

Development and Evaluation of a Novel Product to Remove Surface Contamination of Hazardous Drugs

Authors: Joshua Cox¹, Vonni Speed², Sara O'Neal^{3,4}, Terry Hasselwander², Candice Sherwood^{3,4}, Stephen Eckel^{3,6,7}, William C. Zamboni^{3,4,5,7}.

¹Dayton Physicians Network, Dayton, OH.

²James Graham Brown Cancer Center, Louisville, KY;

³University of North Carolina (UNC) Eshelman School of Pharmacy;

⁴UNC Lineberger Comprehensive Cancer Center;

⁵Carolina Center of Cancer Nanotechnology Excellence, University of North Carolina;

⁶University of North Carolina Hospitals;

⁷ChemoGLO, LLC, Chapel Hill, NC

ABSTRACT:

Background: Even while following best practices, surface exposures of hazardous drugs (HDs) are high and numerous. Thus, it is important to develop new products to reduce the surface contamination of HDs. Hazardous Drug Clean (HDClean™) was developed to decontaminate and remove HDs from various types of surfaces and overcome the problems associated with other cleaning products.

Methods: HDClean was evaluated to remove mock surface exposures of HDs (docetaxel, paclitaxel, ifosfamide, cyclophosphamide, 5-FU, and cisplatin) from various types of surfaces. In 2 separate cancer centers, studies were performed to evaluate HDClean in reducing surface contamination of HDs in the pharmacy departments where no closed system transfer device (CSTD) was used. In a 3rd cancer center, studies were performed comparing the effectiveness of a CSTD + Surface Safe compared with CSTD + HDClean to remove HDs.

Results: HDClean was able to completely remove mock exposures of a wide range of HDs from various surfaces (4 and 8 sq ft areas). Daily use of HDClean was equal to or more effective in reducing surface contamination of HDs in 2 pharmacies compared with a CSTD. HDClean was significantly more effective in removing HDs, especially cisplatin, compared with Surface Safe and does not have the problems associated with decontamination solutions that contain sodium hypochlorite.

Conclusion: These studies support HDClean as an effective decontaminating product, that HDClean is more effective than Surface Safe in removing HDs and is equal to or more effective than CSTD in controlling HD surface exposures.

KEYWORDS:

Hazardous drugs (HDs), surface contamination, decontamination, cleaning, HDClean