

A qualitative assessment of circumstances surrounding drug overdose deaths during the early stages of the COVID-19 pandemic

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KEY FINDINGS

- Two overarching COVID-19-related themes were identified among overdose decedents during January–June 2020: physical and mental impacts of the pandemic and missed touchpoints or opportunities for intervention.
- Commonly noted physical and mental impacts that may have contributed to increased overdose deaths included depression, stress, anxiety, job loss, financial strain, and altered living arrangements due to the COVID-19 pandemic as well as COVID-19 symptoms or diagnosis.
- Missed touchpoints and intervention opportunities identified were lack or spatial separation of bystanders, changes in treatment for substance use disorders, cancellation or postponement of other medical appointments, and early release from criminal justice system.
- Efforts to address missed touchpoints and opportunities for intervention (e.g., ensuring continuity of treatment for substance use disorders and addressing mental health impacts) for persons who use drugs are essential to prevent rises in overdose deaths during future emergencies.

Introduction

There were 91,799 drug overdose deaths in the U.S. in 2020, a 30% increase from 2019, which began accelerating in March 2020.^{1,2} The COVID-19 pandemic was declared a national emergency on March 13, 2020 and during March 1–May 31, 2020, 42 states and territories issued mandatory stay-at-home orders.³ The pandemic and vital public health mitigation measures designed to reduce disease spread potentially led to unintended social and economic consequences (e.g., depression, health care disruption), which can increase overdose risk.^{4,5} These consequences, combined with interruptions and changes in illicit drug supply,⁶ possibly contributed to increased fatal overdose risk for persons who use drugs (PWUD).⁷

Multiple reports indicate drug overdoses have increased during the COVID-19 pandemic.^{1,2,8-12} In December 2020, the Centers for Disease Control and Prevention (CDC) issued a health advisory highlighting provisional data indicating a substantial increase in overdose deaths beginning in 2019 and accelerating in early 2020, and called for essential services to remain accessible for those at risk of overdose.² However, data are limited on COVID-19 specific circumstances that may have contributed to the rise in overdose deaths, particularly leading up to and after implementation of mitigation strategies. We utilized free-text narratives from CDC's [State Unintentional Drug Overdose Reporting System \(SUDORS\)](#) to understand how COVID-19 specific circumstances might have contributed to overdose deaths across the U.S. and inform prevention and response efforts for future emergencies.



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Data Source and Methods

SUDORS captures information on unintentional and undetermined intent drug overdose deaths from 47 states and the District of Columbia. Jurisdictions abstract data from death certificates and medical examiner/coroner (ME/C) reports, including death scene investigations and postmortem toxicology, to capture decedent demographics, overdose-specific circumstances, and drugs involved (i.e., listed as cause of death). Additionally, abstractor-drafted case narratives provide context not captured through discrete fields. This activity was reviewed by CDC and was conducted consistent with applicable federal law and CDC policy.^a

Analyses were restricted to 33 states that reported overdose deaths which occurred during January–June 2020. Abstractors documented evidence of COVID-19-related circumstances in case

narratives. COVID-19-related circumstances were identified using narrative text searches for “COVID”, “coronavirus”, “corona”, “pandemic”, “quarantine”, and “social distanc”. Searches for “isolat”, “mask”, and misspellings were also performed, but did not identify any relevant narratives. Qualitative analyses were restricted to deaths with documented COVID-19-related circumstances. Two independent reviewers examined all cases with at least one COVID-19-related circumstance to develop and finalize a codebook of key themes. The reviewers determined which circumstances to include under each theme, and then re-examined all cases to apply these codes. After the second review, they resolved any discrepancies in applied codes by case. Following code application, themes were divided into two overarching categories and quotes were identified to provide representative examples of each theme.

Results

Among 20,957 overdose deaths reported by 33 jurisdictions during January 2020–June 2020, 563 met inclusion criteria for COVID-19 related circumstances; 96% of these 563 deaths occurred during March 15–June 30, 2020.

Two overarching COVID-19-related themes were identified: physical and mental impacts of the pandemic and missed touchpoints or opportunities for intervention (Figure 1). Mental health impacts, such as depression, anxiety, or stress about COVID-19, or resulting from mitigation measures, were commonly noted. For example, one decedent “told her boyfriend that she was very depressed over the recent COVID-19 pandemic and was afraid of relapsing due to the social isolation”. Narratives also noted decedents experienced job loss and financial strain, which potentially contributed to overdose deaths. One narrative described that the decedent “relapsed two months prior (to overdose death) due to job loss due to COVID”. The pandemic also resulted in altered living arrangements, including relocation to avoid exposure, staying with relatives, and experiencing housing instability or homelessness. Finally, some decedents had potential COVID-19 exposures, symptoms, and/or diagnosis leading up to or at the time of death.

Missed touchpoints or opportunities for intervention included limited bystander presence, substance use disorder(s) (SUD) treatment changes, other clinical-related changes, and criminal justice system release. Potential bystanders were sometimes unable to intervene and possibly prevent the fatal overdose because they were spatially separated (e.g., in a different room) or not present because of COVID-19 precautions. One narrative noted the decedent’s “wife and children had been staying out of state for the past week due to his (the decedent’s) potential risk of being exposed to COVID-19”. Examples of SUD treatment changes were delayed or denied treatment and transitions to virtual sessions. Other clinical-related changes included cancelled or postponed medical care due to COVID-19, or fear of seeking care during COVID-19. For example, one narrative stated that the decedent “had a broken clavicle that was supposed to be surgically fixed but had been postponed due to COVID-19. He was on several medications and is suspected to have taken more than prescribed to handle the pain.” Lastly, some decedents were released early from the criminal justice system because of COVID-19 and may not have had appropriate linkage to SUD care or treatment, or suitable housing.

^aSee e.g., 45 C.F.R. part 46.102(l)(2), 21 C.F.R. part 56; 42 U.S.C. §241(d); 5 U.S.C. §552a; 44 U.S.C. §3501 et seq.

Figure 1. COVID-19-related themes and supporting evidence identified from SUDORS case narratives — 33 states,^a January 2020–June 2020

Physical / Mental Impacts		
Themes	Subthemes	Narrative Excerpts
Mental Health Impacts	Decedent experienced depression, stress, or anxiety due to pandemic	“(Decedent) told her boyfriend that she was very depressed over the recent COVID-19 pandemic and was afraid of relapsing due to the social isolation.”
	Decedent’s family member/partner died or was hospitalized during pandemic	“(Decedent)’s spouse passed away at the hospital the morning of decedent’s discovery from COVID-19.”
Job Loss/ Financial Strain	Decedent lost job/projects halted due to COVID-19	“Believed to have been clean for 5 years, depression and relapsed 2 months prior due to job loss due to COVID and breakup with SO (significant other).”
	Decedent sought drugs/returned to use due to COVID-19 pandemic	“(Decedent) was stressed over the COVID-19 pandemic as well as having to close his business because of it and not having a job.”
Altered Living Arrangements	Decedent relocated due to COVID-19	“Due to concerns regarding COVID-19, (decedent) and boyfriend left their residence to self-isolate at a motel because a roommate had a cough and (decedent) had underlying medical conditions.”
	Decedent experienced housing instability/homelessness prior to death (due to or unknown if due to COVID-19)	“Landlord recently received a text from (decedent) [...] asked if he could move out due to job loss because of COVID-19 and his inability to pay rent.”
COVID-19 Symptoms	Decedent experienced COVID-19-like symptoms prior to death	“(Per decedent’s girlfriend) He did travel out of state for his mother’s funeral in the last month. He complained of having chills, sneezing, and nausea during the past few days.”
	Decedent COVID-19 positive and/or contributing to cause of death	“(Per decedent’s family member) He had stated that his body and throat were hurting and that he was having trouble breathing for the days leading up to the discovery [...]”
Missed Touchpoints / Intervention Opportunities		
Themes	Subthemes	Narrative Excerpts
Bystander	Bystanders not present or spatially separated due to COVID-19	“(Decedent)’s wife and children had been staying out of state for the past week due to his potential risk of being exposed to COVID-19.”
	Decedent self-quarantined or isolated for potential exposure/ COVID-19 positive	“The (decedent) had been staying home due to COVID which is suspected in the delayed response in finding the (decedent).”
SUD Treatment	Changes in SUD treatment/ treatment stopped due to COVID-19	“(Per mother) He was doing great until the beginning of COVID lockdown. (It) prevented him from going to the various places he needed to go to stay clean.”
	Treatment/rehab admittance delayed or denied due to COVID-19	“(Decedent) was recently laid off from work due to COVID and couldn’t receive their Vivitrol injection this month due to losing their insurance.”
Other Clinical (unrelated to fatal overdose)	Decedent’s medical procedure/ appointment canceled or postponed due to COVID-19	“(Decedent) had a broken clavicle that was supposed to be surgically fixed but had been postponed due to COVID-19. He was on several medications and is suspected to have taken more than prescribed to handle the pain.”
	Decedent did not go to medical facility for fear of COVID-19 exposure	“Earlier in the day of this incident, (decedent) had been unresponsive on the floor of his bedroom and EMS arrived at the scene; however, he refused transport to the hospital due to his fear of contracting COVID-19.”
Criminal Justice System	Decedent released from jail or prison early due to COVID-19	“(Decedent) was released from jail the day before death due to COVID.” “(Decedent) was homeless and placed in a hotel the day before death. He was in prison recently but released early due to COVID-19. He was supposed to live with his parent but opted not to in case he had COVID.”

COVID-19 Circumstances^b

Discussion

Qualitative analyses using free-text narratives in SUDORS identified missed touchpoints and opportunities for intervention, and pandemic-related factors potentially contributing to overdose deaths. To our knowledge, this is the first study to utilize qualitative data to identify COVID-19-related circumstances surrounding overdose deaths.

The acceleration of overdose deaths corresponded with implementation of the national stay-at-home order as part of the “15 Days to Slow the Spread” proclamation on March 16, 2020 and the rise in COVID-19 cases.^{2,13} Results suggest pandemic mitigation measures yielded social isolation and mental health impacts, job loss and financial strain, and missed touchpoints and opportunities for intervention, which potentially contributed to some overdose deaths. Cancelled and postponed medical care due to COVID-19 fear, diagnosis, or medical facility precautions represent possible missed touchpoints between healthcare systems and persons with SUD. It is critical to expand SUD screening, maintain SUD treatment, and expand telehealth during emergencies to ensure persons are linked to available services.^{2,14} Some decedents released early from the criminal justice system because of COVID-19 might not have been linked to SUD care or treatment upon release. Public health departments, harm reduction organizations, and providers should consider innovative solutions to ensure treatment access and care linkage for those released from institutional settings and initiate or continue medications for opioids use disorder (MOUD) among these persons.^{2,14}

Potential bystanders were often spatially separated from decedents due to COVID-19 precautions. Altered living arrangements could have resulted in living with persons unaware of their substance use or how to respond to an overdose, both of which limit overdose recognition and response. Prevention messaging should encourage PWUD to not use alone and ensure co-habiting friends and family check on PWUD and know how to recognize and respond to an overdose. Harm reduction and community organizations and providers play important roles in discussing overdose prevention with PWUD, and their family and friends, and providing naloxone to those likely to witness, experience, or respond to an overdose.^{2,14}

Findings indicate decedents experienced stressors associated with initiation or worsening of substance use.¹⁵ Other research noted persons initiated or

increased substance use to cope with pandemic impacts, directly linking pandemic stressors to substance use.^{16,17} Expanding SUD screening and treatment during emergencies might be essential to identify persons at increased risk and prevent overdose.^{2,14}

Analyses were limited to states with data available for deaths during January 2020–June 2020. Results might not be generalizable to the entire U.S.; however, inclusion of 33 states yields, to our knowledge, the most comprehensive qualitative assessment to date of circumstances surrounding overdose deaths during the pandemic. Second, our analysis depended on ME/C reports including COVID-19-related circumstances and identifying them in narratives through keywords. Thus, small sample size and lack of inclusion may not equate to lack of experienced COVID-19 related circumstances; some themes might not have been identified, possibly limiting generalizability. However, our analysis identified several important themes and narratives that illuminated them. Third, the analysis did not examine reasons unrelated to COVID-19 that may have resulted in increased overdose deaths in 2020. Lastly, COVID-19 cases peaked several times during 2020–2021;¹⁸ we only assessed overdose deaths during the first peak. Circumstances might have changed as the pandemic continued; however, our results can inform prevention and intervention opportunities related to overdose deaths during emergencies.

Although efforts were made to address SUD treatment barriers early in the COVID-19 pandemic,^{19,20} addressing remaining missed touchpoints and intervention opportunities may help avoid surges in overdose deaths as the COVID-19 pandemic continues, and during future emergencies. This could include ensuring SUD treatment during reduced hours or closures, providing treatment opportunities for those experiencing mental health impacts, expanding naloxone availability in communities, and training potential bystanders to recognize and respond to an overdose. Continued surveillance and prevention efforts geared towards understanding and reducing impacts of pandemics and other emergencies on overdose deaths and including specific emergency preparedness plans to ensure continuation of prevention, care, and treatment for PWUD are essential to mitigate excess morbidity and mortality.

Definitions and Technical Notes

SUDORS: CDC's [State Unintentional Drug Overdose Reporting System \(SUDORS\)](#) collects information on drug overdose deaths of unintentional or undetermined intent. In 2016, SUDORS was launched as part of the Enhanced State Opioid Overdose Surveillance (ESOOS) program, which funded 12 states and in 2017, an additional 20 states and the District of Columbia (DC) were funded to abstract data on opioid-involved overdose deaths. In 2019, as part of CDC's [Overdose Data to Action \(OD2A\) program](#), SUDORS was expanded to collect data on all drug overdose deaths from 47 states and DC (collectively referred to as jurisdictions).

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For More Information

Additional information on CDC's overdose surveillance, prevention and response initiative can be found at [Overdose Data to Action](#). For more information on SUDORS, please see [State Unintentional Drug Overdose Reporting System \(SUDORS\) Fact Sheet \(cdc.gov\)](#) For more information on drug overdose death data in the United States, please see <https://www.cdc.gov/drugoverdose/deaths/index.html>

Footnotes

Abbreviations: SUD: substance use disorder(s)

Note: Narrative excerpts that were succinct, illustrative of each theme, and representative of the patterns identified in the data were selected for inclusion in the figure.

^a Includes Alaska, Arizona, Arkansas, Colorado, Connecticut, Delaware, Georgia, Illinois, Kansas, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Tennessee, Utah, Vermont, Virginia, Washington, and West Virginia

^b COVID-19 circumstances are not mutually exclusive.

References

1. Hedegaard H, Miniño AM, Spencer MR, Warner M. Drug overdose deaths in the United States, 1999–2020. NCHS Data Brief, no 428. Hyattsville, MD: National Center for Health Statistics. 2021. doi: <https://stacks.cdc.gov/view/cdc/112340>
2. Centers for Disease Control and Prevention. Increase in Fatal Drug Overdoses Across the United States Driven by Synthetic Opioids Before and During the COVID-19 Pandemic. Published December 17, 2020. Accessed June 15, 2021. <https://emergency.cdc.gov/han/2020/han00438.asp>
3. Moreland A, Herlihy C, Tynan MA, et al. Timing of State and Territorial COVID-19 Stay-at-Home Orders and Changes in Population Movement - United States, March 1-May 31, 2020. MMWR Morb Mortal Wkly Rep. Sep 4 2020;69(35):1198-1203. DOI: <http://dx.doi.org/10.15585/mmwr.mm6935a2>
4. Handwerker EW, Meyer PB, Piacentini J, Schultz M, Sveikauskas L. Employment recovery in the wake of the COVID-19 pandemic. Monthly Labor Review, U.S. Bureau of Labor Statistics. Accessed June 4, 2021, <https://www.bls.gov/opub/mlr/2020/article/employment-recovery.htm>
5. Tull MT, Edmonds KA, Scamaldo KM, Richmond JR, Rose JP, Gratz KL. Psychological Outcomes Associated with Stay-at-Home Orders and the Perceived Impact of COVID-19 on Daily Life. Psychiatry Res. Jul 2020;289:113098. <http://dx.doi.org/10.1016/j.psychres.2020.113098>
6. Drug Enforcement Administration. 2020 National Drug Threat Assessment. Washington, DC: US Department of Justice, Drug Enforcement Administration; 2021. https://www.dea.gov/sites/default/files/2021-02/DIR-008-21%202020%20National%20Drug%20Threat%20Assessment_WEB.pdf
7. Englander H, Salisbury-Afshar E, Gregg J, et al. Converging Crises: Caring for Hospitalized Adults With Substance Use Disorder in the Time of COVID-19. J Hosp Med. Oct 2020;15(10):628-630. DOI: <http://dx.doi.org/10.12788/jhm.3485>
8. Appa A, Rodda LN, Cawley C, et al. Drug Overdose Deaths Before and After Shelter-in-Place Orders During the COVID-19 Pandemic in San Francisco. JAMA Netw Open. May 3 2021;4(5):e2110452. DOI: <http://dx.doi.org/10.1001/jamanetworkopen.2021.10452>
9. DiGennaro C, Garcia GG, Stringfellow EJ, Wakeman S, Jalali MS. Changes in characteristics of drug overdose death trends during the COVID-19 pandemic. Int J Drug Policy. 2021 Jul 20 98(103392). DOI: <http://dx.doi.org/10.1016/j.drugpo.2021.103392>
10. Friedman J, Akre S. COVID-19 and the Drug Overdose Crisis: Uncovering the Deadliest Months in the United States, January–July 2020. Am J Public Health. Jul 2021;111(7):1284-1291. DOI: <http://dx.doi.org/10.2105/AJPH.2021.306256>
11. Holland KM, Jones C, Vivolo-Kantor AM, et al. Trends in US Emergency Department Visits for Mental Health, Overdose, and Violence Outcomes Before and During the COVID-19 Pandemic. JAMA Psychiatry. Apr 1 2021;78(4):372-379. DOI: <http://dx.doi.org/10.1001/jamapsychiatry.2020.4402>
12. Mason M, Welch SB, Arunkumar P, Post LA, Feinglass JM. Notes from the Field: Opioid Overdose Deaths Before, During, and After an 11-Week COVID-19 Stay-at-Home Order - Cook County, Illinois, January 1, 2018–October 6, 2020. MMWR Morb Mortal Wkly Rep. Mar 12 2021;70(10):362-363. DOI: <http://dx.doi.org/10.15585/mmwr.mm7010a3>
13. The White House. The President's Coronavirus Guidelines for America: 30 Days to Slow the Spread. The White House. 2020. https://trumpwhitehouse.archives.gov/wp-content/uploads/2020/03/03.16.20_coronavirus-guidance_8.5x11_315PM.pdf
14. Baldwin GT, Seth P, Noonan RK. Continued Increases in Overdose Deaths Related to Synthetic Opioids: Implications for Clinical Practice. JAMA. Mar 23 2021;325(12):1151-1152. DOI: <http://dx.doi.org/10.1001/jama.2021.1169>

15. Sinha R. Chronic stress, drug use, and vulnerability to addiction. *Ann N Y Acad Sci.* Oct 2008;1141:105-30. DOI: <http://dx.doi.org/10.1196/annals.1441.030>
16. Czeisler ME, Lane RI, Petrosky E, et al. Mental Health, Substance Use, and Suicidal Ideation During the COVID-19 Pandemic - United States, June 24-30, 2020. *MMWR Morb Mortal Wkly Rep.* Aug 14 2020;69(32):1049-1057. DOI: <http://dx.doi.org/10.15585/mmwr.mm6932a1>
17. Horigian VE, Schmidt RD, Feaster DJ. Loneliness, Mental Health, and Substance Use among US Young Adults during COVID-19. *J Psychoactive Drugs.* Jan-Mar 2021;53(1):1-9. DOI: <http://dx.doi.org/10.1080/02791072.2020.1836435>
18. Centers for Disease Control and Prevention, COVID-19 Response. Trends in Number of COVID-19 Cases and Deaths in the US Reported to CDC, by State/Territory. https://covid.cdc.gov/covid-data-tracker/#trends_dailytrendscases
19. Drug Enforcement Administration. Flexibility during the nationwide public health emergency to prescribe buprenorphine. US Department of Justice, Drug Enforcement Administration, 2020. [https://www.deadiversion.usdoj.gov/GDP/\(DEA-DC-022\)\(DEA068\)%20DEA%20SAMHSA%20buprenorphine%20telemedicine%20%20\(Final\)%20+Esign.pdf](https://www.deadiversion.usdoj.gov/GDP/(DEA-DC-022)(DEA068)%20DEA%20SAMHSA%20buprenorphine%20telemedicine%20%20(Final)%20+Esign.pdf)
20. Substance Abuse and Mental Health Services Administration. Opioid Treatment Program (OTP) Guidance. <https://www.samhsa.gov/sites/default/files/otp-guidance-20200316.pdf>