

Increases in opioid overdoses in Pennsylvania varied by county during the COVID-19 pandemic

March 22 2023, by Brian King, Andrea Rishworth, Louisa M. Holmes and Ruchi Patel



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The COVID-19 pandemic intensified the opioid epidemic, according to

our new research, which finds that [opioid overdoses increased in Pennsylvania](#) in 2020 compared with 2018 and 2019.

Yet general trends obscure critical local variations. Specifically, 19 Pennsylvania counties saw statistically significant increases in opioid overdose rates. The people who live in those 19 counties are both socially and economically diverse, signaling that overdoses did not just worsen for one group of people.

In our study, we analyzed age-adjusted rates of opioid-related overdose incidents, reported by emergency services personnel, at the county level in Pennsylvania from 2018 to 2020. This measure is based on the number of overdose incidents to which EMS responded during the study period. We also interviewed public health providers to identify the key factors influencing opioid misuse.

Opioid overdoses are the leading cause of [accidental death in Pennsylvania](#), according to the Centers for Disease Control and Prevention. From 2010 to 2019, rates of opioid-related deaths in Pennsylvania almost quintupled, rising from [5 per 100,000 people](#) to 23.7 per 100,000 people. In 2020, it rose to [42.4 per 100,000 people](#).

In earlier work, we showed that the initial four months of the COVID-19 pandemic saw an increase in [opioid overdoses](#) in Pennsylvania. Our latest study extended this analysis through 2020.

Since the early 1990s, the [opioid epidemic](#) has gone through several waves. First, high death rates were [caused by prescription opioids](#), particularly among white rural populations. The epidemic then shifted to heroin use, and expanded to include [urban and non-Hispanic Black populations](#). More recently, synthetic opioids like fentanyl have been the [main cause of overdoses](#).

Overdose rates increased in Pennsylvania at the start of the COVID-19 pandemic. This initial increase occurred at the same time as a mandatory stay-at-home order that was designed to reduce the spread of the virus. While this order was a necessary response, it resulted in a range of social effects, including job losses, [mental illness](#), isolation and reduced access to inpatient addiction treatment services.

In our newest study, we examined the longer-term trends and spatial patterns for the opioid epidemic. Our research shows statistically significant county-level changes in the age-adjusted rates of opioid-related overdose incidents before and after the onset of the COVID-19 pandemic. Some Pennsylvania counties saw a significant increase in opioid overdose rates, including some with [small populations](#), while others saw a significant decrease.

Health care providers agree that while opioid misuse has increased across the state, local conditions matter and directly affect the epidemic. As one [health provider](#) told us in an interview, "There's a lot of variation between counties. You can drive 20 minutes across the line, and it almost seems like a different state. I think the rates of use are similar, but you see different sorts of associated factors with substance use in these counties."

In order to understand [social factors](#), we examined differences in opioid overdose rates between men and women and between Black and white people. Our research shows overdose rates among men and women were declining from 2018 to 2019 but jumped in 2020. These trends were also declining among Black and white individuals from 2018 to 2019, but those groups also experienced a large increase from 2019 to 2020. A benefit of our research is that it shows that broader segments of the population are now being affected by the opioid epidemic.

Our work is finding that the stress associated with the COVID-19

pandemic was overwhelming for many people, resulting in an increase in substance misuse or relapses. We believe research and policy attention to these factors is urgently needed, especially in states like Pennsylvania that were experiencing high rates of substance use prior to the pandemic.

Future work could evaluate whether funds are effectively distributed to address the effects of social isolation and the social inequities surrounding opioid misuse.

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