



# Protecting Health Care Workers from Hazardous Drugs and Chemicals

In today's society, it's impossible for anyone to avoid exposure to chemicals. The Centers for Disease Control and Prevention (CDC), the Department of Health and Human Services (HHS) and the National Institute for Occupational Safety and Health (NIOSH) are just a few of the organizations that are researching the impact chemicals may have on humans.

Because of their frequent exposure to hazardous drugs and chemicals — such as antineoplastics, antiviral treatments, chemotherapy drugs, glutaraldehyde and hormone regimens — in the course of caring for patients, hospital and health care workers are at increased risk for chemical and pharmaceutical exposure. Thus, the CDC, HHS, NIOSH and other workplace safety organizations are making workers and their employers aware of the risks these drugs and chemicals pose when exposures occur. The Bureau of Labor Statistics estimates that an estimated 8.8 million health care workers in the U.S. are potentially exposed to hazardous drugs or drug waste at their worksites.

Although not all workers in health care settings may handle hazardous drugs, those potentially at risk include:

- Environmental services workers
- Home health care workers
- Hospice workers
- Operating room personnel
- Pharmacy and nursing personnel
- Physicians
- Research laboratory workers
- Shipping and receiving personnel
- Veterinarians and veterinary technicians

Scenarios where such exposures can take place include:

- While preparing or administering of hazardous drugs
- Working in areas where these drugs are used and coming into contact with these agents in the air, on work surfaces, contaminated clothing, medical equipment, patient or animal excreta and other surfaces

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## Biomonitoring Study Finds Many Chemicals Present in Health Care Workers

Biomonitoring is a tool used by the CDC, state health departments, academic-based researchers, non-governmental organizations and communities to identify the presence of and exposure to potential toxicants. It involves measuring environmental chemicals in human tissues and fluids, such as blood, saliva, breast milk and urine. Through biomonitoring, scientists can determine which chemicals are present in people's bodies, at what levels and whether they exceed known toxicity levels.

Physicians for Social Responsibility (PSR) conducted the first biomonitoring study of health care professionals for chemicals that are emerging or known chemicals of concern and have been associated with certain diseases whose incidences are on the rise. Participants' blood and urine were tested for six chemicals or chemical groups:

- Bisphenol A
- Mercury
- Perfluorinated compounds
- Phthalates
- Polybrominated diphenyl ethers
- Triclosan

The study found:

- All 20 participants had at least 24 individual chemicals in their body.
- Two participants had a high of 39 chemicals detected.
- All participants had bisphenol A, and some form of phthalates, PBDEs, and PFSc

To read the PSR's full report, visit <http://www.psr.org/assets/pdfs/hazardous-chemicals-in-health-care.pdf>

## Risks of Exposure

Studies have shown that exposure to such hazardous materials can cause serious health effects including:

- Skin rashes and other allergic reactions
- Adverse reproductive and developmental outcomes (infertility, spontaneous abortions, congenital malformations)
- Leukemia and/or other cancers

The extent of the exposure and the potency and toxicity of the drugs or chemicals also influences the potential impact to one's health.

## What Employers Can Do

Both the CDC and NIOSH have stated in public alerts that to provide workers with the greatest protection, employers should "implement necessary administrative and engineering controls and assure that workers use sound procedures for handling hazardous drugs and proper protective equipment." "Substances that present a potential health hazard to workers must be included in an employer's hazard communication program, and it should be readily available and accessible to all including temporary workers, contractors and trainees," said David Michaels, Ph.D., MPH, Assistant Secretary of Labor for OSHA. "We encourage employers to address safe drug handling by committing their management staff to taking a leadership role identifying and remediating hazards, offering employee training and evaluating workplace injury and illness prevention programs for continuous improvement."

For a list of specific drug and chemical hazards found in hospital and health care settings and additional information on the risks these items pose, please refer to the following resources available through the CDC:

- "Glutaraldehyde – Occupational Hazards in Hospitals": <http://www.cdc.gov/niosh/docs/2001-115/pdfs/2001-115.pdf>
- "NIOSH List of Antineoplastic and Other Hazardous Drugs in Healthcare Settings 2012": <http://www.cdc.gov/niosh/docs/2010-167/pdfs/2010-167.pdf>
- "Preventing Occupational Exposure to Antineoplastic and Other Hazardous Drugs in Health Care Settings": <http://www.cdc.gov/niosh/docs/2004-165/pdfs/2004-165.pdf>
- "Workplace Solutions: Medical Surveillance for Healthcare Workers Exposed to Hazardous Drugs": <http://www.cdc.gov/niosh/docs/wp-solutions/2013-103/pdfs/2013-103.pdf>

United Heartland is committed to providing and directing our customers to helpful resources regarding exposures to hazardous drugs and chemicals. Contact our team of specialists for more information at 800-258-2667.

