG USE

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WHAT ARE THE CLEANING RECOMMENDATIONS FOR SURFACES POTENTIALLY CONTAMINATED WITH HAZARDOUS DRUGS?

USP<800> describes a four-step process for surfaces potentially exposed to hazardous drugs (HDs): deactivation, decontamination, cleaning, and disinfection. However, the chapter context is intended for the pharmacy and not areas where HDs are administered.

By definition, disinfection is for sterile areas, which does not apply to administration.

Cleaning uses a germicidal wipe or solution and reflects current infection prevention practice in infusion departments and hospital rooms.

Decontamination is the process of removing HD residue from a surface. This removal does not normally occur with standard cleaning products. Based on wipe test studies, it is known that HDs can remain on surfaces for extended periods of time (Chu et al., 2012; Hansel et al., 1997). They are also typically difficult to remove because of the chemical structure of the drug and/or the diluent (Anderson et al., 2001; Gonzalez & Massoomi, 2010; Hon et al., 2014).

Deactivation renders HD residue inert; although it may be preferred, it is not always possible given the different chemical structure of the chemotherapy agents currently in use. Strong oxidizers, such as sodium hypochlorite, have been shown to neutralize some HDs (Simon et al., 2019). These products can be used on floors (e.g., after a spill) but are not recommended for plastic surfaces. In addition, they typically have a strong odor, limiting their use in large areas and particularly between patients in infusion rooms.

One of the big challenges in applying the previously mentioned standards to administration areas is that, with the exception of cleaning, HD-specific products are designed for smaller areas in the pharmacy, such as the interior of the biologic safety cabinet, and for surfaces made of stainless steel. Patient rooms and infusion areas typically have minimal stainless steel. IV pumps, which are commonly contaminated with HD residue (Bartel et al., 2018; Viegas et al., 2014) should only be exposed to chemicals specified by the pump manufacturer to prevent damage to the case and internal electromechanical components. The products available for pharmacy use are not

currently recommended by pump manufacturers. Although independent testing can be done, no official recommendations can be made without risk of violating the manufacturer's warranty.

WHAT CLEANING AGENTS SHOULD BE USED FOR CLEANING HAZARDOUS DRUG ADMINISTRATION AREAS?

Select cleaning agents appropriate for the surface type. Alcohol is not effective for cleaning surfaces that are contaminated with HD residue because it is a solvent and may spread contamination (Power & Coyne, 2018). Detergent (or soap) and water is not referenced in USP<800> but has been included in the Oncology Nursing Society HD guidelines for many years (Polovich & Olsen, 2018). Although no studies have validated efficacy, it is thought that the detergent or soap will loosen the drug from the surface, and water aids in diluting the HD concentration.

HOW SHOULD SURFACES IN HAZARDOUS DRUG ADMINISTRATION AREAS BE CLEANED?

Wear personal protective equipment when cleaning surfaces that are potentially contaminated with HD residue. According to the American Society of Health-System Pharmacists (Power & Coyne, 2018), "surface decontamination" means transferring HD residue from a surface (e.g., counter top) to a disposable wipe or towel that is wetted with a cleaning solution. The wipe will physically remove much of the HD residue. Be aware that spraying surfaces with cleaning agents may aerosolize or spread HD residue (Power & Coyne, 2018).

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