

# 17 percent of cancer nurses unintentionally exposed to chemotherapy, study finds

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Nearly 17 percent of nurses who work in outpatient chemotherapy infusion centers reported being exposed on their skin or eyes to the toxic drugs they deliver, according to a new study from the University of Michigan Comprehensive Cancer Center.

The study surveyed 1,339 oncology [nurses](#) from one state who did not work in inpatient hospital units. About 84 percent of chemotherapy is delivered in outpatient settings, largely by nurses. Results appear online in the journal *BMJ Quality and Safety*.

"Any unintentional exposure to the skin or eyes could be just as dangerous as a needle stick," says lead study author Christopher Friese, R.N., Ph.D., assistant professor at the U-M School of Nursing.

"We have minimized needle stick incidents so that they are rare events that elicit a robust response from administrators. Nurses go immediately for evaluation and prophylactic treatment. But we don't have that with chemotherapy exposure," Friese says.

Safety guidelines for chemotherapy drug administration have been issued by organizations such as the National Institute for Occupational Safety and Health. But these guidelines are not mandatory. Guidelines include recommendations for using gowns, gloves and other protective gear when handling [chemotherapy drugs](#).

The U-M Comprehensive Cancer Center adheres to these safety guidelines and has procedures in place to implement and enforce them for all staff who administer chemotherapy drugs. U-M nurses did not participate in this study.

The study authors found that practices that had more staffing and resources reported fewer exposures. Also, practices in which two or more nurses were required to verify chemotherapy

orders - part of the suggested guidelines - had fewer exposures.

"This research shows that paying attention to the workload, the health of an organization, and the quality of working conditions pays off. It's not just about job satisfaction - it's likely to lower the risk of these occupational hazards," Friese says.

Unlike needle sticks where a specific virus is involved and preventive treatments can be given, it's more difficult to link chemotherapy exposure to a direct health effect. That makes it more difficult for health care systems to respond to these incidents. Unintentional chemotherapy exposure can affect the nervous system, impair the reproductive system and confer a future risk of blood cancers.

Friese collaborated in this study with the U-M School of Nursing's Occupational Health Nursing Program, which focuses on training nurses to promote injury prevention and protect against work-related injuries and environmental hazards on the job. By combining this practical occupational health perspective with the expertise of quality and safety researchers, the team hopes to better understand what happens during [chemotherapy](#) exposure and what can be done in the work place to prevent it.

"If we ensure patient safety, we should also ensure employee safety by strictly adhering to the national safety guidelines and providing staff education on these guidelines," Friese says.

**More information:** Structures and Processes of Care in Ambulatory Oncology Settings and Nurse-Reported Exposure to Chemotherapy, *BMJ Quality and Safety*, DOI: [10.1136/bmjqs-2011-000178](https://doi.org/10.1136/bmjqs-2011-000178) ; published online Aug. 16, 2011.

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