

Tracking the shifting landscape of the opioid crisis

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Credit: Engin Akyurt from Pexels

Few if any communities in the United States have escaped the opioid crisis, and in 2020, opioid overdose deaths rose sharply across the entire country. But the crisis plays out differently from place to place and over

time. In some states, the crisis is more profound in rural communities while in other states, it's more of a problem in cities. The drugs in question vary from prescription opioids like oxycodone to heroin to, most recently, fentanyl, which is 50 to 100 times stronger than morphine and a primary driver of the rise in overdose deaths since 2013. And the demographics of the most affected populations change over time as well.

The shifting landscape of the [opioid overdose](#) epidemic makes it hard for local public health officials and policymakers to see which communities in their state are most at risk and how to help them.

"All communities are not created equal," said Thomas Stopka, an epidemiologist and associate professor at Tufts University School of Medicine. "The [risk factors](#) related to opioid overdose may not be as intense in some locations compared to others."

Stopka and his team recently completed county-level assessments of 10 states, highlighting the communities most at risk for a spike in [opioid overdose deaths](#) and identifying areas where services for opioid users are lacking.

Stopka hopes the approach will be replicated by others. "Future analyses could focus on even smaller geographic scales," he said, "which would allow for state and local health departments to further pinpoint specific towns, specific neighborhoods, or specific census tracts that might be at even higher risk and might have even higher gaps in services."

The assessment created a rich and complex picture by using both statistical methods and [geographic information systems](#) (GIS) to analyze datasets of more than 20 factors such as opioid-related emergency room visits and arrests, opioid prescription rates, high school graduation rates, prevalence of chronic hepatitis C infection, average income, unemployment rates, and demographic information. The researchers

determined which factors were most closely correlated with overdose deaths and used those to assess each county's potential to experience an increase in overdose deaths.

"We want to be forward-looking to identify areas that might be vulnerable in the future, not just where most deaths have been in the past," said Jared Sawyer, who led the portion of the project that focused on Indiana, the results of which were published in *Preventive Medicine Reports*. Sawyer earned his Master of Public Health from the School of Medicine in 2020 and now works at the research organization NORC at the University of Chicago.

The 92 counties in Indiana provide a good example of how the effects of the [opioid crisis](#) vary widely even in one state. Collaborating with experts at the Indiana Department of Health, the Centers for Disease Control and Prevention, and the Council for State and Territorial Epidemiologists, the Tufts team found an uneven distribution of overdose vulnerability. More than half of the most vulnerable counties are clustered in the east-central part of the state, with two smaller clusters in the northwest and southeast and one county in the southwest.

The most vulnerable counties include a fairly even mix of urban and rural counties: Eight are urban, five are rural, and six are mixed. Sawyer said that's different from some other states, where urban counties are more likely to be vulnerable, or vice versa.

The crisis is not spread evenly across populations, however. The team found links between several socioeconomic factors and vulnerability, making it clear that social determinants of health play a big role. For example, counties with higher unemployment, lower high school graduation rates, lower income, and less access to internet services were more vulnerable.

An in-depth analysis of services, including their accessibility, revealed that people in many of the most vulnerable counties lack easy access to resources such as treatment and [education programs](#), harm reduction (like needle exchanges), maintenance medications (such as methadone and buprenorphine) to help users stay off opioids, and overdose reversal medicine (naloxone). Of the 19 most vulnerable counties, only two ranked highly in terms of accessible services. Both Sawyer and Stopka hope that kind of information will help policymakers decide where to focus resources to most effectively close gaps between need and services.

Syringe Services Programs (SSPs), for example, typically bundle many services together, offering not only clean syringes to prevent the spread of HIV and other diseases, but also access and referrals to treatment programs and healthcare. Yet the study found that less than half of Indiana's most vulnerable counties have an SSP.

"Those findings are particularly important right now," Stopka said, "because Indiana and a number of other states have been contemplating shutting down SSPs despite the fact that they have been shown over numerous decades and through numerous studies to be effective from a public health perspective."

More information: Jared L. Sawyer et al, Characterizing opioid-involved overdose risk in local communities: An opioid overdose vulnerability assessment across Indiana, 2017, *Preventive Medicine Reports* (2021). [DOI: 10.1016/j.pmedr.2021.101538](https://doi.org/10.1016/j.pmedr.2021.101538)

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