

“Tranq”: Xylazine-Associated Wound Care Training

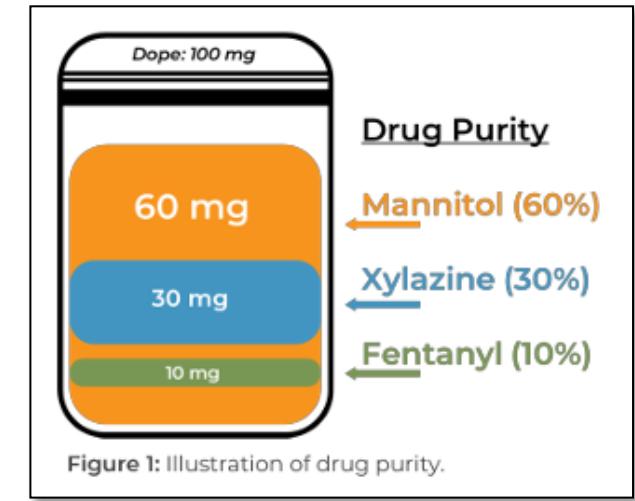
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The Drug Supply

“Heroin,” “Dope,” “Fentanyl”

- Core: fentanyl + alpha-2 agonist
 - Fentanyl 10-13mg per bag
- Alpha-2 agonist
 - Xylazine → medetomidine
- Non-fentanyl analogues – nitazenes
- Local anesthetics
 - Lidocaine, tetracaine, procaine, and benzocaine





Philadelphia Department of Public Health
Health Commissioner's Office

CHERYL BETTIGOLE, MD, MPH
Health Commissioner

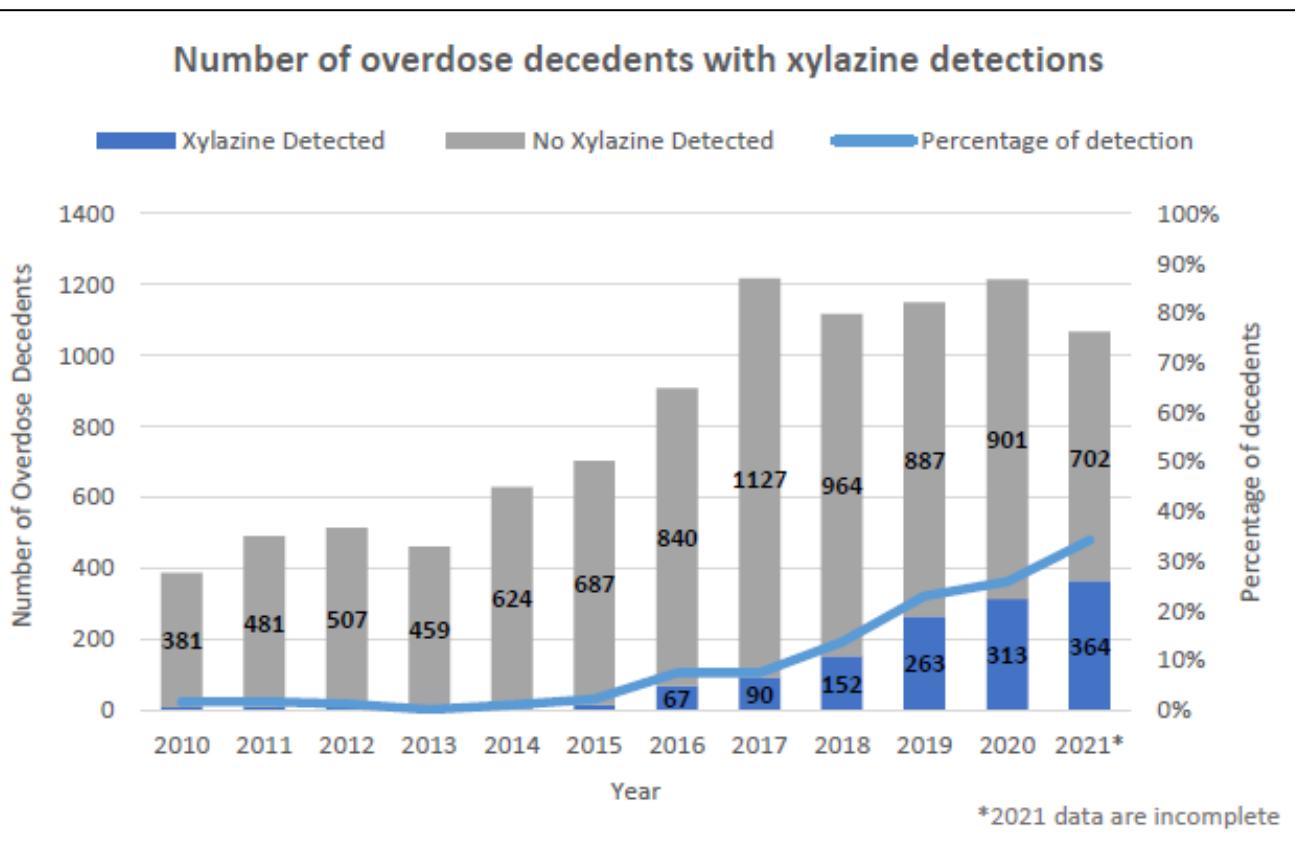
FRANK FRANKLIN, PhD, JD
Deputy Health Commissioner

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Acting Director, Division of Substance Use Prevention
and Harm Reduction

Health Alert

Risks of Xylazine Use and Withdrawal in People Who Use Drugs in Philadelphia

March 16, 2022

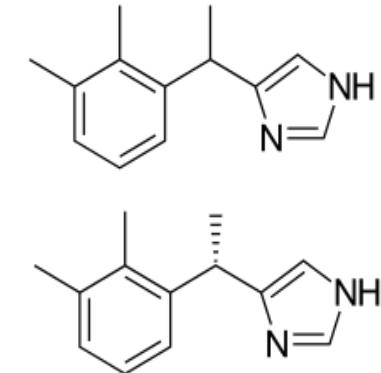


*In 2021, 91% of samples of purported heroin or fentanyl from Philadelphia also contained xylazine, making it the most common adulterant in the drug supply

Health Alert

In Philadelphia, medetomidine, a potent non-opioid veterinary sedative, has been detected in the illicit drug supply.

5/13/2024



SUMMARY POINTS

- Drug-related morbidity and mortality remain high in Philadelphia and is complicated by a dangerous and changing drug supply.
- Medetomidine, a veterinary alpha-2 agonist that is more potent than xylazine, has been detected in Philadelphia's drug supply.
- All samples that contained medetomidine were 'dope' samples and contained xylazine and fentanyl.
- Introduction of medetomidine to Philadelphia's drug supply can likely be attributed to events involving symptoms of hypotension, bradycardia, and prolonged sedation that is not reversed by naloxone.
- Patients may report symptoms of withdrawal from medetomidine that may be responsive to clonidine, a similar alpha-2 agonist.
- Withdrawal management should prioritize treating opioid withdrawal with buprenorphine or methadone and add clonidine early for patients who are hemodynamically stable and have persistent symptoms.

In Philadelphia, medetomidine was identified by the Center for Forensic, Science, Research, and Education in drug samples submitted by PDPH during the timeframe of 4/29/2024-5/1/2024. The samples were submitted as part of PDPH's ongoing surveillance of drugs associated with overdose.

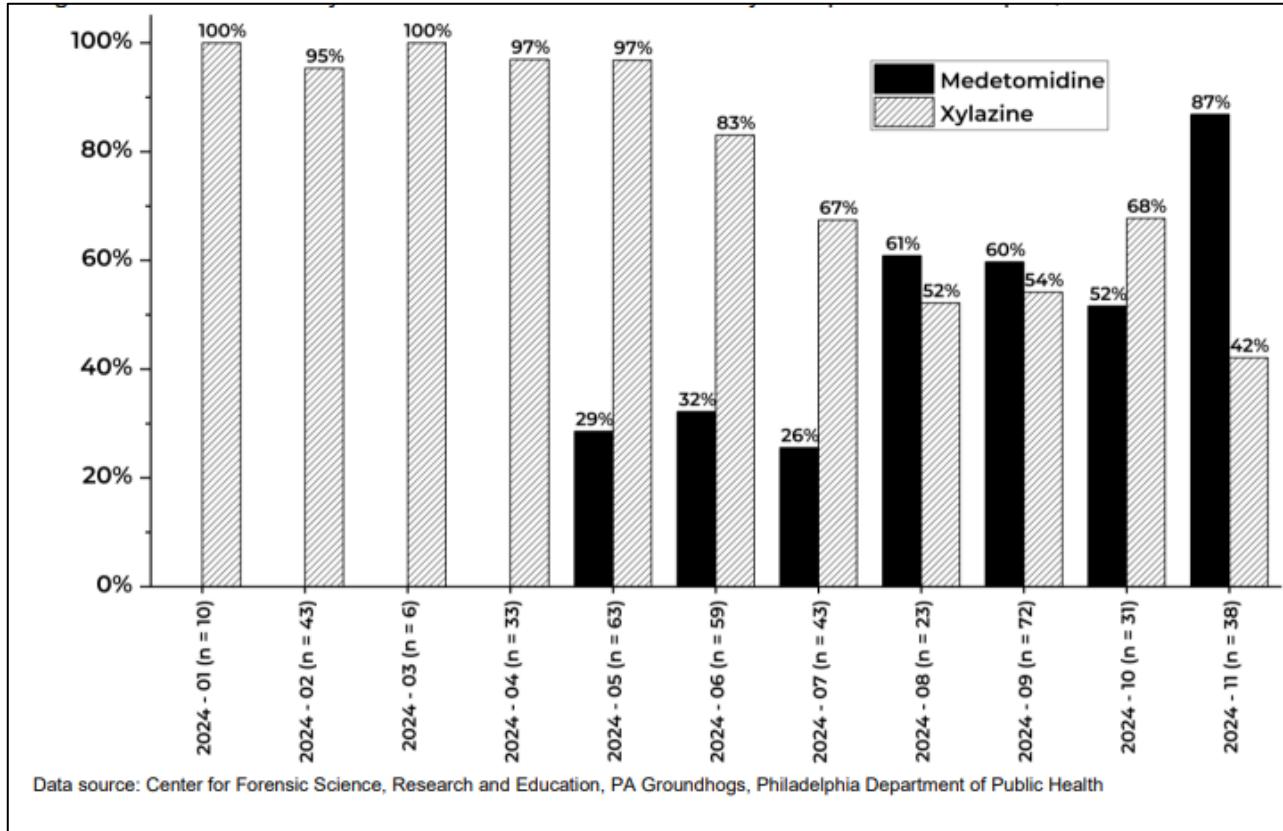
Reports of patients presenting to hospitals during this timeframe included symptoms of prolonged sedation, bradycardia, and hypotension, which are consistent with the expected clinical effects of medetomidine. At this point, a link to these adverse drug events and the introduction of medetomidine to Philadelphia's drug supply has not been established. To date all samples that contained medetomidine also contained xylazine and fentanyl.

Adverse Effects of Medetomidine Medetomidine use among humans is not well described, and adverse effects may be similar to those associated with dexmedetomidine, such as bradycardia and hypotension. Based on veterinary studies, medetomidine has been shown to cause bradycardia, hyperglycemia, diuresis, and low cardiac output. In addition, medetomidine may cause several adverse gastrointestinal effects, such as vomiting, decreased gastric motility, and bloody diarrhea. Peripheral vasoconstriction caused by medetomidine has been widely described, which may impact wounds and wound healing among people who use drugs in Philadelphia.

160 hospitalizations 4/29-5/1/2024

Shift from Xylazine to Medetomidine

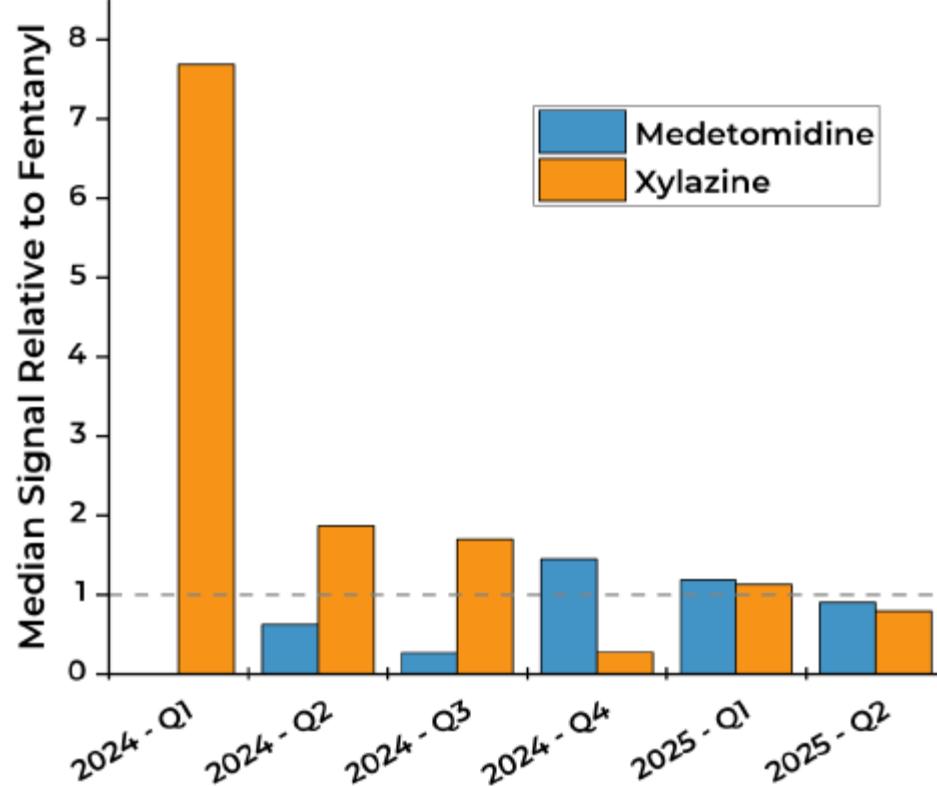
Prevalence of Xylazine and Medetomidine in Fentanyl Samples



- From May 2024 to November 2024, the percentage of Philadelphia dope samples with medetomidine increased from 29% to 87%, while the percentage of samples with xylazine decreased from 97% to 42%, suggesting that medetomidine is quickly overtaking xylazine in the dope supply.
- Medetomidine 1,000 – 10,000 mcg per bag compared to therapeutic treatment with dexmed at 1.5mcg/kg/hr
- Fentanyl concentration in bags continue to remain around 13,000 mcg/bag

Shift to Medetomidine in the Fentanyl Supply

Drug Checking — Quarterly Report



MID-ATLANTIC

DRUG CHECKING

Q2 2025

	2023 - Q1 (n = 132)	2023 - Q2 (n = 95)	2023 - Q3 (n = 53)	2023 - Q4 (n = 60)	2024 - Q1 (n = 65)	2024 - Q2 (n = 165)	2024 - Q3 (n = 159)	2024 - Q4 (n = 91)	2025 - Q1 (n = 80)	2025 - Q2 (n = 130)	100%
Acetaminophen	3%	2%	0%	0%	3%	1%	6%	5%	5%	5%	
Benzocaine	0%	0%	0%	0%	15%	2%	4%	4%	9%	15%	
BTMPS	0%	0%	0%	0%	0%	4%	17%	45%	45%	14%	
Caffeine	27%	23%	9%	28%	12%	21%	23%	23%	23%	21%	
Carfentanil	0%	0%	0%	0%	3%	0%	1%	0%	3%	3%	
Diphenhydramine	0%	0%	0%	5%	3%	6%	10%	2%	4%	0%	
Heroin	16%	11%	6%	12%	8%	7%	9%	9%	10%	8%	
Lidocaine	16%	9%	15%	22%	11%	27%	47%	70%	51%	45%	
Medetomidine	0%	0%	0%	0%	0%	22%	50%	69%	70%	82%	
Procaine	0%	3%	0%	0%	5%	8%	19%	45%	49%	56%	
Tetracaine	0%	0%	0%	0%	0%	21%	38%	53%	53%	40%	
Xylazine	93%	97%	98%	98%	97%	92%	57%	49%	36%	12%	

DeBord et al. (2025) NPS Discovery Q2 2025 Mid-Atlantic Drug Checking Quarterly Report, Center for Forensic Science Research and Education, United States.

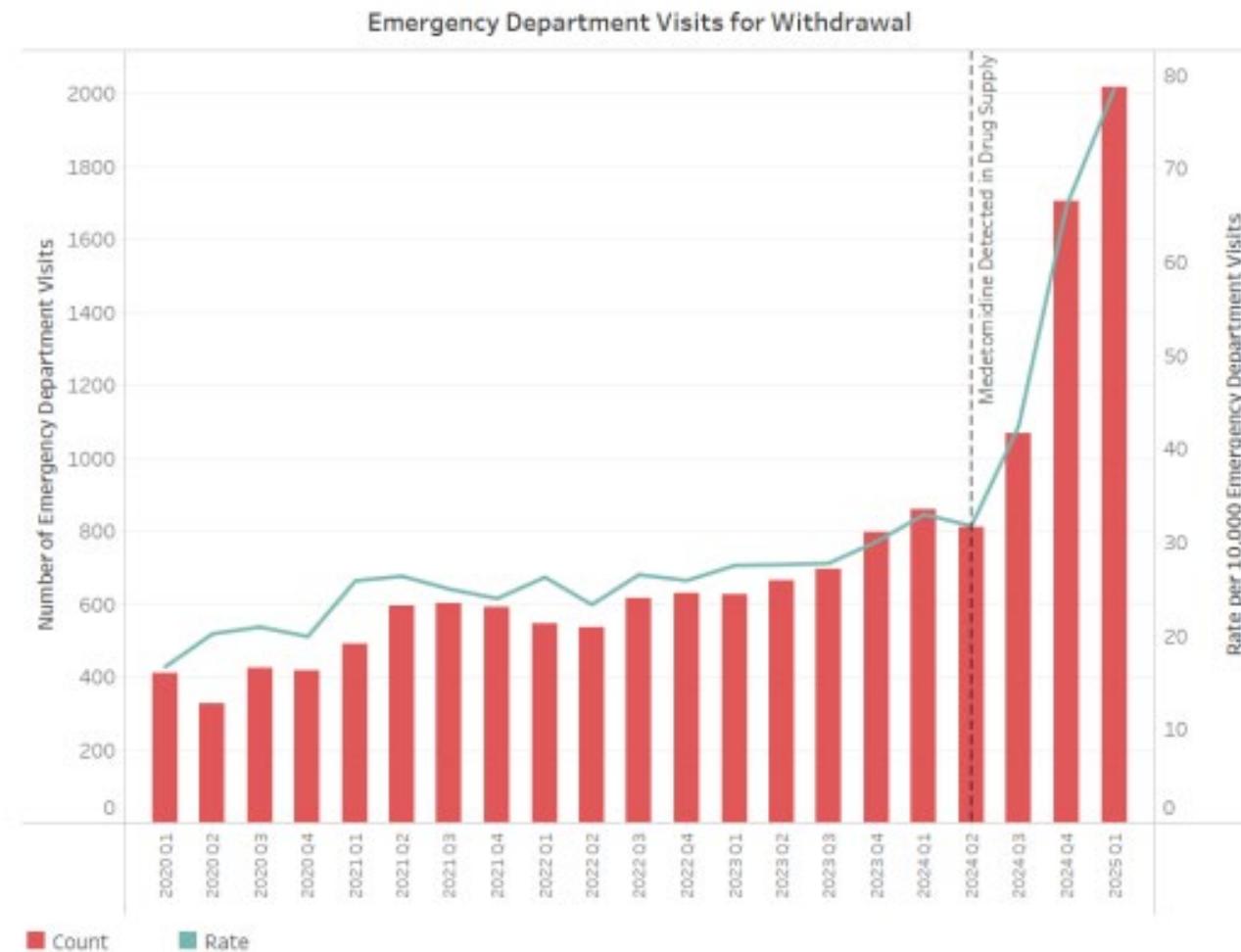


Marijuana MTB (THC), Urine	Negative
MDMA CONFIRM, URINE	Not Detected
Propoxyphene, Urine	Negative
Tramadol, Urine	Negative
Buprenorphine, Urine	Negative
MDA Confirm, Urine	Not Detected
Ethyl Glucuronide, Urine	Negative
Fentanyl IA	++POSITIVE++ !
Fentanyl Confirm, Urine	385
Norfentanyl Confirm, Urine	>820
Amphetamines, Urine	++POSITIVE++ !
Amphetamine Confirm, Urine	124
Methamphetamine Confirm, Urine	3,098
Barbiturates, Urine	Negative
Benzodiazepines, Urine	Negative
Cocaine, Urine	Not Detected
Cocaine Metabolite, Urine	Comment
Cocaine + Metabolite, Urine	++POSITIVE++ !
Benzoyllecgonine Confirm, Urine	3,102
Methadone, Urine	Negative
Opiates, Urine	Negative
Oxycodone, Urine	Negative
Phencyclidine (PCP), Urine	Negative
6-Acetylmorphine, Urine	Negative
Carisoprodol, Urine	Negative
Gabapentin, Urine	Negative
Cocaethylene, Urine	Not Detected
Xylazine and Metab, Urine	++POSITIVE++ !
Xylazine, Urine	PRESENT
4-Hydroxyxylazine, Urine	PRESENT
Amphetamines IA	Comment

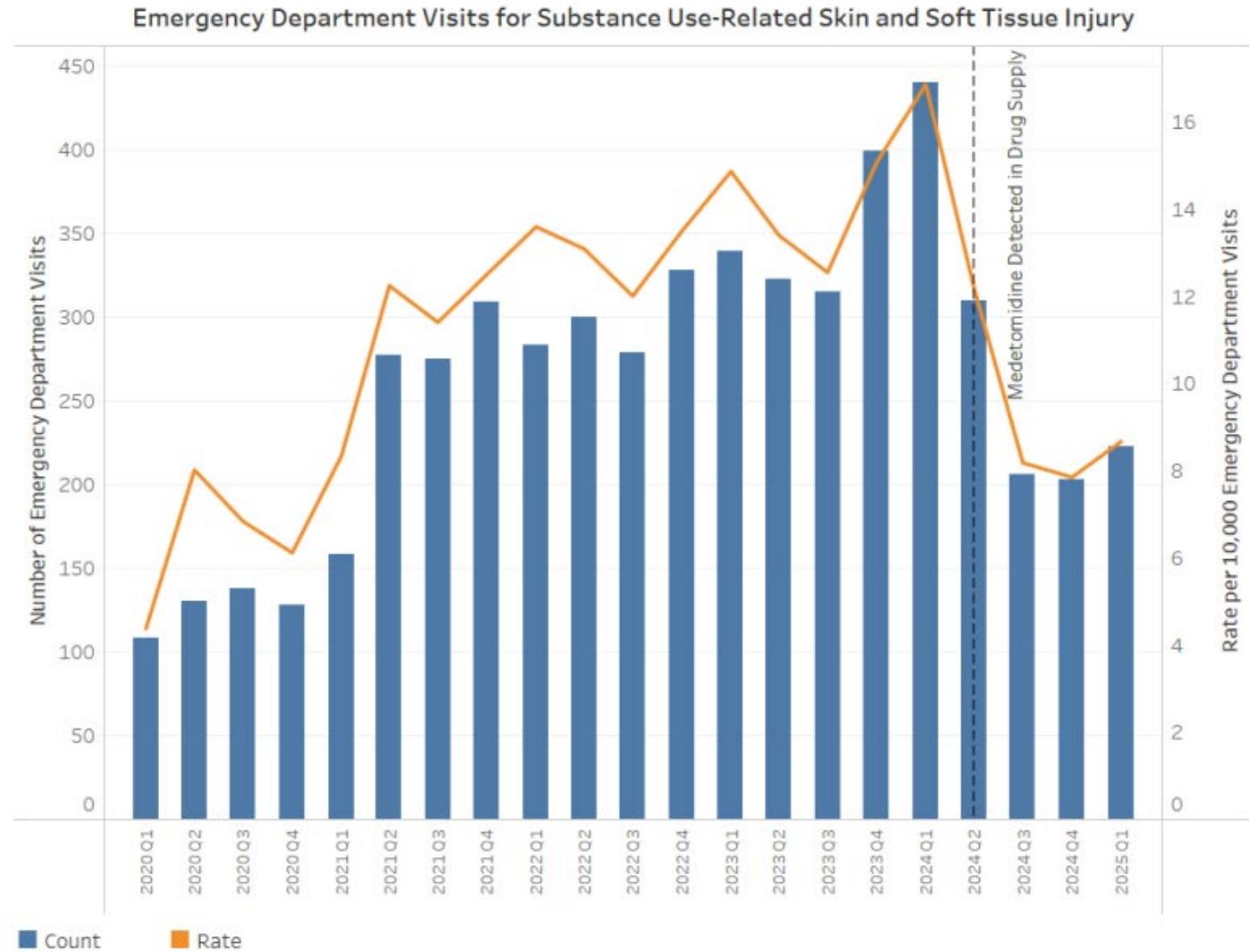
- No readily available immunoassay for xylazine
- “Pain Med Panel” Lab 702645
 - Outpatient laboratory testing
 - ~5-7 business day turnaround time
 - Qualitative AND quantitative levels
 - **Xylazine reflex testing for fentanyl positive samples**
- Cooper Center for Healing Outpatient Xylazine Testing
 - 2024 xylazine positivity fentanyl + xylazine: 92%
 - 2025 xylazine positivity fentanyl + xylazine: 75%
 - Adding medetomidine

CHART

Emergency department visits for withdrawal increased substantially after medetomidine was first detected in Philadelphia's drug supply in May 2024 (2024 Q2).



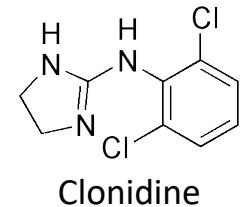
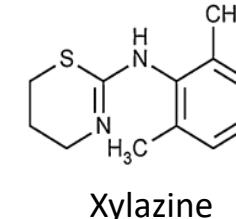
Despite large increases from 2020 through the beginning of 2024, emergency department visits for substance use-related skin and soft tissue injury rapidly decreased after 2024 Q1.



Philadelphia Department of Public Health. Philadelphia's Changing Drug Supply and Substance Use-Related Emergency Department Visits. CHART 2025;4(7):1-4.

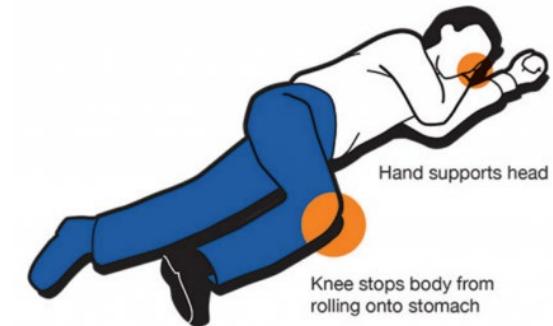
Xylazine – Pharmacology/Clinical Effects

- Alpha-2 adrenergic agonist that stimulates central alpha-2 receptors
 - Decreases sympathetic outflow → sedation, CNS depression
- Similar effects to *imidazoline* compounds
 - Clonidine, dexmedetomidine, oxymetazoline, tetrahydrazoline, tizanidine, and lofexidine
- Pharmacokinetics
 - Typical anesthesia dose ranges (0.2-1 mg/kg IM or IV)
 - Time to effect is a 1-2 minutes with IV administration
 - Duration of drug effect up to 4 hours



The Recovery Position

Keep the Airway Clear



Stay with person. If you must leave them alone at any point, or if they are unconscious, put them in this position to keep airway clear and prevent choking.

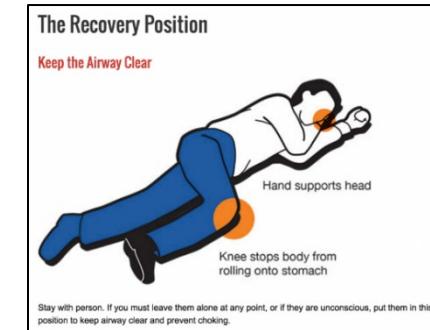
"Narcan resistant overdose"

- Xylazine is not an opioid, so naloxone will not reverse xylazine
 - Xylazine is always found in combination with fentanyl = resp depression
 - Naloxone should still be administered for respiratory depression
 - Apnea or cyanosis and decreased mental status in suspected opioid overdose (respiratory rate <8 bpm and POx <92%)
 - Risk of overshoot and precipitating opioid withdrawal in patients with significant opioid dependence
- Xylazine causes sedation which will blunt the response to hypoxia
 - Recovery position, airway control, oxygenation, monitoring
 - No antidotal therapy available or recommended
 - Yohimbine and Atipamezole are not recommended

Respiratory depression =



Sedation =



Drug Users Are Losing Their Fingers and Toes After Shooting 'Tranq Dope'

In Philadelphia, the animal tranquilizer xylazine has infiltrated the opioid supply, and it's been linked to horrific wounds and amputations.

 By [Manisha Krishnan](#)
TORONTO, CA

March 22, 2022, 7:00am [Share](#) [Tweet](#) [Snap](#)



“It’s eating away at my skin.”



Xylazine-Associated Wounds

Early Stage



Late Stage







RECOMMENDATIONS FOR CARING FOR INDIVIDUALS WITH XYLAZINE-ASSOCIATED WOUNDS

January 8th, 2024

S U P H R
Substance Use Prevention & Harm Reduction



HEALTH FEDERATION
OF PHILADELPHIA

The keystone of community health since 1983

Figure 1: Illustration of Spectrum of Xylazine-Associated Wounds²⁶



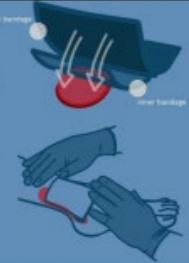
1. Clean

1. Wash or sanitize your hands and use gloves if you have some.
2. Clean wound with soap and water or saline. Do not use alcohol or peroxide on a wound because they are too harsh.
3. With a wet piece of gauze gently wipe the wound and surrounding skin to remove any dried drainage and dead tissue that's able to be removed easily and painlessly.



2. Moist

1. Spread a barrier ointment like ABD™ or Vaseline™ around the edges of the wound. This will help protect the wound and keep it from getting bigger.
2. Apply the same ointment (ABD™ or Vaseline™) to a non-adhesive dressing. A non-adhesive dressing can look like gauze that's shiny on one side, or greasy mesh like Adaptic™ or Xeroform™.
3. Place the non-adhesive dressing with the ointment on the wound. This is your "inner dressing."



3. Covered

1. Place an ABD Pad, an extra layer of dry gauze, or cloth on top of the inner dressing. This is your "outer dressing" that will help soak up drainage.
2. Wrap the wound with a gauze roll, athletic wrap, or ACE™ bandage. The wrap should be tight enough to keep the dressings in place, but not so tight that it cuts off blood flow.
3. Change the inner and outer dressing every 1-3 days or when it is soiled.



Things to watch for:

The wound: is getting more painful, draining more pus than usual, or has an odor even after cleaning it.

The surrounding skin: feels hot, and looks swollen, red, or darkened.

You are: able to see bone or tendon, having fevers, chills, nausea or vomiting, or are unable to feel or move that part of your body normally.

If you see black material in your wound you may need debridement which is best done by a medical professional.

Takeaways:

Keep your wound **CLEAN, MOIST, AND COVERED**. A dry wound won't heal!

You know your body best – go to a clinic or hospital if you are experiencing any of the things to watch out for.

See substanceusephilly.com/services to learn where you can get wound care.



Department of
Public Health
CITY OF PHILADELPHIA

- Home
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- Substance Use-Associated Wounds 101**
- Stigma Reduction
- Products and Preparation
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Table of Contents

Substance Use-Associated Wounds 101



A photo of a nurse placing a bandage on a patient's wound.

Xylazine-Associated Wounds

Xylazine-associated wounds (XAW) are substance use-associated wounds.⁸ Skin wounds associated with xylazine use (i.e., xylazine-associated wounds) are consistently described as partial to full thickness ulcers with progressive necrosis of the skin, soft tissues, and underlying structures such as tendon or bone.⁹⁻²⁰ Xylazine-associated wounds typically display delayed healing, and become chronic or recurring. Although xylazine-associated wounds commonly develop at sites of injection, they can appear regardless of the method of xylazine administration anywhere on the body (i.e. away from sites of injection, and/or in people who only smoke or snort their drugs).^{11,21,22,22-24} Often, injuries to the skin and soft tissue (bug bites, pimples, sun/burns, bruises, blisters, cuts) develop into xylazine-associated wounds in people who use drugs.

The mechanisms that cause tissue damage and death and delayed wound healing seen in people who use tranq dope are not fully understood. However, inadequate blood flow from drug effects and/or damage to small vessels seems likely to contribute. Infection as the primary cause of XAW seems unlikely, though secondary skin and soft tissue infections are often seen.



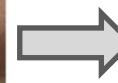
During admission



3 months



6 months





3 weeks



3 months



 Welcome Tranq Dope Substance Use-
Associated Wounds 101 Stigma Reduction Products and
Preparation Wound Assessment How to Guide Video Resources Glossary Further information

How to Guide

 Icon Guide 1 Establish Consent 2 Remove Dressing 3 Assess Periwound 4 Assess Wound Bed 5 Securement Dressing 6 Follow-up Planning

Step 4: Assess the Wound Bed and Drainage

Assess each wound bed tissue type and follow the recommended steps to cleanse the area using appropriate products. This section also outlines additional actions based on **signs of infection** and the amount of drainage. Select the wound bed tissue type below to navigate directly to a detailed walkthrough.

Eschar



Slough



Granulation tissue



Hypergranulation tissue



Exposed underlying structures



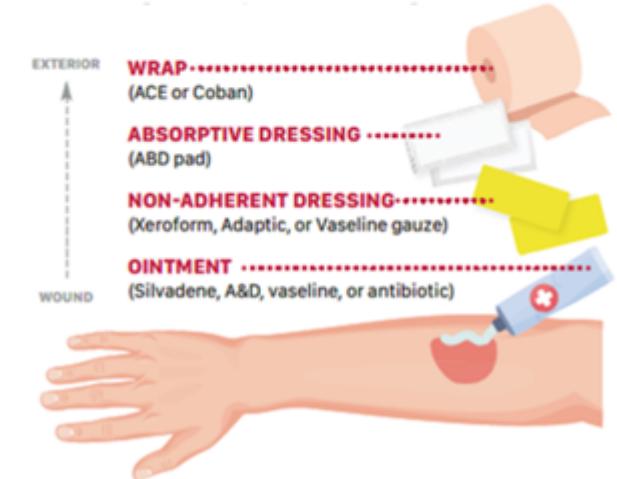
Xylazine-Associated Wound Care Synopsis

- Daily wound care
- Avoid surgical debridement
 - Practice conservative, limb-sparing care
- Clean with soap/water or foam cleanser
- Keeping wound moist and covered
 - Common street misconception that wound healing is better when allowed to dry/scab
- Topical ointment – autolytic/enzymatic debridement
 - Silver sulfadiazine, petroleum-based ointment, collagenase, hydrogels, medical honey, other antimicrobials
- Non-adhesive layer (Xeroform/Vaseline gauze/Adaptic)
 - Avoids painful, unnecessary daily debridement with dressing changes
- Absorptive layer for wounds with significant drainage (ABD pad)
- Protective layer (ACE wrap/cohesive bandage)



Xylazine-Associated Wound Care Basics

- Provide daily wound care.
- Clean with soap and water, saline, or foam cleanser.
- Keep wound moist with ointment and completely covered to prevent/treat scabbing. Eschars (scabs) prevent healing.
- Apply Silvadene or petroleum-based ointment (Aquaphor, A&D ointment) to wounds.
- Conservative management is preferred over aggressive surgical debridement/intervention.



- Topical antimicrobials for superficial bacterial overgrowth (slough)
 - Superficial bacterial growth will prevent healing
 - Topical antimicrobials will help manage putrid wound smell
 - Silver sulfadiazine, bacitracin, triple antibiotic ointment (Bacitracin/Neomycin/Polymyxin)
- Wounds rarely require oral or IV antibiotics unless there are signs of SSTI like cellulitis, abscess, or deep space infection
 - Border erythema is normal healing
 - MSSA, MRSA coverage
- Exposed bone/osteomyelitis
 - Initiate prolonged systemic antibiotic regimen once a healthy wound bed develops and the exposed bone is covered



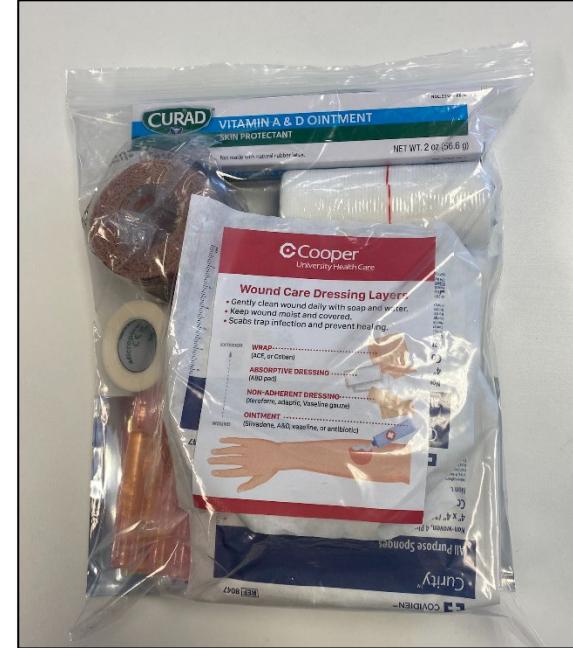
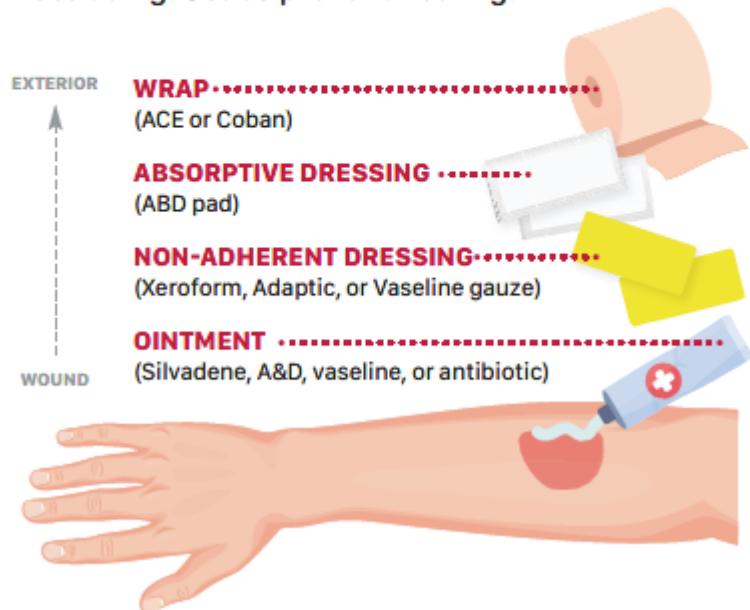
Outpatient Management

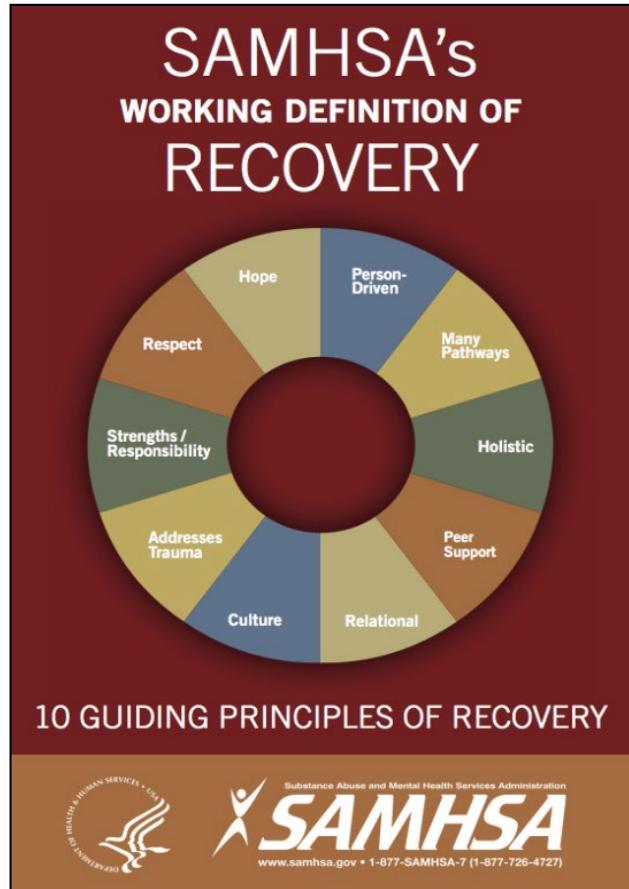
- Access to supplies
- Nutrition - Dietary supplement: protein
- Access to clean water, ability to clean/dress wound daily
- Non-stigmatized environment
- Empowering community care
- Harm reduction mindset
 - Transition from intravenous use to other routes
- Co-located SUD and wound care management
- Weekly visits (space for self-directed daily wound care?)
 - Re-evaluations, prescriptions, wound care dressing, supplies
 - Documentation of care – to help guide plastics, ortho, hand surgery, podiatry
 - Documentation of stability, UDS, pictures of wounds, document care plan



Wound Care Dressing Layers

- Gently clean wound daily with soap and water.
- Keep wound moist and covered to avoid scabbing. Scabs prevent healing.





SAMHSA's Guiding Principles of Recovery

- Recovery emerges from hope.
- Recovery is person driven.
- Recovery occurs via many pathways.
- Recovery is holistic.
- Recovery is supported by peers and allies.
- Recovery is supported through relationships and social networks.
- Recovery is culturally based and influenced.
- Recovery is supported by addressing trauma.
- Recovery involves individual, family, and community strengths and responsibilities.
- Recovery is based on respect.