

# Overall calls to poison centers are declining, but serious cases are increasing

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Calls to poison centers about the most serious cases are on the rise, even as the overall volume of calls declines, according to a UVA study. Credit: John DiJulio, University Communications

America's poison centers are fielding increasingly severe cases that are

dramatically more likely to lead to serious harm or death in both adults and children, a new study from the University of Virginia School of Medicine reveals.

The study examined a 15-year period ending in 2021 and found the number of calls about "intentional exposures" that resulted in death had increased 234%. Those calls included [suicide attempts](#), illegal drug use and misuse of medications.

The study is [published](#) in the journal *Clinical Toxicology*.

The severity of "unintentional exposures" increased as well, with the number resulting in severe harm (such as disfigurement or disability) increasing by more than a third and the number resulting in death increasing by 65.3%. Those calls included accidents like taking an incorrect dose of medicine; workplace and environmental exposures to [harmful substances](#); bites and stings; and [food poisoning](#).

The severity of cases among children was up, too. The number of pediatric intentional exposures resulting in severe harm or death was up by 76.6%, even as the total number of cases declined by 33%. The number of unintentional exposures resulting in severe harm or death was up by 190% and 122.7%, respectively.

"As a society, we should be concerned at these trends pertaining to children," said Dr. Christopher Holstege, director of UVA Health's Blue Ridge Poison Center and chief of the Division of Medical Toxicology at UVA's School of Medicine. "We need to collaboratively strategize on better delineating the root causes for such severe cases of pediatric poisonings, especially in the realms of mental health and substance use and misuse.

## Understanding poisoning trends

With drug overdose deaths rising around the nation, Holstege and his collaborators—UVA epidemiologist Rita Farah and Dr. Ryan J. Cole—wanted to get a better sense of the outcomes for calls poison centers have received in recent years. So, they reviewed more than 33.7 million poison exposures reported to the 55 poison centers in the United States between Jan. 1, 2007, and Dec. 31, 2021.

The calls included:

- Almost 8 million unintentional exposures among adults 19 and older
- 3.9 million intentional adult exposures
- 18.7 million unintentional pediatric exposures
- More than 1.6 million intentional pediatric exposures

The researchers found that calls were increasingly likely to result in severe harm or death as time went on, and this held true across all age groups. Calls about cases that had minor effects, meanwhile, declined.

That aligned with what Holstege expected. "We were not surprised by the study findings. In fact, what prompted us to look at the data on a national level is the increased severity of cases we are seeing at UVA Health's Blue Ridge Poison Center," he said. "The cause for this trend is multifactorial: We have experienced a growing mental health crisis in the nation's youth, and we are finding an increasing number of dangerous novel [psychoactive substances](#) such as synthetic opioids and designer benzodiazepines entering society."

Despite the increasing severity of calls to poison centers, the researchers did not find a consistent, corresponding increase to critical care units. This may have resulted, in part, from the COVID-19 pandemic limiting available health care resources, the researchers say.

With poison centers being called upon to handle increasingly severe cases, they may need to rethink how they allocate resources, the researchers note. For example, they may need to have more toxicologists available to field complex cases that go beyond the expertise of the poison specialists who answer calls.

"Poison centers are an integral part of the medical management team as we see an increase in the severity of cases of poisoning," Holstege said. "Poison centers are staffed with clinical toxicologists who provide free expert recommendations on a vast array of toxicologic emergencies to the public and to professionals who call. Involving toxicologists early can save lives and reduce the length of hospital stays."

**More information:** Rita Farah et al, Increasing severity of medical outcomes and associated substances in cases reported to United States poison centers, *Clinical Toxicology* (2024). [DOI: 10.1080/15563650.2024.2337897](https://doi.org/10.1080/15563650.2024.2337897)

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