



# What's the Latest? A quarterly webinar series addressing current MOUD trends

November 16, 2022

# Introduction our Facilitator



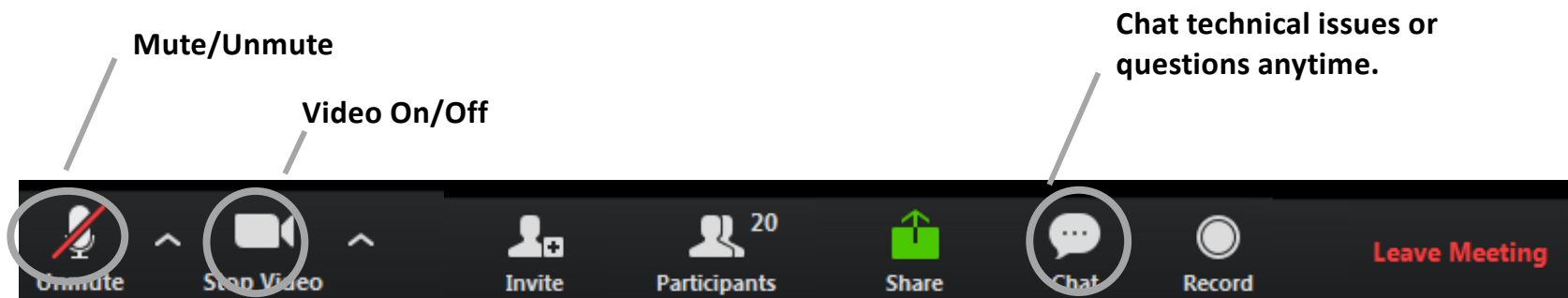
- Maureen Oscadal, RN, AMB-BC, CARN
- Nurse Care Manager Trainer  
University of Washington

In the chat box:

1. Your name
2. Organization
3. Role

# Zoom Housekeeping

- **This call is being recorded**
- **Mute when not speaking**
- **Audio & video controls in lower left corner**





# Call Agenda

- **Land Acknowledgement**
- **WA State Opioid & Stimulant Trends**
  - Caleb Banta-Green PhD, MPH, MSW
- **Questions & Discussion**



# Land Acknowledgment

I would like to begin by acknowledging that as we gather today, we are on the ancestral homelands of the Indigenous Peoples who have lived on these lands since time immemorial.

Please join me in expressing our deepest respect and gratitude for our Indigenous neighbors.



# WA State Opioid & Stimulant Trends

**Caleb Banta-Green, PhD, MPH, MSW**

[@BantaGreen](#)

Acting Professor- Addictions, Drug & Alcohol Institute

Director- Center for Community-Engaged Drug Education, Epidemiology & Research

Department of Psychiatry & Behavioral Sciences, School of Medicine

November 16, 2022



# Conflict of Interest & Funding

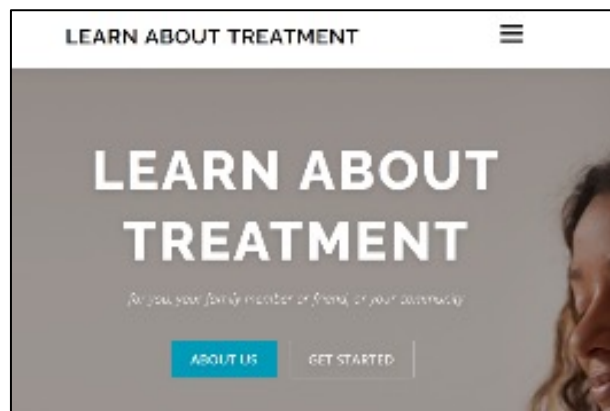
- ✓ I have no conflicts of interest to report.
- ✓ I do not accept funding from pharmaceutical companies.
- ✓ Any trade/brand names for products mentioned are for identification purposes only.
- ✓ Current funding includes
  - WA Health Care Authority (WA State funds & US DHHS SAMHSA)
  - NIH National Institute on Drug Abuse
  - Paul G. Allen Family Foundation



# Today's presentation

- **Stimulant and opioid trends.**
- **Fentanyl basics and key points of community education.**
- **Preliminary xylazine and novel benzo(diazepine) data.**
- **Resources.**

- **Washington State Opioid/Major Drug Interactive Data**
- **Patient/Client and Staff/Provider materials**
  - StopOverdose.org
  - LearnAboutTreatment.org
  - Community Surveys with People Who Use Drugs
  - Transforming Our Communities Annual Gathering





## Washington State Opioid/Major Drug Interactive Data

This site offers a series of interactive data charts and maps featuring Washington state data related to overdose deaths, treatment admissions, statewide opioid sales, and police evidence testing data for opioids and other drugs.

### Find data by:



Geography ▾



Drug Type ▾



Indicator/Source ▾

### Acknowledgments

Funding from the Washington State Department of Social and Health Services, Division of Behavioral Health and Recovery. Marijuana indicators analysis was provided with support from the Washington State Dedicated Marijuana Fund for research at the University of Washington. All analysis and interpretation by ADAI.

We thank the following for data access:

- King County Medical Examiner
- Washington State Department of Social and Health Services, Division of Behavioral Health and Recovery
- Center for Health Statistics, Washington State Department of Health
- Washington State Patrol Forensic Laboratory Services Bureau
- US Drug Enforcement Agency [ARCOS database](#)
- Washington State Office of Financial Management
- Washington State Department of Health Prescription Monitoring Program
- American Community Survey, US Census Bureau
- [Looking Glass Analytics](#)
- Washington State Liquor and Cannabis Board

ADAI thanks our geocoding partner, [Texas A&M Geoservices](#).

We thank [ColorBrewer](#) for color palette assistance, used on many of our time-series plots.

 Icon made by [Gregor Cresnar](#), from [www.flaticon.com](#), licensed by [CC 3.0 BY](#).

Produced by ADAI, with funding from the Washington State Department of Social and Health Services, Division of Behavioral Health and Recovery  
Updated 20 November 2020 • [Privacy](#) • [Terms](#)

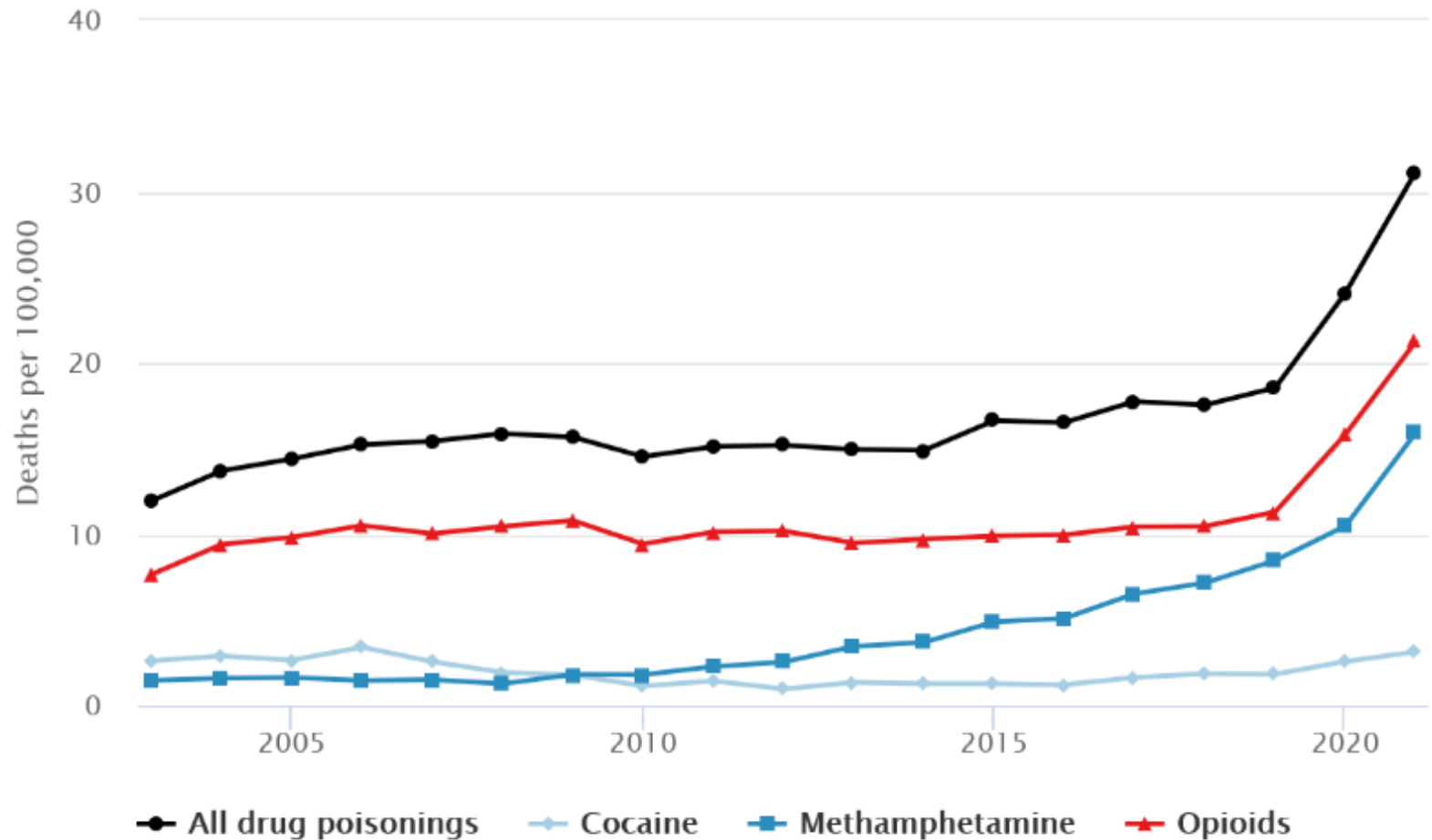


# Fatal overdoses

- **Deaths due to acute intoxication with drugs**
- **WA State death certificate data, final through 2020, preliminary through 2021**

# Fatal overdoses

Drug-caused death rates per 100,000 state residents

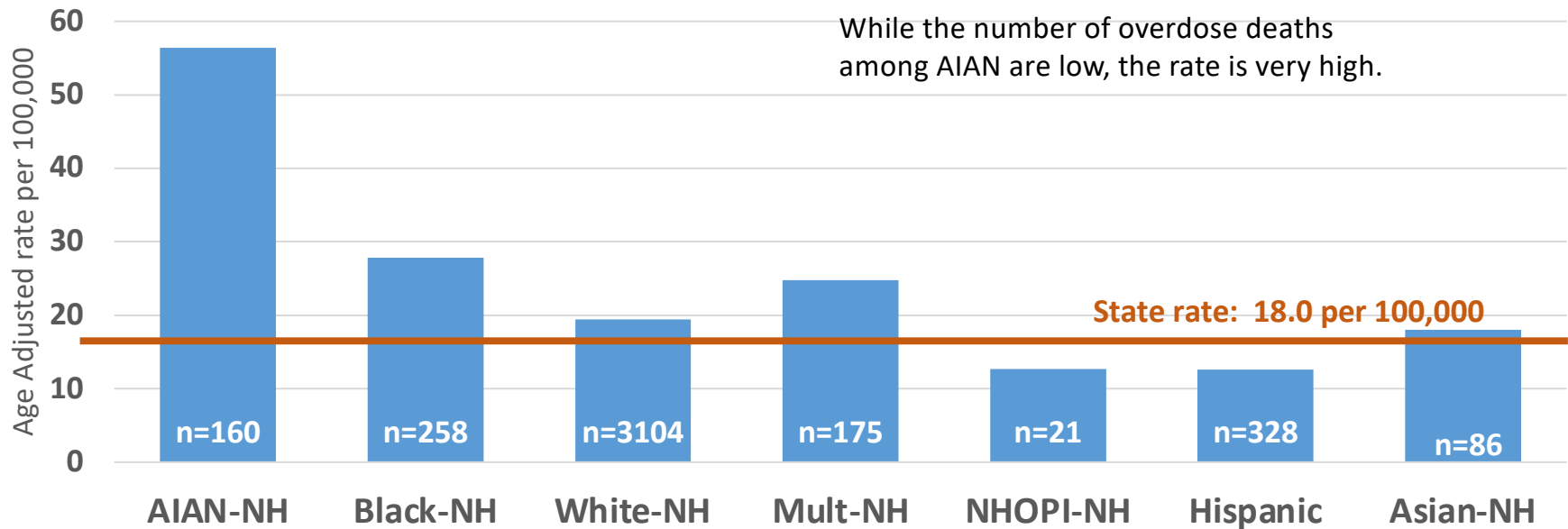


Analysis by UW ADAI. For data sources, see text or [adai.uw.edu/WAdata](http://adai.uw.edu/WAdata)

# Fatal overdoses

## Drug overdose deaths disproportionately affect American Indian and Alaskan Native populations

WA residents (2018-2020)



NH: Non-Hispanic  
AIAN: American Indian/Alaskan Native

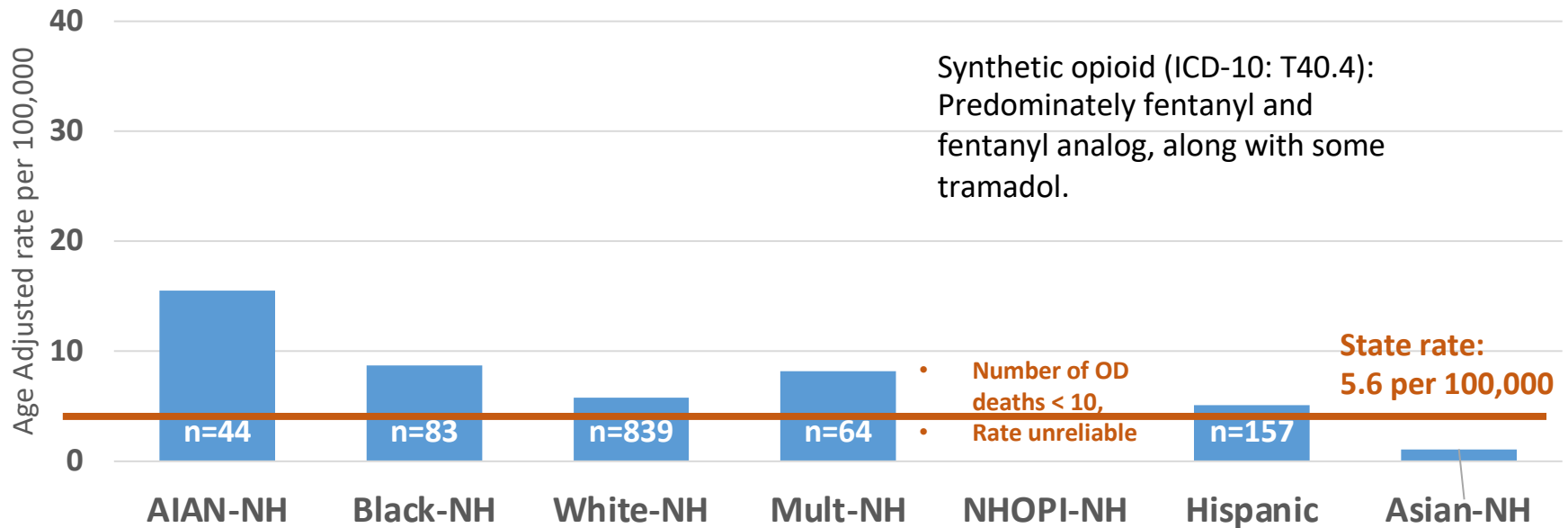
NHOPI: Native Hawaiian or Other Pacific  
Islander  
Multi: Multi-racial

Data likely substantially underestimate rates for AIAN people

# Fatal overdoses

## Drug overdose deaths involving synthetic opioids disproportionately affect American Indian and Alaskan Native populations

WA residents (2018-2020)



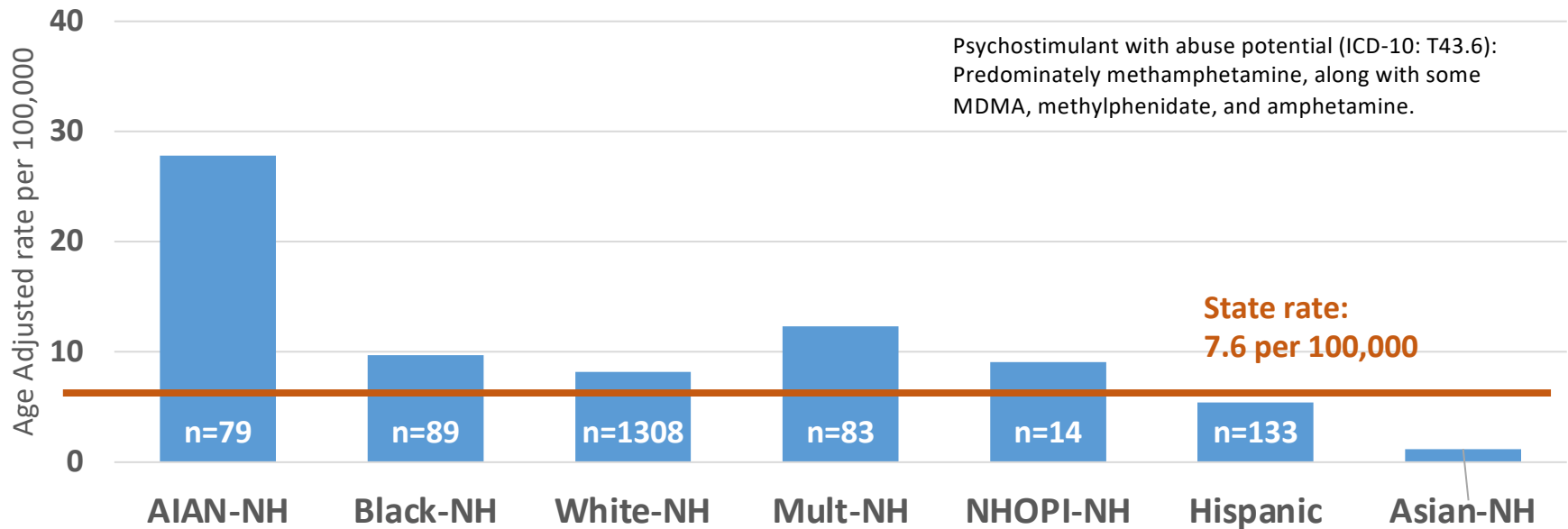
NH: Non-Hispanic  
AIAN: American Indian/Alaskan Native

NHOPI: Native Hawaiian or Other Pacific Islander  
Multi: Multi-racial

# Fatal overdoses

## Drug overdose deaths involving psychostimulants disproportionately affect American Indian and Alaskan Native populations

WA residents (2018-2020)

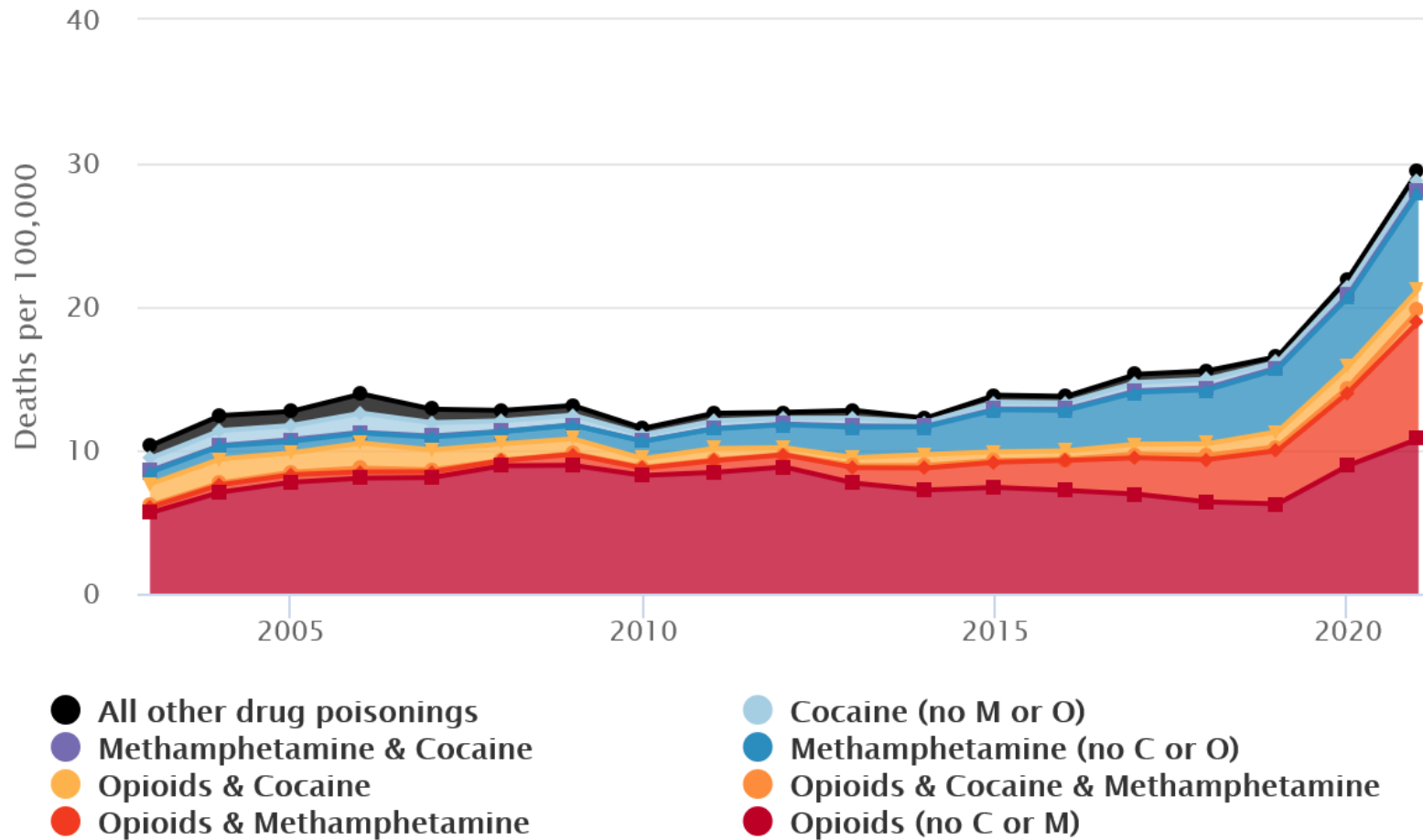


NH: Non-Hispanic  
AIAN: American Indian/Alaskan Native

NHOPI: Native Hawaiian or Other Pacific  
Islander  
Multi: Multi-racial

# All drug overdose deaths

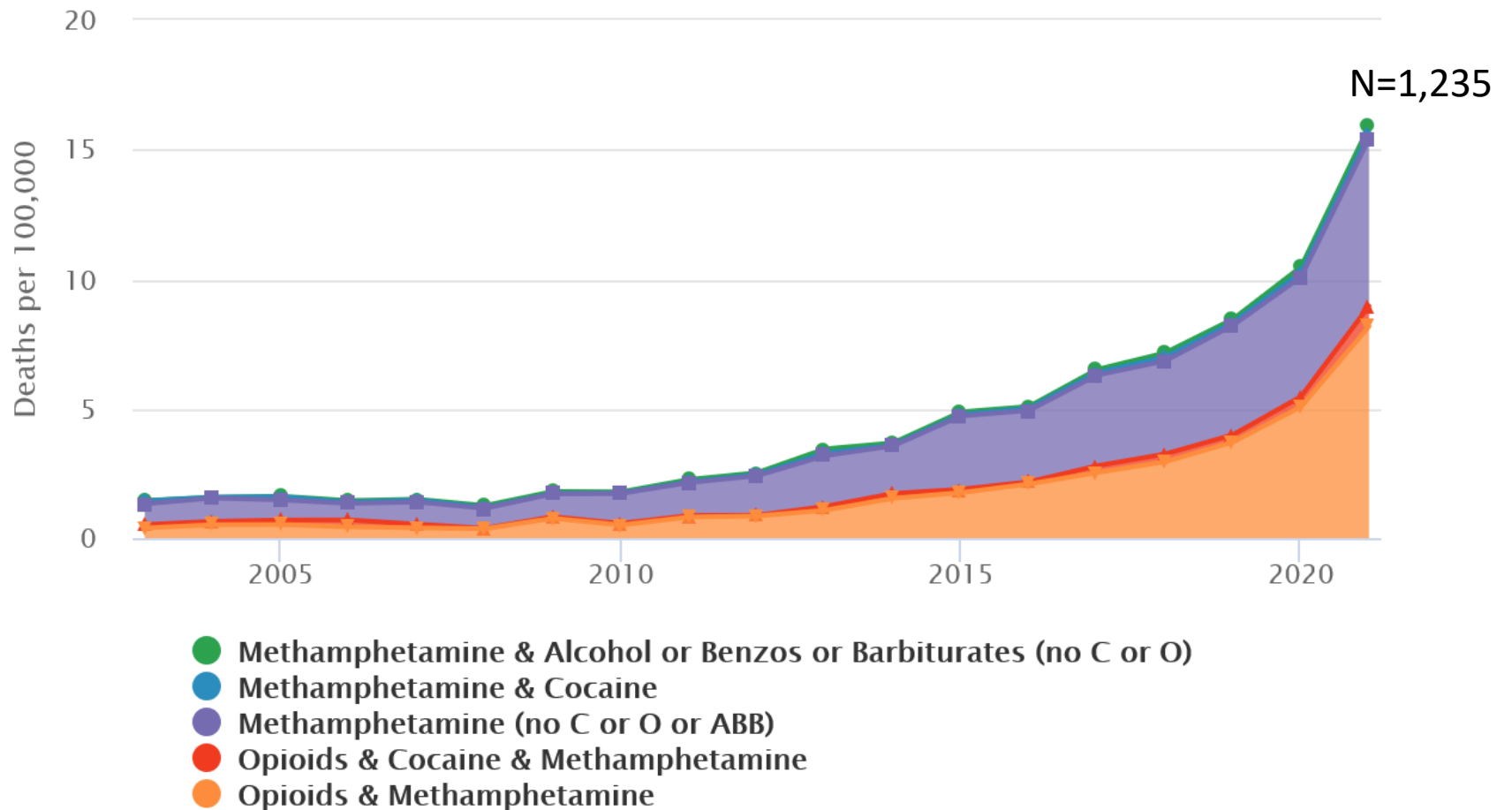
Death rates per 100,000 state residents, all drug poisonings



Analysis by UW ADAI. For data sources, see text or [adai.uw.edu/WAdata](http://adai.uw.edu/WAdata)

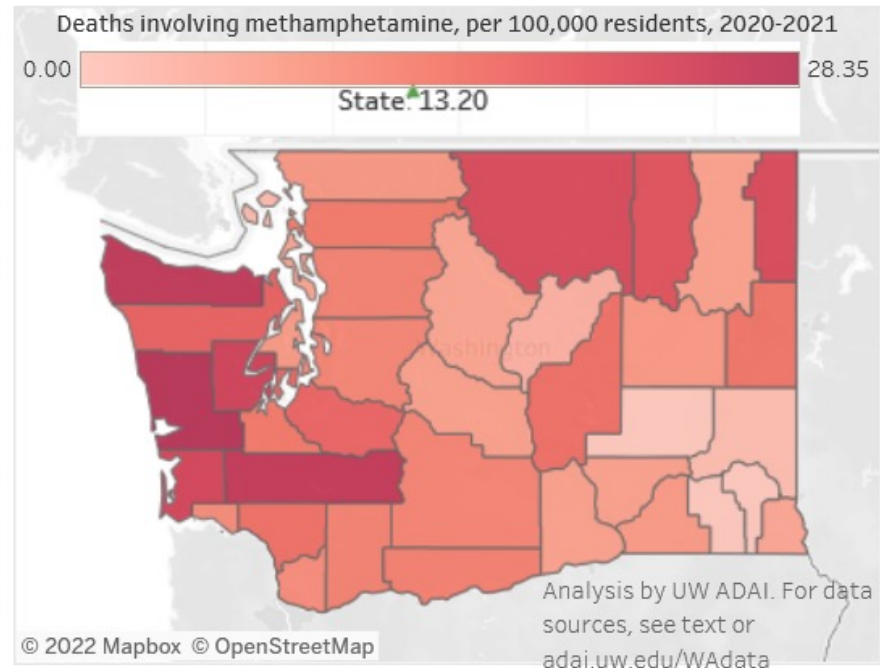
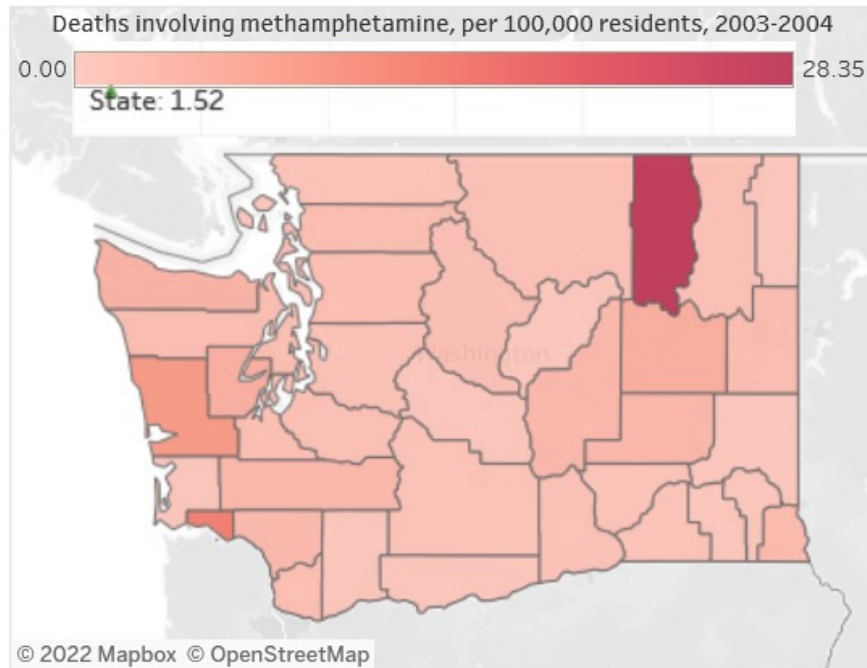
# All drug overdose deaths

Death rates per 100,000 state residents, methamphetamine deaths detail



Analysis by UW ADAI. For data sources, see text or [adai.uw.edu/WAdata](http://adai.uw.edu/WAdata)

# Methamphetamine involved



tableau



Data sources: Washington State Department of Health (deaths), state Office of Financial Management (population). 2020 & 2021 death data are preliminary.



# Methamphetamine OD Deaths Changes 2003-2021

**Number up 89 to 1,235, 1.45-15.90/100,000**

**Median age increased from 40 to 49**

**Continues to be mostly men 73% in '21**

**Increasingly w/ opioids 36% to 56%**

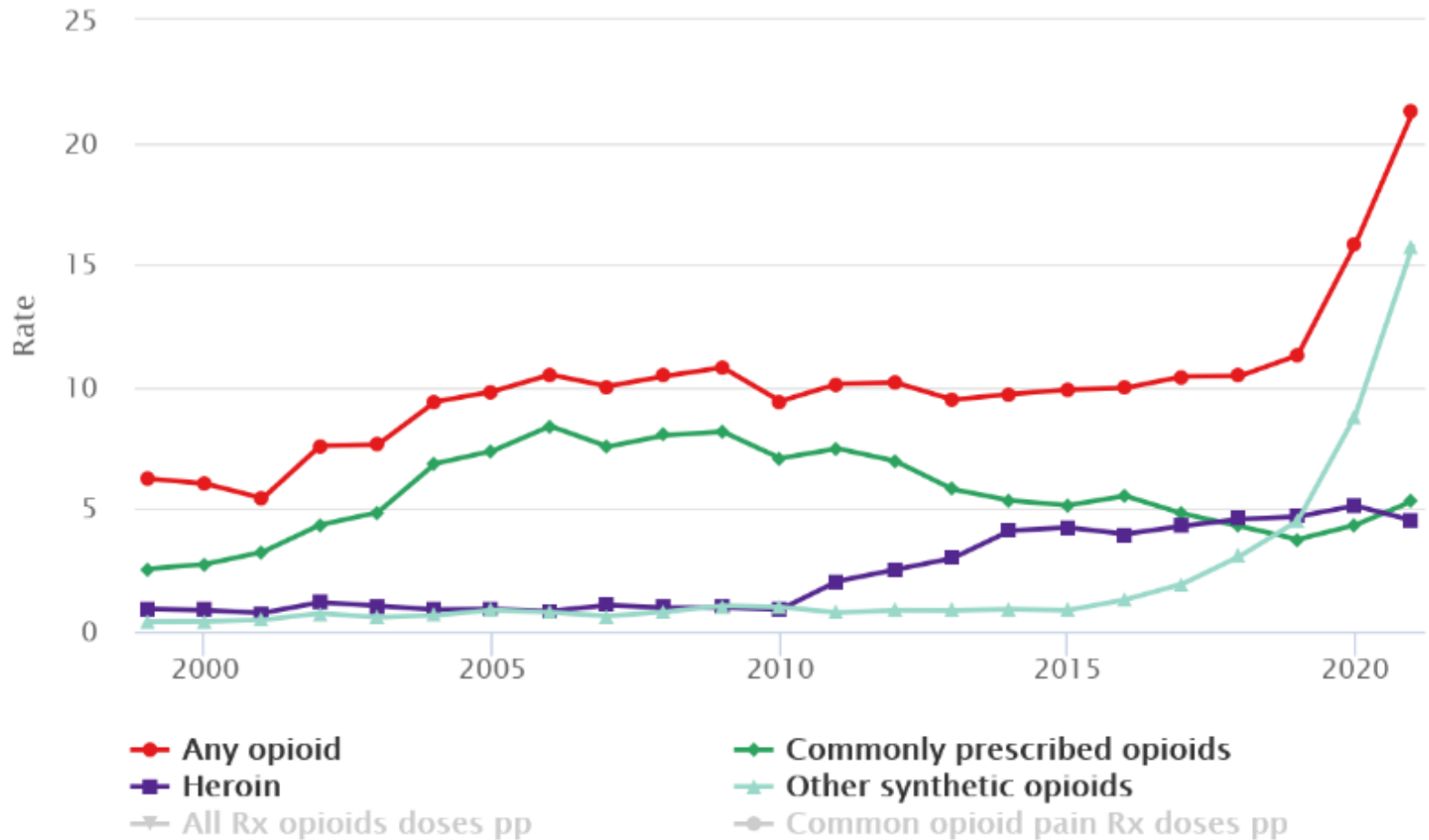
**Decreasing among Whites 91% to 76%**

**Notable increases among Black and Hispanic populations**

**Overrepresentation among American Indian/Alaska Native ~6% of deaths over time v  
~2% of population**

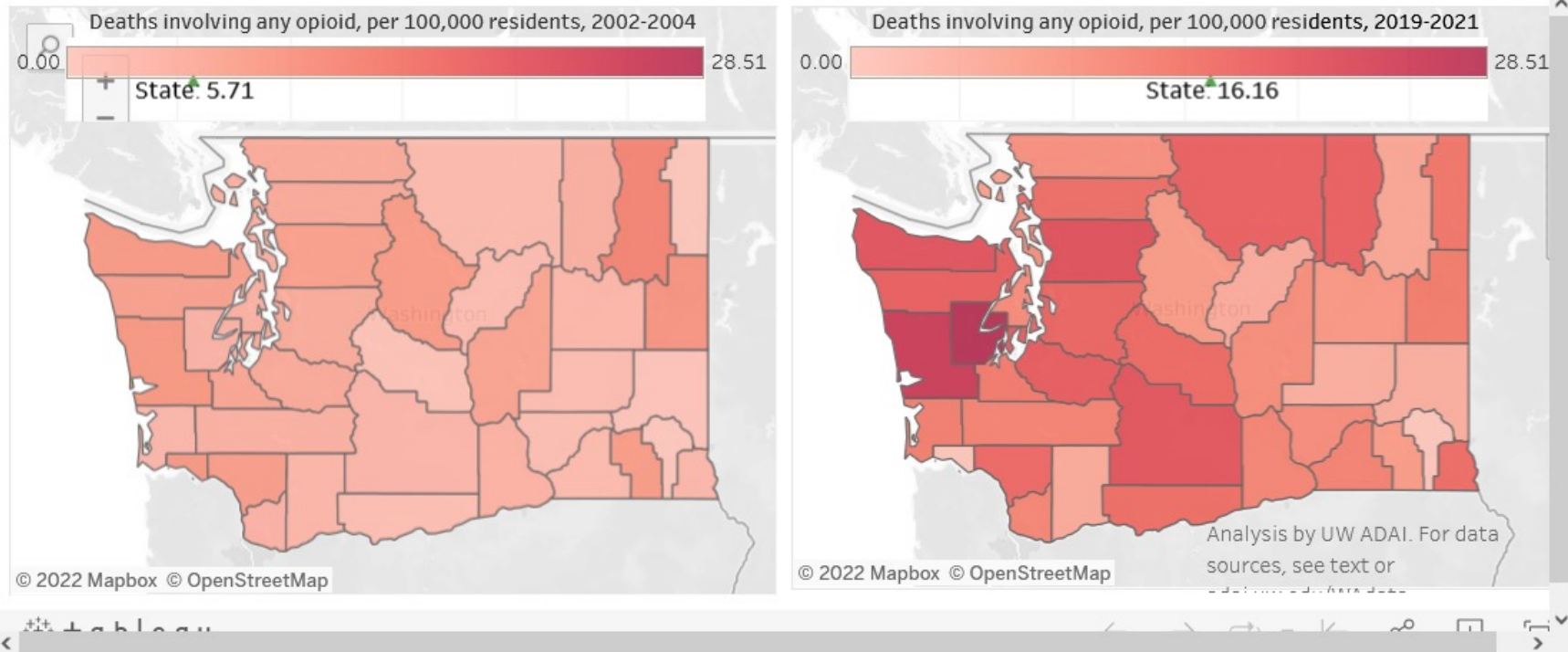
# Opioids

## Statewide opioid death rates



Analysis by UW ADAI. For data sources, see text or [adai.uw.edu/WAdata](http://adai.uw.edu/WAdata)

# Opioids

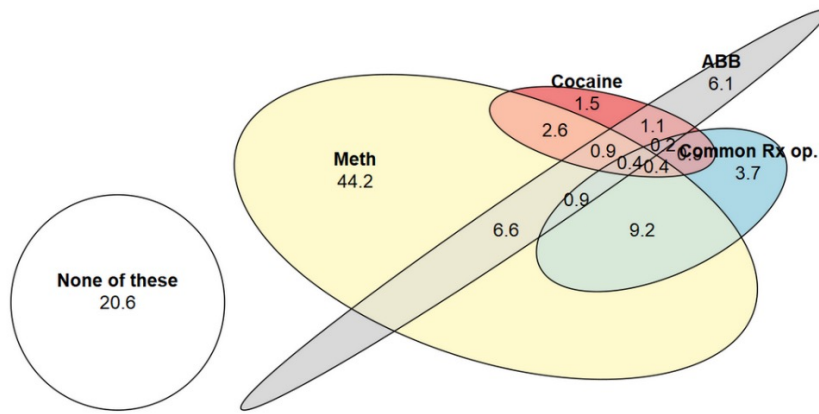


Data sources: Center for Health Statistics, Washington State Department of Health (deaths), Washington State Office of Financial Management (population)

# Opioids

## Heroin

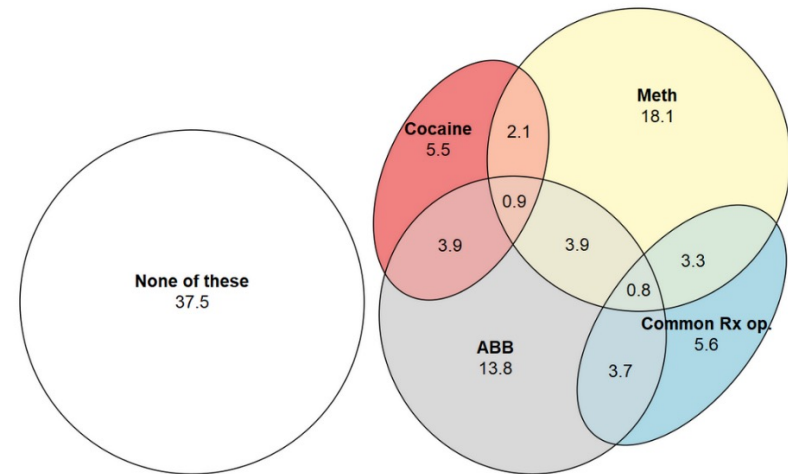
Drugs present along with heroin, no synthetic opioids  
 % of n = 545 deaths in Washington, 2020-2021



Data source: Washington State Department of Health. 2020 & 2021 death data are preliminary.

## Fentanyl

Drugs present along with other synthetic opioids, no heroin  
 % of n = 1700 deaths in Washington, 2020-2021

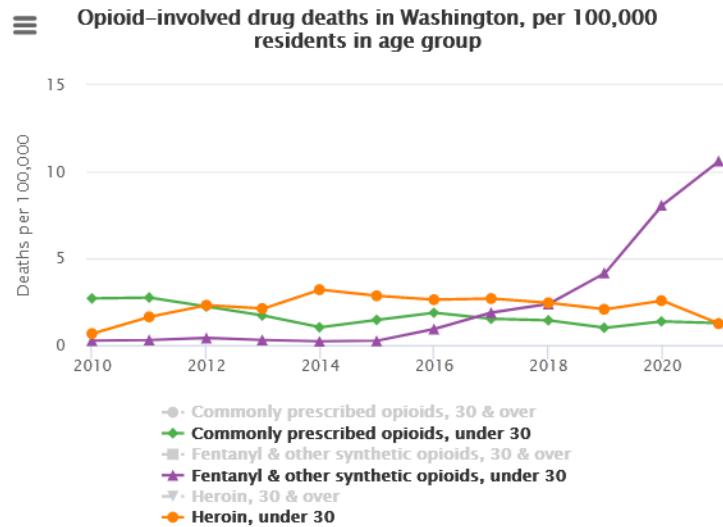


Data source: Washington State Department of Health. 2020 & 2021 death data are preliminary.

ABB = Alcohol, barbiturates, or benzodiazepines. All sedatives.

# Opioids

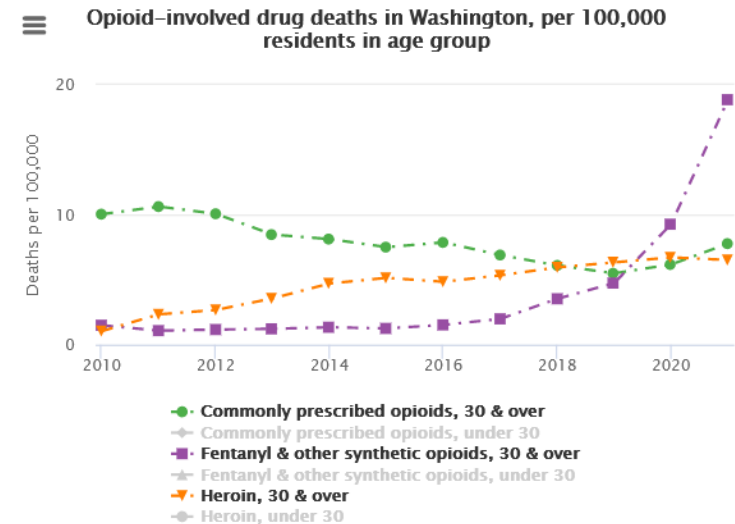
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Analysis by UW ADAI. For data sources, see text or [adaai.uw.edu/WAdata](http://adaai.uw.edu/WAdata)

Data sources: Washington State Department of Health (deaths), state Office of Financial Management (population). 2020 & 2021 death data are preliminary.

30+



Analysis by UW ADAI. For data sources, see text or [adaai.uw.edu/WAdata](http://adaai.uw.edu/WAdata)

Data sources: Washington State Department of Health (deaths), state Office of Financial Management (population). 2020 & 2021 death data are preliminary.

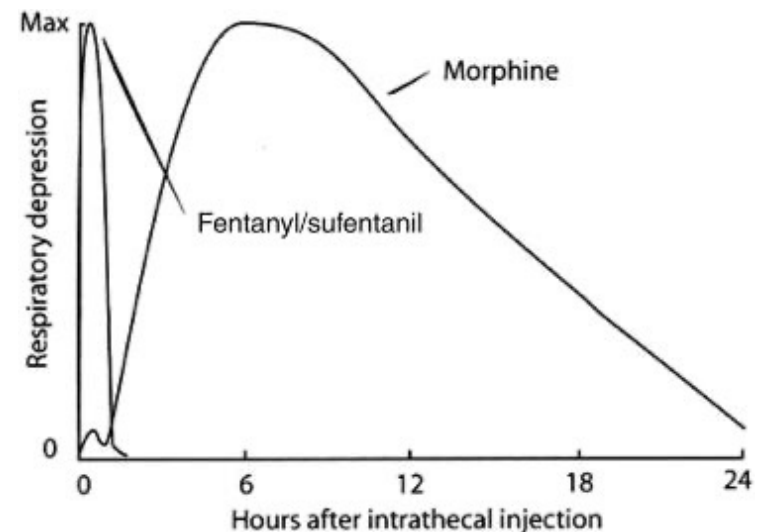
- Median age of decedents (2020-2021)
  - Heroin 45 years (no fentanyl) n=545
  - Fentanyl 36 years (no heroin) n=1700

# Implications of fentanyl

- **Rapid** onset
- A **high** peak dose/effect
- A **short** duration of effect

**These** characteristics of a drug are strongly related to its:

- Addiction potential-reinforcing
- Overdose potential-hard to feel and control dose



The figure gives a sense of the relative differences in biological effect between drugs over time. However, the site of administration, lower spinal cord, means the times are longer than would be seen IV or smoked.

[https://www.bjaed.org/article/S1743-1816\(17\)30415-8/fulltext](https://www.bjaed.org/article/S1743-1816(17)30415-8/fulltext)

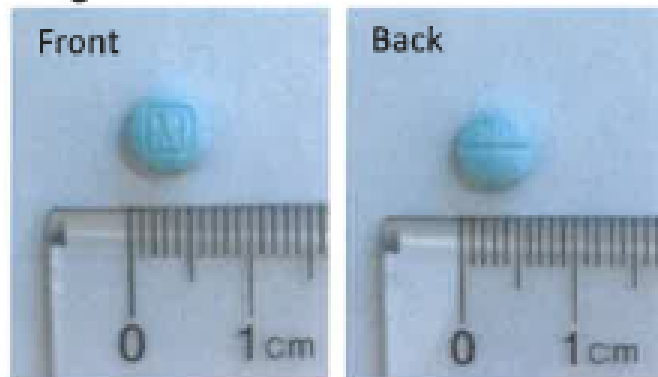
# DEA analysis of King County samples

**Drug Product ID:** DEA-2022-738-220414-WA-98133-003-T1

**Description:** Blue tablet with "M" and "30" markings.

**TOTAL WEIGHT OF EXHIBIT:** 107.6mg tablet

**Image:**



**Analytical Results:**

Confirmed Drug	Percentage within Drug Product	Actual Amount within Drug Product	Total Weight of Exhibit
Acetaminophen	38.9% (389mg/g)	42mg	107.6mg
Fentanyl	1.4% (14mg/g)	1.5mg	
4-ANPP	0.39% (3.9mg/g)	0.42mg	
Acetyl Fentanyl	0.0013% (0.013 mg/g)	0.0014mg	

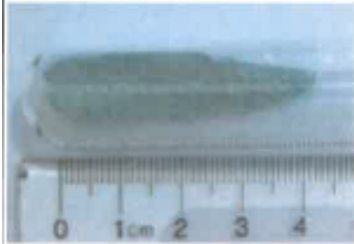
# DEA analysis of King County samples

Drug Product ID: DEA-2022-741-220324-WA-98001-006-P1

Description: Blue Powder

TOTAL WEIGHT OF EXHIBIT: 303.1mg powder

Image:



Analytical Results:

Confirmed Drug	Percentage within Drug Product	Actual Amount within Drug Product	Total Weight of Exhibit
Acetaminophen	7.5% (75mg/g)	23mg	303.1mg
Fentanyl	4.3% (43mg/g)	13mg	
Methamphetamine	1.9% (19mg/g)	5.8mg	
4F-ABUTINACA*	0.37% (3.7mg/g)	1.1mg	
Etizolam	0.17% (1.7mg/g)	0.52mg	
4-ANPP	0.069% (0.69mg/g)	0.21mg	
<i>para</i> -Fluorofentanyl	0.066% (0.66mg/g)	0.20mg	
Flubromazolam	0.024% (0.24mg/g)	0.073mg	
Lidocaine	0.016% (0.16mg/g)	0.048mg	
Tramadol	0.0076% (0.076mg/g)	0.023mg	
Acetyl Fentanyl	0.0061% (0.061mg/g)	0.018mg	
Cocaine	0.0038% (0.038mg/g)	0.012mg	
Despropionyl- <i>para</i> -Fluorofentanyl	0.0007% (0.007mg/g)	0.002mg	

# Syringe services programs client surveys

- **Large increase in % using fentanyl in 2021 compared to 2019**
  - 42% used past 3 months
  - 14% used 5+ days in the past week
- **Most often in pills, but increasingly powders**
- **2019 data show most heroin users, 82%, want to stop/reduce use and most want treatment medications.**
  - Many also want counseling, care navigation, mental health medications and other services.



## Fentanyl use among treatment enrollees

- In our community based low barrier programs large increase in the % of those reporting an opioid indicating fentanyl as a primary drug

	7/21-6/22 N=488	7/22-10/22 N=105
Heroin	51%	22%
Fentanyl	38%	76%
Heroin & meth	11%	2%
Total	100%	100%

- In a large opioid treatment program in Vancouver, WA 74% had indications of fentanyl use in Q3 2022, up from previous quarters even as heroin declined.

# Opioids at Vancouver WA OTP

	% of Using Clients Using Fentanyl (FYL + designer FYLs)	% of Using Clients +Heroin	Share of Fentanyl that is a Fentanyl Analogue	% of Using Clients Positive for Any Opioid	% of Using Clients Abstaining from Opioids
Q4 2021	54	32	23	86	14
Q1 2022	64	29	21	92	8
Q2 2022	74	23	20	97	3
Q3 2022	74	19	18	99	1

## Key Takeaways:

- Fentanyl prevalence stable from Q2
- Heroin prevalence shrinking
- Share of fentanyl analogues decreasing
- Opioid abstinence in still-using clients decreasing





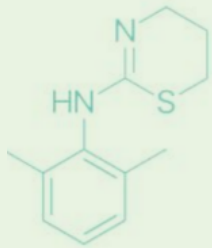
# Fentanyl in Washington State

## ➤ Populations consuming include:

- Teens/Young adults without OUD
  - Important because we need prevention and harm reduction for youth
- Teens/Young adults with rapid onset OUD
  - Little awareness or availability of MOUD
- Adults with pre-existing OUD often involving injected heroin
  - Less involvement in Syringe services programs

# Xylazine

## Xylazine



### What is Xylazine?

Xylazine is a veterinary anesthetic that's often used as a cut in street drugs. It's sometimes called tranq, tranq dope or sleep cut and people usually use xylazine unknowingly when their drugs are cut with it.

### Uses

For humans there isn't a prescribed use because it's intended for use in animals.

### Effects

Sedation, analgesia (pain killing like ibuprofen or advil but not opioids) and muscle relaxation. Strong sedative effects and excessive sleepiness without euphoria have been anecdotally reported to happen anywhere from 5 to 200mg.

### Withdrawal

Withdrawal symptoms have been reported to be mild but because of the lack of human information about xylazine your results may vary.

### Withdrawal Management

Research suggests that if withdrawal symptoms are present, low dose clonidine can be used to manage withdrawal symptoms.

### Overdose Prevention

Treat xylazine like you would any other drug that can cause respiratory depression such as opioids, benzos or alcohol. If combining with other drugs, keep the doses low especially if they are other depressant drugs. There isn't an overdose reversal drug for xylazine so it's recommended to not to use alone and practice harm reduction if you decide to use xylazine.

<https://nextdistro.org/resources-collection/xylazine-quick-guide>

# Xylazine

## Side Effects

Xylazine isn't intended for human use and long term use can cause skin lesions or ulcers. In high doses, respiratory depression, passing out or falling unconscious while still standing is common. Deaths are rare but have occurred in humans using anywhere from 40 to 2400mg of xylazine.

## Dose

There isn't an established human dose for xylazine use. For harm reduction purposes, use as little as possible if you think your drug contains xylazine. It's recommended to start as low as possible and go slow if using xylazine.

## Routes of Administration

Not much is known about the human use of xylazine but there have been reports of people eating, snorting, IVing, IMing, and using xylazine subcutaneously (injection in the skin or skin-popping).



For more drug-specific information & resources, visit:

[www.nextdistro.org/drugspecific](http://www.nextdistro.org/drugspecific)

**www.nextdistro.org**

**SMS/Signal** 646-389-0752

**Reddit** /u/nextdistro

**Email** info@nextdistro.org

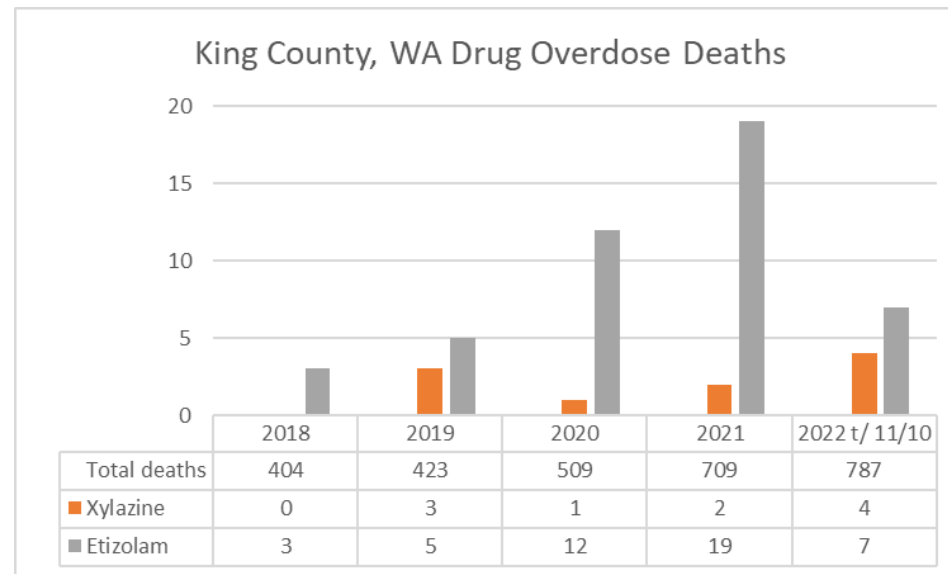
# Xylazine

## ➤ Crime lab/police evidence data show

- 9 cases statewide in 2021, 9 cases through Q2 in 2022.
  - <<1% of cases

## ➤ King County Medical Examiner data

- In 2022 all also had fentanyl present





# Xylazine

- **Opioid treatment program in Vancouver, WA**
- **Data courtesy of Dr. Kevin Fischer**

	Methamphetamine, % of +Drug Screens	Cocaine, % of +Drug Screens	Alcohol, % of +Drug Screens	Designer Sedatives, % of +Drug Screens	Xylazine, % of Fentanyl Samples
Q4 2021	59	6	17	4	
Q1 2022	56	8	14	2.6	1.7
Q2 2022	60	8	15	4	6.1
Q3 2022	62	9	17	2.4	3.8

Key Takeaways:

- Meth prevalence stable, but high
- Cocaine & alcohol prevalence stable
- Novel sedative prevalence fluctuating, but low
- Xylazine adulteration of FYL decreased 3<sup>rd</sup> quarter





# Xylazine

- Xylazine is present in the local drug supply in WA State, apparently often/mostly with fentanyl.
- # & % are small
  - apparently also small in Portland and SF
- East coast suggests it may become common in the drug supply and OD's
- Health consequences can be severe, wounds and overdoses
  - Naloxone works for the opioids
  - Rescue breathing often still needed

# Novel sedatives

Q4 2021	Q1 2022	Q2 2022	Q3 2022
Etizolam (6)	Etizolam (14)	Etizolam (15)	Etizolam (3)
Clonazolam (1)	Clonazolam (11)	Clonazolam (25)	Clonazolam (4)
Flubromazolam (12)	Flubromazolam (8)	Flubromazolam (9)	Flubromazolam (2)
Bromazolam (4)	Bromazolam (8)	Bromazolam (11)	Bromazolam (10)
Flualprazolam (6)	Flualprazolam (3)	Flualprazolam (2)	Flualprazolam (0)
		Phenibut (1)	Phenibut (0)

**Etizolam** – short acting BZD-like substance used outside US for insomnia and anxiety treatment

**Flubromazolam & Clonazolam** – designer BZDs worldwide, high risk for sedation & amnesia, fatal at low doses (no safe dose)

**Bromazolam** – designer BZD worldwide, similar effects to alprazolam

**Phenibut** – anxiolytic developed in Russia, similar in action to GHB and Rx baclofen; available in US as a supplement, “head shops”



# Overdose response

Select Language [Find Naloxone Near You](#)

**STOPOVERDOSE**.org [Basics](#) [Getting Help](#) [For Professionals](#) [Resources](#) [About](#) [Q](#)



## Minutes Count in an Opioid Overdose

Learn what to do, watch an opioid overdose training video, and download a brochure.

[Read More](#)

**HELPING INDIVIDUALS AND COMMUNITIES IN WASHINGTON STATE RESPOND TO PREVENT OPIOID OVERDOSE**

# Educational materials

**WARNING**  
**FENTANYL HAS BEEN FOUND IN BLACK TAR**

Recent overdose deaths involved **fentanyl** in black tar. This is new in King County.



**Fentanyl** continues to be most common in **pills**, primarily M30s. It can also be found in **white powders**.

**Reduce overdose risk**

- **Avoid using alone.** If you must use alone, have someone check on you often or use a service like [neverusealone.com](http://neverusealone.com).
- **Have naloxone (Narcan) ready** to reverse an overdose. Find it near you at [stopoverdose.org](http://stopoverdose.org).

Poster  
Fentanyl is found in black tar

**Don't be faked out.**



Knock-off pills sold on the street or online contain the deadly substance **fentanyl**.


**Be ready to help your friends.**  
WhatsApp chat line to use "Stopoverdose" or "Narcan" pills. Pills not obtained from suppliers on file and cannot be used.



11" x 17" poster  
Don't be faked out.


**Narcan saves lives**

Naloxone, or "Narcan", can be used to stop an overdose.



Anyone can get Narcan without a prescription.

**Be ready to help your friends.**  
You can get Narcan at nearby pharmacies and clinics. Use the resources to find more information about Narcan and where to get it at [stopoverdose.org](http://stopoverdose.org).



11" x 17" poster  
Narcan saves lives

Look for these signs of an **opioid overdose**

ABNORMAL BREATHING		
CAN'T BE WOKEN UP		
SKIN CHANGES		

Look for these signs of opioid overdose

**WARNING**  
**FENTANYL IS KILLING KING COUNTY RESIDENTS**

"Oxycodone" and "Percocet" pills sold on the street or online are **FAKE** and likely contain **fentanyl**.

**Fentanyl** can also be found in **white powders**.



**HOW TO PREVENT OVERDOSE**

- Don't use pills/powders from the street or online
- Don't mix drugs
- Don't use alone
- Have Naloxone (Narcan) ready Find it near you at [stopoverdose.org](http://stopoverdose.org)
- Call 911 if someone overdoses

- Fentanyl warning poster
- Fentanyl warning postcards
- Order printed copies of "Fentanyl is Killing King"

**FENTANYL WARNING** Public Health | King County

FENTANYL FOUND LOCALLY IN FAKE PILLS

- Fentanyl may be in your drugs—in pills, powder & heroin.
- You can't smell or taste fentanyl.
- Fentanyl can put you at greater risk for overdose and death.

**HOW TO AVOID OVERDOSE**

- DO NOT USE ALONE.**
- START WITH A TESTER SHOT.**  
Fentanyl is a potent drug about 100 times more powerful than other opioids.
- WATCH AND WAIT BEFORE THE NEXT PERSON USES.**
- HAVE NALOXONE READY.**  
You can get Naloxone at the Needle Exchange or visit [stopoverdose.org](http://stopoverdose.org) for more locations.
- AN OPIOID OVERDOSE IS A MEDICAL EMERGENCY. CALL 911 RIGHT AWAY.**  
Don't worry, the Good Samaritan Law protects you and the person overdosing.

**TREATMENT WORKS. CALL THE RECOVERY HELPLINE**

Fentanyl warning infographic

# Educational materials

## What's up with fentanyl?

### Strong



Fentanyl is a very strong opioid, **50x stronger** than heroin.

### Fast



Overdose can happen in **seconds or minutes**.

### Higher Risk



*Most overdose deaths in WA State now involve fentanyl.*

### What does it look like?

In WA State, most fentanyl has been in blue pills with a "M30" stamp. It's sometimes in drugs that look like powder, or a rock like crack cocaine.

**Fentanyl could be in any drug you buy on the street or online.** What fentanyl looks like will continue to change.



### What's the risk?

The amount and strength of fentanyl can **vary a lot**.

One pill might have a deadly amount.

Another pill might have very little, if any, fentanyl.



### Naloxone works on fentanyl.

**Carry naloxone.** Tell people you have it and how to use it. Because fentanyl is so strong, it may take more than one dose to work. Keep extra kits around.



### Meth does not protect from OD.

Using meth along with fentanyl actually **increases the chance of overdose**.

If you use both meth and fentanyl, use one at a time, and pace yourself slowly with small amounts.



### Mythbusting Facts

- 1 You can overdose on fentanyl however you use it:** if you smoke, swallow, snort, or inject.
- 2 It's safe to respond to a fentanyl overdose!** You can't overdose just by touching fentanyl or drugs that contain fentanyl.

**ADA I** ADDICTION DISORDER AND ALCOHOL INTERVENTION

**CENTER FOR COMMUNITY-ENGAGED DRUG EDUCATION, EPIDEMIOLOGY AND RESEARCH**

**W UNIVERSITY of WASHINGTON** PSYCHIATRY & BEHAVIORAL SCIENCES School of Medicine

**Want to learn more?**  
Visit [stopoverdose.org](http://stopoverdose.org)

## What can I do?

- Start with a **small amount** and **go slow**. Use one drug at a time.
- When you can, **use around other people**. Use one person a time. That way, if someone overdoses, one person can respond.
- If you do use alone, **let a friend know they should check on you**.



Try [neverusealone.com](http://neverusealone.com) or call **(800) 484-3731**. You provide some basic info, and they stay on the phone with you for a few minutes after you use. If you stop responding, they call 911.

- Watch your tolerance.** If you take a break from using fentanyl or other opioids, use way less when you start again.

### Signs of a fentanyl OD:

- Not breathing. Gurgling or heavy snoring.
- Won't wake up.
- Blue or gray skin, lips or fingernails.
- Chest muscles may get stiff.



### What to do in an OD:

- Call 911 right away.** You don't have to say there's been an overdose, just that someone is not breathing.
- Give a dose of naloxone.** You may need to give another dose every 2 minutes. Do rescue breathing until they start to breathe on their own.



**Learn more about fentanyl and find naloxone at:**  
[StopOverdose.org](http://StopOverdose.org) & [LacedAndLethal.com](http://LacedAndLethal.com)

**STOPOVERDOSE**.org

**LACED & LETHAL**

<http://stopoverdose.org/wp-content/uploads/2022/10/Fentanyl-Handout-2022-10-Final-web.pdf>

Programs in WA State can order copies of the flier <http://adaiclearinghouse.net/>

## LEARN ABOUT TREATMENT

*for you, your family member or friend, or your community*

ABOUT US

GET STARTED



### Treatment Options

This section provides information about the treatments for opioid use disorder and stimulant use disorder. Learn more about these options and what might work for you.



### For Professionals

This section features resources, tools, and information for professionals who work with people who have opioid or stimulant use disorder.



### For Family/Friends

This page provides information and tools to help you better understand opioid or stimulant use disorder and how you can support someone you care about.



# Questions, comments?

- Please write in the chat



# Upcoming Training

## Next Topic:

- What's the Latest: Xylazine
  - February 15<sup>th</sup> 12-1pm
  - Registration link:  
<https://washington.zoom.us/meeting/register/tJYvf-mgpj0vEtMX8s9pv9grKNCRK9m1x2Nz>



# Ongoing ADAI Trainings

- **Monthly Care Navigator Call** : *Facilitated by Lisa Rey Thomas, PhD*  
**10am-11am Second Wednesday of the month**
- **Monthly Jail MOUD Call**: *Facilitated by Mandy Owens, PhD*  
**11am-12pm Second Tuesday of the month**
- **Quarterly Emergency Department Call**: *Facilitated by Wendy Williams Gilbert, PhD, RN and Chris Buresh, MD, MPH*  
**9am-10am Last Tuesday of the month**

To register email Ali Lenox, [alilenox@uw.edu](mailto:alilenox@uw.edu)