

Emergency drug overdose visits associated with increased risk for later suicide

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A new data analysis funded by the National Institutes of Health finds patients who visited the emergency department for an opioid overdose are 100 times more likely to die by drug overdose in the year after being discharged and 18 times more likely to die by suicide relative to the general population. Additionally, in the year after emergency department discharge, patients who visited for a sedative/hypnotic overdose had overdose death rates 24 times higher, and suicide rates 9 times higher, than the general population. The findings, published in the *American Journal of Preventive Medicine*, highlight the need for interventions that reduce suicide and overdose risk that can be implemented when patients come to the emergency department.

"We knew that nonfatal opioid and [sedative](#)/hypnotic drug overdoses were a major cause of disease. What these new findings show is that overdose patients also face an exceptionally high risk of subsequent [death](#)—not just from an unintentional overdose, but also from suicide, non-suicide accidents, and natural causes," said Sidra Goldman-Mellor, Ph.D., lead study author and assistant professor of public health at the University of California, Merced.

Drug-related mortality is an ongoing public health problem. Deaths by drug overdose increased 225% between 1999 and 2015, with prescription drugs and heroin overdose accounting for the majority of these deaths. Although previous studies have detailed trends in [emergency department](#) visits related to opioid and sedative/hypnotic drug overdose, less is known about the risk of death in the year following

emergency care for a drug overdose.

"We have tracked and reported patient survival for health concerns such as cancers and heart surgery for decades," said paper co-author Michael Schoenbaum, Ph.D., a senior advisor for mental health services, epidemiology, and economics at the National Institute of Mental Health (NIMH), part of the NIH. "We improve what we measure and should be doing the same type of tracking for people with overdose or suicide risk to inform our prevention and treatment programs."

To learn more about the risks for death that follow a nonfatal [opioid overdose](#), a research team led by Dr. Goldman-Mellor examined discharge data for all visits to emergency departments in California between 2009 and 2011. These data were matched with death records from the California Department of Public Health, which provided information about the date and cause of death for all individuals who died between 2009-2012.

The researchers focused on patients who visited the emergency department for an opioid overdose (e.g., heroin, methadone) or for a sedative/hypnotic drug overdose (e.g., barbiturate, benzodiazepine) at least once during the 2009-2011 study period.

The data showed that for those who had visited for sedative/hypnotic drug overdose, the death rate in the following year was 18,080 per 100,000; for those who had visited for an opioid overdose, the death rate in the following year was 10,620 per 100,00 patients. The death rates for these groups were significantly higher than the death rate observed in a demographically matched group of Californians (3,236 per 100,000 people).

Eighty-eight percent of the unintentional deaths among patients who had visited for opioid overdose were caused by an unintentional overdose

(1,863 per 100,000)—a rate 100 times higher than that of the general population. The suicide rate for this group (319 per 100,000 patients), which included some deaths by intentional drug overdose, was 18 times higher than that of the general population.

Sixty percent of unintentional deaths among patients who had visited for sedative/hypnotic overdose were caused by an unintentional [drug overdose](#) (342 per 100,00 patients)—a rate 24 times higher than that of the general population. Among those who had previously experienced a sedative/hypnotic [drug overdose](#), the rate of death by suicide (174 per 100,000 patients) was almost 9 times higher than the general population.

"There are already promising emergency department-based interventions that could reduce overdose and other mortality risks, such as suicide, among these patients, but such interventions need to be much more widely implemented," said Dr. Goldman-Mellor. "Moreover, those interventions should target not just patients overdosing on opioids, but also those overdosing on sedative/hypnotic drugs, since their mortality risks were also very high."

Dr. Goldman-Mellor indicated that although this study provides important information about the outcomes of individuals presenting to emergency departments after an [overdose](#), the findings should be replicated in other parts of the U.S. using more recent data, as patterns of [opioid](#) and sedative/hypnotic use (and related mortality) have changed substantially over time.

More information: Goldman-Mellor, S., Olfson, M., Lidon-Moyano, C., & Schoenbaum, M. (2020). Mortality following nonfatal opioid and sedative/hypnotic drug overdose. *American Journal of Preventive Medicine*.

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