



Detect harmful surface contamination in minutes, not weeks

Introducing the BD[®] HD Check system, the **first and only** rapid detection test for select hazardous drugs.



Providing life-saving treatments can put your staff at risk

Numerous studies show chemotherapy drugs can cause serious acute and chronic health complications.



Detrimental effect on DNA

- ✓ 2.5-fold to 5-fold increase in total chromosomal aberrations among pharmacists and nurses.^{1,2}



Increased rates of cancer

- ✓ 2.8-fold increase in nonmelanoma skin cancer and 3.7-fold increase in non-Hodgkin lymphoma among pharmacy techs.⁴
- ✓ Oncology nurses have shown an increase in relative risk of leukemia.³



Reproductive issues

- ✓ Doubled risk of miscarriage among staff handling antineoplastic drugs, along with an increase in risk of malformations in offspring.^{5,6}



Damage to internal organs

- ✓ Increased risk of liver damage among nurses handling antineoplastic drugs.⁷

Anyone who handles hazardous drugs during transportation, preparation, administration or waste disposal may be at risk for exposure.^{8,9}

Contamination may be surprisingly widespread

Surface contamination with hazardous drugs still occurs frequently, despite well-established safety guidelines and standards from USP, NIOSH, OSHA and others.^{10,11}



✓ **Contamination may be present and easily spread throughout your institution.¹²**

- Surface, airfoil or floor in front of BSC
- Surface and floor in front of CACI
- Floor in pharmacy
- Pass-through (inside and outside, both for CACI and from inside the pharmacy)
- Countertops
- Equipment
- Storage trays
- Drug vials
- Door handles, doorknobs, other high-touch areas
- Computer keyboard/ mouse

✓ Inadvertent spread of contamination can put hospital personnel at risk through various routes, including inhalation, dermal contact and ingestion.¹³

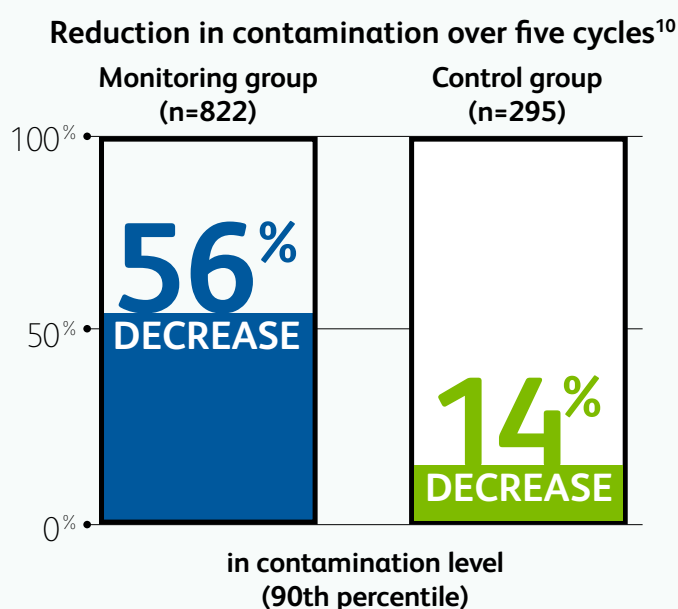
BSC, biological safety cabinet; CACI, compounding aseptic containment isolator; NIOSH, National Institute for Occupational Safety and Health; OSHA, Occupational Safety and Health Administration; USP, United States Pharmacopeia

Routine monitoring is recommended to validate engineering controls and minimize hazardous drug exposure^{10,14}

Current USP <797>, new USP <800> standards and other safe handling guidelines recommend routine testing, as needed, to check for hazardous residue on various surfaces and verify containment.¹⁵

In a 15-month study investigating wipe sample monitoring at regular intervals¹⁰:

- ✓ **61%** of wipe samples (N=1,269) were positive for contamination at baseline.
- ✓ In the control group, contamination was tested at cycle one and cycle five.
- ✓ In the monitoring group, contamination was tested at all five cycles.



During the study, **approximately 75%** of the monitoring group introduced cleaning protocol changes as a result of monitoring.¹⁰

Almost 7 out of 10 participating pharmacies stated that they had changed or would change their work procedures as a consequence of these findings.¹⁰



Detect surface contamination in less than 10 minutes with the BD[®] HD Check system

- ✓ Provides easy-to-read results, enabling immediate corrective action to be taken.
- ✓ Technology licensed from NIOSH.
- ✓ Facilitates routine testing with the convenience of a handheld design.
- ✓ Tests for select commonly used antineoplastic agents.
- ✓ Evaluates effectiveness of safe handling processes.
- ✓ Enables you to track contamination levels over time with more frequency.
- ✓ Offers a simple way to help justify quality control investments and safe handling compliance efforts.
- ✓ Adapted from lateral flow immunoassay technology.

Conventional testing methods can be time consuming, making regular monitoring a challenge.¹⁴

BD[®] HD Check system: a revolution in hazardous drug detection

- ✓ Current guidelines and standards recommend routine monitoring to help improve environmental quality and control.
- ✓ The BD HD Check system detects select hazardous drugs in less than 10 minutes to help facilitate routine monitoring and evaluate your institution's safe handling practices.

Order today—together let's keep a check on surface contamination

Part no.	Product	Case
515020	Analyzer	1
515033	Collection kit	20
515024	Surface area templates	20
515025	Doxorubicin assay cartridges	20
515026	Doxorubicin assay cartridges	40
515029	Methotrexate assay cartridges	20
515030	Methotrexate assay cartridges	40
515031	Cyclophosphamide assay cartridges	20
515032	Cyclophosphamide assay cartridges	40

Speak to your BD representative to learn more.

References: **1.** Cavallo D, Ursini CL, Perniconi B, et al. Evaluation of genotoxic effects induced by exposure to antineoplastic drugs in lymphocytes and exfoliated buccal cells of oncology nurses and pharmacy employees. *Mutat Res.* 2005;587(1-2):45-51. **2.** McDiarmid MA, Oliver MS, Roth TS, Rogers B, Escalante C. Chromosome 5 and 7 abnormalities in oncology personnel handling anticancer drugs. *JOEM.* 2010;52(10):1028-1034. **3.** Skov T, Maarup B, Olsen J, Rørth M, Winthereik H, Lyng E. Leukaemia and reproductive outcome among nurses handling antineoplastic drugs. *Br J Ind Med.* 1992;49(12):855-861. **4.** Hansen J, Olsen JH. Cancer morbidity among Danish female pharmacy technicians. *Scand J Work Environ Health.* 1994;20(1):22-26. **5.** Lawson CC, Rocheleau CM, Whelan EA, et al. Occupational exposures among nurses and risk of spontaneous abortion. *Am J Obstet Gynecol.* 2012;206(4):327.e1-8. **6.** Hemminki K, Kyronen P, Lindbohm ML. Spontaneous abortions and malformations in the offspring of nurses exposed to anaesthetic gases, cytostatic drugs, and other potential hazards in hospitals, based on registered information of outcome. *J Epidemiol Community Health.* 1985;39(2):141-147. **7.** Sotaniemi EA, Sutinen S, Aranto AJ, et al. Liver damage in nurses handling cytostatic agents. *Acta Med Scand.* 1983;214(3):181-189. **8.** Connor TH, Lawson CC, Polovich M, McDiarmid MA. Reproductive health risks associated with occupational exposures to antineoplastic drugs in health care settings: a review of the evidence. *JOEM.* 2014;56(9):901-910. **9.** NIOSH Alert 2004. Preventing occupational exposures to antineoplastic and other hazardous drugs in health care settings. <http://www.cdc.gov/niosh/docs/2004-165/pdfs/2004-165.pdf>. **10.** Kiffmeyer TK, Tuerk J, Hahn M, et al. Application and assessment of regular environmental monitoring of the antineoplastic drug contamination level in pharmacies—the MEWIP project. *Ann Occup Hyg.* 2013;57(4):444-455. **11.** Connor TH, Massoomi F. Environmental monitoring and medical surveillance of health care workers who handle hazardous drugs (HDs). In: Mansur J, ed. *Improving Safe Handling Practices for Hazardous Drugs.* Oak Brook, IL: Joint Commission Resources; 2016:139-167. **12.** Connor TH, Zock MD, Snow AH. Surface wipe sampling for antineoplastic (chemotherapy) and other hazardous drug residue in healthcare settings: methodology and recommendations. *J Occup Environ Hyg.* 2016;13(9):658-667. **13.** Connor TH, McDiarmid MA. Preventing occupational exposures to antineoplastic drugs in healthcare settings. *CA Cancer J Clin.* 2006;56(6):354-365. **14.** Connor TH, Smith JP. New approaches to wipe sampling methods for antineoplastic and other hazardous drugs in healthcare settings. *Pharm Technol Hosp Pharm.* 2016;1(3):107-114. **15.** The United States Pharmacopeial Convention. USP 40–NF 35 Physical tests: <800> Hazardous drugs handling in healthcare settings. Chapter ahead of publication in December 2019.

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