

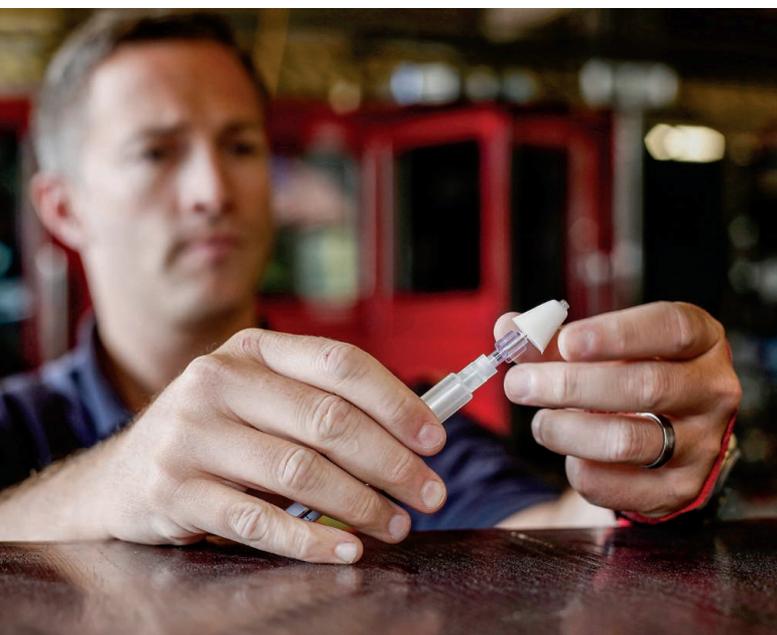
S&T Policy Forum examines evolving opioid epidemic

More young people are using heroin, and powerful drug additives are causing more overdoses

By **Kathleen O'Neil**

Heroin and adulterated forms of illegal opioids are causing an increase of accidental overdoses in the United States, particularly among young people, even as overdoses due to prescription opioids have begun to decline.

Hospital admissions for prescription opioid overdoses peaked in 2011, when almost 17 people per 100,000 in the United States were admitted, and have been slowly declining. However, hospitalizations for heroin overdoses saw a sharp increase between 2010 and 2014, when the rate almost doubled to 4 in 100,000, according to an analysis by Daniel Ciccarone, professor of family and community medicine at the University of California, San Francisco, and his colleagues.



A paramedic in Portland, Maine, prepares to demonstrate how to administer naloxone, a medication that can reverse a drug overdose.

The opioid epidemic has evolved into two or three epidemics, Ciccarone said during a talk at the 2017 AAAS Science and Technology Policy Forum, held 27 to 28 March in Washington, DC. For years, researchers have known that heroin use has been rising, in part due to people becoming addicted to prescription opioid pills, such as oxycodone and hydrocodone, and then transitioning to heroin use when the pills became too hard to get or too expensive.

"I'm not questioning that narrative," Ciccarone said, "but it's more complicated." He presented graphs showing that prescription opioid pills were the leading cause of opioid overdose between 2012 and 2014 for people ages 45 to 64. But for ages 20 to 34, the leading cause of opioid overdose was heroin. "That's a heroin epidemic right there," Ciccarone said, pointing at the graphs.

After his talk, Ciccarone said the young heroin users he has interviewed for his research increasingly say that they didn't start by using prescription pills, but went directly to heroin.

"Heroin is a big thing right now," among people ages 18 to 34, Ciccarone said after his talk. "It's cheap, it's highly available, and your friends are using it."

Heroin use is highest in the Northeast, he said, where it has long been entrenched, but its use has risen in the Midwest since 1997, to the point that the rate of heroin overdoses has almost matched the Northeast's since 2008.

Meanwhile, heroin and other illegal opioids are becoming more dangerous, due to fluctuating levels of additives that have been introduced lately, particularly fentanyl. Fentanyl is an inexpensive opioid that is 30 to 40 times stronger than heroin. While it can be diverted from pharmaceutical sources, the federal Drug Enforcement Agency reports that most fentanyl circulating now is being clandestinely manufactured. The amount of fentanyl added to heroin varies widely, and can change daily, even from the same dealer, Ciccarone said. That makes it much harder for a user to know what dose he or she is actually getting, leading to another reason for the increase in accidental overdoses.

The best way to address the epidemic, Ciccarone and the session's other two speakers agreed, is to increase the community's access to naloxone, a medication that can be used to reverse overdoses, and to provide more access to evidence-based substance use treatments, including opiate-substitution therapies using medications such as methadone.

Forum's fight for science

Multiple speakers at the Science and Technology Policy Forum voiced concerns about scientific integrity, defending evidence, and using scientific data in policy-making throughout this year's event.

Senator Christopher Coons (D-Del.) implored scientists to step up as advocates for scientific discovery—and called upon his colleagues to ensure that the federal government continues to make data generated by statistical agencies publicly available, to launch a bipartisan

effort to secure federal funding for basic science research, and to pass an immigration reform bill that would make it easier for scientists to live, work, and study in the United States.

"In short, I'm calling for all of us to work with Congress and fight for open data, open minds, and open arms," said Coons during the William D. Carey Lecture, which annually honors a leader in articulating science policy concerns.

Amy Luers, director of climate change at the Skoll Global Threats Fund, cited a global survey that found people's trust in

government, business, media, and non-governmental organizations has continued to decline, and that people are as likely to trust their peers as they are experts. Other research has shown that no matter how good evidence is, people will reject it if it does not fit into their own views. To combat these problems, Luers said, scientists should link issues such as climate change with other issues that their target audience cares about, such as managing risk, creating resilience, or even national security.

Andrea Korte contributed to this article

Science

Forum's fight for science

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