

Study finds Narcan revived 653 opioid overdose victims in Erie County

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Over a two-year period, more than 650 people who overdosed on opioids in Erie County were revived using the overdose drug naloxone, known more commonly by its brand name Narcan.

That's according to a recently published research paper that provides a glimpse into naloxone administration by first responders in Erie County, which was one of the first communities in the nation to make the medication available.

"This is an innovative program that is working. It is reversing overdoses and saving lives," said Sarah Cercone Heavey, lead author of the study, published in the Journal of Community Health.

Heavey worked on the paper while completing her PhD in community health and [health behavior](#) from the University at Buffalo School of Public Health and Health Professions, from which she also received her master's degree in [public health](#).

Gale Burstein, the Erie County Department of Health (ECDOH) commissioner, is a co-author on the paper, which examined the frequency and location of Narcan administration by first responders from July 2014 through June 2016. The paper was published online first Aug. 29 in the Journal of Community Health.

"We realized that people were dying of drug overdoses when first responders, such as police and fire, or family members or friends, were

at the [overdose](#) scene before an ambulance arrived because they had no tools to reverse the overdose. So, we started an aggressive campaign to train and dispense naloxone," said Burstein, who is also a clinical professor of pediatrics in the Jacobs School of Medicine and Biomedical Sciences at UB, and a clinical professor of epidemiology and environmental health in UB's School of Public Health and Health Professions.

Expanding access to Narcan is vital

There were 800 opioid overdoses reported to the Erie County Department of Health by police and fire first responders during that two-year span. Naloxone was successful in reversing the overdose in 653—or 81 percent—of those reported incidents.

The remaining attempts were either unsuccessful (6.3 percent) or unknown (12 percent), meaning care of the person who overdosed was transferred to emergency medical services without the police officer or firefighter who first arrived on scene and administered naloxone knowing whether the individual survived, the paper reports.

"The take home message here is that increasing access to naloxone through firefighters and police is saving lives," said Gregory Homish, associate chair and associate professor of [community health](#) and [health behavior](#) at UB and a paper co-author.

"We saw in a short window of time that a lot of deaths were prevented by expanding access to naloxone. Many communities have supported it, but others have resisted. I think our findings show that this is saving lives and it is making a difference," added Homish, PhD, who served as Heavey's faculty adviser.

Under the direction of county leaders, Erie County began a

comprehensive program to train first responders and law enforcement officers in the use of naloxone, and distributed Narcan kits to local law enforcement agencies, in June 2014.

In drug users who overdose, breathing becomes slow and ineffective. Naloxone works by reversing respiratory depression, or hypoventilation, and allowing oxygen to get to the brain.

The drug has a high success rate, but time is of the essence. In the UB study of Erie County overdoses, 26.6 percent of drug users responded to naloxone within three minutes, and an additional 21.7 percent responded within five minutes.

Heroin becoming more prevalent

The vast majority, or 79 percent, of the reported overdoses in Erie County were due to suspected heroin, and the majority of users were men (70 percent) with an average age of 31. "It is possible that this region has seen an expedited transition from nonmedical to illicit opioids," the paper states.

There are non-prescription opioids such as heroin, which can be used illicitly. But people also overdose on prescription drugs like oxycodone, Vicodin and hydrocodone—which are intended to be used as prescribed by a physician to treat pain but can be misused by the patient or by a friend or family member.

"Fentanyl, a potent prescription pain medication, is manufactured to be sold illicitly appearing as heroin or a counterfeit pain pill medication," Burstein explains. "Fentanyl and fentanyl analogues are the most potent opioids on the street and causing the greatest number of overdose deaths in Erie County and the entire United States."

"There is research suggesting that people are transitioning from non-medical use of prescription opioids to illicit opioids like heroin," said Heavey, who is now a postdoctoral fellow at the University of Rochester Medical Center. "And much of the research suggests this is because it becomes cheaper and easier to get heroin."

Not just an urban problem

The UB study also used Geographic Information Systems (GIS) to map naloxone administration rates. The highest rates were found in two city of Buffalo waterfront zip codes: 14207, which is the neighborhood known as Black Rock, and 14203, which stretches from Tiffy Nature Preserve up to Canalside.

That doesn't mean, however, that the [drug users](#) who overdosed live in those neighborhoods, Heavey said, citing follow-up research she conducted. "There was this migration for drug use, where individuals would come into the city to purchase their heroin or [opioids](#) and use where they purchased, not necessarily where they live, because the parks along the waterfront are more isolated," she said.

The research also indicates that opioid use has hit Erie County's suburbs and rural areas particularly hard, with Collins, North Collins, Lancaster and Cheektowaga experiencing high rates of Narcan administration, the paper notes.

"This is not an urban, inner-city problem," Heavey said.

Researchers add that while Narcan is effective, it is not the only approach to battling the nation's opioid epidemic. "We need to think more broadly about how we get people into treatment and help them recover," Heavey said.

"It's important to remember that addiction is a brain disease. We can see changes in the brain that occur because of addiction. The good news is that long-term recovery is very possible with medication-assisted treatment, such as with buprenorphine," Heavey added, referring to the drug commonly known by its trade name suboxone.

More information: Sarah Cercone Heavey et al. Descriptive Epidemiology for Community-wide Naloxone Administration by Police Officers and Firefighters Responding to Opioid Overdose, *Journal of Community Health* (2017). [DOI: 10.1007/s10900-017-0422-8](https://doi.org/10.1007/s10900-017-0422-8)

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