

*Approaches for Optimizing Research and  
Implementation of Harm Reduction Services:*

# **Lessons Learned from Community-Based Drug Checking Research**

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*Disclosures: I have provided consulting services for an opioid modelling project  
at Harvard Medical School funded by the FDA (U01FD00745501).*



## Land Acknowledgement

Brown University is located in Providence, Rhode Island, on lands that are within the ancestral homelands of the **Narragansett Indian Tribe**. The Narragansett Indian Tribe, whose ancestors stewarded these lands with great care, continues as a sovereign nation today. We commit to working together to honor our past and build our future with truth.



This is a commonly used statement:  
fentanyl causes overdose deaths.

But fentanyl can be administered safely  
without causing an overdose.



# Fentanyl Dosing



Patient-controlled IV analgesia: 10-20 mcg every 6-20 min. as needed (60-120 mcg)

Total dose required for stability needs to consider patient characteristics

e.g., age, weight, pain level, opioid tolerance



<https://www.ncbi.nlm.nih.gov/books/NBK459275/>

# Drug Checking Services

What it is

- Test small amounts of drug samples (e.g., residue, used baggies)
- Drugs include opioids, stimulants, psychedelics, sedatives, inactive compounds
- Methods include fentanyl test strips, FTIR spectroscopy, laboratory testing
- Qualitative, semi-quantitative, quantitative testing
- Goals: proactively reduce risk of overdose, and other drug-related complications (e.g., wounds, infections, heart attacks); provide linkages to care

# Drug Checking Services

What it is not

- Drug surveillance projects that do not provide individual-level results
- Urine testing cups sold at pharmacies
- Biological sample testing for clinical care (e.g., bloodwork)
- Forensic / crime laboratory testing



# Drug Checking Research (2016–Present)



Drug and Alcohol Dependence 253 (2023) 111028

Contents lists available at [ScienceDirect](#)

**Drug and Alcohol Dependence**

journal homepage: [www.elsevier.com/locate/drugalcdep](http://www.elsevier.com/locate/drugalcdep)

ELSEVIER

Short communication

**Costing analysis of a point-of-care drug checking program in Rhode Island**

Javier A. Cepeda<sup>a,\*</sup>, Erin Thompson<sup>b</sup>, Merci Ujeneza<sup>b</sup>, Jessica Tardif<sup>b</sup>, Thomas Walsh<sup>b</sup>, Alexis Morales<sup>c</sup>, Joseph G. Rosen<sup>b,d</sup>, Traci C. Green<sup>e,f</sup>, Ju Nyeong Park<sup>b,f,g</sup>

International Journal of Drug Policy 77 (2020) 102661

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**International Journal of Drug Policy**

journal homepage: [www.elsevier.com/locate/drugpo](http://www.elsevier.com/locate/drugpo)

ELSEVIER

Research Paper

**An assessment of the limits of detection, sensitivity and specificity of three devices for public health-based drug checking of fentanyl in street-acquired samples**

Traci C. Green<sup>a,b,\*</sup>, Ju Nyeong Park<sup>c</sup>, Michael Gilbert<sup>d</sup>, Michelle McKenzie<sup>e</sup>, Eric Struth<sup>f</sup>, Rachel Lucas<sup>g</sup>, William Clarke<sup>h</sup>, Susan G. Sherman<sup>c</sup>

International Journal of Drug Policy 121 (2023) 104206

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**International Journal of Drug Policy**

journal homepage: [www.elsevier.com/locate/drugpo](http://www.elsevier.com/locate/drugpo)

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Research Paper

**A survey of North American drug checking services operating in 2022**

Ju Nyeong Park<sup>a,b,\*</sup>, Jessica Tardif<sup>a</sup>, Erin Thompson<sup>a</sup>, Joseph G. Rosen<sup>c</sup>, Jaime Arredondo Sanchez Lira<sup>d</sup>, Traci C. Green<sup>a,b,e</sup>



# Unique contribution of drug checking

City	Sample sold as...	Perceived to contain...	FTIR Spectroscopy	LC-QTOF-MS
Providence	Fentanyl	Fentanyl	Xylazine Fentanyl	Xylazine Fentanyl
Providence	Heroin	Heroin	Xylazine Lidocaine Fentanyl	Xylazine Caffeine Lidocaine Fentanyl, para-fluorofentanyl
Woonsocket	Crack cocaine (rock)	Cocaine	Fentanyl Ascorbic acid Mannitol	Cocaine Fentanyl Lidocaine Xylazine
Cranston	M30 (Percocet)	Fentanyl	Sertraline	Sertraline Fentanyl Xylazine

PI: Green, CUTS Cohort, NIDA (1UG3DA056881)



# Health Outcomes

Behavior change (Peiper et al., 2018; Krieger et al., 2018)

Knowledge diffusion (Measham 2020; Park et al., 2021)

Engagement in substance use services (Carroll et al., 2022; Giulini et al., 2023)

Inform public health strategies (Green et al., 2022; Kennedy et al., 2024)

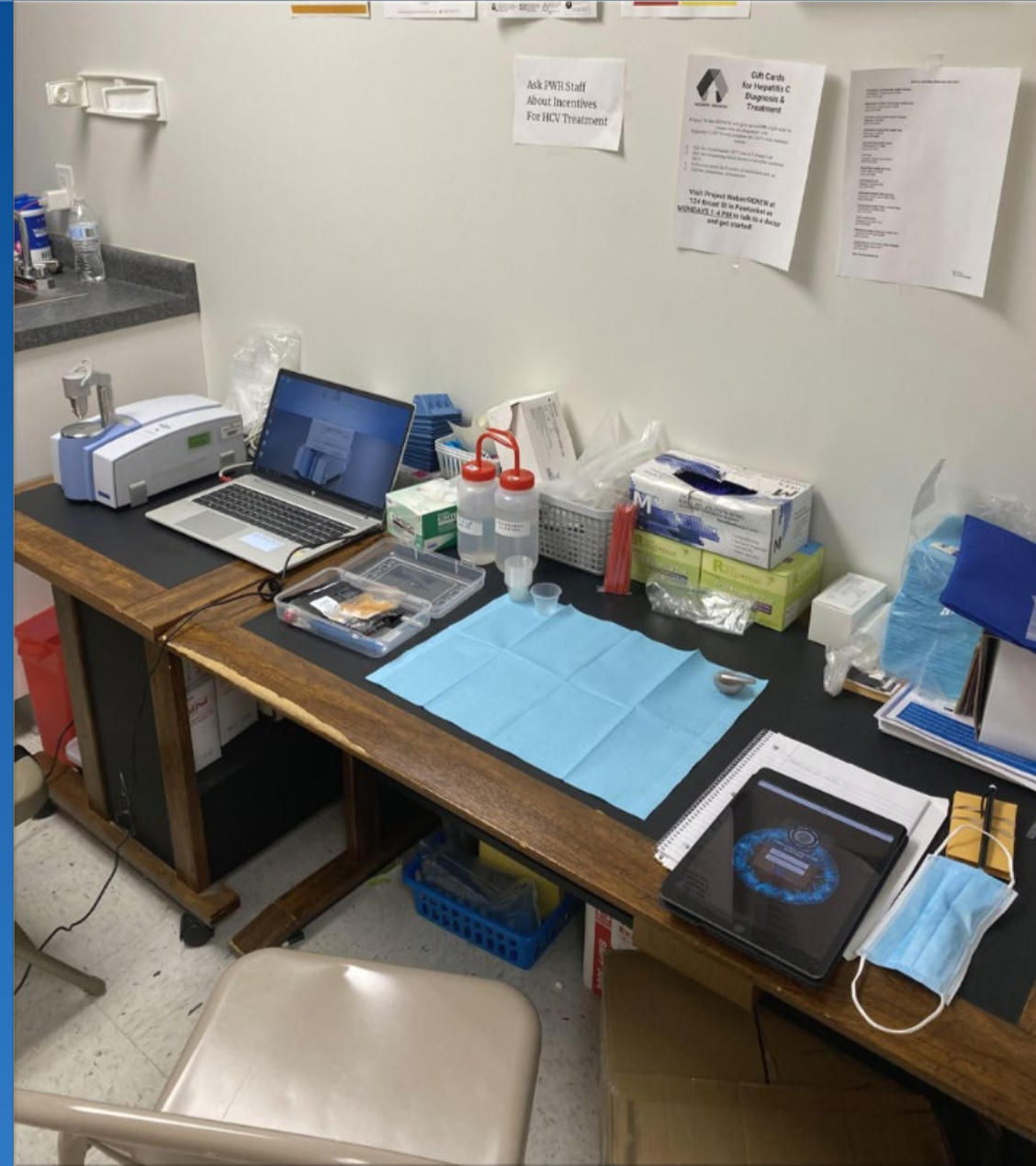
# Cost Analysis

## Comprehensive Drug Checking Pilot Program in Rhode Island

- 4-6 hours a week at a local organization
- ~3 months
- \$71,044 - \$83,058 total

\*Includes confirmatory testing. Comparable to the costs of drug testing for prosecuting drug possession cases

Cepeda et al., 2023 Drug and Alcohol Dependence



# State Model Law



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<https://legislativeanalysis.org/model-fentanyl-test-strip-and-other-drug-checking-equipment-act/>

LEGISLATIVE ANALYSIS AND PUBLIC POLICY ASSOCIATION

## MODEL FENTANYL/XYLAZINE TEST STRIP AND OTHER DRUG CHECKING EQUIPMENT ACT

APRIL 2023



This project was supported by Grant No. G21990NDP03A awarded by the Office of National Drug Control Policy. Points of view or opinions in this document are those of the author and do not necessarily represent the official position or policies of the Office of National Drug Control Policy or the United States Government. Research current as of September 2022.

# Implementation Research Needs

1. Federal regulatory oversight of drug checking devices (e.g., instructions, warning labels, quality controls)
2. Legal protections for organizations and their clients (US vs. Canada)
3. Funding and technical assistance for harm reduction organizations
4. Ending workplace discrimination for people with lived experience / in recovery
5. Funding and technical assistance for drug checking device development and implementation research



# Future Harm Reduction Research



**Racial and gender equity** in drug checking

**Clinical implications** of drug checking

**Safer opioid and stimulant supplies**

**Trauma and mental health**

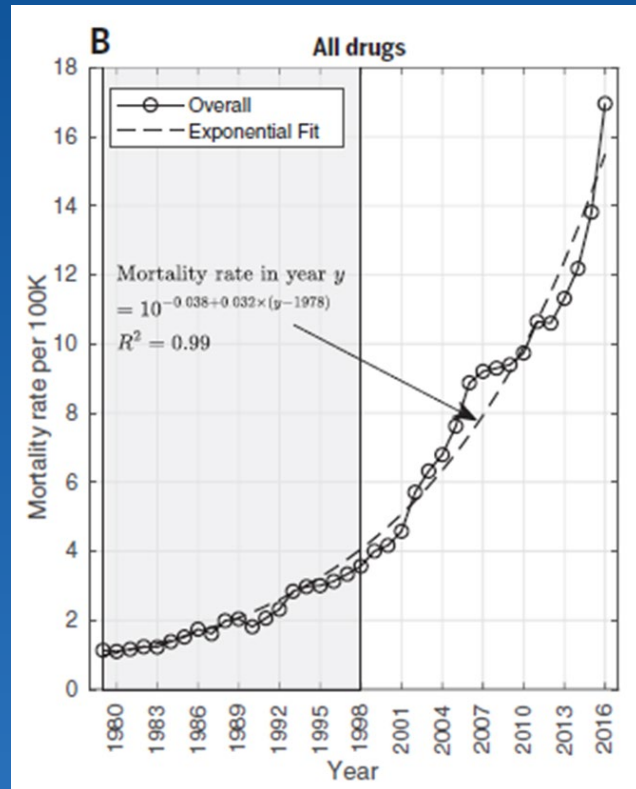
Impact of **drug policy and laws** on substance use  
service access and health

# Supporting Early Stage Investigators

- Importance of Center (P30) grants
- Challenges of transitioning from K01s, R03s, pilot awards to an R01
- Avenir Awards for overdose prevention research
- Harm reduction RFAs
- Study section panels

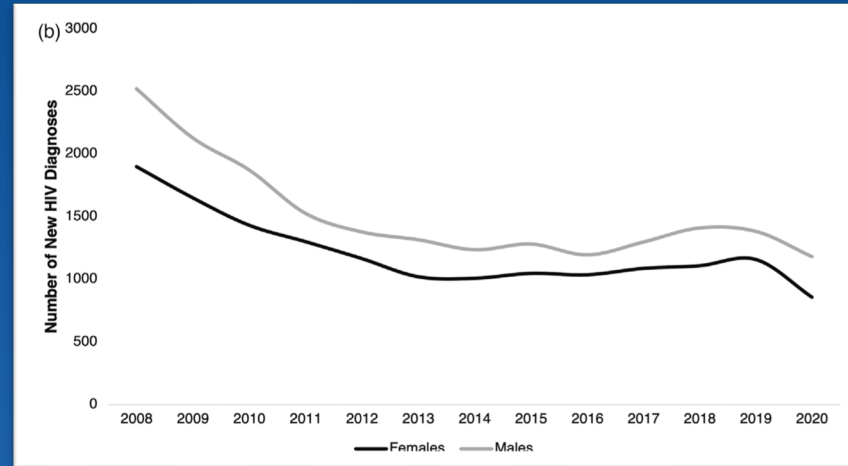


# Drug Overdose Mortality



Jalal et al 2018, Science

# HIV among PWID



Rosen et al., AIDS 2023

# COVID-19 Response



<https://usafacts.org/visualizations/coronavirus-covid-19-spread-map/>

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Lab Website

