

New study analyzes sharp rise in US drug poisoning deaths by county

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A new study published in the *American Journal of Preventive Medicine* gives new insight into the geographic variation in drug poisoning mortality, with both urban centers and rural areas showing a large increase in death rates. While previous studies have looked at drug poisoning related deaths in broad strokes, this is the first study to examine them on the county level across the entire U.S.

Drug poisoning is now the leading cause of injury death in the U.S. and has increased by more than 300 percent over the last three decades. Almost 90 percent of poisoning deaths can be attributed to illicit or licit drugs, with [prescription drugs](#) accounting for the majority of [drug overdose deaths](#).

According to reports from the National Survey of Drug Use and Health, about 2.1 percent of Americans—or roughly 5 million people—have used prescription painkillers non-medically in the past month. The rise in drug-related deaths correlates to the increase in the non-medical use of prescription drugs, especially opioid analgesics.

While there have been some reports that suggest the rise in deaths has been sharper in rural areas than in urban centers, data to support the claim had never been fully substantiated. In this new study, investigators used small area estimation techniques to produce stable estimates of drug-related poisoning deaths at a county level, which revealed more information about how geography plays a role in death rates.

Using data obtained from the National Vital Statistics Multiple Cause of Death Files, investigators found that in 1999 only 3 percent of counties had annual drug poisoning age adjusted death rates (AADRs) over ten per 100,000, but found that the rate rose to 54 percent of counties by 2008. Additionally, while drug poisoning AADRs increased across all geographic areas both large and small, there was a greater percentage increase for rural areas (394 percent) compared to large metropolitan counties (297 percent).

"The interaction suggests that both central metropolitan and rural areas experienced similar absolute rates of increase in drug-poisoning AADRs from 1999 to 2009 and that these rates were more rapid than those seen in fringe or small metropolitan or micropolitan areas," explains lead investigator Lauren M. Rossen, PhD, MS. "However, since the AADRs in rural areas were substantially lower in 1999 as compared to central cities, the percentage increase was larger for [rural areas](#) over time."

The study also reveals regional trends in drug poisoning related deaths. "Maps of drug-poisoning mortality over time illustrated that AADRs greater than 29 per 100,000 per year were largely concentrated in Appalachian counties in 1999-2000; by 2008-2009, counties across the entire U.S. displayed AADRs of more than 29 per 100,000 per year," said Rossen. "These high rates could be seen in Alaska, Hawaii, the entire Pacific region, New Mexico, Oklahoma, Appalachia, the southern coasts of Louisiana and Mississippi, Florida, and across New England."

"Mapping [death rates](#) associated with drug poisoning at the county level may help elucidate geographic patterns, highlight areas where drug-related poisoning deaths are higher than expected, and inform policies and programs designed to address the increase in drug-poisoning mortality and morbidity," added Rossen.

More information: "Trends and Geographic Patterns in Drug-

Poisoning Death Rates in the U.S., 1999-2009," by Lauren M Rossen, PhD, MS; Diba Khan, PhD; and Margaret Warner, PhD, is available online as of November 12, 2013 at www.ajpmonline.org and in print in the *American Journal of Preventive Medicine*, Volume 45, Issue 6 (December 2013), [DOI: 10.1016/j.amepre.2013.07.012](https://doi.org/10.1016/j.amepre.2013.07.012)

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