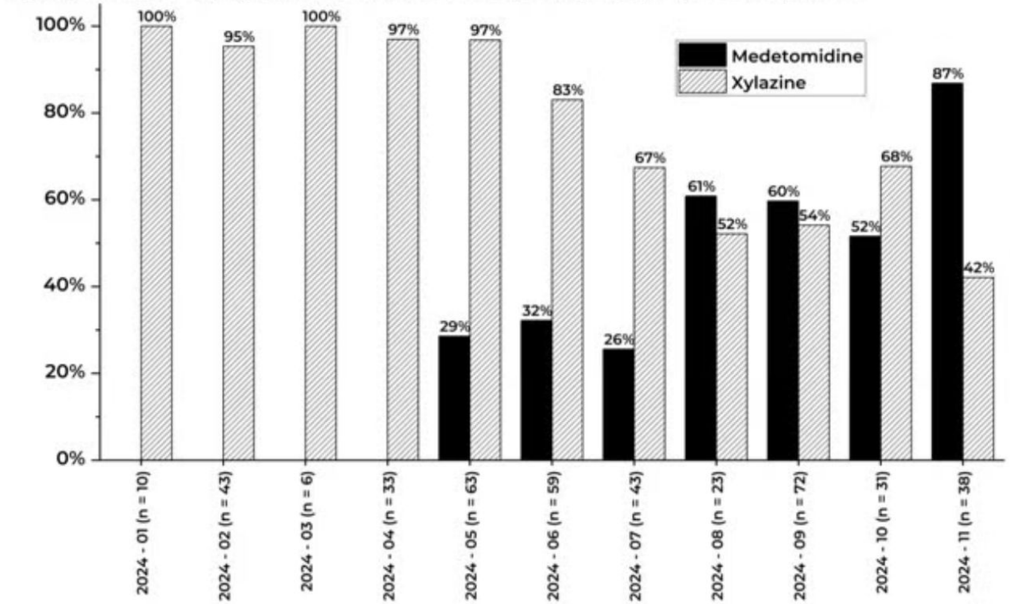
Withdrawal From Medetomidine-Adulterated Fentanyl During Pregnancy: A Case Report

Chloe Kern, MD, MS, Erik Saka, MD, MBE, James Miranda, MD, Nia Bhadra-Heintz, MD, Allison Lee, MD, MS

- Aka “rhino tranq” : α2-adrenergic agonist racemic mixture of dexmedetomidine and levomedetomidine (inactive)
- Highly selective and potent α2 agonist (100–200× more potent than xylazine)
- 1 bag of "fentanyl" ~ 15mg of medetomidine (20 infusion vials of dexmedetomidine (400mcg/100mL))
- Toxidrome: naloxone-resistant sedation, sinus bradycardia, hypotension
- Withdrawal: severe sympathetic hyperactivity
    - rapid onset hypertension with systolics >180 mmHg
    - tachycardia
    - vomiting
    - hypoactive delirium
    - tremor without clonus
- Withdrawal often requires ICU admission for severe autonomic hyperactivity leading to end-organ damage including ACS, PRES, and seizures.

Figure 1: Prevalence of Xylazine and Medetomidine in Fentanyl Samples in Philadelphia, PA



Data source: Center for Forensic Science, Research and Education, PA Groundhogs, Philadelphia Department of Public Health

*in 2024, PA made xylazine a scheduled drug

Medetomidine. CAMP. (n.d.). https://penncamp.org/medetomidine/

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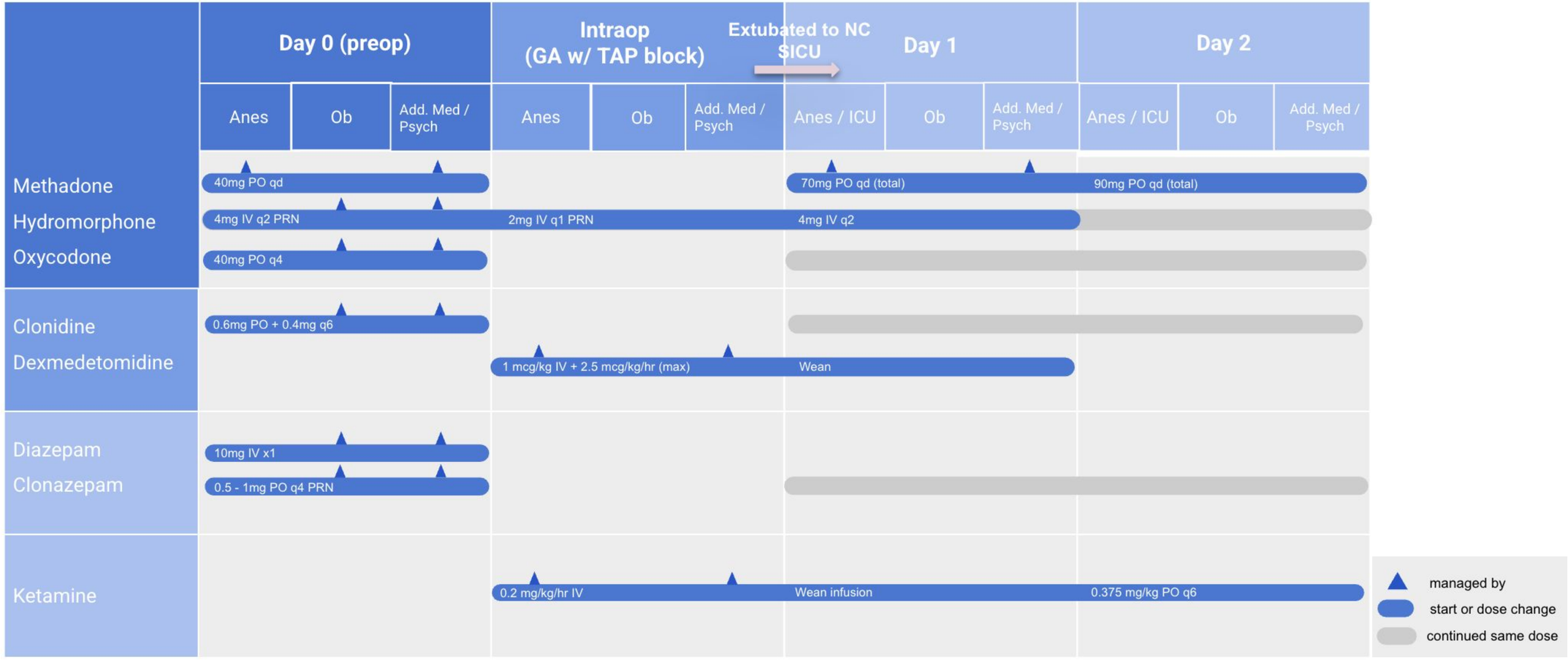
The Case

32yo G5P3013 at 39w4d with hypertension, MRSA bacteremia, epilepsy, HIV, HCV, HSV, depression, anxiety, 4 prior cesarean deliveries (CDs), and polysubstance use disorder (opioids, benzos, alcohol, amphetamines) on methadone, presented w/ painful contractions.

Her last use of fentanyl and xylazine was 2 hours prior.



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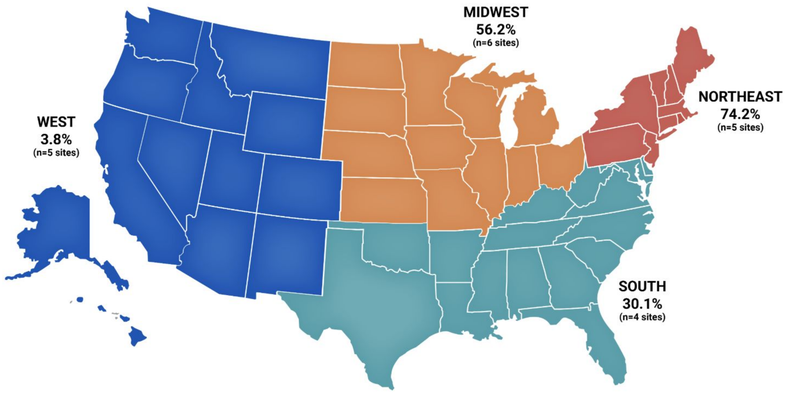
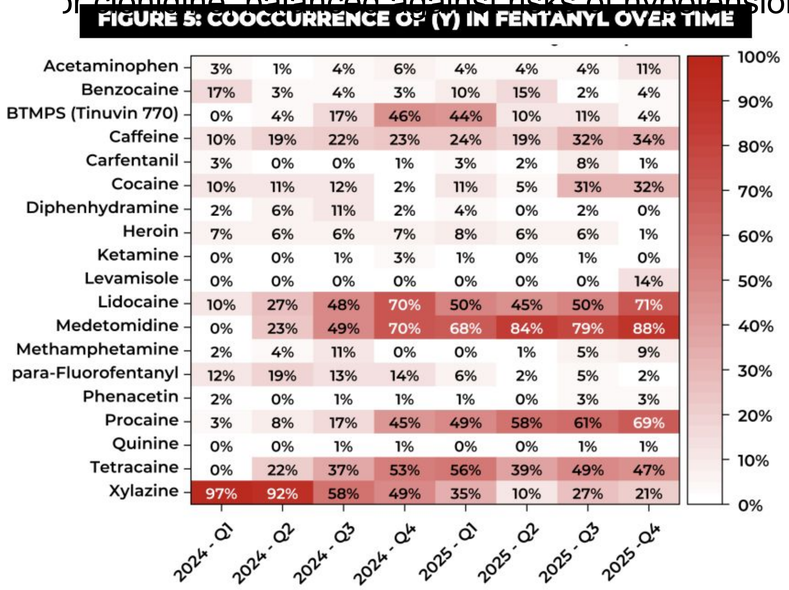
Learning points



Percentage of opioid-positive drug product and paraphernalia samples positive for medetomidine across 20 sentinel sites: US region, July 2025 – December 2025

- Medetomidine-laced fentanyl is on the rise, and withdrawal syndromes are growing increasingly complex. The percentage of fentanyl with medetomidine has been increasing continuously over the past two years and is now in nearly every tested sample.
- Failure to recognize α2-agonist exposure may result in misdiagnosis and suboptimal management.
- Withdrawal management includes α2-agonist substitution or bridging therapy, such as dexmedetom[illegible]or clonidine, balanced against risks of hypotension and bradycardia.

- Multidisciplinary coordination is essential and should involve Obstetrics, Anesthesiology, Addiction Medicine, Neonatology, Infectious Disease, Psychiatry, and Bioethics Services
- There is limited evidence-based guidance regarding management of medetomidine withdrawal in parturients.
- Our institution is working on better coordination with nursing and pharmacy to allow dexmedetomidine infusions on acute care floors.
- Clinicians need to be vigilant of the constantly-evolving landscape of novel and synthetic additives to the opioid supply



Selected co-occurring analytes shown from GC-MS analysis of fentanyl-primary samples in Mid-Atlantic 2024 - 25

Centers for Disease Control and Prevention. (2026, April 2). *Medetomidine situation summary*. Centers for Disease Control and Prevention. https://www.cdc.gov/overdose-prevention/situation-summary/medetomidine.html

Drug checking quarterly report (Q2 2025): Mid-Atlantic, USA. The Center for Forensic Science Research & Education. (2025, October 15). https://www.cfsre.org/nps-discovery/drug-checking/drug-checking-quarterly-report-q2-2025-mid-atlantic-usa