

Fentanyl can be weaponized, but preparation could minimize the damage

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The widely-available drug fentanyl, already the number one killer of Americans under 50, could be weaponized and used for terroristic mass poisoning, according to health experts at Rutgers and other institutions.

"Before fentanyl, the only viable mass poisons were rare and difficult-to-access agents such as cyanide or nerve agents," said Lewis Nelson, chair of the Department of Emergency Medicine at Rutgers New Jersey Medical School and senior author of the new *Frontiers in Public Health* paper. "Fentanyl can be just as deadly if properly disseminated, and it's ubiquitous. A motivated person could readily obtain enough to potentially poison hundreds of people—which, uncut, would fit easily onto a teaspoon."

Unlike biological attacks, in which a weaponized disease could spread globally and kill millions, chemical attacks generally only harm the victim through direct exposure. Still, fentanyl's high toxicity makes it a viable tool for unleashing a damaging, intentional event on an unsuspecting population.

Attackers with little technical knowledge could introduce the synthetic opioid in fatal doses into building ventilation systems or local food or water supplies. Nelson said it's unlikely to be successful in a large-scale attack, so simply dumping a truckload in a reservoir would be unlikely to produce significant casualties.

History vividly demonstrates its potential as an aerosolized, inhaled poison. Russian authorities seem to have weaponized a fentanyl-like drug in 2002, after Chechen terrorists seized a crowded theater and threatened to execute hundreds of hostages unless Russia withdrew from Chechnya.

Conventional rescue operations against 40 well-armed and well-fortified captors appeared impossible, so security forces pumped a fentanyl analog into the theater's ventilation system, incapacitating nearly everyone inside. They then stormed the building, shot the unconscious terrorists, and brought the hostages for medical care.

The operation left 130 hostages dead and demonstrated the scale of harm that is possible when fentanyl is used for non-peaceful purposes.

"We have no effective antidotes to many poisons, but we do have an antidote to fentanyl [poisoning](#)—[naloxone](#), which also goes by the brand name Narcan—and the extreme frequency of unintentional fentanyl overdoses means we now stock this antidote in large quantities at health care facilities and pharmacies," Nelson said.

The frequency of accidental overdose also means that many healthcare providers and non-medical personnel have learned to recognize the signs of fentanyl poisoning while there is still time to reverse it. The paper's plan for minimizing vulnerability to fentanyl attacks calls for training more caregivers to spot victims quickly and administer naloxone early.

"Treating based on clinical findings rather than more definitive tests such as blood-test results is generally safe," Nelson said. "If you suspect fentanyl poisoning, administer naloxone, and it turns out the poison was another agent, you generally haven't hurt the patient."

The panel's response plan relies largely on such preparatory steps: training more people to recognize poisoning, creating channels to report unusual victims of fentanyl poisoning, finding commonalities among these victims, and eliminating the sources for obtaining fentanyl. It also involves devising ways to quickly transfer many doses of naloxone to where they are needed most.

"We have a lot of naloxone available in metropolitan and rural areas," said Nelson. He noted that it's safe to aid poisoning victims because [fentanyl](#) powder must be inhaled or ingested to hurt rescuers, and this is exceedingly unlikely to occur. There is essentially no risk of rapid absorption across the skin. "The key in a mass event will be quickly moving naloxone to the scene or to facilities that are suddenly

overwhelmed with victims. Fentanyl generally kills more slowly than poisons like cyanide, but it still requires quick action to prevent harm."

More information: Susan M. Cibulsky et al, Public health and medical preparedness for mass casualties from the deliberate release of synthetic opioids, *Frontiers in Public Health* (2023). [DOI: 10.3389/fpubh.2023.1158479](https://doi.org/10.3389/fpubh.2023.1158479)

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