

# Helping to End Addiction Long-Term Initiative

**NIH  
HEAL  
INITIATIVE**

## Report to the National Advisory Committee to the Director

**Nora D. Volkow, MD**  
Director, National Institute on Drug Abuse

June 14, 2024

# 2022-2023: Provisional\* Drug Overdose Deaths

## 12-months ending in select months

	ALL DRUGS	HEROIN	NAT & SEMI SYNTHETIC	METHADONE	SYNTHETIC OPIOIDS (illicit fentanyl)	COCAINE	OTHER PSYCHO-STIMULANTS (meth.)
12/2022*	111,029	6,053	12,135	3,427	76,226	28,441	35,550
6/2023*	112,934	5,048	11,514	3,497	78,963	30,558	37,152
12/2023*	107,543	4,065	10,171	3,362	74,702	29,918	36,251
Percent Change 12/22-12/23	<b>-3.14%</b>	<b>-32.84%</b>	<b>-16.18%</b>	<b>-1.90%</b>	<b>-2.00%</b>	<b>5.19%</b>	<b>1.97%</b>

\*NCHS Provisional drug-involved overdose death counts are **PREDICTED VALUES**, 12 months ending in select months. The numbers for 2022 differ from final data in slide 1 because provisional data includes all deaths that occurred in the US including foreign residents. Final data through 2022 on slide 1 is limited to deaths in U.S. residents.

<https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm>

## FDA-Approved Medications

### Methadone



In use since the 1960s, the slow-acting synthetic opioid agonist effectively treats moderate to severe heroin addiction. It is only available in heavily regulated clinics.

### Buprenorphine/Suboxone



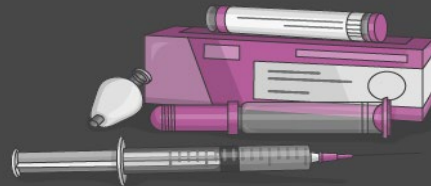
Approved in 2002, the long-acting opioid agonist relieves drug cravings with fewer side effects than other opioids and is available by prescription from certain doctors. Suboxone is designed to deter illicit use.

### Naltrexone/Vivitrol



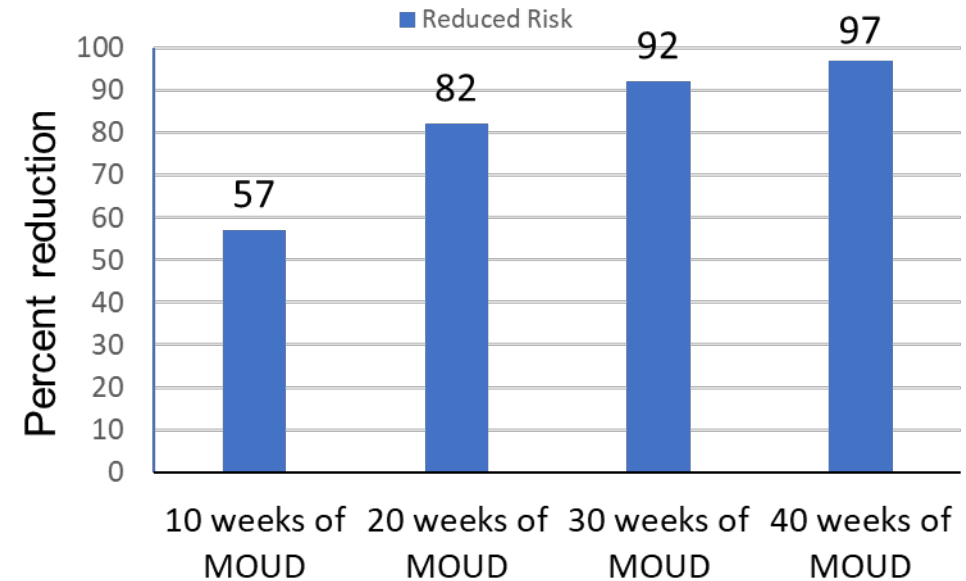
Approved in pill form in 1984, it has been available since 2010 as a 30-day time-release injectable medication called Vivitrol. Patients must be completely off all opioids for seven to 10 days. Both block the effect of opioids, do not activate the opioid receptor system, and do not cause physical dependence.

### Naloxone



Approved in 1971, the short-acting medication, also known as Narcan and Evzio, reverses opioid overdoses but does not treat opioid addiction.

## Reduced Risk of Overdose in Pregnant Women Given MOUD



[Jarlenski M et al., JAMA Network Open. 2022;5\(4\):e227964](#)

MOUD are very effective but they are vastly underutilized

JAMA Network | Open™

Research Letter | Substance Use and Addiction

Use of Medication for Opioid Use Disorder Among Adults With Past-Year Opioid Use Disorder in the US, 2021

Christopher M. Jones, PharmD, DrPH, MPH; Beth Han, MD, PhD, MPH; Grant T. Baldwin, PhD, MPH; Emily B. Einstein, PhD; Wilson M. Compton, MD, MPE

only **22%** of those with OUD received MOUD



# NIDA Clinical Trials Network

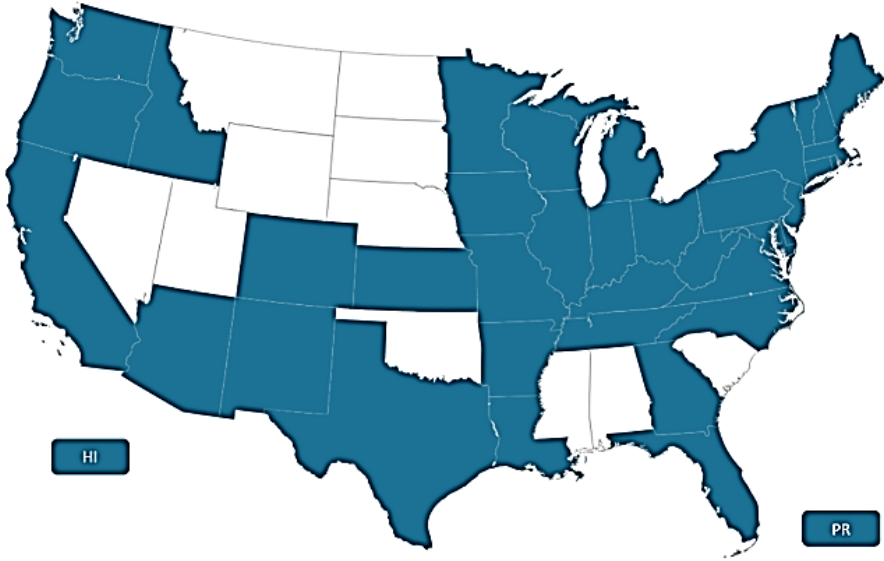
## Effectiveness of treatments in diverse clinical settings and populations

- Emergency Department initiated MOUD
- Primary Care for Screening and OUD Treatment
- Integrating HIV and OUD care
- Spokes and Hub Model
- Pharmacy Delivery of MOUD
- Mobile Delivery of MOUD
- Telehealth for OUD treatment and care



**The healthcare system represents the most impactful infrastructure to prevent and treat substance use disorders including interventions to address the overdose crisis.**

# Justice Community Innovation Network (JCOIN)



Build evidence for OUD treatment in justice populations

The criminal legal system is a high impact setting for interventions to address the overdose crisis.

**1 in 4**

Overdose decedents had prior year justice involvement  
*Ray et al., 2023*

**31%**

Projected reduction in overall overdose deaths when all 3 MOUDs offered in jails  
*Macmadu, 2021*

Treatments	BJS (2019)	JCOIN (2022)
Have protocol to screen for OUD	63%	90.2%
Any MOUD available Bup > Ntx > Methadone	≥24%	43%
Continue MOUD for those already receiving it	24%	29%

# Justice Community Innovation Network

## Bridging the Research-Practice Gap

### Building the Evidence Base

- 83 Research protocols
  - 13 Multisite clinical trials
    - ▶ >23,000 participants
  - 14 Small grant awards
  - 14 Modeling + mapping studies
  - 6 National surveys
  - 6 Diversity supplements
- 140 counties across 38 states
- 165+ publications
- Coordination with ONDCP, BJA, BJS, SAMHSA, BOP

### Building Capacity

- LEAP R25 [Training Program](#)
  - 71 practitioner & ESI
- Online course catalog
  - 50+ courses
  - 6,500+ enrolled
  - 15,000+ podcast downloads
- Dozens of diverse webinars & research translation products
- Technical assistance platform
  - 93 engagements across the country



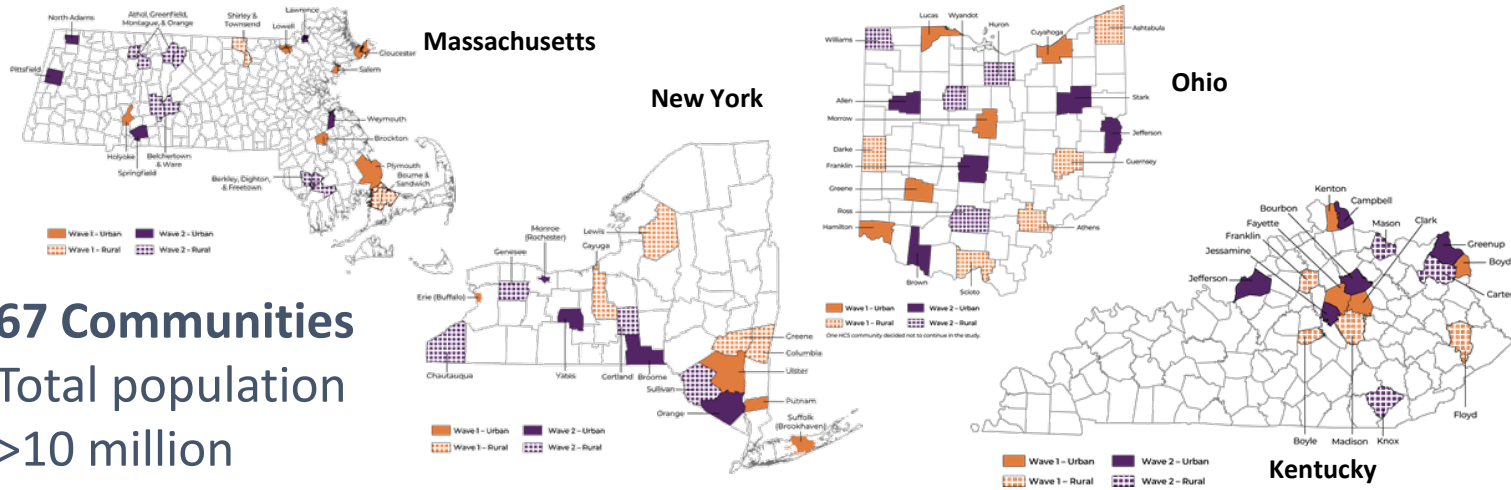
# Healing Communities Study (HCS)

Empower communities with data and support to partner with healthcare, justice, and the States to address the overdose crisis

**Goal:** Reduce overdose deaths

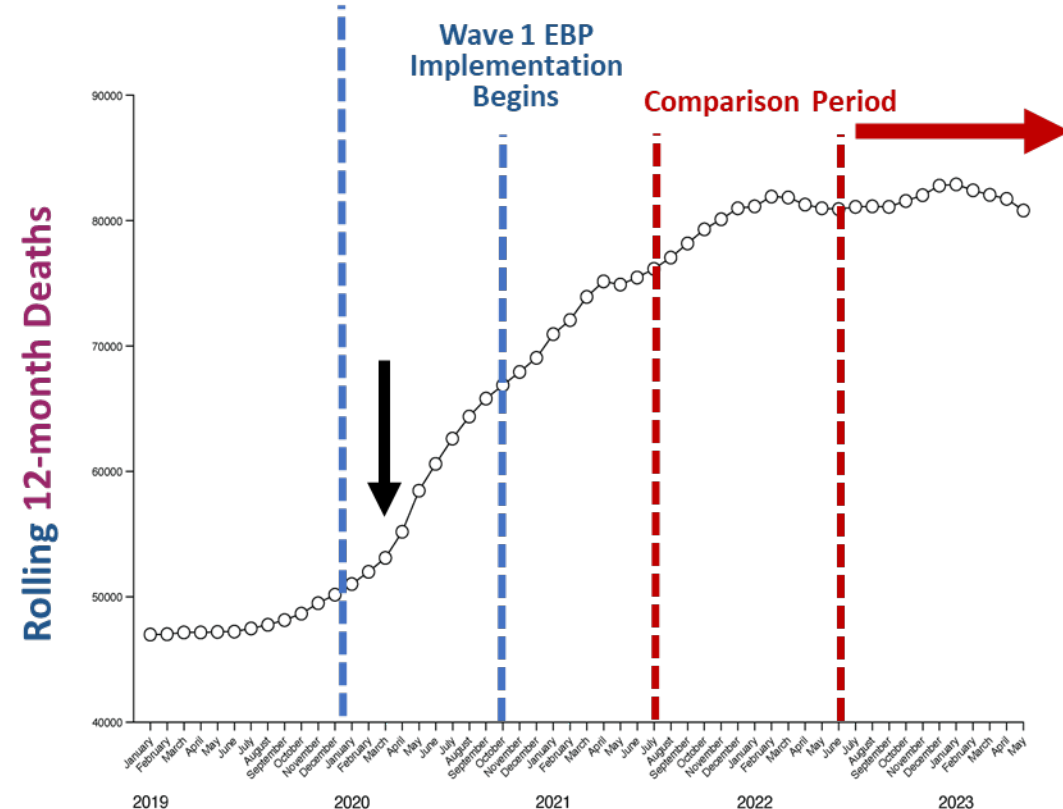
**Secondary Outcomes:**

- Increase naloxone distribution
- Increase access/utilization of MOUD
- Decrease high risk opioid prescribing



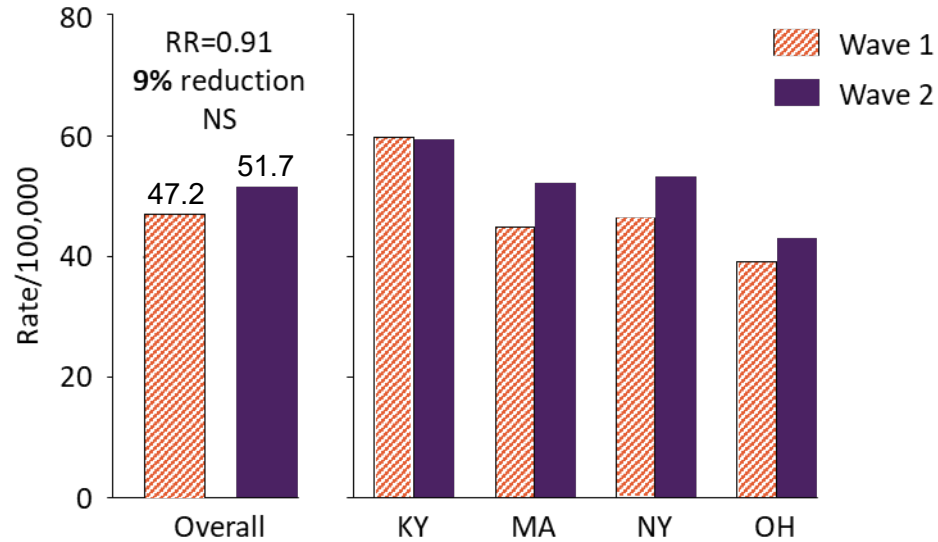
**67 Communities**  
Total population >10 million

## Wave 1 Intervention Begins



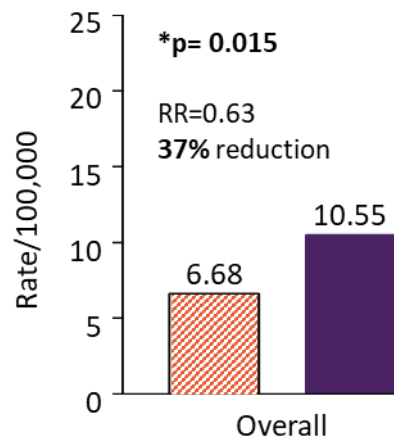
Compares Wave 1 to Wave 2 communities from **July 2022- June 2023** (period when Wave 1 received intervention and Wave 2 waited)

# Opioid-overdose Deaths



- **9% reduction** opioid OD deaths (NS)
- **37% reduction** opioid + psychostimulant (excluding cocaine) deaths
- 525 total OD deaths averted W1
- Factors impacting results:
  - Increase in poly drug use
  - Increase of fentanyl
  - COVID
  - Limited time period from implementation of EBPs to observe benefit in overdose death

# Opioid + Psychostimulant OD Deaths





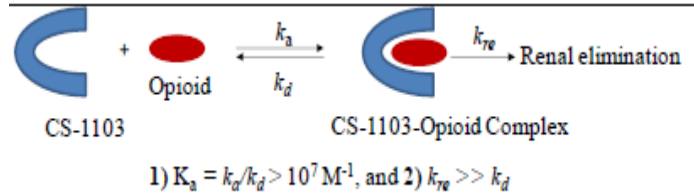
# Development Novel Therapeutics

- Overdose reversal agents: overdoses with polysubstances
- Pharmacological and immune therapies (vaccine, monoclonal antibodies) to treat opioid, cocaine and methamphetamine use disorders
- Device-based therapeutics for opioid, cocaine and methamphetamine use disorders such as neuromodulation
- Treatments targeting polysubstance use

**CS-1103**

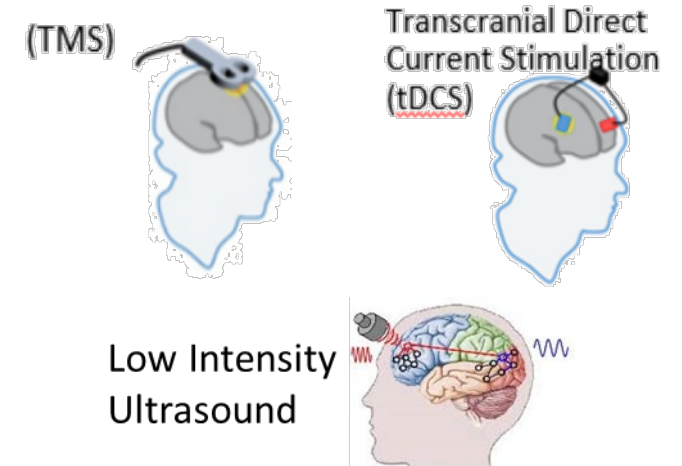
Clear Scientific, L.L.C

Cucurbit[7]uril molecular container



Sequesters fentanyl and methamphetamine in plasma enhancing their renal clearance.

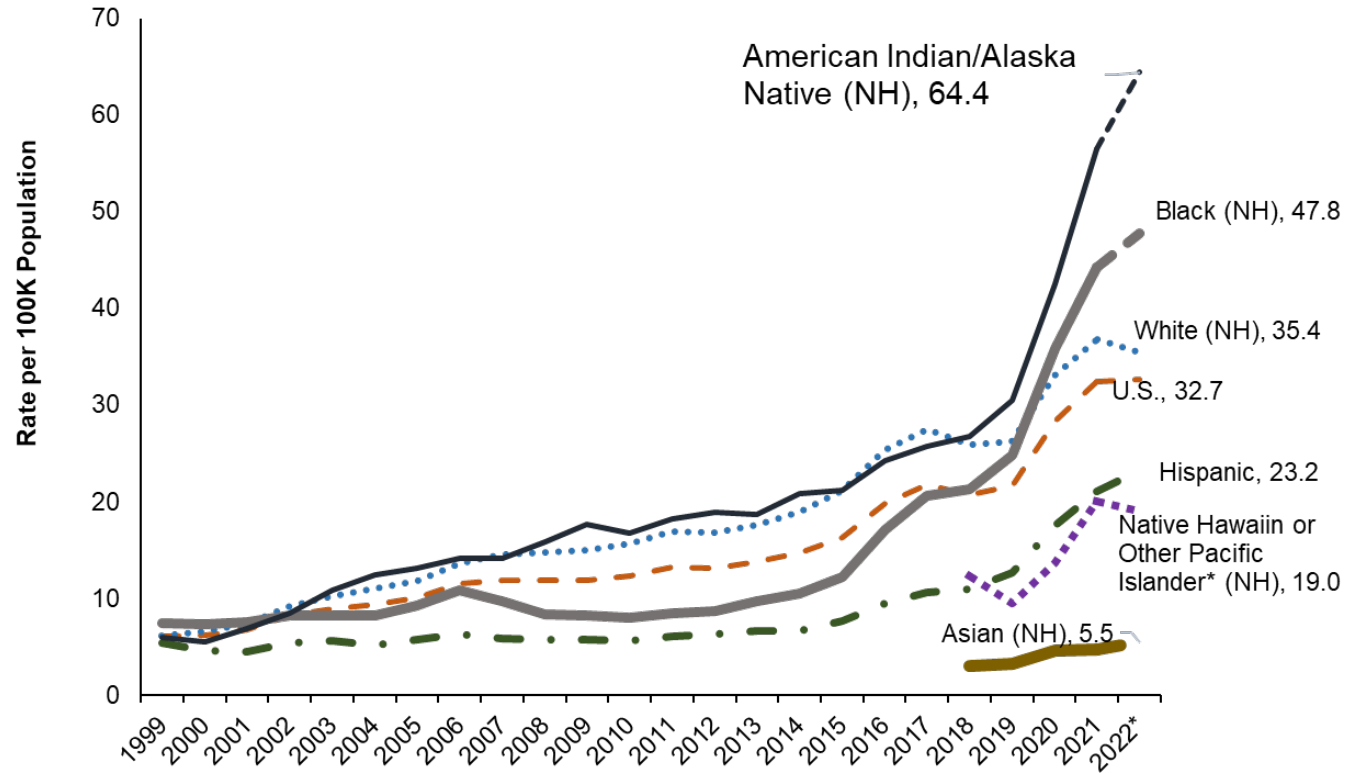
## Neuromodulation Techniques



## Polysubstance Targets

- GLP-1A
- mGLUR5
- DRD3
- Orexin R antagonists

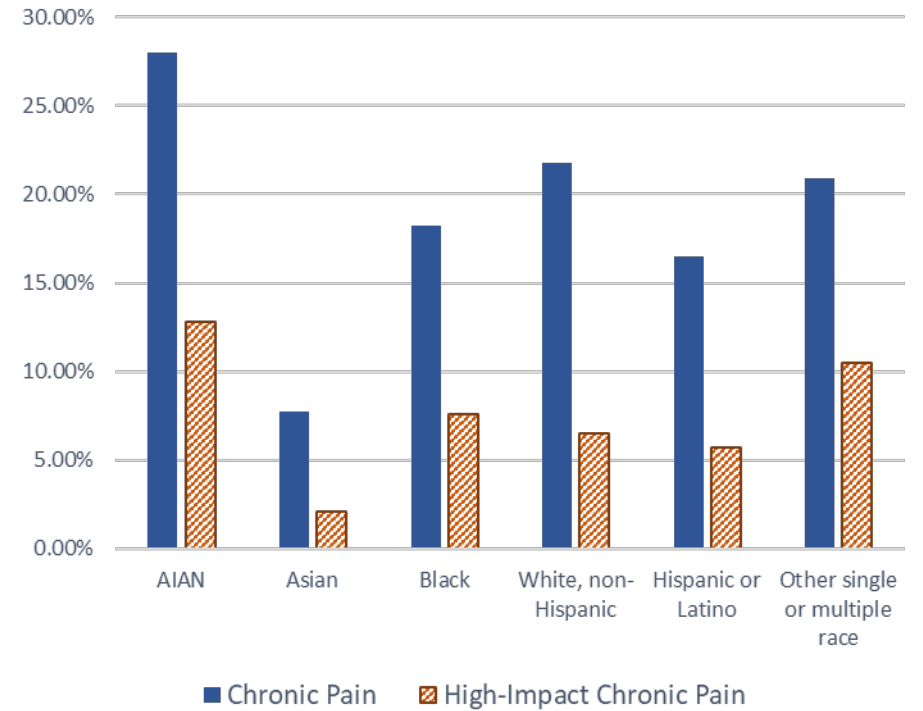
# Drug Overdose Death Rates by Race/Ethnicity



NCHS, National Vital Statistics System. Estimates for 2022 are based on provisional data.

# Pain Prevalence By Race/Ethnicity

Age-Adjusted Rates of Chronic Pain and High-Impact Chronic Pain Among Adults in the US, 2019 - 2021



Rikard et al., (2023). Chronic Pain Among Adults – United States, 2019 – 2021 (CDC MMWR).



# Native Collective Research Effort to Enhance Wellness (N CREW)

## Addressing Overdose, Substance Use & Pain

### Phase I: Development and Planning

FY24-25 \$~25 million

- **ROA OTA 23-007: T/NASOs** plan, develop, pilot, and/or implement research and/or data improvement projects.
- **ROA OTA 23-008: T/NASOs** and Ally Organizations form a **Native Research Resource Network (NRRN)** to provide training, resources and program coordination.

### Phase II: Builds on Phase I

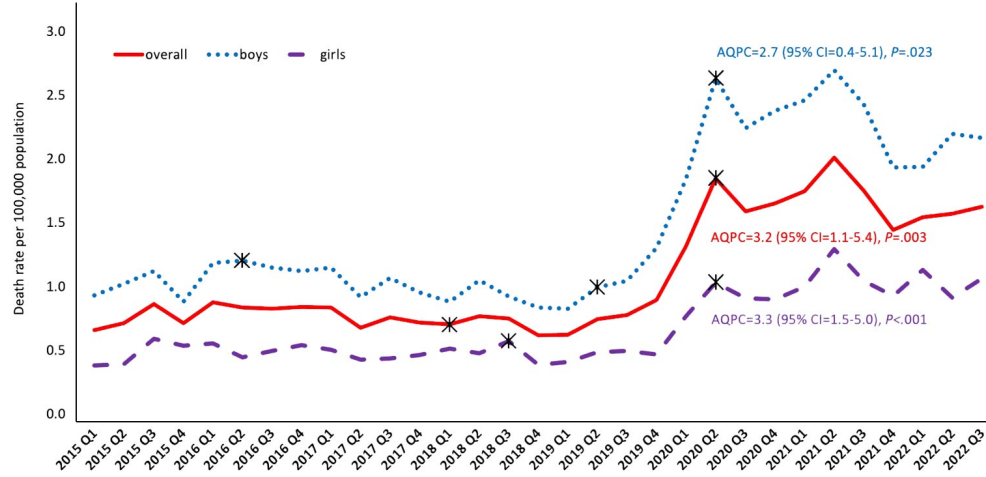
FY26-30 \$~240 million

Contact: [NCREW@NIH.GOV](mailto:NCREW@NIH.GOV)



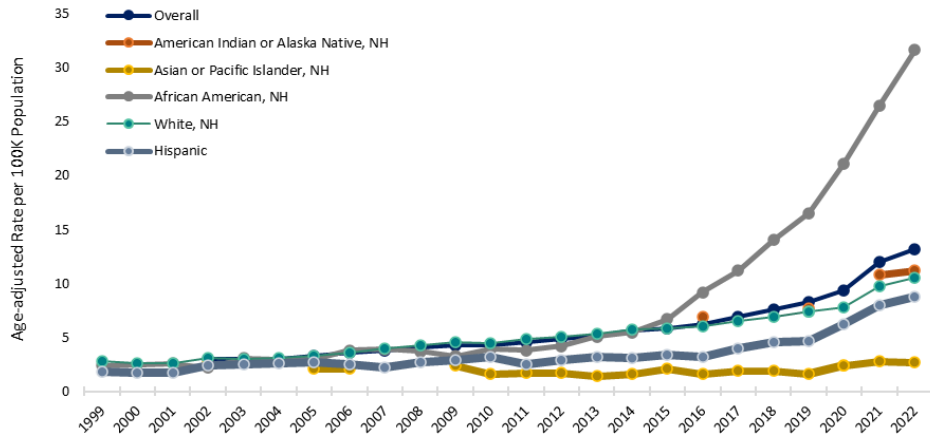
# Fentanyl Overdose Deaths Youth Aged 15-19

## Unintentional Drug Overdose Death Rates Among US Youth Aged 15-19



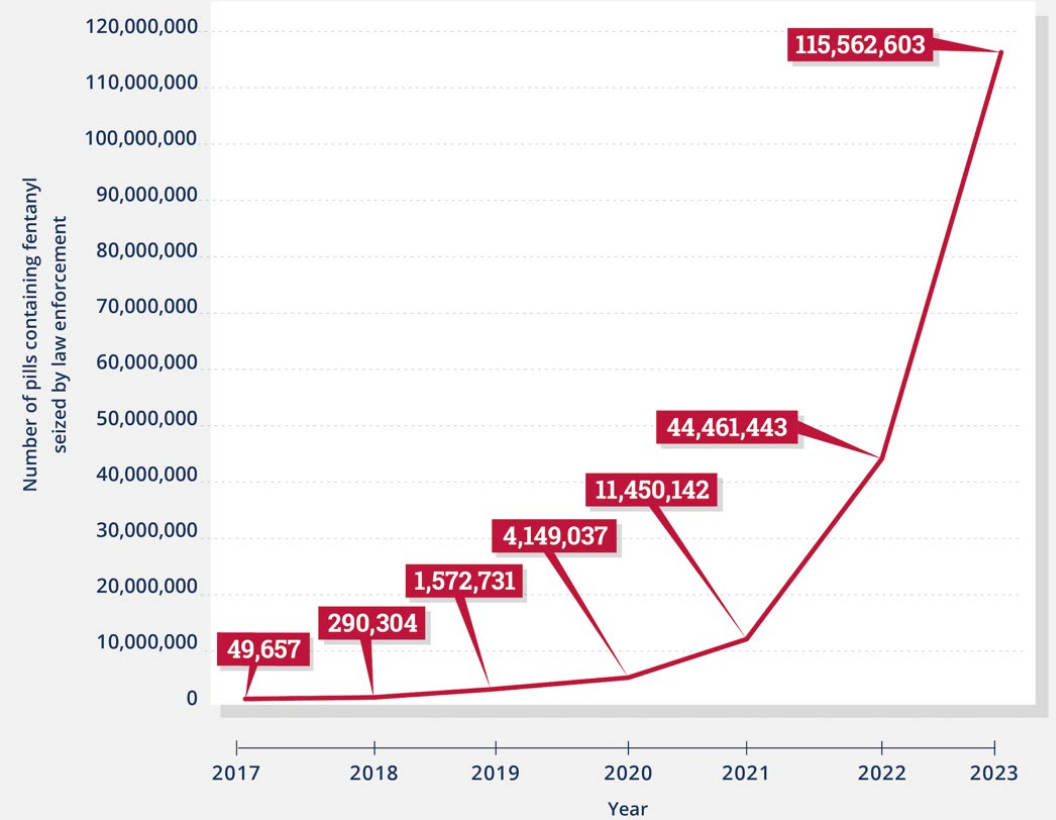
<https://nida.nih.gov/research-topics/trends-statistics/infographics/unintentional-drug-overdose-death-rates-among-us-youth-aged-15-19>

# Drug Overdose Deaths In Adults >65 years



# Overdose Deaths

## Number of Pills Containing Fentanyl Seized by Law Enforcement in the United States, 2017 – 2023

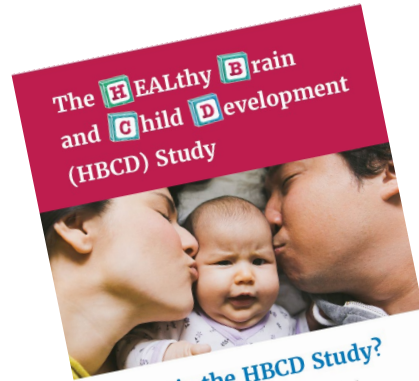


Estimates based on data reported by the Office of National Drug Control Policy's High Intensity Drug Trafficking Areas program

Reference: JJ Palamar, et al. *International Journal of Drug Policy*. DOI: 10.1016/j.drugpo.2024.104417 (2024)



# Research Across the Cascade of Care for Substance Use Disorder and Pain



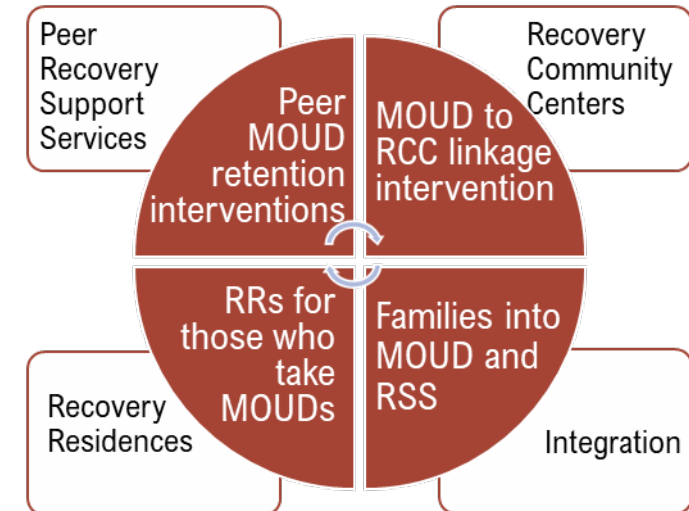
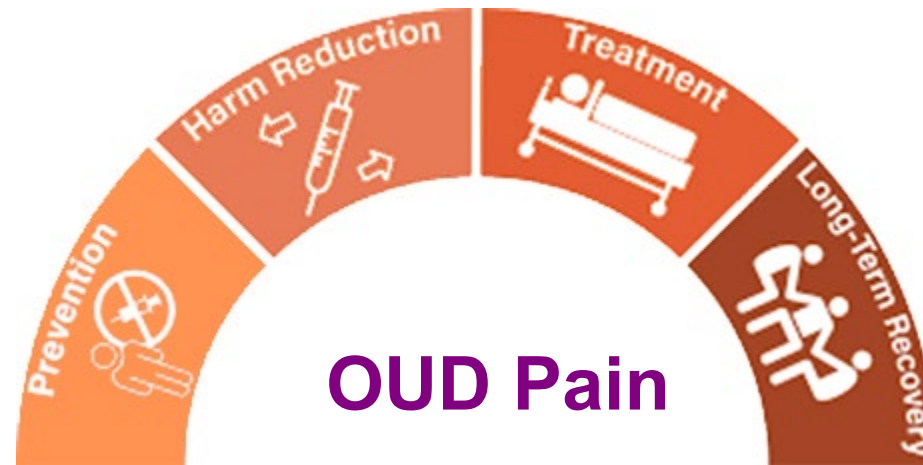
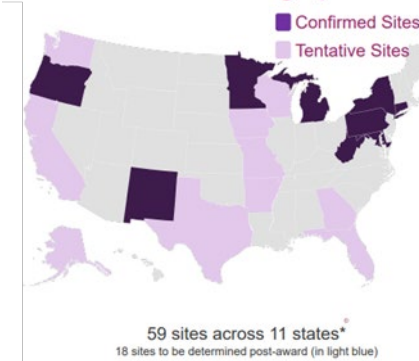
## What is the HBCD Study?

The HBCD Study will enroll a large cohort of participating families from across the U.S. and follow them and their children through early

**Longitudinal (n=7,500 infants) normative neurodevelopment study from birth to 9-10 years to investigate impact of drug exposures and social determinants of health factors and genes throughout childhood**

Novel HR approaches	Understanding addressing barriers
Novel modes of service delivery	Reaching understudied populations

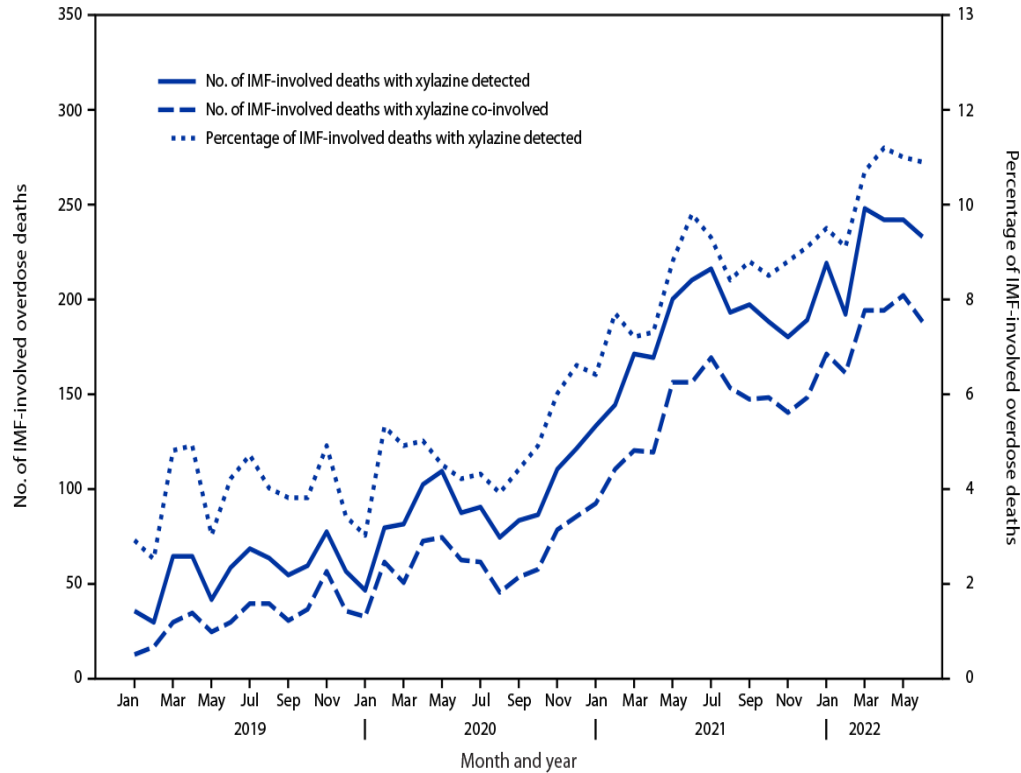
## Integrative Management of chronic Pain and OUD for Whole Recovery (IMPOWR)



**Thank you!**

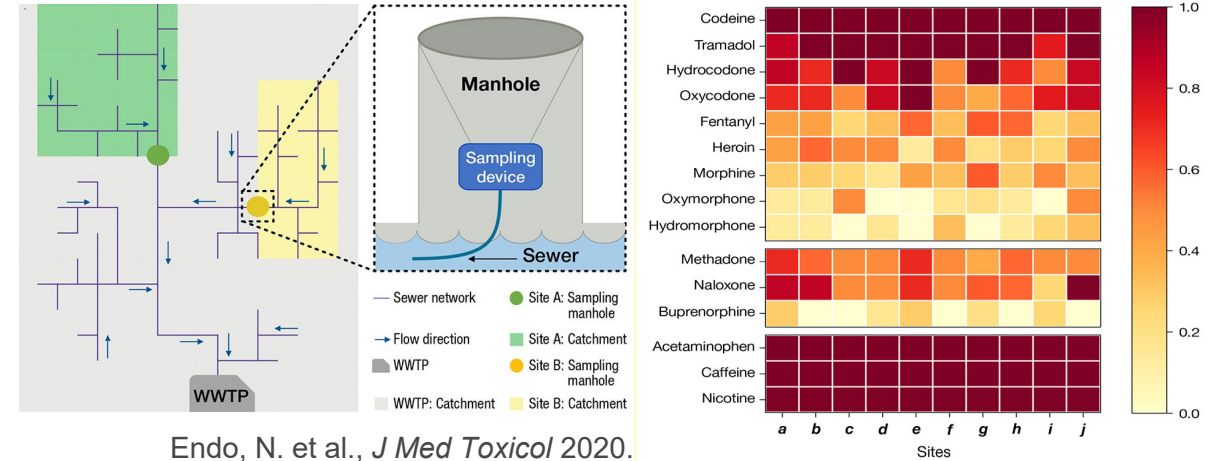
# Faster Methods to Quantify Changes in Drugs Exposures

## Xylazine



O'Donnell, et al., (2023) MMWR Morb Mortal Wkly Rep.

## Measuring Drug Exposures in Communities with Wastewater



Endo, N. et al., *J Med Toxicol* 2020.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7099105/>

## Fentanyl Test Strips

**INSTAN****SIS**

- A Lateral Flow Assay for Rapid Saliva Fentanyl Detection (FENTANYL) (PI: Uddin; PO: Dan Kostov, OTIPI)
- Rapid, Instrument-free and High Sensitivity Over-the-counter Urine Fentanyl Testing (PI: Xia; PO: Dan Kostov, OTIPI)



- FDA Breakthrough Device Designation: Oct 25, 2023
- FDA 510(k) approval: March 28, 2024

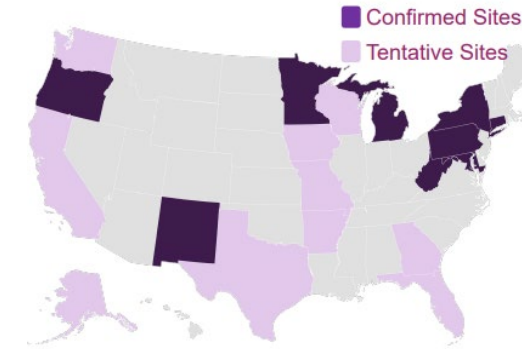


# Treatment of Co-Morbid Pain and OUD

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**Integrative Management of chronic Pain and OUD for Whole Recovery (IMPOWR)**

**Limited research on the treatment of co-morbid chronic pain and OUD**



59 sites across 11 states\*  
18 sites to be determined post-award (in light blue)

## IMPOWR Vision

Generate evidence-based, **patient-centered solutions** for integrated management of co-occurring CP and OUD and rapidly disseminate knowledge to stakeholders to impact **population health**.

## IMPOWR Goals

1. Maximize generalizability of developed interventions
2. Focus on the *Whole Patient* (co-occurring conditions, stigma/discrimination)
3. Emphasis on health inequities
4. Public/Private Partner involvement
5. Strengthen the next generation of scientists

### Behavioral Pain Tx

Primary Care (Bup)	
Pain self-management & Bup inductions	
Pittsburgh (Merlin)	
OTP (Bup)	★
Acceptance Commitment Therapy + Mindfulness	
UNM (Witkiewitz)	
OTP (Methadone)	
Yoga vs Physical Therapy vs TAU	
Einstein (Starrels)	★

### Bup Dosing

Primary Care (Bup)	
Pain self-management & flexible bup dosing	
Pittsburgh (Merlin)	★
Hospital (Bup)	
Microdosing vs standard induction	
Einstein (Starrels)	★

### Models of Care Delivery

OTP (Both)	Primary Care (Both)
Multimodal stepped care	Implementation strategies for AI/AN tailored MI
Yale (Becker)	UNM (Witkiewitz) ★
Primary Care: VA (Bup)	Primary Care: FQHC (Bup)
Pharmacist-Physician Collaborative Care	Acceptance Commitment Therapy + Care management
Yale (Becker)	Einstein (Starrels) ★

★ = underserved populations

### Coordination & Dissemination Center

- Create composite screening instrument
- Develop educational materials, addressing stigma

# Challenges to Current Overdose Epidemic

- Consequences of Fentanyl and Polysubstance misuse
  - Treatment (initiation and retention)
  - Overdoses
  - Long term Outcomes
- Addressing hard-to-reach and underserved populations
  - American Indians/Alaskan Natives
  - Black Americans
  - Rural
  - Homeless
  - Pregnant Women
- Addressing challenges associated with pain and psychiatric co-morbidities
- Novel harm reduction approaches
- Monitoring changing Drug landscapes
  - Xylazine
- Prevention across the lifespan
- SDOH