

PUBLIC HEALTH ALERTS | IN PARTNERSHIP WITH CIDRAP

U.S. Drug Overdose Deaths that Occurred in Isolation, 2022–2024

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Abstract

Timeliness of drug overdose response efforts may be improved when bystanders are present to provide life-saving care. From January 2022 through December 2024, a total of 191,577 unintentional or undetermined intent overdose deaths occurred in 46 U.S. states and Washington, DC. Of these, 75.5% occurred in isolation (i.e., with no evidence of a bystander present or with a bystander spatially separated from the decedent), and 55.0% occurred in isolation in a house or apartment setting. Emerging technological approaches, in addition to improvements in overdose education and distribution of opioid overdose reversal medications, may help address the challenge of preventing death among individuals who use drugs in isolation, particularly in the home.

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Introduction

Despite recent declines in drug overdose deaths, 79,384 people died of a drug overdose in 2024.¹ Although transitions in the overdose epidemic in the United States have led to more stimulant and polysubstance overdoses, most overdose deaths continue to involve synthetic opioids, primarily illegally manufactured fentanyl and fentanyl analogs.² In 2024, 73% of overdose deaths involved any opioid, and 65% of deaths involved illegally manufactured fentanyls.^{1,3–5} Because fentanyl is fast acting and can quickly cause respiratory depression and overdose,⁵ rapid response to overdose (including use of opioid overdose reversal medications such as naloxone) is important.

Lifesaving response to overdose may be delayed or absent when drug use occurs in isolation. In 2024, a majority of overdose deaths recorded in the Centers for Disease Control and Prevention (CDC) State Unintentional Drug Overdose Reporting System (SUDORS) had no evidence of the presence of a potential bystander. To assist in identifying options for preventing overdose deaths that occurred in isolation, we analyzed SUDORS data to describe the settings in which they occurred. This activity was reviewed by the CDC, deemed not research, and was conducted consistent with applicable federal law and CDC policy [45 C.F.R. part 46.102(l)(2), 21 C.F.R. part 56; 42 U.S.C. Sect. 241(d); 5 U.S.C. Sect. 552a; 44 U.S.C. Sect. 3501 et seq.].

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Investigation and Outcomes

SUDORS collects data on drug overdose deaths that are unintentional and of undetermined intent from death certificates, coroner/medical examiner reports, and postmortem toxicology reports. We analyzed data on bystander type and setting of overdose deaths that occurred in 46 states and Washington, DC, from January 2022 through December 2024. Jurisdictions with death certificate and circumstance data for at least 75% of deaths in one or more 6-month reporting periods were included. Thirty-seven jurisdictions had data for the entire period and 10 for a subset of periods. Analyses were restricted to deaths with data available for any overdose-related circumstances (N=191,577 [93.6% of all deaths in the included jurisdictions and reporting periods]). For the settings-specific analyses, deaths with unknown/missing setting (n=5744 [4.0% of deaths]) were excluded.

Overdose deaths that occurred in isolation were defined as deaths in which a potential bystander was present but spatially separated from the decedent (e.g., in a different room) or deaths in which there was no evidence of a bystander present. A potential bystander was defined as a person 11 years of age or older who was physically nearby either during or shortly preceding an overdose and potentially had an opportunity to intervene or respond. This includes persons in the same building structure (e.g., same room or same house but different room) as the decedent during that time but does not include persons in different self-contained parts of buildings (e.g., persons in a different unit in the same apartment building). We assessed overdose setting and type of spatially separated bystander among deaths that occurred in isolation.

From January 2022 through December 2024, a total of 191,577 overdose deaths occurred in the 47 jurisdictions; of these, 75.5% (144,607 deaths) occurred in isolation. Among deaths in isolation, 72.9% (105,347 deaths) occurred in a house or apartment setting, and 23.2% (33,516 deaths) occurred in other settings (e.g., car, sidewalk, bar). There was no evidence of a bystander for 70.4% (74,124) of deaths that occurred in isolation in a house or apartment and 86.3% (28,931) of deaths that occurred in other settings. A spatially separated intimate partner or family member was present for 20.2% (21,299) of deaths that occurred in isolation in a house or apartment and for 2.7% (911) of deaths that occurred in other settings. A spatially separated other type of bystander (e.g., roommate or friend) was present for

8.8% (9271) of deaths in isolation in a house or apartment, and 10.6% (3563) of deaths in isolation in other settings (Fig. 1).

This analysis had limitations. Although 47 jurisdictions were included in this analysis, some large states were excluded, which could affect generalizability. In addition, circumstance data in SUDORS are limited to information available in investigative reports, which can vary across and within jurisdictions.

Preliminary Conclusions and Actions

From January 2022 through December 2024, more than 75% of fatal overdoses occurred in isolation, which limited possibilities for providing life-saving overdose response efforts; this finding highlights the importance of tailoring overdose prevention and messaging to persons using drugs in isolation to reduce their overdose risk.⁶ For approximately one in five deaths that occurred in isolation in a house or apartment, an intimate partner or family member was present but spatially separated. Enhanced overdose education and increased distribution of opioid overdose reversal medications, particularly to intimate partners and family members, could increase awareness of substance use, improve overdose response, and prevent deaths.⁷ Existing and emerging technologies, such as phone-based apps or wearable devices that track vital signs and alert first responders to overdoses, offer potential approaches to preventing deaths for persons using drugs, particularly for those using drugs in isolation in the absence of nearby bystanders. Although additional evaluation of the effectiveness of these emerging technologies is needed, some already are becoming more widely available and could complement current overdose prevention efforts.⁸

Disclosures

Author disclosures are available at evidence.nejm.org.

The findings and conclusions in this report are those of the authors and do not necessarily reflect the official position of the CDC or the US Department of Health and Human Services.

We appreciate jurisdictions participating in CDC's Overdose Data to Action in States (OD2A-S) program and providing data to SUDORS, including state and jurisdictional health departments, vital registrar offices, and medical examiner and coroner offices.

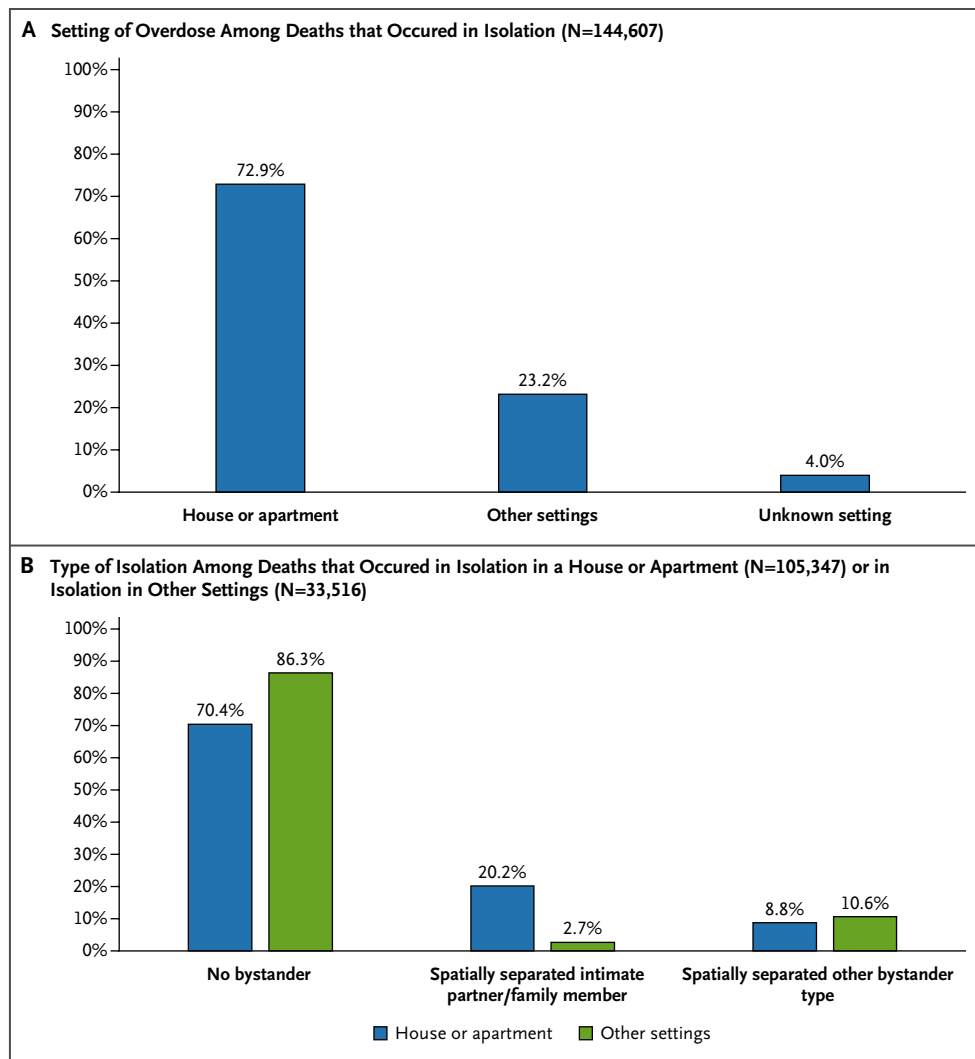


Figure 1. Setting of Overdose and Type of Isolation among Overdose Deaths Occurring in Isolation, State Unintentional Drug Overdose Reporting System, United States, January 2022–December 2024.

Panel A presents the settings of overdose among deaths that occurred in isolation (N=144,607). Panel B presents types of isolation among deaths that occurred in isolation in a house or apartment (N=105,347) or in isolation in other settings (N=33,516). Settings other than a house or apartment included both indoor and outdoor settings, such as motor vehicles, streets or sidewalks, parking lots or public garages, bars or nightclubs, or others. Deaths with unknown/missing setting (n=5744 [4.0% of deaths]) were excluded from setting analyses. Percentages by setting may not sum to 100% due to rounding. Overdose deaths that occurred in isolation were defined as deaths in which a potential bystander was present but was spatially separated, or deaths in which there was no evidence of a bystander present. A reported potential bystander was defined as a person 11 years of age or older who was physically nearby either during or shortly preceding an overdose and potentially had an opportunity to intervene or respond. This includes persons in the same structure (e.g., same room or same house, but different room) as the decedent during that time. This does not include persons in different self-contained parts of buildings (e.g., persons in a different apartment in the same apartment building). Multiple types of bystanders could be selected, reflecting either multiple bystanders present or a single individual who fits more than one type of bystander (e.g., family member who is also a person using drugs). If a family member or intimate partner was noted to be present, the death was categorized only as having a family or intimate partner present, irrespective of whether another type of bystander was present. Other bystander types include friend, medical professional, roommate, stranger, person using drugs, or other. Panel B does not show deaths in which bystander type was unknown (n=653 [0.6% of deaths in a home or apartment] and n=111 [0.3% of deaths in other settings]). This report includes Washington, DC, and all U.S. states except California, Idaho, North Dakota, and Texas. Jurisdictions with death certificate and circumstance data available for at least 75% of deaths in one or more 6-month reporting period from January 2022 through December 2024 were included (37 jurisdictions had data for all of January 2022–December 2024; 10 had data available for a subset of periods). Analyses were restricted to deaths with data available on any overdose-related circumstances (n=191,577 [93.6% of all deaths in the included jurisdictions and reporting periods]).

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