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Frequent, public drug users may be good candidates for overdose-treatment training

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In response to America's opioid crisis, public health departments and community organizations across the country have started to train opioid users to reverse overdoses in other users with the opioid-blocker naloxone. The most frequent and public opioid users may be the best available candidates for naloxone training, according to a new study from scientists at Johns Hopkins Bloomberg School of Public Health.

The scientists interviewed 450 Baltimore drug users—the vast majority with histories of opioid abuse—and found that users who had witnessed more drug overdoses tended to be those who engaged in riskier drug use and used drugs in more places.

"A user can't administer naloxone to himself when he's overdosing, so from a public health standpoint we need to figure out which users are most likely to witness other users' overdoses and thus be in position to revive them," says senior author Carl A. Latkin, PhD, professor in the Bloomberg School's Department of Health, Behavior and Society. "Our results indicate that the likeliest overdose witnesses are the heavier users who use in a wider range of settings."

The study, published in the journal *Substance Abuse*, comes as the opioid crisis continues to worsen across the U.S. Emergency room visits for opioid overdoses surged by a third during 2016-2017, and the daily opioid-overdose death toll now averages 115, according to government statistics. Maryland, where statistics are dominated by Baltimore, is no exception to the trend. "Every time you look at the annual overdose

fatality numbers for the state, they're higher," Latkin says.

Opioid drug overdoses can easily be fatal because these drugs' side effects include the suppression of brain cell activity that controls breathing. Naloxone, which can be administered by injection or nasal spray, powerfully blocks opioids' effects on brain cells, and thus can quickly restore normal breathing and consciousness in an overdose victim. But there is often only a brief window of opportunity for its effective use—particularly when the overdose involves one of the more potent opioids, such as fentanyl. "Since fentanyl is more potent and faster acting than heroin, you really need to ensure that naloxone is immediately available in the case of an overdose," Latkin says.

Maryland, like many other states, allows pharmacists to dispense naloxone without a prescription and sanctions naloxone training and distribution programs by health organizations. How to direct limited supplies of naloxone most effectively is an unanswered question, however.

The study stemmed from a larger HIV risk-reduction project in which hundreds of impoverished Baltimore opioid users were interviewed about their drug-use habits. Latkin and colleagues analyzed the interview data to find factors that would allow them to identify users who were most likely to witness overdoses—users who might therefore be good candidates for naloxone training.

The analysis covered 450 participants who had provided relevant information on their drug-use behaviors. Roughly 75 percent of these users reported that they had witnessed an overdose. About 12 percent had witnessed more than five. Not surprisingly, those who had witnessed more overdoses tended to be those whose behaviors indicated a deeper involvement in drug abuse. In the analysis, the behaviors that were most strongly associated with witnessing overdoses included injecting with

heroin and/or "speedball" (cocaine plus heroin), snorting heroin, having an overdose history, using city needle-exchange programs and using drugs in a greater variety of places—such as public restrooms, "shooting galleries" and abandoned buildings.

"These results give us some clues about the individuals we should be training in the use of naloxone," Latkin says. "Drug users have consistently demonstrated their abilities to help others prevent HIV and treat overdose victims."

He emphasizes that this fact doesn't make the problem an easily soluble one. "Training users to administer naloxone and distributing it in affected areas is no guarantee that these users will have it with them when needed. It is also important for both drug users and non-using family members to discuss and plan for preventing and treating overdoses," Latkin says.

His group's follow-on projects are now aimed in part at those issues of naloxone availability and witnesses' willingness to use it. "Clearly a lot more needs to be done to resolve this crisis," he says. "In addition to addressing causes of opioid abuse, we need to reduce stigma and increase access to effective drug treatments."

"The relationship between drug use settings, roles in the drug economy, and witnessing a drug overdose in Baltimore, Maryland" was written by Carl A. Latkin, Catie Edwards, Melissa A. Davey-Rothwell, Cui Yang, and Karin E. Tobin.

Provided by Johns Hopkins University Bloomberg School of Public Health

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