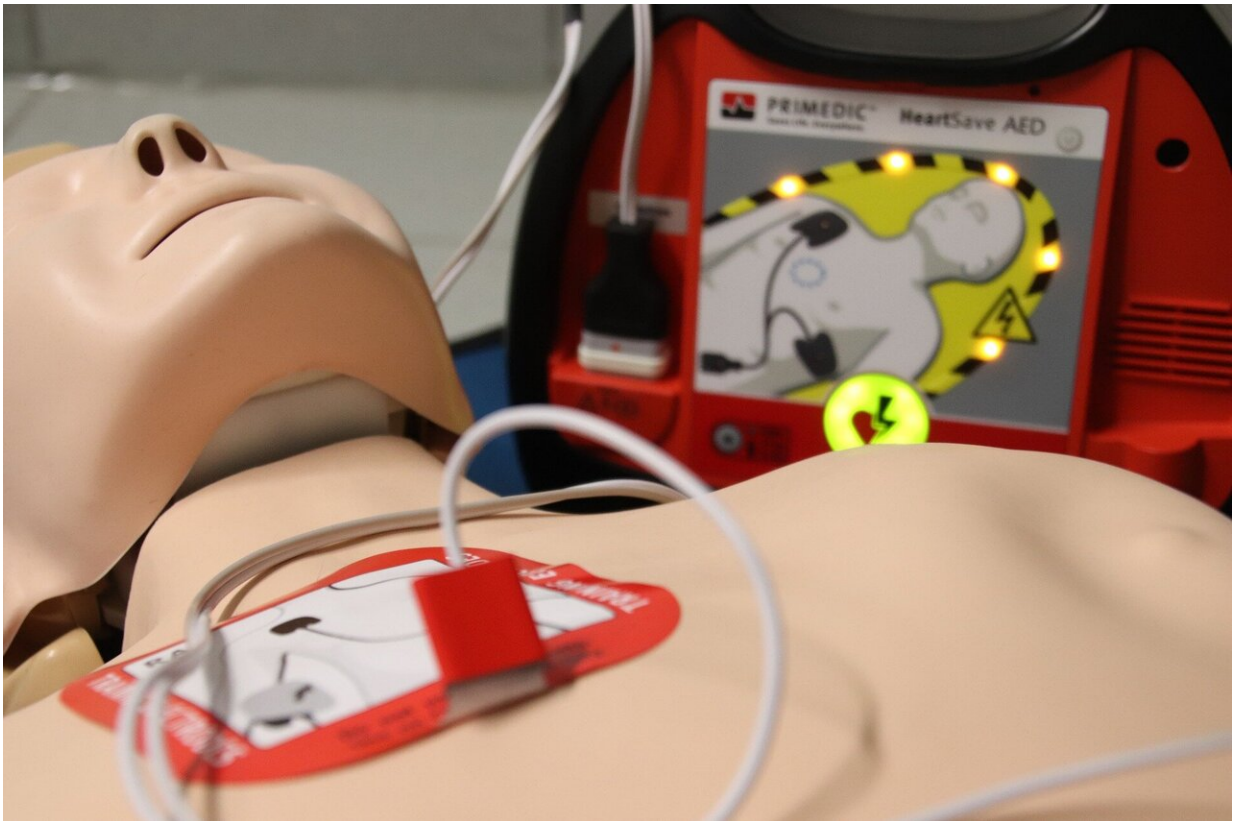


Can you stop an overdose death? Updated guidelines may help

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Saving lives after an opioid overdose isn't just the job of emergency department workers, according to guidelines on how to treat heart-stopping poisonings.

Opioids are just one of the substances addressed in the updated American Heart Association guidelines. But the threat posed by overdoses from such drugs, particularly fentanyl, is immense, said Dr. Eric Lavonas, professor of emergency medicine at Denver Health and the Rocky Mountain Poison and Drug Center.

"Opioids kill more Americans than all other poisons together by a lot," said Lavonas, who led the [expert panel](#) that wrote the [updated guidelines](#), published in the journal *Circulation*. "They kill more Americans than motor vehicles, and the death rate keeps climbing. It's getting insane."

The guidelines address substances that cause [cardiac arrest](#), when the heart suddenly stops beating.

Although the update affirms much of the previous science on the topic, it's the first comprehensive review since 2010, Lavonas said. It includes recommendations for the treatment of 12 common types of poisoning, including [drug overdose](#), chemical exposure and drug interactions. It also offers guidance on when to use the latest life-sustaining technology to help patients "whose hearts are so badly affected by a poison that they otherwise could not sustain life," he said.

That technology, called ECMO, is the most important new advance in the treatment of poisonings, Lavonas said. ECMO, which stands for extracorporeal membrane oxygenation, pumps blood when the heart is unable to do so, buying time for the poison to leave the body.

Although primarily available in large medical centers, he said, it's saving lives. Earlier this summer, Lavonas helped take care of a young woman who had overdosed on an antidepressant. "Despite every antidote in our arsenal, she was in shock and dying. We were able to mobilize an ECMO team, who supported her blood pressure for several days while her liver metabolized the toxin. She is now home from the hospital, fully

recovered."

But a doctor might encounter a life-threatening overdose of that particular drug once every few years, Lavonas said. By contrast, he treats someone for opioid overdose almost every emergency room shift. "On many shifts, it's multiple," he said.

The new guidelines reflect the fact that [opioid overdoses](#) are becoming common enough to upend traditional thinking about cardiac arrest patients, said co-author Dr. Maryann Amirshahi, a professor of emergency medicine at Georgetown University School of Medicine in Washington, D.C.

"A lot of these patients have healthy hearts," said Amirshahi, who also is an emergency medicine physician at MedStar Washington Hospital Center and a medical toxicologist for the National Capital Poison Center. "A clogged artery isn't their primary pathology. They stopped breathing because of an opioid, and that caused their heart to stop."

The guidelines note that in the 12-month period ending in April 2021, more than 75,000 people in the United States died from an opioid overdose, which makes it the leading cause of cardiac arrest due to poisoning in North America.

According to a [study](#) published in July in *JAMA Network Open*, as of 2021, accidental opioid overdoses caused one of every 22 U.S. deaths. Opioid overdoses were responsible for one in 10 deaths of people ages 15 to 19 and more than one in 5 five deaths among those ages 20 to 39.

Patterns of drug abuse vary by city, said Amirshahi, whose medical system covers Baltimore and Washington. In her D.C. hospital, she's seen opioid overdoses grow in relation to other drugs over the past five years to the point that she sees an overdose every shift she works.

In Denver, the primary problem is fentanyl, Lavonas said. People with addiction seek it out instead of heroin, and fentanyl shows up in counterfeit pills that are sold as oxycodone or ecstasy.

Victims can turn up anywhere, he said. "You can go to the bathroom in a [department store](#), and maybe that person in the stall next to you is passed out. I came upon someone when I was driving to the bank, and he had passed out in a car. These situations are so common that any person who moves about in our society may run into someone with an opioid overdose and have the opportunity to save a life."

Which is why everybody needs to be prepared, Lavonas said.

"Every teenager and adult should know how to perform CPR, use a defibrillator and administer [naloxone](#)," Lavonas said.

If you find someone passed out and unresponsive:

- Call 911.
- If the person is not responding and not breathing normally, start CPR.
- Have someone get an [automated external defibrillator](#), or AED, if one is available.
- If you have reason to think opioids might be involved, get and give naloxone.
- Continue CPR, including using the AED, until help arrives.

The primary reason somebody has a cardiac arrest from an [opioid](#) overdose is that they stopped breathing, Amirshahi said. Naloxone is now an over-the-counter medication that temporarily reverses the effects of opioids. It can restore breathing, and it may make the victim more awake and alert.

Naloxone is sold over-the-counter as an automatic injector or as a nasal spray, and is easy to administer, Lavonas said. "Our Denver public librarians save lives with naloxone on a regular basis. Both my teenage kids carry naloxone in their school bags, just in case."

Amirshahi said that although it might not be practical for everyone to carry naloxone, she wants it to be widely accessible. "I think that we should really push to have it more in public places, because you never know where you're going to need it."

She emphasized the importance of starting CPR before seeking out naloxone if the patient is believed to be in cardiac arrest. "Once the heart stops, the naloxone doesn't help."

The guidelines note the importance of fast action and educating friends, families and close contacts of people at risk of [opioid overdose](#). That would include people taking opioids legally to control pain. But, Amirshahi said, it's important for people to be willing to dial 911 even if illegal drugs are involved.

Lavonas personally would like to see naloxone treatment worked into all CPR training. Meanwhile, he said, training on naloxone is offered by community groups across the country. Information can be found online through the Centers for Disease Control and Prevention, state health departments and elsewhere.

As a toxicologist, Amirshahi said doctors should be willing to ask for guidance, too—either from a regional center or from an expert colleague. "Please call us," she said. "We have tremendous expertise in this. You don't have to manage patients with these [guidelines](#) in a vacuum."

Lavonas said that in his emergency room, most of the [overdose](#) patients

he treats have been rescued by someone who was trained in naloxone and had it on hand. "Unfortunately, some people who use opioids by themselves, or use opioids where someone's not there to help, don't survive to see me."

Which is why more people need training—urgently, he said. "Opioid poisoning is so common that everyone should be prepared."

More information: Eric J. Lavonas et al, 2023 American Heart Association Focused Update on the Management of Patients With Cardiac Arrest or Life-Threatening Toxicity Due to Poisoning: An Update to the American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care, *Circulation* (2023). [DOI: 10.1161/CIR.0000000000001161](https://doi.org/10.1161/CIR.0000000000001161)

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