

Health Update

Etomidate detected in Philadelphia's drug supply and involved in overdose deaths
August 12, 2024

SUMMARY POINTS

- Morbidity and mortality associated with substance use remain high in Philadelphia and is complicated by a constantly changing drug supply.
- Illicit substances that are referred to as “dope” almost always contain illicit synthetic opioids in combination with a sedative.
- Etomidate, a short-acting sedative-hypnotic medication used in emergency and critical care medicine, has been detected in Philadelphia's drug supply in combination with fentanyl.
- Etomidate has been involved in overdose deaths in Philadelphia.
- Etomidate may increase mortality in patients with sepsis and may increase risk of respiratory depression when used together with opioids.
- The first step to reversing an overdose remains administration of naloxone.
- Withdrawal management should prioritize opioid withdrawal management with methadone and buprenorphine.

Morbidity and mortality associated with substance use remains high in Philadelphia, where more than 1,400 individuals died from unintentional overdoses in 2022. Complicating both the medical and public health response to this crisis is constantly changing illicit drug supply. Illicit synthetic opioids, such as fentanyl, remain the primary cause of overdose fatality. However, illicit substances that are referred to as “dope” almost always contain illicit synthetic opioids in combination with a sedative. While the focus is often placed on new opioid analogues of known illicit substances, monitoring sedatives in the drug supply is equally as important.

In June 2024, the Philadelphia Department of Public Health (PDPH) Surveillance Drug Checking Program detected **etomidate** in Philadelphia's drug supply. Etomidate was detected in combination with fentanyl and medetomidine. This is the first-time etomidate has been detected in illicit drugs being used in Philadelphia, and it is possibly the first-time etomidate has been detected in an illicit drug in the United States. The Philadelphia Medical Examiner's Office has confirmed that etomidate was involved in at least one overdose fatality.

Clinical Effects of Etomidate

Etomidate is a short-acting sedative-hypnotic intravenous medication used in emergency and critical care medicine for the induction of general anesthesia and procedural sedation.^{1,2} Similar to benzodiazepines, etomidate produces clinical effects by binding GABA receptors in the central nervous system.³ Like other anesthetics, the clinical effects of etomidate are primarily include sedation and unconsciousness.^{3,4} Etomidate is rapidly metabolized by the liver.^{2,3} The onset of action of etomidate is usually within one minute, and the duration of action is usually within three to five minutes.²

Importantly, etomidate does not have significant effects of blood pressure or heart rate.³

Adverse Effects of Etomidate

The most well recognized and significant adverse effect of etomidate is transient adrenal suppression, which can last 6-8 hours after a single use.²⁻⁴ Thus, there is a concern that etomidate use among individuals with sepsis may increase mortality.⁴ A common side effect of etomidate use is pain at the injection site, and transient muscle twitching (i.e., myoclonus).^{3,4} Lastly, nausea and vomiting has been associated with etomidate.³

Transient changes in respiratory rate can occur after etomidate use, such as brief periods of apnea or hyperventilation, which have been described as having a small effect on the respiratory system.^{3,4} However, the combination of sedative-hypnotic GABA agonists, which includes etomidate, with opioids can increase the risk respiratory depression and overdose.⁵

Overdose Response

Naloxone administration is the first step in responding to a drug overdose. Etomidate had a rapid onset and duration of action, but other sedatives found in the drug supply (e.g., xylazine, medetomidine, benzodiazepine) may cause prolonged sedation. If the individual is not breathing, then administer rescue breaths in between doses of naloxone. Once individuals are breathing on their own and taking a minimum of one breath every six seconds, they no longer require more naloxone. If the individual is still sedated, place them in the rescue position and continue to monitor their breathing. All overdose responses should include calling 911 so the individual can receive medical therapy

Withdrawal Management

All samples that tested positive for etomidate also contained fentanyl, so withdrawal management should prioritize treatment of opioid withdrawal with methadone and buprenorphine. Etomidate is GABA agonist, similar to benzodiazepines, so withdrawal management for chronic etomidate use may follow similar protocols for benzodiazepine withdrawal which can be found [here](#). Other non-GABA agonist sedatives, such as medetomidine and xylazine, are also regularly detected in the drug supply and withdrawal recommendations for those substances can be found [here](#), [here](#), and [here](#).

Treat Substance Use Disorder (SUD)

SUD is a treatable chronic health condition. All clinicians registered with the Drug Enforcement Administration (DEA) can [prescribe buprenorphine](#) for the management of opioid use disorder and opioid withdrawal. In addition to buprenorphine, hospital-based clinicians can treat opioid use disorder and opioid withdrawal with Methadone. In the outpatient setting, clinicians can refer patients with opioid use disorder to an opioid treatment program for methadone initiation using the resources below. Patients with stimulant use disorder can benefit from behavioral therapies, such as contingency management, as well as from off-label medications following guidance from the [American Society of Addiction Medicine and the American Academy of Addiction Psychiatry](#).

Prevent Initiation of Illicit Drug Use

Clinicians should be equipped with the skills and expertise to engage their patients in a respectful, trauma-informed, and patient-centered conversation about drug use. A guide in using non-stigmatizing language to talk about drug use can be found [here](#). Early screening and successful treatment of psychiatric illness may prevent illicit drug use. Providers should also regularly [screen](#) for unhealthy drug use as part of routine care, and use the Prescription Drug Monitoring Program (PDMP) to inform their treatment plans. The PDMP should not be used punitively.

Prevent Harms Associated with Illicit Drug Use

For patients who have initiated illicit drug use, providers should be equipped with the skills and expertise to provide strategies to reduce the harm associated with drug use. These include:

- Always carrying Naloxone
 - Dispense naloxone directly to patients in your clinical setting.
 - See resources below for obtaining naloxone from PDPH.
- Testing drugs
 - There are test strips available to test drugs for the presence or absence of Fentanyl and Xylazine; However, there are currently no test strips available to test for Medetomidine.
 - See resources below for obtaining test strips from PDPH.
- Recommend patients to try not to use alone; if that is not possible, provide resources below.
- Recommend patients reduce the amount taken.

What is PDPH Doing:

- The [Surveillance Drug Checking Program](#) is testing illicit substances across clinical and community settings in Philadelphia to detect changes in the illicit drug supply.

- PDPH disseminates information about the drug supply to community partners who serve people who use drugs.
- The Division of Substance Use Prevention and Harm Reduction informs hospital-based clinicians of changes in the drug supply to inform and improve the care for people who use drugs in Philadelphia.
- The Medical Examiner's Office is updating the testing of overdose decedents to reflect the changing drug supply in Philadelphia.
- PDPH partners with DBHIDS, EMS, and other City agencies to share data and strategically support City-wide initiatives aimed at ending the overdose crisis and improving the lives of people who use drugs.
- PDPH distributes naloxone, fentanyl test strips, and xylazine test strips to community organizations and individuals across Philadelphia

Resources

Substance Use Disorder Treatment

- Behavioral Health Services Initiative (uninsured): 1-215-546-1200
- Community Behavioral Health (Medicaid): 1-888-545-2600
- CareConnect Warmline: 484-278-1679
- DBHIDS Medication Assisted Treatment: <https://dbhids.org/services/addiction-services/mat/>
- SAMHSA National Helpline: 800-662-HELP (4357)

Recommend patients try not to use alone. If that is what they are doing, then provide resources:

- Never Use Alone: 877-696-1996
- The Brave App – free to download on app stores
- Canary App – free to download on app stores

Learn how to get and use naloxone – www.substanceusephilly.com

Get naloxone & fentanyl test strips for free and confidentially – <https://nextdistro.org/philly>

Learn how to use fentanyl test strips:

- <https://www.cdc.gov/stopoverdose/fentanyl/fentanyl-test-strips.html>
- <https://www.youtube.com/watch?v=GmhE6UOZ9YY>

Take a wound care training - <https://www.substanceusephilly.com/healthcare-providers>

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