

Naloxone, witnessed overdoses could reduce opioid-related deaths

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Opioid-related drug overdoses cause 130 deaths per day in the U.S. Access to treatment and prevention programs are key to addressing the opioid crisis, as is access to overdose reversal drugs like naloxone, which

has emerged as one of the most effective tools for saving the lives of people struggling with opioid addiction.

Increasing the availability of [naloxone](#) through community-based distribution can prevent fatal overdoses, but since naloxone must be administered by another person, a major challenge to its effectiveness is the prevalence of solitary drug use. A new study from the University of Minnesota School of Public Health (SPH) aims to address the knowledge gap on solitary drug use and interventions to effectively administer overdose reversal drugs.

Researchers used a mathematical simulation model to predict the effects of giving out 50,000 nasal spray naloxone kits through community-based distribution programs each year from 2023 to 2025 in Rhode Island. They looked at two ways to distribute naloxone: a supply-based system that follows existing patterns for areas where it is currently provided, and a demand-based system that targets areas with the most people at risk.

Using the model, researchers were able to forecast annual opioid overdose deaths, evaluate the impact of expanded naloxone distribution, and assess the effectiveness of other interventions—including strategies to increase the likelihood of witnessed overdoses.

The study, [published](#) in *JAMA Network Open*, found:

- Naloxone's effectiveness is related to how it is distributed. A supply-based approach could reduce overdose deaths by about 6.3%, and a demand-based approach could achieve an 8.8% reduction.
- Interventions aimed at increasing the likelihood of overdoses being witnessed have a significant impact on opioid overdose deaths. Even without reversal drugs, increasing witnessed overdoses by 20% to 60% could reduce deaths by 8.5% to

24.1%.

- Naloxone is far more effective when people who use drugs are not alone. Combining naloxone distribution with interventions to address solitary drug use could lead to a reduction in opioid overdose deaths by up to 37.4%.

"As funding from opioid legal settlements becomes available, policymakers can use these findings to inform more effective naloxone distribution programs, implement interventions to increase [overdose](#) witnessing and enhance public health responses to the [opioid crisis](#)," said Xiao Zang, SPH assistant professor and lead author.

This research was conducted in collaboration with Jennifer Koziol and Michelle McKenzie of the Rhode Island Rescue Strategy Work Group.

More information: Xiao Zang et al, Evaluation of Strategies to Enhance Community-Based Naloxone Distribution Supported by an Opioid Settlement, *JAMA Network Open* (2024). [DOI: 10.1001/jamanetworkopen.2024.13861](#)

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