



**Advanced Implementation of the
Massachusetts Drug Supply Data
Stream (MADDS):
A State-Wide Public Health-Public
Safety Partnership Drug Checking
Program**

OD2A Conference

Working Together to Reduce Harms
June 7

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Brandeis



Drug Supply

?

- ✓ Drug supply is a major determinant of drug related death
- ✓ Knowing a drug's content informs our responses
- ✓ Only known after a death, hospitalization, arrest, and often way too late to be informative, ***rarely shared publicly***
- ✓ 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**
- ✓ Protecting **consumer safety is** a proven **prevention** approach



Why do Drug Checking?

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

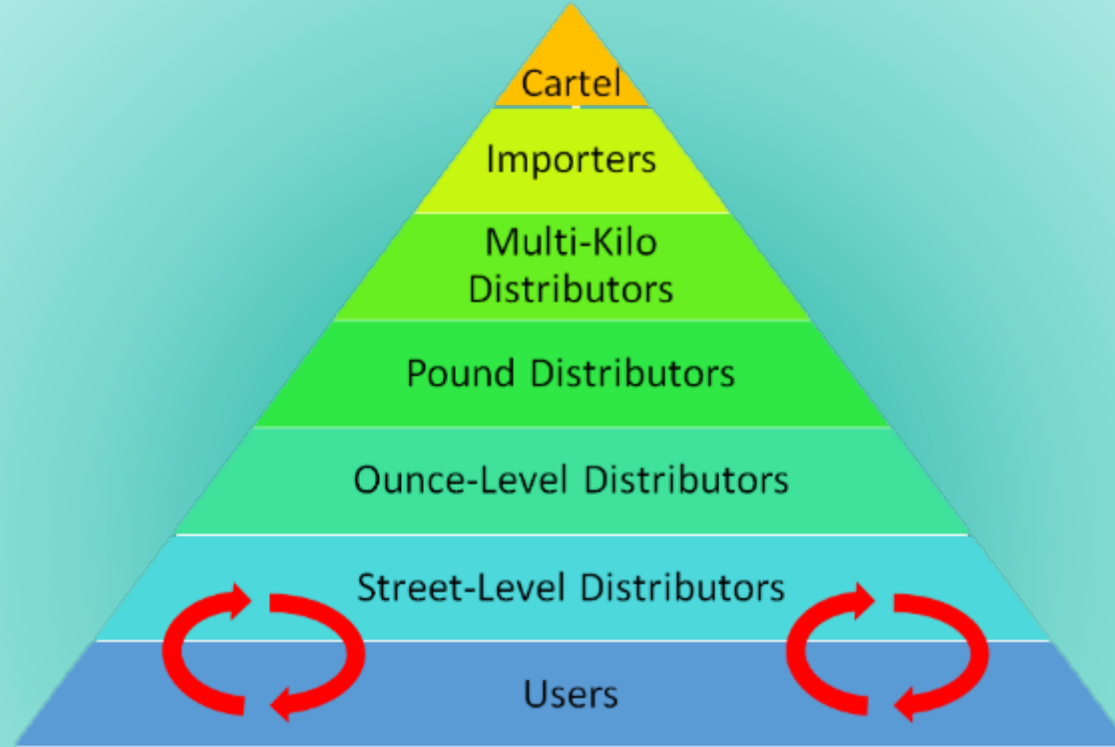
Decreases violence in drug transactions
Improves consumer knowledge and confidence
Fewer unsafe adulterants/cuts
Stabilizes market

Provides an opportunity for empowerment, health promotion, consumer behavior change
(Evidence: FORECAST, 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, program contacts when coupling drug checking at outreach with existing medical and harm reduction services



Community drug checking focuses on supply effects for people using drugs

Does drug checking save lives?

“We got us an FTIR machine and the first person’s life. It saved was mine.

Without [it], well...they changed the batch that I was using, the other stuff it had, well-- I was trying to get into a methadone clinic but I was not successful. I could not get above 40mg but the thing was, I couldn’t do what I needed to do so that [using fentanyl] seemed like the answer. One day they changed the batch, it was too strong and we had just got the machine and learned how to use it, and I told my partner, ‘I need to go to the office and I need you to test it, there is something wrong.’



And before I could, even, like within minutes, he called, and he’s like, ‘Don’t do anything else. Don’t do another drop. Flush it down the toilet. I’ll be home in a second and I’ll explain to you what’s going on. We’ve got a problem.’ And then he began to tell me all about the side effects [of xylazine] and all of the things that were happening to me and that I just didn’t understand.

Your dealer needs to know. Just like your doctor needs to know. We didn’t deal with the pill crisis and not talk to doctors and pharmacists. We cannot deal with an illicit drug crisis and not talk to people who sell drugs. It doesn’t make any sense.”

Louise Vincent, Executive Director, NC Urban Survivors Union and National Survivors Union.

Source: Narcotica podcast, April 20, 2023

Stages of Community Drug Checking Program Implementation

Early-on
(We want to get it!)

Picking the instrument and parallel testing approach

Determine level of uncertainty and reporting delay you are comfortable with

Budgeting: machine, operator, libraries, maintenance, immunoassays (e.g., FTS, benzo strips), confirmatory lab, materials, mailing/mileage

Determining operator, location, space and power sources

Legal considerations, site liabilities

Data storage, safety and access

Community Drug Checking Program Overview

“Massachusetts style”

Samples provided from harm reduction partner site/police department and gather situational and subjective information



Scan sample with FTIR (on-site), test with fentanyl/benzo/xylazine test strips (on-site), send for additional lab testing (off-site) and review by medical toxicologist

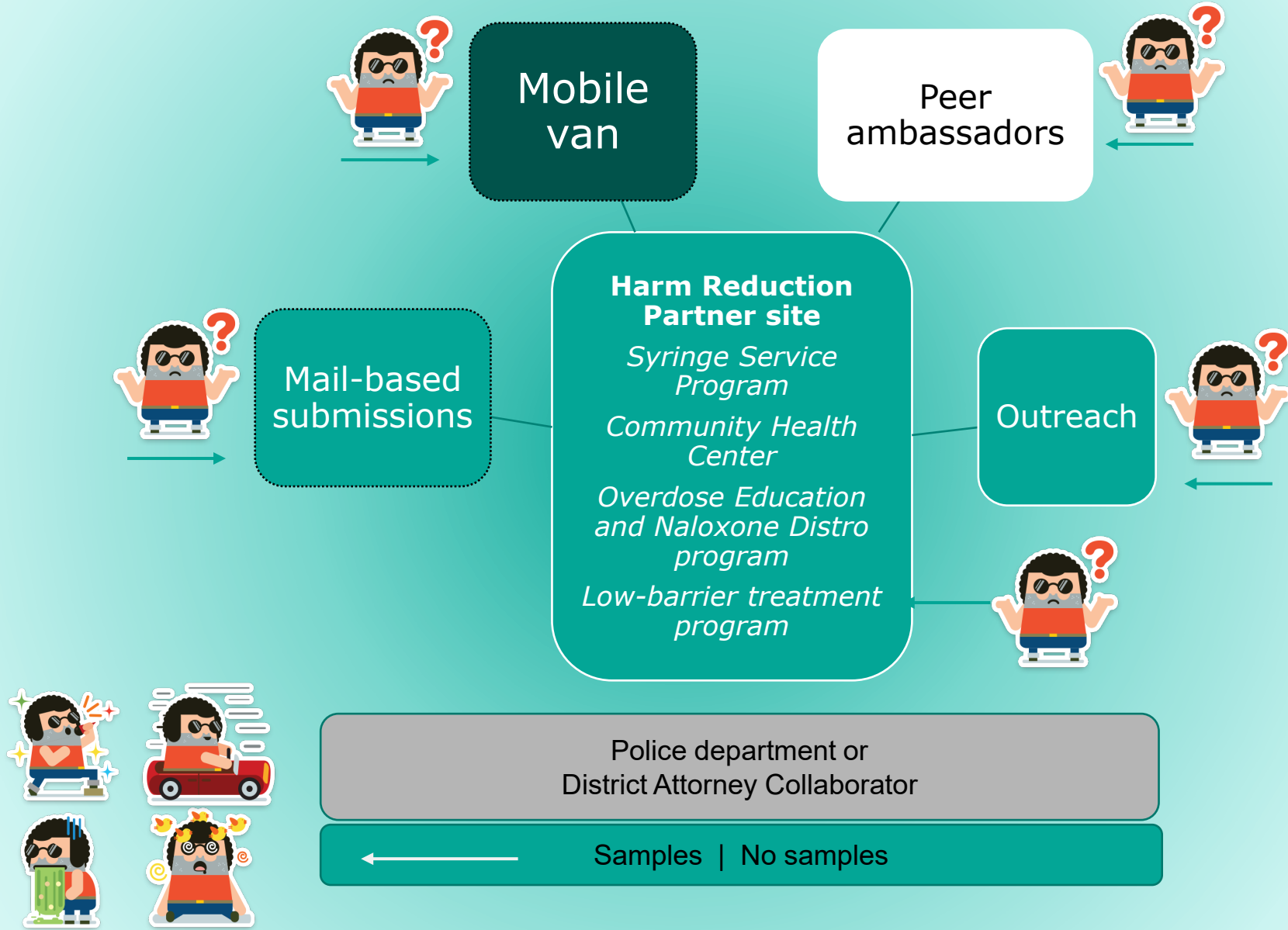


Report out findings to partners, submitter, communities and the state





MADDS:
Massachusetts
Drug Supply
Data Stream





“

Drug checking has been a powerful tool for those we serve to make more informed decisions around their drug use and health, and also for us as harm reduction and medical providers in order to better adapt and tailor the care we provide.

”



Allyson Pinkhover, Director of Substance Use Services, Brockton Neighborhood Health Center

Flexible Models: Mobile and Stationery Sites

Current Community drug checking program sites*

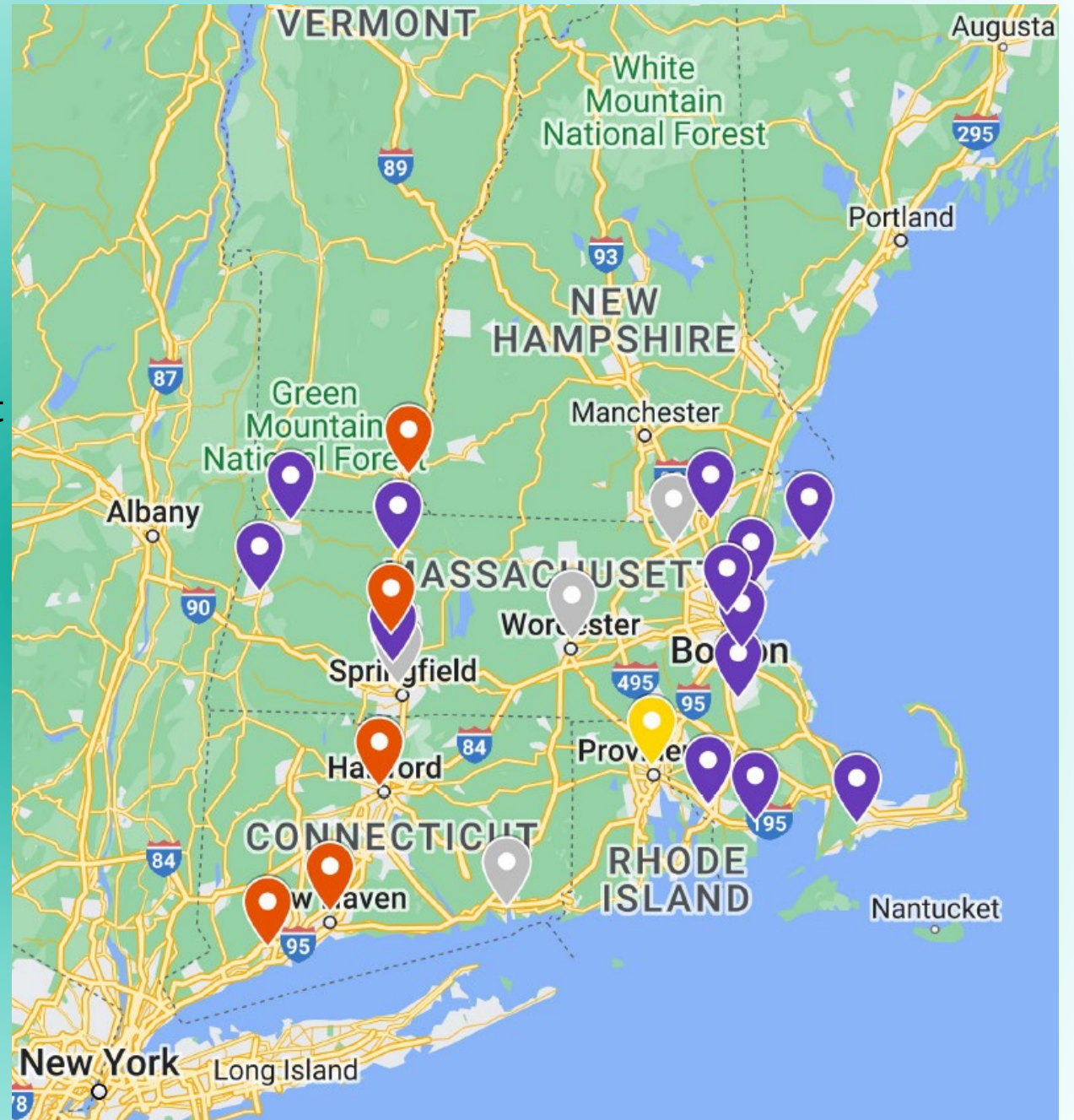
PURPLE=**MADDS**, Massachusetts Public Health Dept – 15+ sites

GREY= Sites in progress

YELLOW= NIH- and FORE-funded research projects

RED= I-91 project (Overdose Response Strategy, ONDCP/CDC Foundation) – 5 sites

*Data from all sites pooled on StreetCheck for transparency and sharing



Real-time

2-3 weeks, complete testing



Bruker Alpha FTIR



Fentanyl, Benzo,
Xylazine Test Strips



GCMS/LC-QToF by
off-site lab



Medical Toxicology
Consultation



Test with tools, interpret with care

Talk to the donor to learn more!

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



What was it like? Tell us more!

- What was the sample expected to be?
- How was it used? (injected, sniffed, etc.)
- Expected OR unexpected reactions (how “normal” was it)?
- Context information
- Health problems experienced after use (abscess, seizure, overdose)
- Anything else you/they think is important

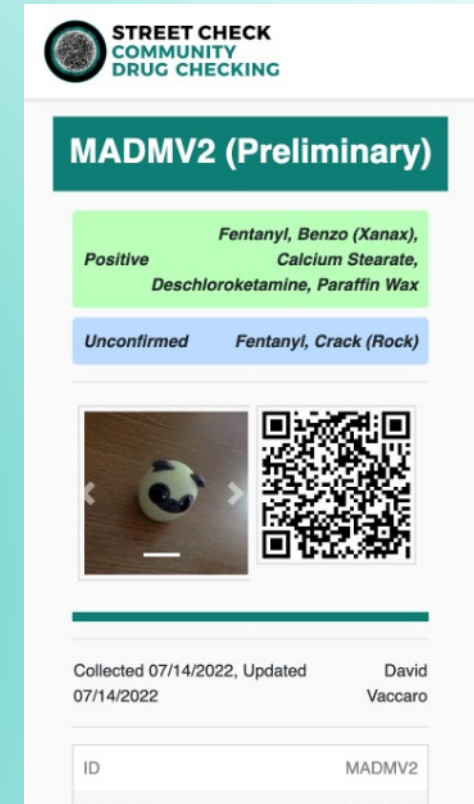
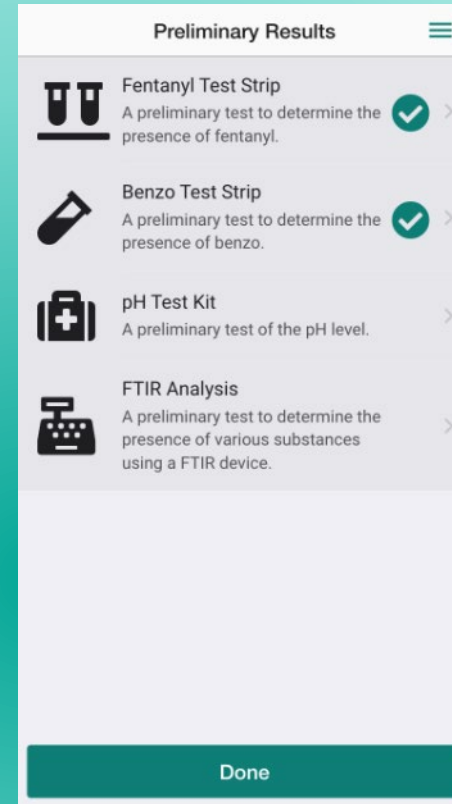
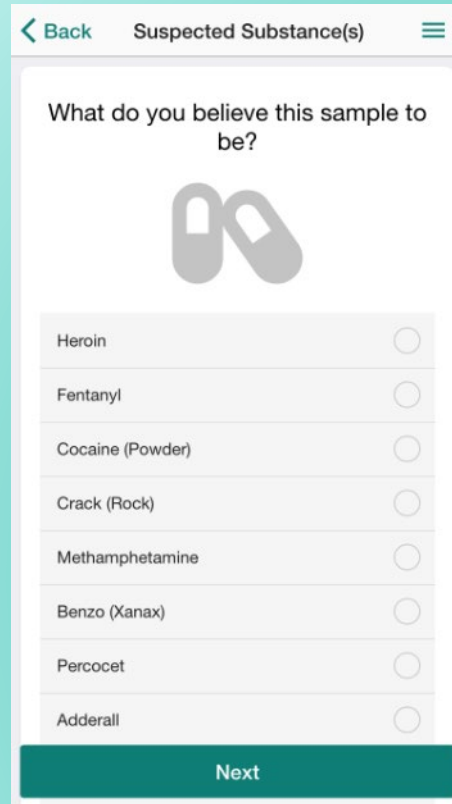
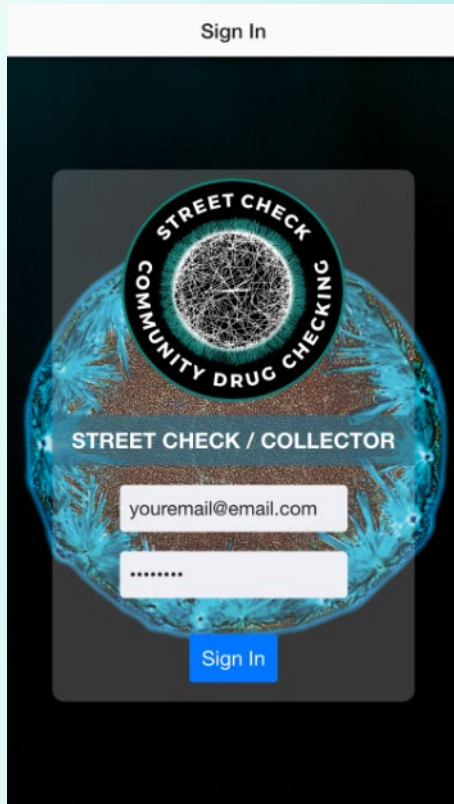


In-person Trainings: Essential!

- **Hands-on**
- **Interactive**
- **Tips, tricks, process**
- **Creating a cohort**
- **Ongoing supports, touch-base**
- **Refreshers, re-trainings**



StreetCheck Web App
www.streetcheck.org



Input data, receive results with a community designed application

Collector-Operator-Administrator










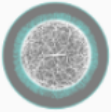








Groups (community programs), Tenants (states)

+Public-facing trends, limited anonymous sample data

- Home
- Manage Portal
- Manage Roles
- Manage Users
- Manage Content Modules
- Manage Dictionary
- Manage Labels
- Manage Samples
 - Untested Samples
 - Initial Samples
 - Tested Samples
 - Complete Samples
 - All Samples
- Reporting

Show 10 entries

Search:

Sample	ID	Laboratory Code	Laboratory	Status	Collected By	Collected On	Modified On	Action
	HST_678			Untested		02/22/2023	02/22/2023	 
	HST_683			Untested		02/22/2023	02/22/2023	 
	MA589			Untested		02/22/2023	02/22/2023	 
	NHT_0639			Untested		02/22/2023	02/22/2023	 
	HST_0709	1238	DrugsData	Initial		02/22/2023	02/22/2023	 
	NHT_0638	1209						 

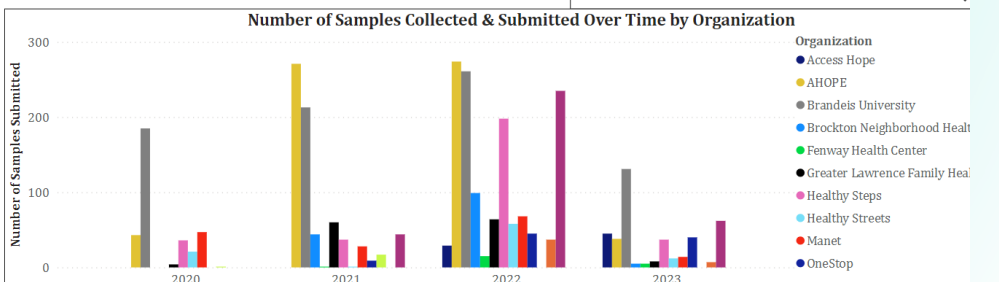
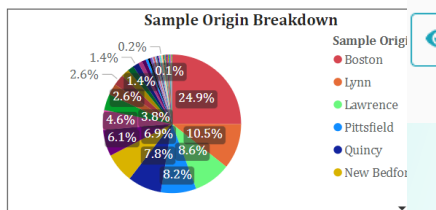


Massachusetts

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Massachusetts

Organization	Location	Count of Samples
Seven Hills	Fall River	3
Seven Hills	New Bedford	36
SSTAR	Fall River	44
Tapestry	Greenfield	154
Tapestry	Northampton	187
Total Samples		3058



Presence of Xylazine
in Samples - Over
Time



Presence of Fentanyl
in Samples - Over
Time



Combinations of Active
Cuts Detected in
Samples - Over Time



Active Cuts Detected
by Primary Chemical



Inactive Cuts Detected
by Primary Chemical

Expected vs Detected
Primary Chemical

Most Common Active
Substances Detected
by Sample Origin

Breakdown of
Fentanyl Analogues
Detected

Results

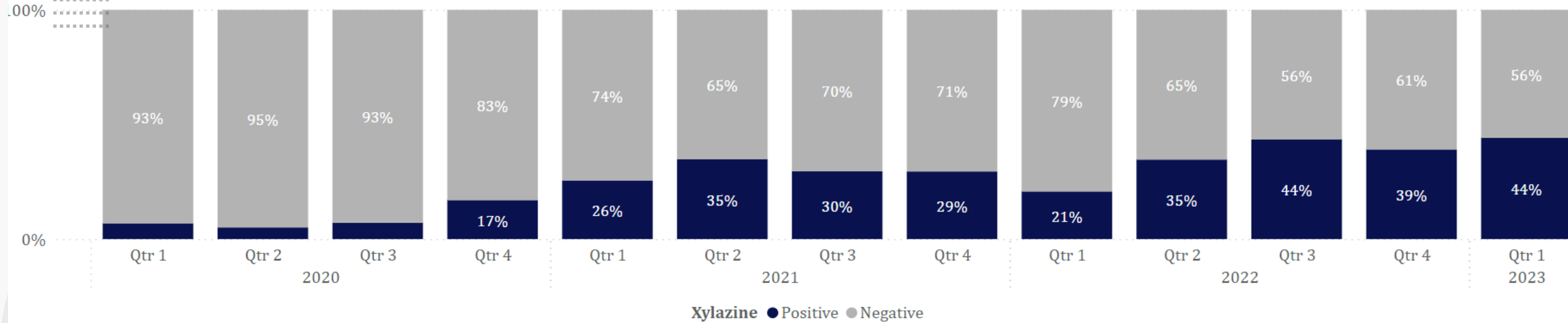
All community partner sites fully operational

Over 1000 samples collected and tested across
the MA project sites per year

All data and quick reports publicly accessible on
[Streetcheck.org](https://streetcheck.org) by location, or together

[Back to report](#)

PRESENCE OF XYLAZINE IN SUBMITTED SAMPLES - OVER TIME



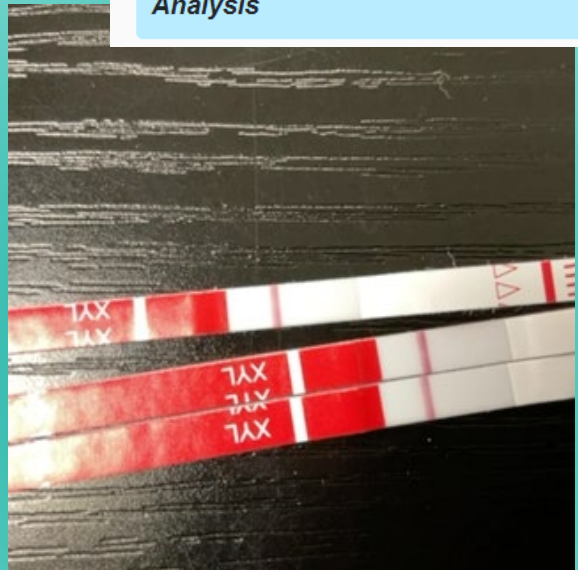
Xylazine Prevalence in Opioids

- Across CT, MA, VT samples
- Primarily opioid samples over time
- Detected as pills (M30, Percocet) and powders (heroin/dope/fentanyl)
- Some local trends: brown or color used to differentiate from white powders

Typical sample

Awaiting Laboratory Analysis

Initial Analysis *This sample probably contains mostly 'Lactose' with 'Mannitol, Xylazine' and trace levels of 'Fentanyl / Analogue'*



- Injected: normal, nothing out of the ordinary
- Weaker than old dealer but consistent with new dealer
- Normal experience, all from same dealer, same day use

Drug checking: more than just alerts

FTIR Results	
Substance	Component
Lactose	Major
Mannitol	Minor
Fentanyl / Analogue	Trace
Xylazine	Minor

What is "normal", what can be expected

Promotes dignity, awareness, self-care

Learning opportunity

Atypical samples

March 2023



Wk 1:
Not yet used



Wk 2:
Used, stronger than usual, developed abscesses

Active Component	Ratio
Xylazine	200
Fentanyl	100
4-ANPP	50
Heroin	1

[FTIR Results](#)

Substance	Component
Xylazine	Major
Fentanyl	Major
Mannitol	Minor

Active Component	Result
Xylazine	5
Fentanyl	2
4-ANPP	1

[FTIR Results](#)

Substance	Component
Xylazine	Major
Fentanyl	Major
Mannitol	Minor

April 2023

Wk 5:
Multiple overdoses
(nonfatal, fatal)

Active Component (Relative Ratio)	Result
Xylazine	8
Fentanyl	2
4-ANPP	1

[FTIR Results](#)

Substance	Component
Xylazine	Major
Fentanyl	Major
Mannitol	Unknown



- Injected: stronger than usual, tasted and smelled like CHEMICALS.
- No "dope rush", just went out. Only used 3 bags vs. usual 5-10. On second use, felt foggy, hard time walking.

HST_0712 (Complete)

Location
Massachusetts [REDACTED]

Suspected as
Heroin

Completed Analysis This sample was confirmed by the laboratory to contain Xylazine (8), Fentanyl (2), 4-ANPP (1)

Key Findings

!! Note that this stamp is associated with several severe overdoses in the local area. Please take care and keep plenty of naloxone with you!!
Xylazine is a strong sedative and high amounts of a strong sedative can be harmful. Learn more [here](#).

MADDS Advisory Board

- 6 people, independent of MADDS
- People who use drugs, harm reduction providers, analytic chemist, drug suppliers
- Compensated, confidential, on-call
- Has own charter, coordinator
- Can task MADDS team for further study
- Meets regularly and as needed, reviews data and trends
- Recommends and reviews all alerts, bulletins
- Defines audience
- Points to next steps



How people use the data

“We are using our drug trash checking results to **create different forms of communication** to people who are at risk of overdose to inform them about what is in their substances. In addition to testing samples for people who use drugs, there is also value to testing samples and sharing results with people who sell drugs. For example, during a nationwide Adderall shortage, one person who took part in the drug checking initiative learned that what they were selling were pressed meth pills. Since learning this, the person informed the people purchasing the Adderall pills what is actually in them. In turn, the people purchasing them are now better equipped with understanding what they are putting in their body and how it will affect their body differently.”

How people use the data

“We use our results to **inform participants of trends**, **monitor above average fentanyl surges**, and **tailor or pivot our outreach** (ex. adding more wound care or focusing on an area with high overdose rates).”

Supply caretaking: To explore local drug market trends (dilution, adulterating), reflect back anomalies, and also share helpful actions that suppliers are taking or could take.

How people use the data

Developing **new partnerships**, reaching **new demographics of PWUD** to share information, drug checking services, and **connecting to other harm reduction services and materials**

- More racially and geographically diverse groups of PWUD
- PWUD by different routes of administration (oral, insufflation) who may not otherwise attend SSPs

Request TA on the OD2A-TAC website's Technical Assistance page



Scan this to take you
to the TA page now.

The screenshot shows the website's navigation menu with "Technical Assistance" selected. The main content area includes a breadcrumb trail "Home > Technical Assistance", a paragraph explaining that TA is freely available to OD2A recipients, and a call to action: "Please contact your OD2A project officer or click the button below to submit a TA request." A prominent green button labeled "Request Technical Assistance" is highlighted with a blue arrow. Below this, there are two sections: "Learn about Our TA Providers", which includes "OD2A TA Provider Organizations" (with a description to browse descriptions and capabilities) and "OD2A Peer-to-Peer Jurisdictions" (with a description to browse summaries of support activities).

Thank you!

Questions? Contact

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Practice Full Report OPEN SDC

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

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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