

Health Advisory

Increasing incidence of seizures among people who use drugs (PWUD) in Philadelphia October 7, 2025

The Philadelphia Department of Public Health (PDPH) has received reports of increased incidence of seizures among people who use drugs (PWUD) from behavioral health and community providers. In response to these reports, PDPH examined syndromic surveillance data and observed a 110% increase in the number of drug use-related Emergency Department (ED) visits (e.g., overdose, withdrawal) that involved a chief complaint or diagnosis of seizures from Quarter 1 2020 to Quarter 1 2025. (See Graph) In 2025, approximately 1 in 40 drug use-related ED visits were for a seizure, an increase from approximately 1 in 50 drug use-related ED visits in 2020. (data not shown) Several factors can contribute to the risk of seizures among PWUD, which include brain injury, previous overdose, withdrawal syndromes, using multiple drugs, and changes in the drug supply. When caring for PWUD, clinicians should screen for traumatic brain injury and provide guidance to their patients regarding their risk of seizures, how to recognize a seizure, and how to safely respond to a seizure.

SUMMARY POINTS

- Seizures may be becoming more common among people who use drugs (PWUD) in Philadelphia.
- Synthetic cannabinoids (i.e., K2, spice), kratom, cocaine, and methamphetamine use have been associated with seizures.
- Changes in the drug supply, such as increased prevalence of local anesthetics, may increase risk of seizures.
- History of traumatic or acquired brain injury, which can occur after an overdose, may increase risk of seizures.
- Providers should screen their patients for brain injury and can counsel PWUD on their risk factors for seizures.

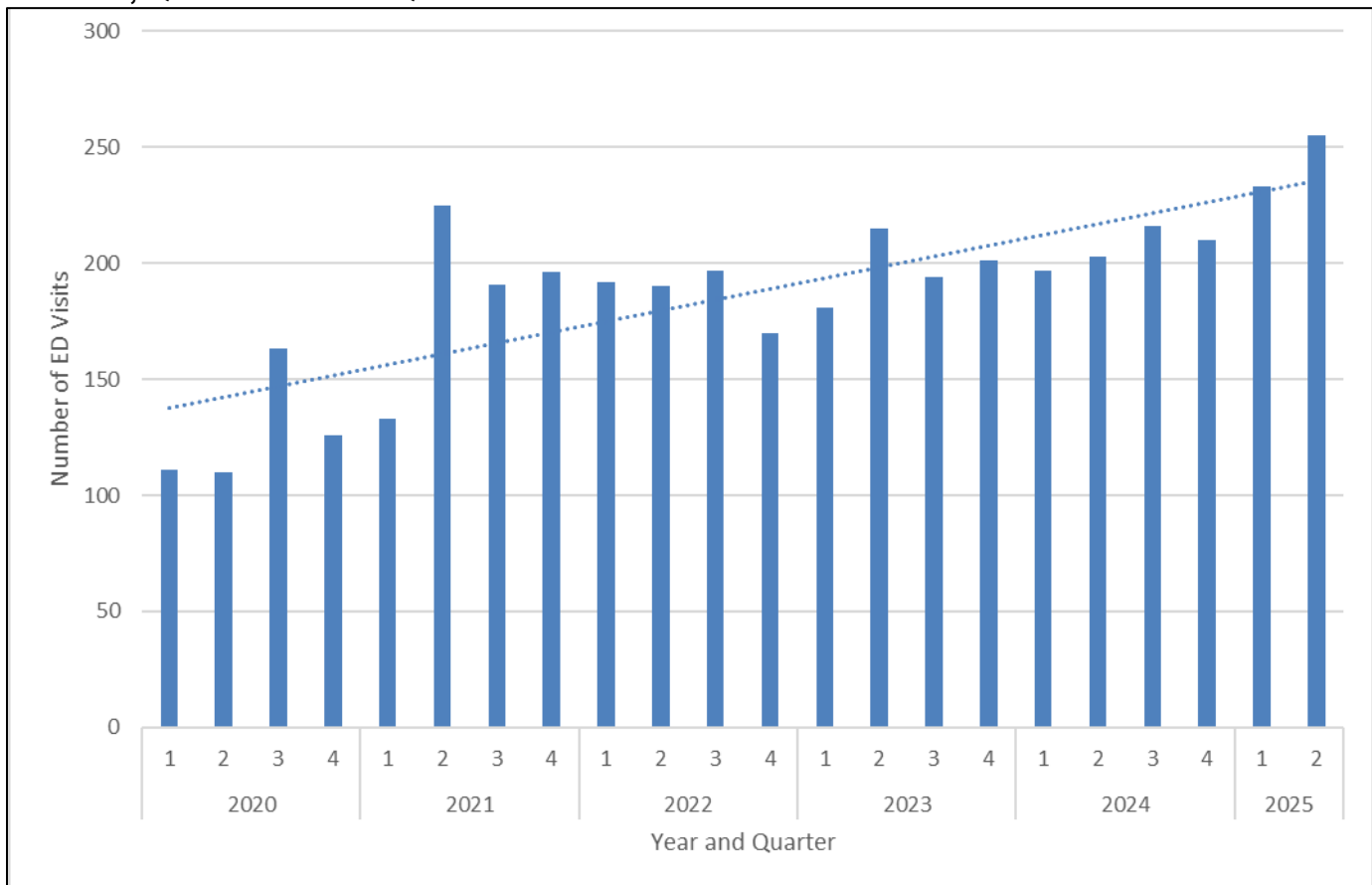
What contributes to the risk of seizures among to PWUD?

The toxicity and withdrawal syndromes associated with using various drugs include presentations with seizures. Using cocaine and methamphetamine can lead to stimulant intoxication, which includes symptoms such as high blood pressure, high body temperature, and seizures.¹ Using other unregulated drugs, such as synthetic cannabinoids (i.e., K2, spice) and kratom, has also been associated with seizures.^{2,3} Recently, there have been reports of increased kratom use in Pennsylvania.⁴ Withdrawal from GABA-agonists, such as benzodiazepines and alcohol, can lead to life-threatening seizures.^{5,6} Recent changes in illicitly manufactured fentanyl, also referred to as dope, can also increase the risk of seizures. Recent surveillance drug checking data have shown an increasing prevalence of local anesthetics, such as lidocaine, procaine, and tetracaine, which have been associated with increased risk of seizures.⁷⁻¹⁰ Importantly, although medetomidine is increasingly prevalent in the dope supply, current evidence does *not* support an association between medetomidine use and seizures.¹¹ Concurrent use of multiple drugs can further increase the risk of seizures for PWUD; for example, using stimulants to mitigate the sedative effects of medetomidine, which is often found with local anesthetics. Overall, providers should be aware of changes in the drug supply, educate their patients about how those changes can impact their risk of seizures, and counsel patients on how different drugs and using drugs in combination may impact their risk of seizures.

Brain injury is a risk factor for seizures and is common among PWUD.^{12,13} In a study of 295 PWUD who also had a mental illness, 80% had a history of a Traumatic Brain Injury (TBI).¹³ The relationship between TBI and drug use is complex. While TBI may be a risk factor for developing a substance use disorder, the increasing prevalence of veterinary sedatives in the drug supply has been associated with falls that may increase the risk of TBI among PWUD.¹⁴ In addition, non-fatal overdoses decrease oxygen delivery to the brain, which can result in acquired brain injury (ABI).¹⁴ To assess the risk of seizures, providers can obtain a history of overdose from their patients, as well as screen their patients for a history of brain injury using standardized tools such as the Ohio State University Traumatic Brain Injury Identification Method ([OSU-TBI-ID](#)). The [Brief Acquired Brain Injury Screen](#) incorporates lifetime history of overdose.

Other risk factors for seizures that impact PWUD include exposure to extreme weather, electrolyte imbalances, and infection. Using drugs and alcohol during heat health emergencies increases the risk of heat strokes, which can present as a seizure.¹⁵ Food insecurity, malnutrition, and dehydration can lead to electrolyte imbalances, which are risk factors for seizures.¹⁶ PWUD are at increased risk for viral and bacterial infections, which can lower seizure thresholds.¹⁷ Lastly, PWUD who have a known seizure disorder may have difficulty adhering to anti-seizure medication regimens due to a lack of access to safe medication storage. Providers can support PWUD with seizure disorders by providing resources for safe medication storage.

Graph: Drug Use-Related Emergency Department (ED) Visits with a Chief Complaint or Diagnosis of Seizures, Quarter 1 2020 – Quarter 2 2025



Recommendations for providers

1) Counsel PWUD on risk factors associated with seizures

- Drug toxicities – synthetic cannabinoids, kratom, cocaine, methamphetamine

- b. Drug withdrawal – alcohol, benzodiazepines
- c. Changes in the drug supply – increased prevalence of local anesthetics
- d. Other factors – heat health emergencies, electrolyte imbalances, infection

2) Screen patients for a history of brain injury

- a. Traumatic brain injury – OSU-TBI-ID
- b. Acquired brain injury – history of overdose

3) Provide anticipatory guidance on how to recognize and safely respond to seizures

4) Support medication adherence for PWUD who have a seizure disorder by providing resources for safe medication storage.

Resources

Recognizing and responding to a seizure for providers and patients

- Division of Substance Use Prevention and Harm Reduction – [Seizure first aid poster](#)
- Centers for Disease Control – [First Aid for Seizures](#) and [Epilepsy resources](#)
- Epilepsy Foundation – [Seizure First Aid](#)

Drug use and changing drug supply

- Division of Substance Use Prevention and Harm Reduction – [Drug Checking Findings: January-June 2025](#) and [Community Alert](#)
- PA Groundhogs – [Data Dashboard](#)
- Division of Substance Use Prevention and Harm Reduction – [Stimulants: Resource toolkit for healthcare providers](#)

Brain injury screening

- Indiana Department of Health – [Traumatic Brain Injury and Opioid Use Toolkit](#).
- CATIE webinar – [Brain injury after non-fatal overdose: A rising concern](#)
- The Ohio State University screening tool – [Traumatic Brain Injury \(TBI\) Identification Method](#)
- Brain Injury Association of America position statement– [Non-lethal Opioid Overdose and Acquired Brain Injury](#)
- Addiction Technology Transfer Center Network – [Traumatic Brain Injury and Substance Use Disorder: Making Connections](#)

Harm Reduction Supplies and Trainings from the Philadelphia Department of Public Health

- [Request medetomidine, xylazine, and fentanyl test strips](#)
 - o [Drug test strips instructions: fentanyl, xylazine, medetomidine](#)
- Request naloxone from [SUPHR](#) or [NEXT Distro](#)
- [Attend a virtual Overdose Prevention and Reversal Training](#)
- [Request wound care kits](#)

Connect with 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
- SafeSpot: 800-972-0590

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