

Researchers find rate of fatal opioid poisonings among children more than doubled over 13-year span

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Researchers from Children's Hospital of Philadelphia (CHOP) have found that opioids were responsible for more than half of all fatal poisonings in children ages 5 and younger between 2005 and 2018, more

than double the proportion of fatal poisonings caused by opioids in 2005. Additionally, over-the-counter drugs still contribute to fatal poisonings in this age group despite increased regulation. The findings, published today in the journal *Pediatrics*, underscore the need for improved intervention to prevent further fatal poisonings.

More than half of all reported poisonings affect [children](#) ages 5 and younger and have the highest rate of emergency department visits for unintentional drug-related poisonings. While child-resistant packaging for many medicines and hazardous products has substantially decreased the number of unintentional fatal poisonings in [young children](#), the escalating opioid epidemic in the United States has contributed to recent child [poisoning](#) deaths.

Studying fatal poisonings in young children on a broad scale in the U.S. has been challenging for researchers. Every state conducts child death reviews, which investigate how and why these deaths happen and what steps can be taken to prevent them. Child death reviews are conducted by teams that often take a multidisciplinary approach when reviewing pediatric fatalities. The National Center for Fatality Review and Prevention provides resources for these child death reviews and maintains a reporting system that collects data from these committees.

"By comprehensively assessing fatal poisonings among children at a national level, we were able to better understand the scale of this tragic and preventable public health issue," said first study author Christopher Gaw, MD, a Pediatric Emergency Medicine Fellow with the Poison Control Center and the Center for Injury Research and Prevention at CHOP. "We were also able to specifically characterize the proportion of poisoning deaths that could be attributed to opioids each year."

The study team used data from 40 states participating in the National Fatality Review-Case Reporting System on deaths attributed to

poisonings among children 5 years and younger between 2005 and 2018. During that period, 731 poisoning-related fatalities were reported by child death reviews.

The researchers found that more than two-fifths of these poisoning deaths occurred among children 1 year old or younger, and more than 65% of these fatalities occurred at home. Nearly one-third of children who died by poisoning were supervised by someone other than a biological parent. Opioids were the most common substance contributing to death, followed by over-the-counter medications for pain, colds and allergies. In 2005, opioids contributed to 24.1% of deaths, but this proportion increased to 52.2% by 2018.

The authors noted that while initiatives focused on reducing opioid prescribing resulted in a transient reduction in these deaths in the early 2010s, in the past decade, new opioid sources—including heroin and synthetic opioids such as fentanyl—have reversed prior public health gains. Additionally, while medication safety initiatives like unit dose packaging have shown promise in reducing these unintended exposures, the approach does not address all prescription opioids or illicit [opioids](#).

"It's clear from these findings that preventing fatal pediatric poisonings requires a multifaceted approach involving caregiver education and community-level interventions," said senior study author Daniel J. Corwin, MD, MSCE, an attending physician and Associate Director of Research in the Division of Emergency Medicine at CHOP. "One such intervention is improving the availability of naloxone for the public, which can rapidly reverse [opioid overdose](#) and is safe and effective for use in children."

More information: Characteristics of Fatal Poisonings Among Infants and Young Children in the United States, *Pediatrics* (2023). [DOI: 10.1542/peds.2022-059016](https://doi.org/10.1542/peds.2022-059016)

Provided by Children's Hospital of Philadelphia

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