



A New Wave of the Overdose Epidemic Arises During the COVID-19 Pandemic



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Introduction

- The Coronavirus disease 2019 (COVID-19) has been responsible for over 896,496 deaths in the United States (U.S.) [1] and has temporarily eclipsed the nation’s other public health crisis, the overdose epidemic.
- Overdose deaths in the U.S. are attributed primarily to opioids, but they also include deaths related to stimulants (cocaine and methamphetamine), sedative-hypnotics, other medications, and non-medical substances.
- The most recent CDC data revealed that 106,699 Americans died from drug overdose during 2021, a 51.1% increase since 2019 (Figure 1). [2] COVID-19 has created uncharted challenges across the entire healthcare system including an inevitable shift away from the treatment of other conditions, including substance use disorders (SUD).
- The increase in overdose deaths during the COVID pandemic has been caused by a multitude of factors, such as lack of accessibility to healthcare, social isolation from lock downs, unemployment, financial hardships, COVID itself, global supply chain issues, as well as other factors.

Methods of Impact

- The largest number of deaths from overdose occurred in April and May 2020, when the shutdown mandates were most strict. [3] This was associated with a dramatic shift in critical prevention services or temporary shutdown of methadone/buprenorphine clinics, closing approximately 25% of facilities. [3]

1. Mechanism of Action

- Opioid use disorder (OUD), is a result of both biological and environmental factors. Genetic factors interact with multiple environmental influences, many of which were worsened during the COVID pandemic. For example, social isolation, unemployment, and lack of resources were an additional challenge to patients with a SUD or mental health issues.

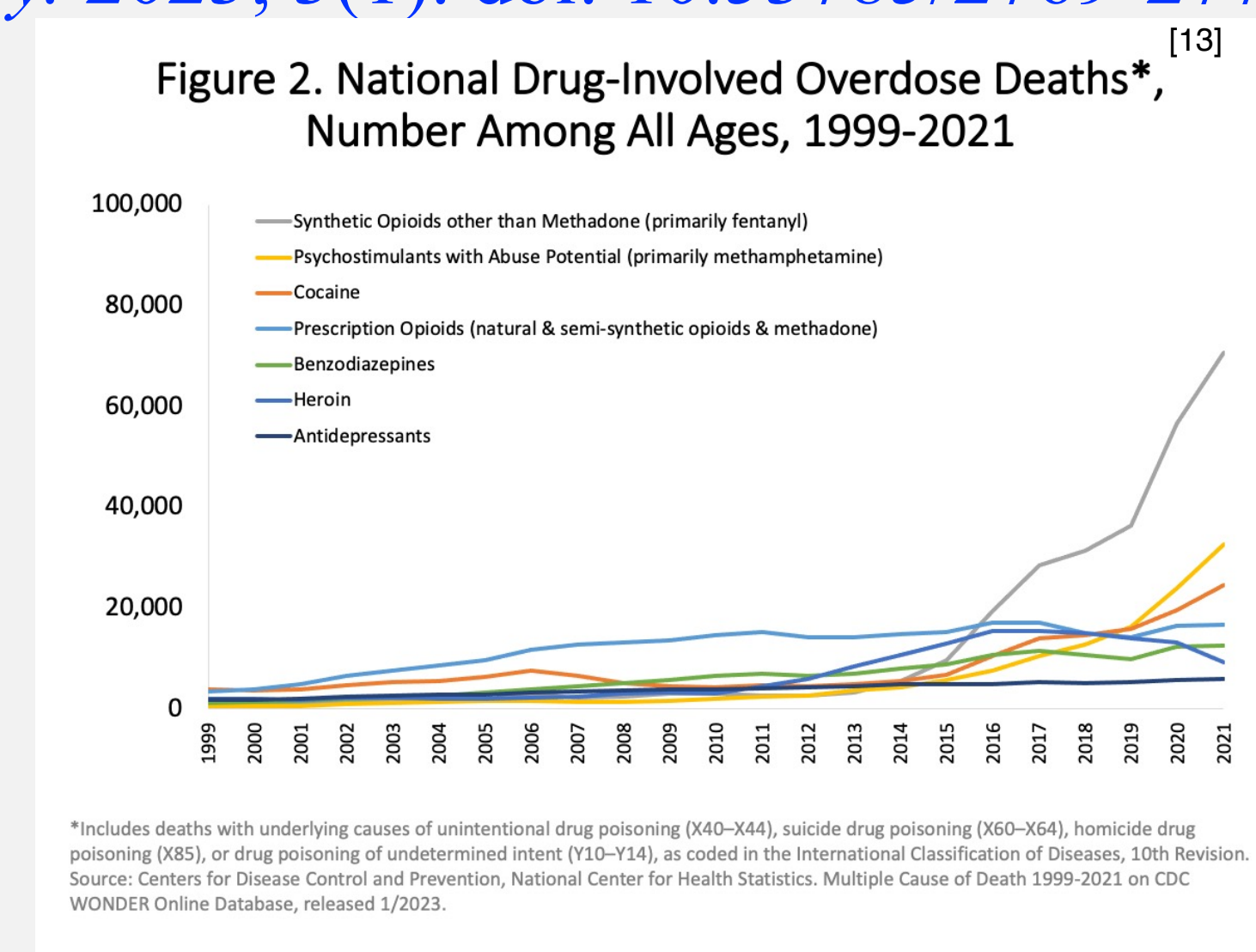
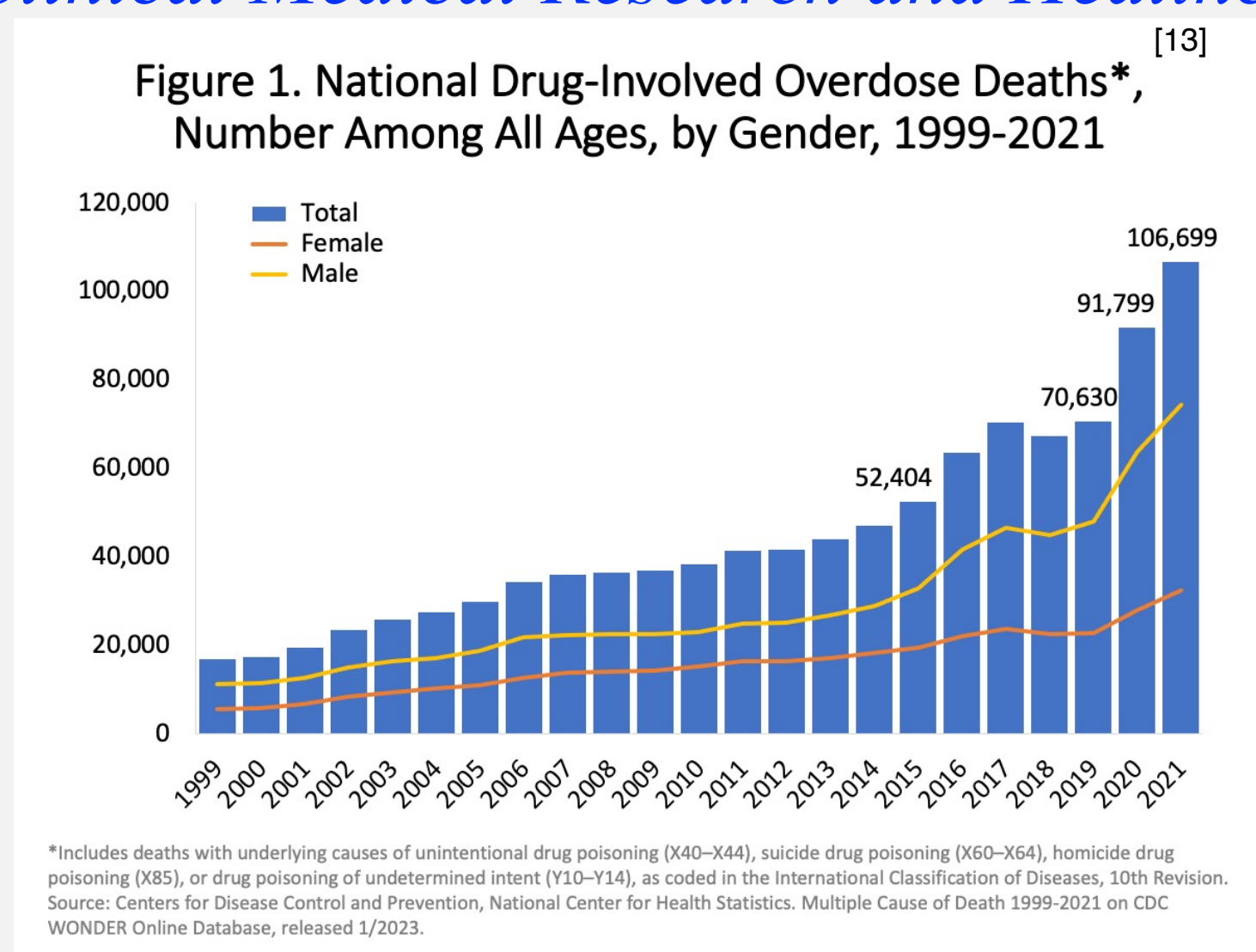
2. Causes of Death

- The primary cause of overdose deaths during 2000-2009 were prescription-type opioid analgesics, but illicit opioids came to dominate after 2010. [2, 4] Synthetic opioids are now almost twice as commonly involved in overdose deaths as prescription opioids. Total deaths in 2021 (106,699), 75% of which involved prescription and illicit opioids (Figures 1 & 2). [2]

3. The “Fourth Overdose” Wave

- There was a 30.0% increase in drug overdose deaths in 2020 compared to 2019, with a further increase of 16.2% from 2020 to 2021. [2] Increases from 2019 to 2020 and from 2020 to 2021 were highest for those attributed to synthetic opioids (55.4% and 24.9%, respectively) and stimulants such as methamphetamine (47.4% and 36.5%, respectively). [2, 5]

- An analysis of electronic health records of 73 million patients in the U.S., demonstrated higher COVID-19 susceptibility and worse outcomes for those with SUD. [6]. According to the study, the risk of COVID-19 was strongest for individuals with OUD followed by individuals with tobacco use disorder, with a greater incidence in the African American population [6].



4. Limitations of Resources During the Pandemic and Subsequent Psychological Effects

- Social distancing requirements during the pandemic placed a strain on the delivery of healthcare. Treatment shifted from in-person to virtual, presenting challenges for those depending on opioid treatment centers. Limited access to psychologist, psychiatrists, therapist, and support groups resulted in hardships for patients at the height of the pandemic.
- Job losses, homelessness, and housing instability adds to the psychosocial and environmental factors that may predispose patients to relapse and fall back into SUD. The prevalence of psychological distress among adults in the US was higher during the COVID-19 pandemic. [7] A psychological distress survey was conducted from April, 2020 using the Kessler 6 Psychological Distress Scale and results demonstrated 13.6% of US adults reported serious emotional distress during the pandemic, relative to 3.9% in 2018. [7]

- Global supply chain issues resulted in long term consequences. According to Institute of Supply Management, about 75% of the companies reported supply chain disruptions, 80% expected some kind of disruptions in the near future, 62% reported delays in receiving products due to COVID. [8]

- The COVID pandemic impacted global finances. During the month of April 2020, 23.1 million individuals filed for unemployment in the US, corresponding to 14.7% of Americans. [9] Financial stress has twice the likelihood to correlate with clinically significant depression. [7]

5. Pain Medicine

- There is a strong correlations between chronic pain, suicide, and decreased life expectancy. [10]

- Most chronic pain services were globally deemed non-urgent, all outpatient and elective interventional procedures were limited and interrupted, negatively impacting patients’ psychological and overall health. [11]

- Telemedicine enabled continuity of care, and with the use of electronic prescribing. The delivery of care to patients in chronic pain was continued until office-based procedures and elective cases in the operating rooms could proceed.

6. Anesthesiology- Guidelines in the Curtailing COVID-19

- Anesthesiologists were called to the COVID-19 front lines for a vital and dangerous role along with global shortages of medications and medical supplies.

- In the face of personal protective equipment (PPE) shortages, anesthesiologists allocated resources to acquire N95 masks, face shields, and power air purifying respirators. Anesthesiologists being extensively trained in airway and intraoperative management, were naturally prepared to treat unstable COVID-19 patients requiring procedures and/or intubations through various anesthetic techniques aimed to reduce aerosol exposure.

- Anesthesiologists are directly combating the opioid epidemic by reducing opioid dependency. Perioperative care and chronic pain management have undergone a paradigm shift with the encouraged use of multimodal analgesia reducing opioid requirements and dependency, such as through the use of Enhanced Recovery After Surgery (ERAS) programs. [12]

Conclusion

- The (COVID-19) pandemic collided with the opioid epidemic in March of 2020, with devastating consequences for the US. [1,2] In 2020 and 2021, respectively, 91,799 and 106,699 people died from drug overdose deaths, substantial increases over the previous years. [2]

- Overwhelming the healthcare system, the pandemic impacted patients who require continued mental health services, treatment of chronic pain, and management of ongoing substance use disorder (SUD). Elective surgeries and in-person visits came to a halt, while society wide priorities were diverted to the mitigation of the spread of COVID-19.

- Limitations in resources, increased social isolation, decreased access to care, and changes in the distribution of illicit fentanyl contributed to a “new wave” of the overdose opioid crisis. While the addiction crisis may have worsened the pandemic in some ways, undoubtedly, the COVID pandemic has fueled the overdose crisis.

- Learning from the impacts of the COVID-19 pandemic may help to strengthen the focus on multiple social factors that were impacted during the pandemic. While these disasters are unavoidable, healthcare requires a delicate balance of resources with secondary plans in place to maintain innovative accessibility to resources to mitigate current healthcare issues such as SUD.

References

- [1] Johns Hopkins University. Coronavirus Resource Center. <https://coronavirus.jhu.edu>. Accessed 17 July 2021
- [2] Spencer MR, Mimiño AM, Warner M. Drug overdose deaths in the United States, 2001–2021. NCHS Data Brief, no 457. Hyattsville, MD: National Center for Health Statistics. 2022. DOI: <https://dx.doi.org/10.15620/cdc.122556>.
- [3] Glick SN, Prohaska SM, LaKosky PA, Juarez AM, Corcoran MA, Des Jarlais DC. The Impact of COVID-19 on Syringe Services Programs in the United States. AIDS Behav. 2020 Sep;24(9):2466–2468. doi: 10.1007/s10461-020-02886-2. PMID: 32333209; PMCID: PMC7182093.
- [4] Compton WM, Jones CM. Epidemiology of the U.S. opioid crisis: the importance of the vector. Annals of the New York Academy of Sciences. 2019; 1451:130–143.
- [5] National Vital Statistics System. Instructions for classifying the underlying cause of death. In: NCHS instruction manual; Part 2a. Published annually
- [6] Wang QQ, Kaelber DC, Xu R, Volkow ND. COVID-19 risk and outcomes in patients with substance use disorders: analyses from electronic health records in the United States. Mol Psychiatry. 2021 Jan;26(1):30–39. doi: 10.1038/s41380-020-00880-7. Epub 2020 Sep 14. Erratum in: Mol Psychiatry. 2020 Sep 30; PMID: 32929211; PMCID: PMC7488216.
- [7] McGinty EE, Presskreischer R, Han H, Barry CL. Psychological Distress and Loneliness Reported by US Adults in 2018 and April 2020. JAMA. 2020 Jul 7;324(1):93–94. doi: 10.1001/jama.2020.9740. PMID: 32492088; PMCID: PMC7270868.
- [8] Magabeh GM. Supply Chains and the COVID-19 Pandemic: A Comprehensive Framework. European Management Review. 2021 Autumn;18(3):363–82. doi: 10.1111/emre.12449. Epub 2021 Feb 8. PMCID: PMC8014293.
- [9] Thayer ZM, Gildner TE. COVID-19-related financial stress associated with higher likelihood of depression among pregnant women living in the United States. Am J Hum Biol. 2021 May;33(3): e23508. doi: 10.1002/ajhb.23508. Epub 2020 Sep 22. PMID: 32964542; PMCID: PMC7536992.
- [10] DALYs GBD, Collaborators H. Global, regional, and national disability-adjusted lifeyears (DALYs) for 359 diseases and injuries and healthy life expectancy (HALE) for 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. Lancet 2018; 392:1859–1922.
- [11] Puntillo F, Giglio M, Brienza N, Viswanath O, Urits I, Kaye AD, Pergolizzi J, Paladini A, Varrassi G. Impact of COVID-19 pandemic on chronic pain management: Looking for the best way to deliver care. Best Pract Res Clin Anaesthesiol. 2020 Sep;34(3):529–537. doi: 10.1016/j.bpa.2020.07.001. Epub 2020 Jul 17. PMID: 33004164; PMCID: PMC7366114.
- [12] Brown JK, Singh K, Dumitru R, Chan E, Kim MP. The Benefits of Enhanced Recovery After Surgery Programs and Their Application in Cardiothoracic Surgery. Methodist Debakey Cardiovasc J. 2018 Apr-Jun;14(2):77–88. doi: 10.14797/mdcj-14-2-77. PMID: 29977464; PMCID: PMC6027721.
- [13] U.S. Department of Health and Human Services. (2023, March 31). *Drug overdose death rates*. National Institutes of Health. <https://nida.nih.gov/research-topics/trends-statistics/overdose-death-rates>