Review 1: "Estimating The Uncertain Effect of the COVID Pandemic on Drug Overdoses"

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The pre-print titled “Estimating The Uncertain Effect of the COVID Pandemic on Drug Overdoses” used national data from the US Centers for Disease Control and Prevention (CDC) to examine trends of annual drug-related deaths (2015-21) and monthly emergency department (ED) visits for drug overdose. The authors conclude that the continuation of pre-pandemic trends of overdose ED visits and overdose mortality “undercut the conclusions from prior work that the pandemic was a principal driver”.

The authors note that their study builds on prior studies focused on pandemic related changes to overdose rates by explicitly modeling the counterfactual of what levels of overdose mortality and ED visits would have been expected to be based on pre-pandemic trends. A major assumption when reporting on counterfactuals, is that the existing level and trend in the outcome would have remained the same, absent the intervention (i.e. the pandemic)(1). One of the major concerns with interpreting the findings of the present study, is the complexity of the “intervention” the authors are examining.

In this study, the intervention is the COVID-19 pandemic, which the authors define as occurring in March 2020 (“onset of the pandemic”). There are a number of factors which also changed in the context of the pandemic which have known influences on rates of fatal and non-fatal overdose since March 2020, such as a changing illicit toxic drug supply, reduced harm reduction and substance use service capacity, and patients’ increased hesitation to contact the health care system (2,3).

It seems as though the authors attempt separate these factors from their examination of pre- vs. post-pandemic trends. For example, the authors note that in prior studies, fentanyl-related deaths have increased steadily over the study period, and that this suggest that “the pandemic was at most a partial explanation for higher overdose deaths in the early pandemic period.” This statement is phrased as if these changes observed in the illicit drug supply are independent of the “pandemic”, while studies have demonstrated that indeed the supply of licit and illicit drugs in the US have been changing in the context of the pandemic (4,5). While the illicit drug supply was contaminated with fentanyl prior to March 2020, it is still possible that the extent and severity of contamination has been affected due to pandemic-related changes. Furthermore, while the authors refer to three waves of the overdose epidemic, they do not consider the rise of concurrent stimulant use among people who use opioids and the increasing detection of methamphetamine in the illicit drug supply in the US, which has been termed a “fourth wave” (4). Consideration to these non-opioid substances and increased polysubstance use is important when considering overdose risk in the context of the pandemic.

The authors also report on trends of drug-related ED visits, and note that ED visits for all other causes fell sharply early in the pandemic due to patients’ hesitation to contact EDs early in the pandemic days. The authors note that there was a smaller decline in drug overdose visits suggesting that overdose events are relatively acute, and “not easily avoidable”.
An important limitation of the data are overlooked here, where like other patients, people who use drugs also avoided health services during the pandemic. Many overdoses are managed in community with naloxone, by peers, community health service providers, or paramedics, without transfer to the emergency department (6). This is a standard limitation of measuring overdose using ED records, and the absence of a significant decline in the ratio of visits relative to the pre-pandemic period (as observed for all visits) may actually indicate a possible increase in overdose events in the community that cannot be observed in this study.

In addition to these considerations, there are a number of places where non-academic language is used, for example referring to the authors’ own “views” and “judgements”. Furthermore, the methodological decisions are not clearly justified. A “fourth order polynomial” is reported to do “a good job”, but the authors do not report on measures of model fit, nor on the decision-making process that led them to this modeling approach.

Overall, the study does have the potential to make important contribution to the literature, but lacks methodological clarity, and sufficient consideration and discussion of the contextual factors known to be contributing to changing risk of overdose since March 2020. The message that the authors intend to translate, that respite from the illicit drug toxicity crisis should not be expected as the pandemic recedes is a reasonable one. Nevertheless, there are a number of pandemic related changes to substance use patterns and health and substance use service delivery that cannot be simply dismissed when presenting and interpreting overdose trends in the United States.

It is also important that academic literature focused on substance use and overdose use respectful and non-stigmatizing language and avoid terms such as “substance abuse” as outlined in NIDA’s documentation “Terms to use and avoid when talking about addiction” (7).

References:


