

# Community drug checking programs with Streetcheck in Massachusetts, Connecticut, & Vermont

A Police-Community-Public Health Partnership with the Overdose Response Strategy, New England High Intensity Drug Trafficking Area (ORS/NEHIDTA)



**Brandeis**  
UNIVERSITY

# Drug Supply

?

- ✓ Drug supply is a major determinant of drug related death
- ✓ Knowing a drug's content informs public health and public safety responses
- ✓ Only known after a death, hospitalization, arrest, and often way too late to be informative
- ✓ A strategy that boosts samples to toxicology and forensic labs risks overwhelming and delaying an already taxed and critical structural lab system
- ✓ **Field-based tools exist and people can be trained to use them**



# Why do Drug Checking?

Improves safety of the drug supply  
(Evidence: European, darknet studies)

Decreases violence in drug transactions  
Improves consumer knowledge and confidence  
Increases safety of supply (fewer unsafe adulterants/cuts, increases purity)  
Stabilizes market

Provides an opportunity for empowerment, health promotion, and consumer behavior change  
(Evidence: Fentanyl Test Strip studies)

Promotes health and dignity of people who use drugs  
With knowledge and interaction with harm reduction staff, people change behaviors

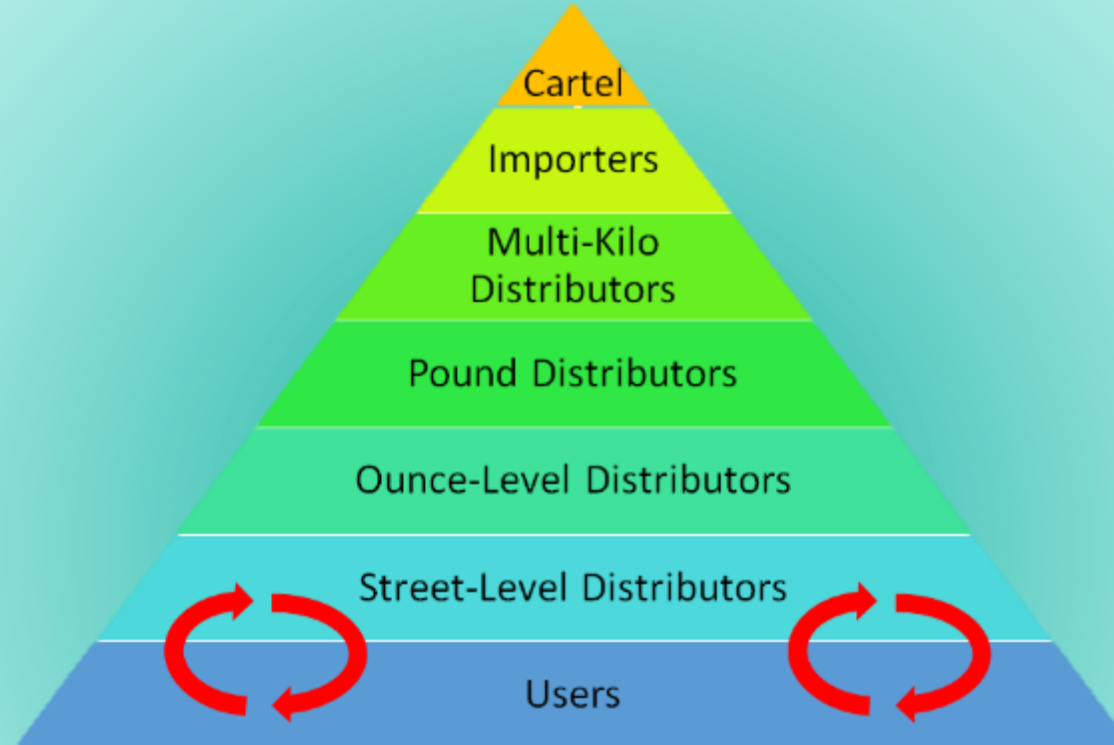
Engagement tool for new, hard to reach populations  
(Evidence: RIZE MA evaluation, Peiper et al.)

Increases in program utilization, patient navigator contacts when coupling drug checking at outreach with existing medical and harm reduction services



# Community Drug Checking

- ✓ Monitoring the illicit drug supply in partnership with public health and public safety is **feasible**
- ✓ Trends detected through illicit drug supply monitoring are **meaningful** for public health and public safety, and may be important for clinical practice
- ✓ Disseminate results/detected trends **more quickly** to consumers, communities, and other stakeholders
- ✓ Triangulate and **validate** trends and alarms with existing systems: syndromic surveillance (hospitals/EDs), drug seizures, medical examiner, media mentions



**Community drug checking focuses on supply effects for people using drugs**

# Brandeis Community Drug Checking Team

- Who we are:

- Traci Green, Principal Investigator
- Becca Olson, Project Manager
- Cole Jarczyk, Analytical Chemist
- Rachel Wightman, Medical Toxicologist
- Brandon del Pozo, First Responder Communications advisor



- What is the project?

- MA Department of Public Health funded, partnered with NEHIDTA
- Piloted in 2019 in Boston and New Bedford PD
- Current I-91 Project (CT, MA, VT), HIDTA Discretionary Funds



# Current Community drug checking program sites\*

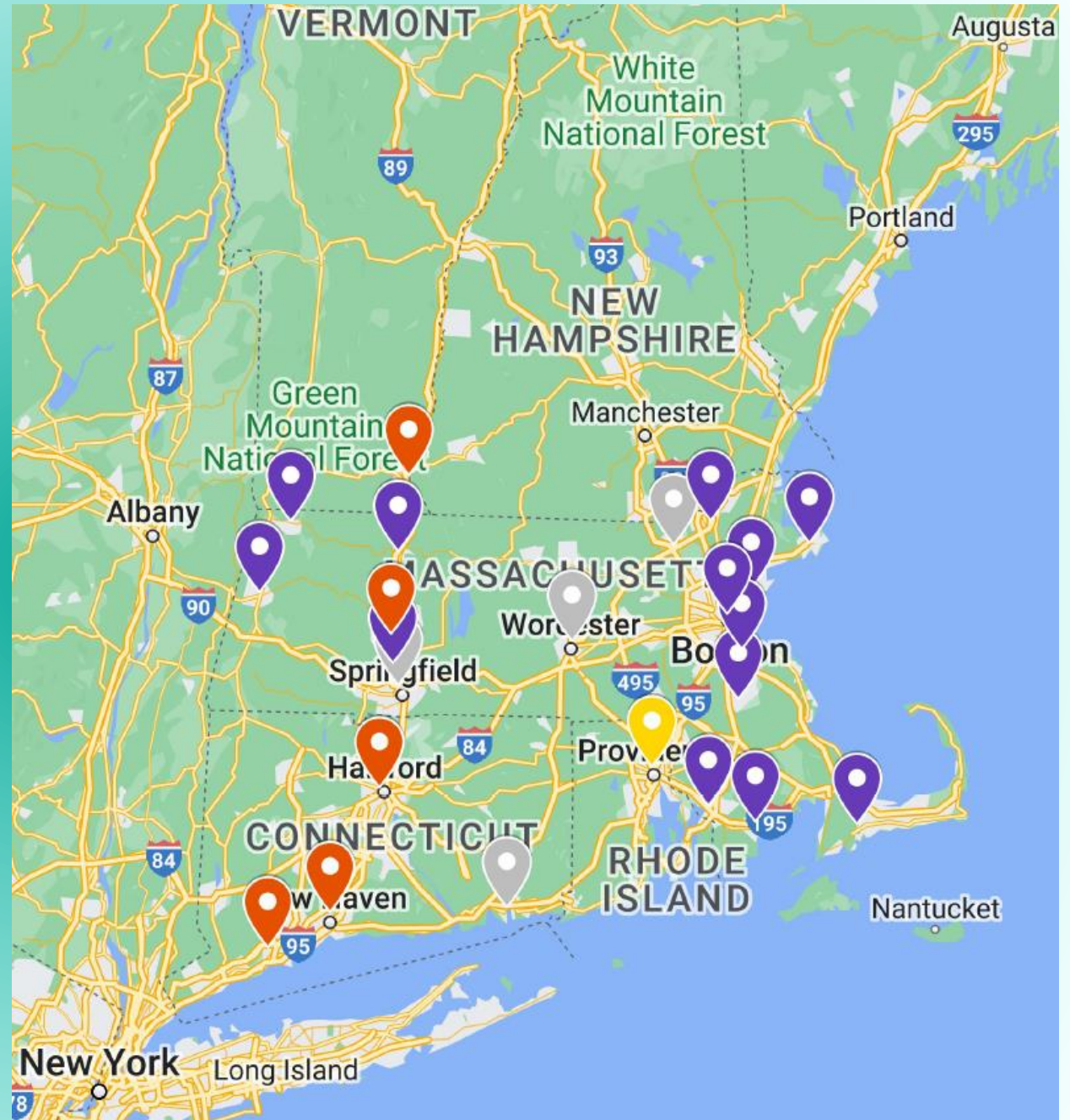
RED=I-91 project (Overdose Response Strategy, ONDCP/CDC Foundation)

PURPLE=MADDS, Massachusetts Public Health Dept

GREY=MADDS and I-91 project sites in progress

YELLOW= NIH- and FORE-funded research projects

\*Data from all sites pooled on Streetcheck for transparency and sharing



# Community Drug Checking Program Overview

Collect sample from community partner/police department and gather situational and subjective information



Scan sample with FTIR (on-site), test with fentanyl test strips (on-site), send for GC/MS confirmation testing (off-site) and review by medical toxicologist



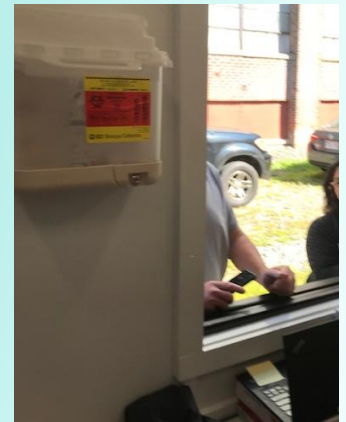
Report out findings to partners, communities and the state





# Community Partner Leads, Public Safety Supports

- Community partner responsibilities
  - Site has FTIR and does own scanning
  - Sends out for confirmatory testing
  - Receives Brandeis team Technical Assistance
  - Brandeis team analyzes, community partner disseminates info
- Public Safety responsibilities
  - MOU/memo reflecting support of program in community
  - Review reports and disseminate to internally, other first responders, to stakeholders
  - Optional opportunity to provide “for destruction” samples for testing



# Process

- **Collect sample** from participants/police departments

Once-used  
cookers



Once-used  
Cottons



Baggies



Wax  
folds/stamps



Parts of  
pills



Pipes



- How much sample? *About the amount of a grain of rice*
- For Police Department samples, eligible samples are *\*Non-criminal cases only\**!
  - Controlled buy, found property, non/fatal overdose, one baggie/stamp bag = personal quantities

# Talk to the donor/review the case file to learn more!

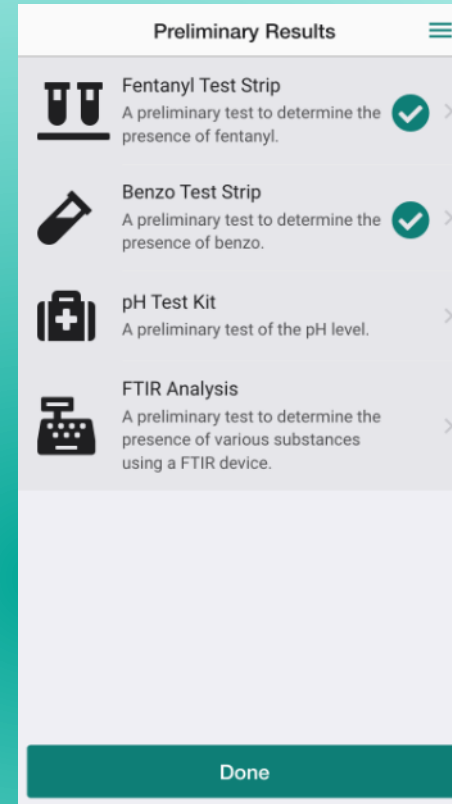
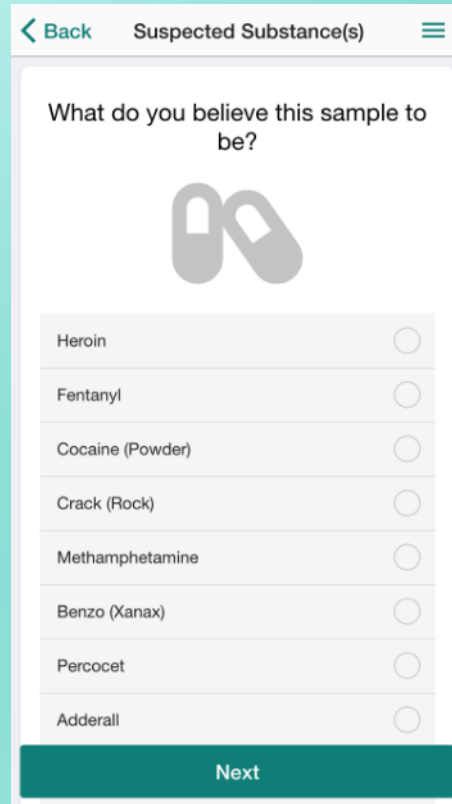
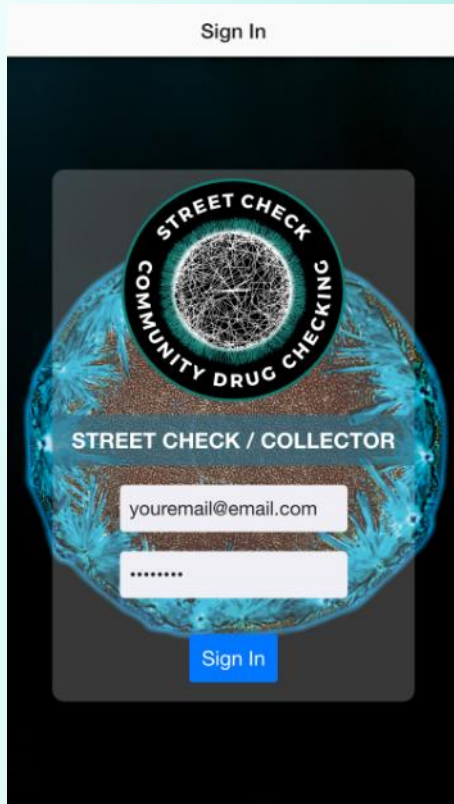


What was it like? Tell us more!

Information from people who use drugs or from the case file can help us get better and quicker results. We ask:

- What was the sample bought as?
- Route of consumption? (injected, sniffed, etc.)
- Expected OR unexpected reactions (how “normal” was it)?
- Did you like it/was is harmful?
- Scene or context information
- Anything else you/they think is important





Input data and receive results with the community designed Streetcheck application

# Community partner sample collection



## Storage

- Put sample in locking bag provided and store them in the locked location set out by your organization. Make sure you are familiar with these specific instructions and follow the safety protocols!



**Test on-site for preliminary, send out for complete testing**

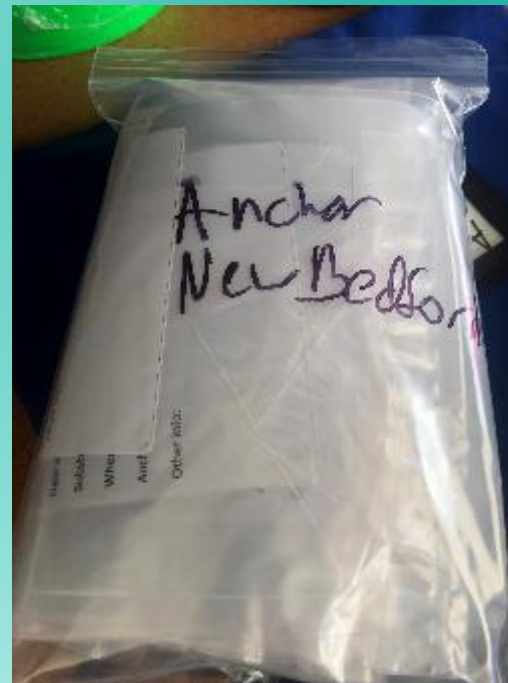


# Community partner trash collection “kit”

Locking sample bag



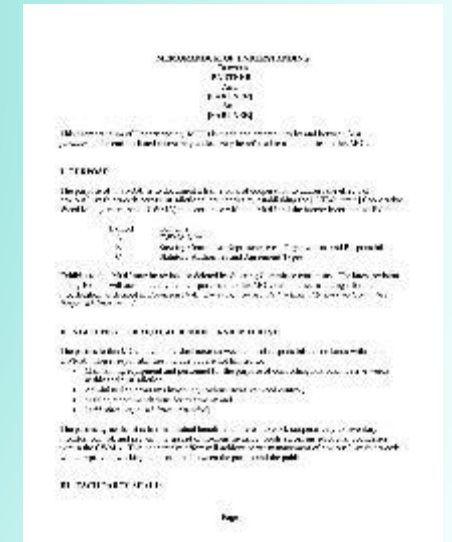
Labeled sample baggies



Flyers



MOU







Bruker Alpha FTIR



BTNX Fentanyl Test Strips



GCMS from Center for Forensic Science Research & Education



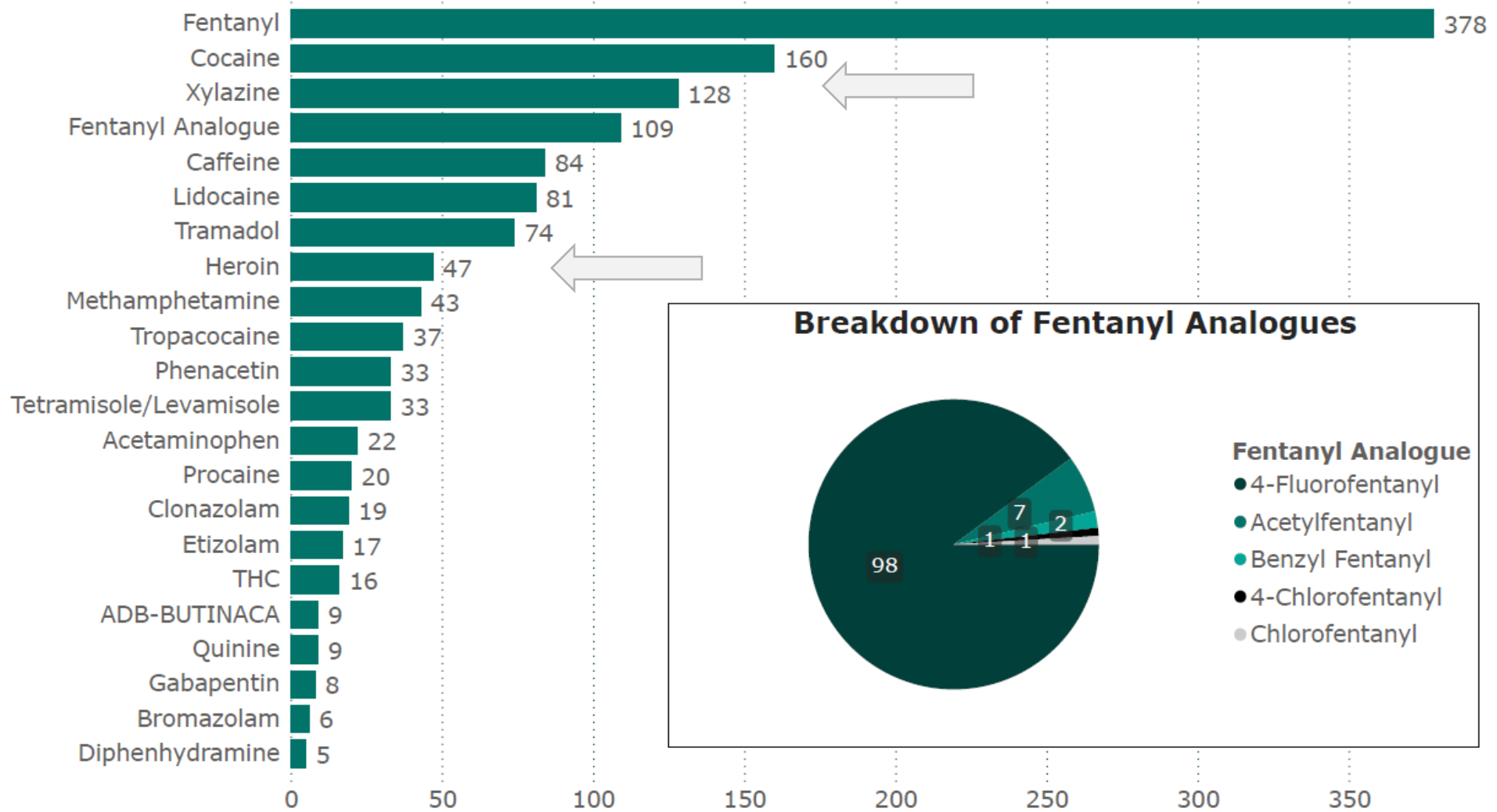
Medical Toxicology Consultation



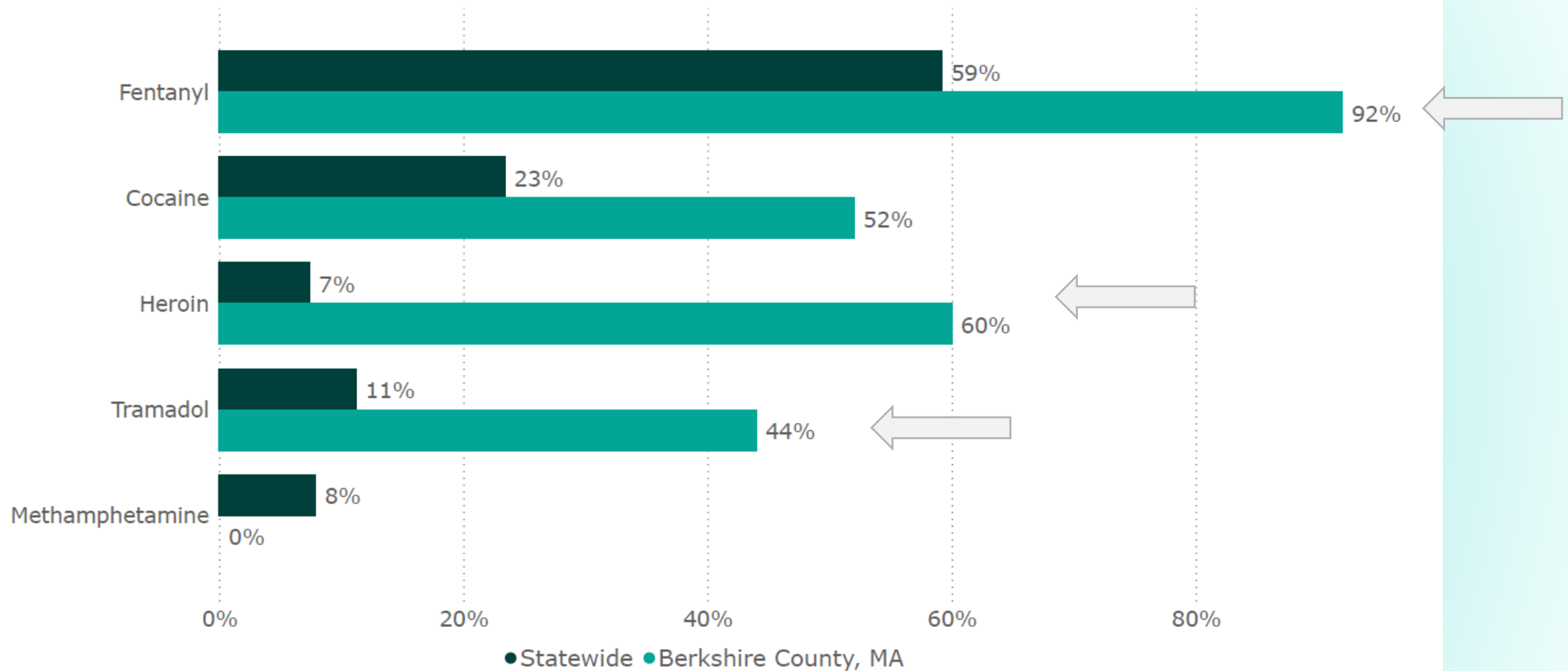
**Test with tools, interpret with care**

2021

### Active Substances Detected in Drug Samples



## Substance Presence in Drug Samples - Berkshire County vs. State of Massachusetts



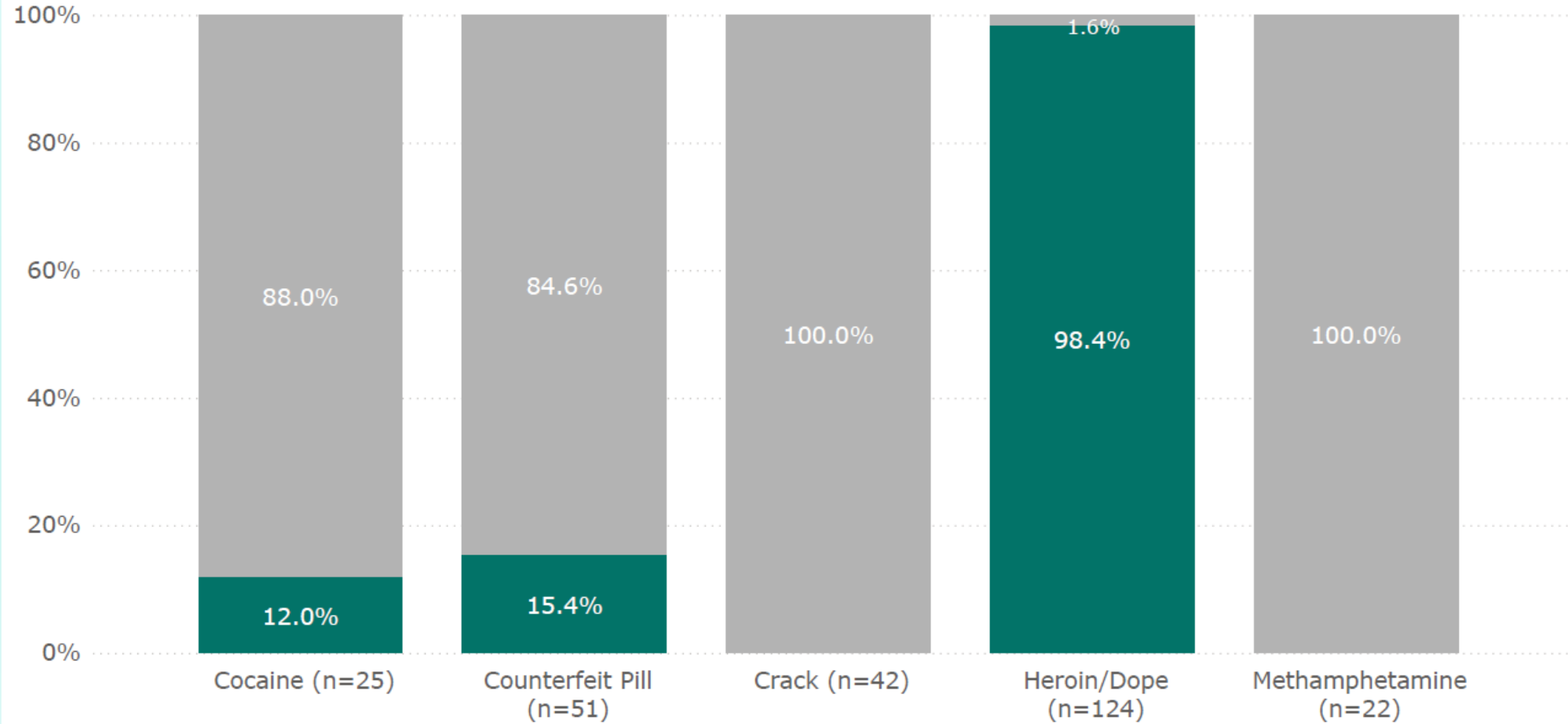
*\*Note: The above visual contains only powders and pills. Samples that were provided in reusable packaging, cookers, and cottons were not included in this visual to minimize the possibility of cross-contamination and skewing of data. The total number of samples from Berkshire County included in this visual is 25, while the statewide total is 385.*



2021





### Presence of Fentanyl in Drug Samples (where n=Total Samples)

Fentanyl Detected? ● Yes ● No



*\*Note: Samples that were provided in reusable packaging, cookers, and cottons were not included in this visual to minimize the possibility of cross-contamination and skewing of data.*

# Xylazine

Photo	Sample Name <sup>i</sup>	Active Contents <sup>i</sup>		Date Published <sup>v</sup> <sup>i</sup>	Date Tested <sup>i</sup>	Location	Data Source <sup>i</sup>
		Substance	Ratio / Amounts <sup>i</sup>				
	<a href="#">Fentanyl</a> Code: AC2020B321 Sold as: Not Specified	<ul style="list-style-type: none"> <li>Xylazine</li> <li>Fentanyl</li> <li>4-ANPP</li> <li>Metamizole</li> <li>Phenethyl 4-ANPP</li> <li>Cocaine</li> </ul>	<ul style="list-style-type: none"> <li>• 20</li> <li>• 19</li> <li>• 2</li> <li>• 1</li> <li>• 1</li> <li>• 0.5</li> </ul>	Jan 27, 2021	Jan 26, 2021	Lawrence, MA	<a href="#">DrugsData (EcstasyData)</a>
	<a href="#">Fentanyl</a> Code: AC2020B340 Sold as: Not Specified	<ul style="list-style-type: none"> <li>Fentanyl</li> <li>Xylazine</li> </ul>	<ul style="list-style-type: none"> <li>• 1</li> <li>• 1</li> </ul>	Jan 27, 2021	Jan 26, 2021	Quincy, MA	<a href="#">DrugsData (EcstasyData)</a>
	<a href="#">Fentanyl</a> Code: AC2020B298 Sold as: Not Specified	<ul style="list-style-type: none"> <li>Xylazine</li> <li>Fentanyl</li> <li>4-ANPP</li> </ul>	<ul style="list-style-type: none"> <li>• 7</li> <li>• 6</li> <li>• 1</li> </ul>	Jan 25, 2021	Jan 22, 2021	Lynn, MA	<a href="#">DrugsData (EcstasyData)</a>
	<a href="#">Dope</a> Code: AC2020B360A Sold as: Dope	<ul style="list-style-type: none"> <li>Xylazine</li> <li>Fentanyl</li> <li>4-ANPP</li> <li>Acetaminophen</li> </ul>	<ul style="list-style-type: none"> <li>• 10</li> <li>• 6</li> <li>• 1</li> <li>• 1</li> </ul>	Jan 21, 2021	Jan 16, 2021	Boston, MA	<a href="#">DrugsData (EcstasyData)</a>
	<a href="#">4812v</a> Code: AC2020A006 Sold as: Percocet	<ul style="list-style-type: none"> <li>Diphenhydramine</li> <li>Fentanyl</li> <li>4-ANPP</li> <li>Unidentified</li> <li>Xylazine</li> </ul>	<ul style="list-style-type: none"> <li>• 10</li> <li>• 5</li> <li>• 2</li> <li>• 1</li> <li>• trace</li> </ul>	Oct 22, 2020	Oct 20, 2020	Boston, MA	<a href="#">DrugsData (EcstasyData)</a>
	<a href="#">Tan Powder</a> Code: AC2020B190 Sold as: Not Specified	<ul style="list-style-type: none"> <li>Fentanyl</li> <li>Lidocaine</li> <li>Tramadol</li> <li>4-ANPP</li> <li>Acetaminophen</li> <li>Phenethyl 4-ANPP</li> <li>Procainamide</li> <li>Xylazine</li> </ul>	<ul style="list-style-type: none"> <li>• 28</li> <li>• 21</li> <li>• 7</li> <li>• 5</li> <li>• 5</li> <li>• 2</li> <li>• 1</li> <li>• trace</li> </ul>	Oct 09, 2020	Oct 04, 2020	Quincy, MA	<a href="#">DrugsData (EcstasyData)</a>

2021

2020



# Massachusetts Drug Supply Stream (MADDS) Street Narcotics Alert: Xylazine

## Active cut alert: Xylazine is on the rise in fentanyl & heroin

- Since initial reporting by MADDS in 2021, the veterinary sedative xylazine has increasingly been detected in opioid samples in Massachusetts statewide as an active cut in fentanyl/heroin. About 1 in 4 heroin/fentanyl samples also contain xylazine.
- Xylazine is a **long-acting sedative**, but it is **not an opioid**. If someone is not responding to naloxone, it is possible that xylazine is contributing.

Xylazine is an active cut in other drugs, primarily opioids, and people may not know that their drugs contain xylazine, which is why it's important to be aware of the harmful effects of xylazine, including oversedation, skin ulcers, infection, and other serious injuries.

### Xylazine is a health hazard

- Xylazine can cause **unresponsiveness**, unconsciousness, low blood sugar, low blood pressure, slowed heart rate, and reduced breathing. It is typically found in drugs also containing fentanyl or heroin, and this mixture may increase risk of overdose or death.
- Xylazine increases **risk for skin ulcers** in places on the body where people inject or have cuts. Skin ulcers from xylazine may quickly lead to infection or tissue death.
- If oversedated or unresponsive for long periods, people may have **serious injuries** like damage to muscles, nerves, and kidneys if blood flow is restricted to a part of the body for a long time. If use occurs outside, oversedation may increase risk for hypothermia or heat-related emergencies.



Examples of xylazine samples collected by MADDS

### How to identify xylazine

- Xylazine appears as a brown or white powder and has also been found in counterfeit pain pills (see photos above).

### How to respond

- Summon medical attention. Monitor oxygen levels and breathing if a person appears unresponsive. **Give naloxone** (see box at right). Start rescue breathing immediately if breathing stops or the person's oxygen levels get too low.
- If you suspect someone has a **skin ulcer** or a **serious injury** from complications related to xylazine, encourage them to seek care immediately or offer to transport them to the nearest medical facility.
- Talk to providers and community members about the harms of xylazine in the drug supply. When conducting post-overdose or community outreach, offer sterile syringes and wound care kits to help prevent infection.

**Xylazine and naloxone: Xylazine can contribute to oversedation alongside opioids. Naloxone WILL NOT reverse the effects of xylazine, but ALWAYS administer naloxone in a suspected overdose. Naloxone will reverse the effects of any opioids present. The person may remain unresponsive if xylazine is present. Give rescue breaths to support their breathing.**



MADDS is a state-funded collaboration between Brandeis University researchers, the Massachusetts Department of Public Health, various town police departments, and local harm reduction agencies. Contact us at [maddsbbrandeis@gmail.com](mailto:maddsbbrandeis@gmail.com), scan the QR code, or [click here](#) for more information



# Updates, 2-min roll call videos





# Massachusetts Drug Supply Data Stream (MADDS) Street Drugs Alert: Xylazine

## Xylazine actions

### Bulletin (March 2021)

### Alerts (July 2022)

First responder

Community provider

Public/Community (right)

English, Spanish, Brazilian Portuguese, Twi, Haitian Creole, Khmer, Vietnamese

#### Xylazine is on the rise in fentanyl & heroin (dope)

- The animal sedative xylazine has been found in dope samples more and more across Massachusetts.\*
- **Xylazine is a long-acting tranquilizer, but it is not an opioid.** Some samples had as much xylazine as dope or more xylazine than dope.

**Nodding out from xylazine** may look like an opioid overdose, but it won't respond to naloxone. If someone is breathing but doesn't respond when you try to wake them, **watch their breathing to make sure they're getting enough oxygen. Give naloxone, start rescue breaths, and call for help** if their breathing is raspy or their skin is ashy or pale.



Xylazine has been found in street dope powder and in fake pain pills.

#### Xylazine is a health hazard

Xylazine may lead to

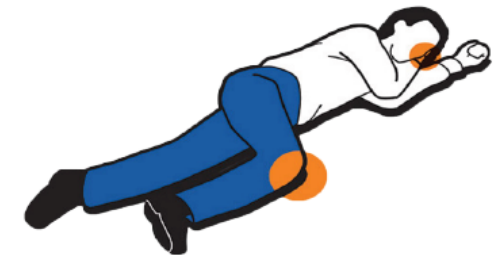
- **Extreme sleepiness**
- **Nodding out for long periods of time**
- **Slower heart rate**
- **A higher chance of overdose or death** if used with dope and other downers
- **Sores and serious infections**, even in places on your body away from where you inject
- **Serious injury** if you pass out and lay in one position for too long
- **Getting too hot or too cold** if you pass out outside

Some people who submitted samples with xylazine said it "made me sleep weird"; "put me out for 6 hours"; "made me pass out and I woke with vomit on me"; and "skin on fire, teeth felt like they were going to fall out."



#### Harm reduction and risk of overdose

- **USE WITH OR AROUND OTHER PEOPLE.** People using together should take turns so they don't overdose at the same time.
- If someone overdoses, **CALL FOR HELP AND GIVE NALOXONE** until they start breathing regularly, even if they're still passed out. If someone has passed out but is still breathing, put them in the recovery position (below) and watch their breathing.



If someone passes out after using, but is still breathing **put them in the recovery position**, as shown here, and **call for help!**

- **USE A STERILE SYRINGE** and clean your skin every time you inject to prevent infection. Keep an eye on injection sites and other sores. Get medical help if the sore gets red/swollen or if you have a fever.

New OPEN ACCESS  
Publication!

## Implementation and Uptake of the Massachusetts Drug Supply Data Stream: A Statewide Public Health-Public Safety Partnership Drug Checking Program

Traci C. Green, PhD, MSc; Rebecca Olson, MPH; Cole Jarczyk, BA; Earth Erowid, BA; Fire Erowid, BA; Sylvia Thyssen, BA; Rachel Wightman, MD; Brandon del Pozo, PhD, MPA, MA; Laura Michelson, MSW; Amanda Consigli, MPH; Brittini Reilly, MSW; Sarah Ruiz, MSW, MPH

### ABSTRACT

**Context:** The illicit drug supply is rapidly evolving. Equally important to gathering drug supply data for monitoring is timely sharing of information with people who use drugs, the providers who care for them, law enforcement partners, and public health stakeholders so that efforts to avoid harmful substances, take preventive actions, and better target interventions can occur.

**Program:** The Massachusetts Drug Supply Data Stream (MADDS) is the country's first statewide community drug checking program. Founded on public health-public safety partnerships, MADDS collects remnant drug packaging and paraphernalia with residue from people who use drugs and noncriminal samples from partnering police departments. MADDS tests samples using simultaneous immunoassay fentanyl test strips, Fourier-transform infrared spectrometry (FTIR), and off-site laboratory testing by gas chromatography-mass spectrometry (GC/MS). Results are accessible to community programs and municipalities, while trend analyses inform public health for cross-site alerts and informational bulletins.

**Implementation:** MADDS was launched statewide in 2020 and rapidly expanded to a multisite program. Program staff approached communities and met with municipal police and community partners to secure written agreements to host drug checking. Community partners designed sample collection consistent with their pandemic era workflows. Consultations with stakeholders gathered feedback on design and deliverables.

**Evaluation:** The program tests sample donations on-site from community agencies and police departments, incorporates review by a medical toxicologist for health and safety concerns, crafts stakeholder-specific communications, and disseminates English, Spanish, and Portuguese language materials. For 2020, a total of 427 samples were tested, of which 47.1% were positive for fentanyl. By early 2021, MADDS detected shifts in cocaine purity, alerted communities of a new toxic fentanyl analogue and a synthetic cannabinoid contaminant, and confirmed the increase of xylazine (a veterinary sedative) in Massachusetts.

**Discussion:** Community drug checking programs can be collaboratively designed with public health and public safety to generate critical health and safety information for people who use drugs and the communities where they live.

**KEY WORDS:** consumer safety, drug checking, fentanyl, harm reduction, overdose

# Funding and budgeting

- Possible sources of funding: CDC, SAMHSA, ORS/HIDTA, Opioid settlement funds/litigation funds, private foundations/fundraising
- Ball-park program start up is \$50K (machine)+ \$2K (supplies)+ staff; \$5K annual costs per site (training/retraining, maintenance, libraries, supplies, mailing). Tox/confirmatory is \*ongoing\* and ~\$150/sample. Budget for analysis/epi/med tox review/communications/travel etc.



**Free!**

**TA from MADDs team through free "CDC TAC Hub"**



# Thank you!

For questions, contact [tracigreen@brandeis.edu](mailto:tracigreen@brandeis.edu) or [becca.olson@brandeis.edu](mailto:becca.olson@brandeis.edu).

Check the *Community Resources* tab of the Opioid Policy Research Collaborative website for videos, reports, and other helpful info:

[heller.brandeis.edu/opioid-policy](https://heller.brandeis.edu/opioid-policy)