

Current Drug Trends

Michael Palladini, RPh MBA

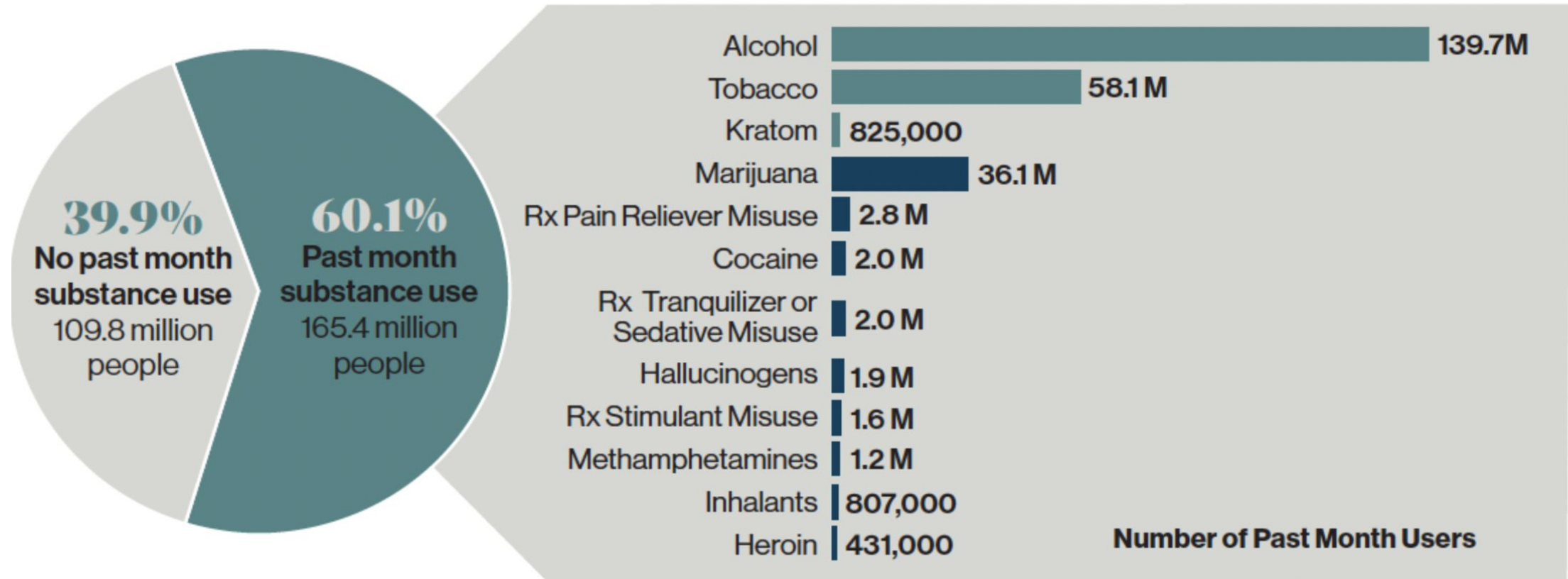


June 7, 2023
State College, PA

Our Objectives

- **List several drugs that are causing harm among users.**
- **Understand the trends of drug use and what promotes and maintains those trends.**
- **Know the potential treatments for specific substance use disorders.**

FIGURE 1. Past Month Substance Use Among People Aged 12 Years or Older: 2019



Rx = prescription.

Note: Substance use includes any illicit drug, kratom, alcohol, and tobacco use.

Note: The estimated numbers of current users of different substances are not mutually exclusive because people could have used more than one type of substance in the past month.

Source: Substance Abuse and Mental Health Services Administration. *Key Substance Use and Mental Health Indicators in the United States: Results from the 2019 National Survey on Drug Use and Health*. Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration; 2020. Accessed November 11, 2022. <https://www.samhsa.gov/data/>

SAMHSA Announces National Survey on Drug Use and Health (NSDUH) Results Detailing Mental Illness and Substance Use Levels in 2021

- Among people aged 12 or older in 2021, ***61.2 million people (or 21.9 percent of the population) used illicit drugs*** in the past year.
- ***46.3 million people aged 12 or older (or 16.5 percent of the population)*** met the applicable DSM-5 criteria for having a substance use disorder in the past year, including ***29.5 million people who were classified as having an alcohol use disorder***
- ***1 in 5 adolescents had a major depressive episode*** in the past year
- ***1 in 3 adults aged 18 to 25 had a mental illness*** in the past year



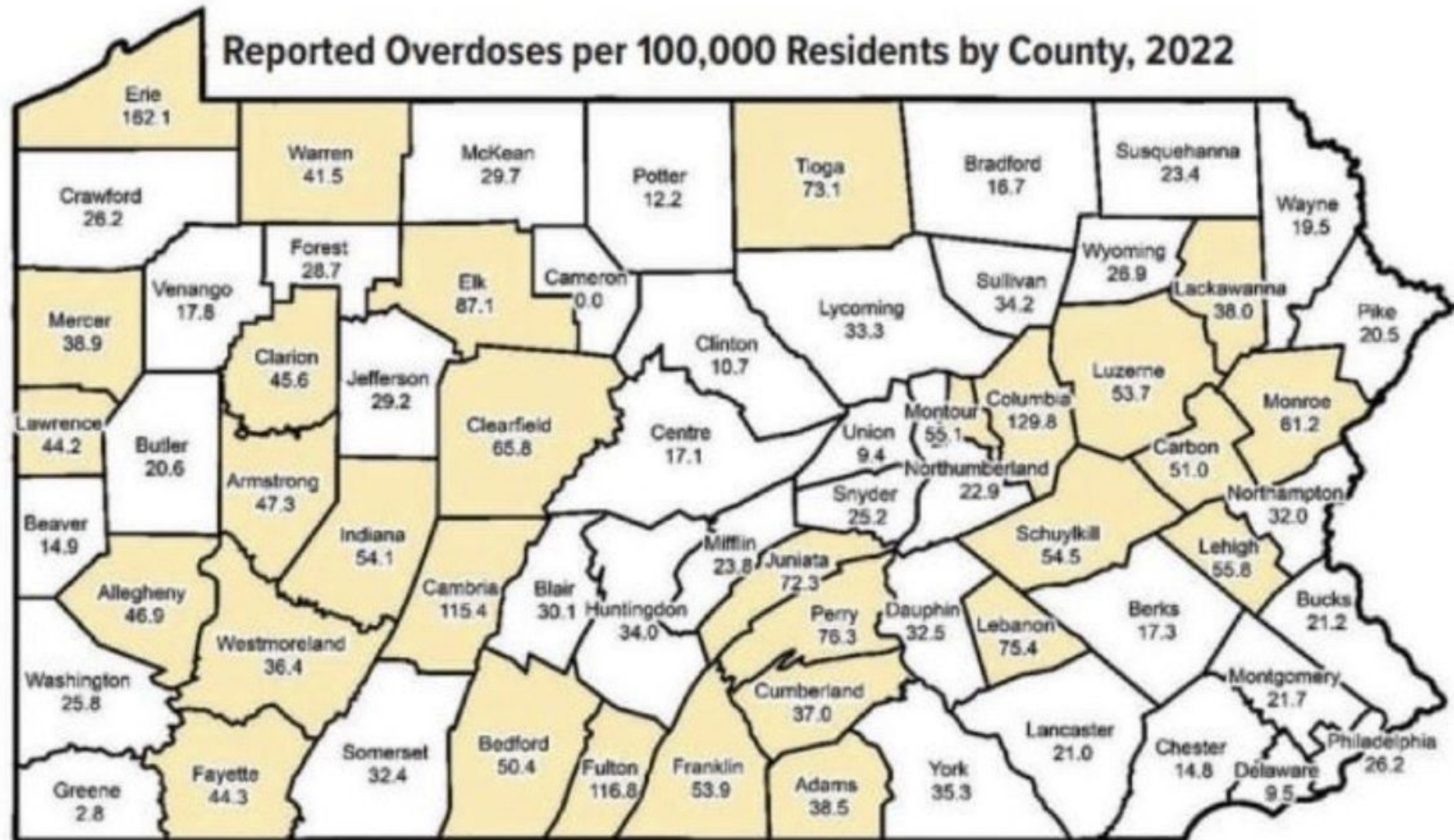
NCDAS

National Center for
Drug Abuse Statistics

Pennsylvania

- 66,000 or 7.22% of 12- to 17-year-olds report using drugs in the last month.
- 84.85% report using marijuana in the last month.
- 0.44% report using cocaine in the last year.
- 0.22% report using methamphetamines.
- 1.86% report misusing pain relievers.
- 9.19% of all 12- to 17-year-olds used alcohol in the last month.
- 436,000 adults aged 18- to 25-year-olds used drugs in the last month.

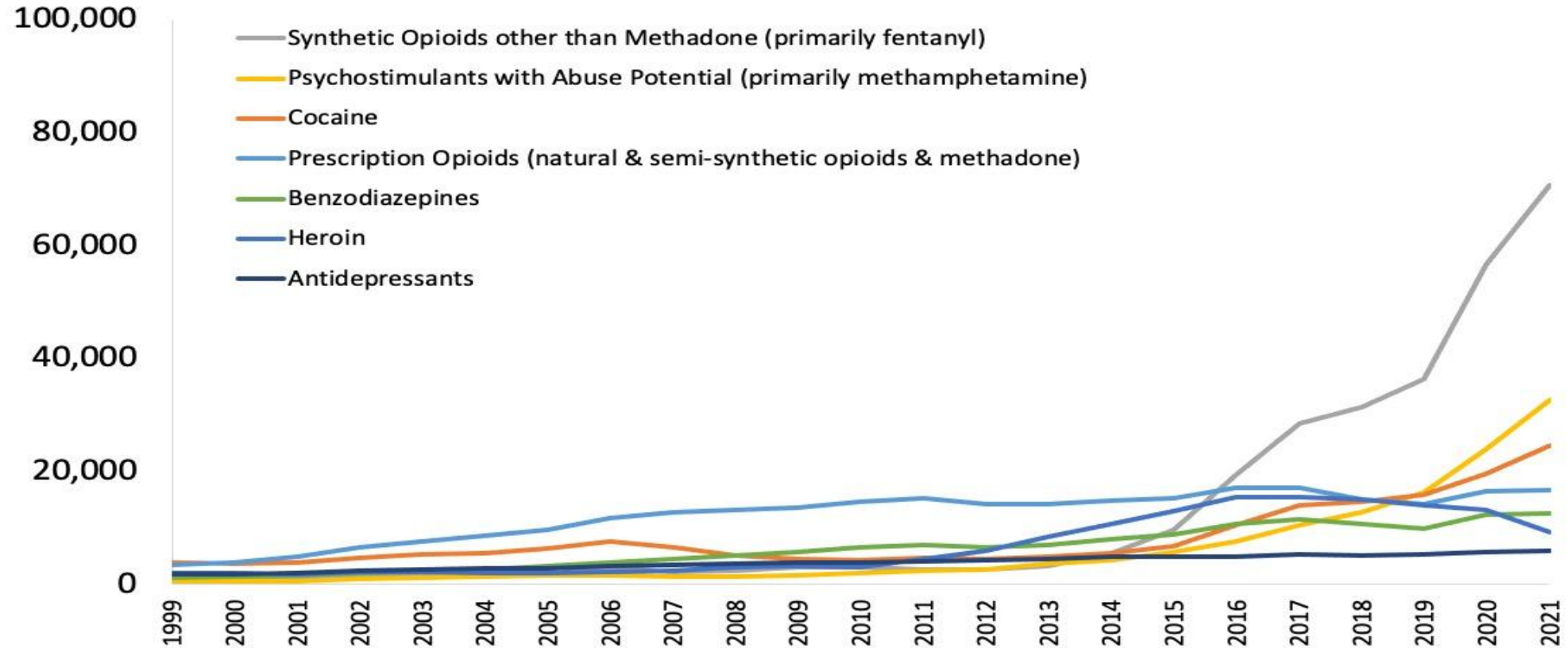
Reported Overdoses per 100,000 Residents by County, 2022



Statewide Rate, 2022 = 36.2 Overdoses per 100,000 People

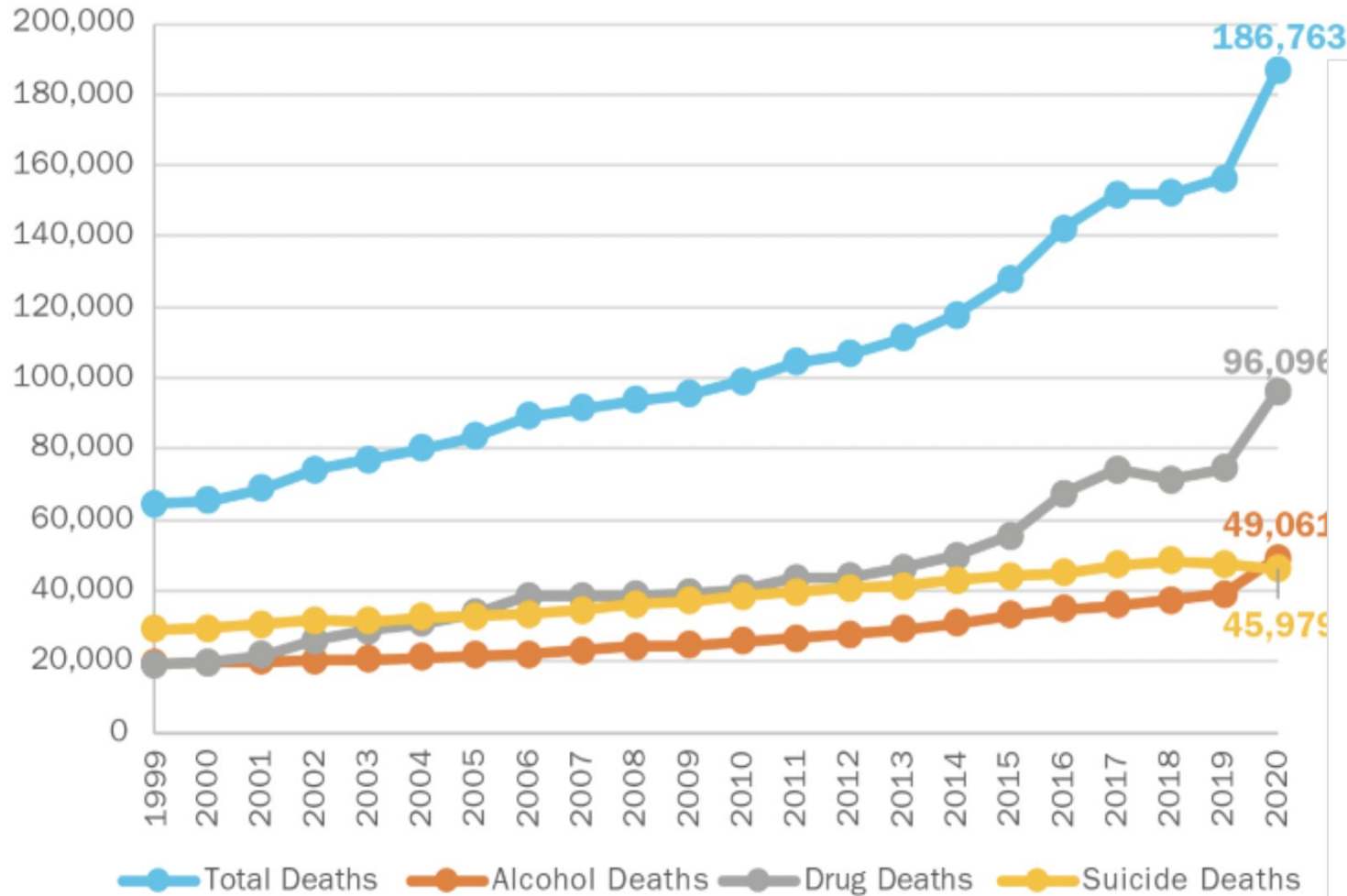
□ At or Below Statewide Rate □ Above Statewide Rate

Figure 2. National Drug-Involved Overdose Deaths*, Number Among All Ages, 1999-2021



*Includes deaths with underlying causes of unintentional drug poisoning (X40–X44), suicide drug poisoning (X60–X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10–Y14), as coded in the International Classification of Diseases, 10th Revision. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2021 on CDC WONDER Online Database, released 1/2023.

Annual Deaths from Alcohol, Drugs, and Suicide in the United States, 1999–2020



While alcohol, drug, and suicide deaths have been increasing for decades, the 2020 increase was unprecedented and driven by a 30 percent increase in the rate of drug-induced deaths and a 27 percent increase in the rate of alcohol-induced deaths.

**2022 Drug Seizure Totals**

Drug	Total Seized	Value of Amount Seized
Cocaine	546.82 lbs.	\$13,389,880
Crack Cocaine	18.39 lbs.	\$294,240
Heroin	60.14 lbs.	\$2,044,760
Fentanyl	348.36 lbs.	\$7,508,000
LSD – Pills and Paper	981 doses	\$19,620
Marijuana THC – Liquid	140.09 pints	\$938,603
Marijuana THC Solid	641.17 lbs.	\$3,205,850
Marijuana Plants	2,366 plants	\$390,390
Processed Marijuana	7,832 lbs.	\$23,496,030
Methamphetamines	691.54 lbs.	\$6,915,400
MDMA – Ecstasy	25.055 lbs.	\$82,698
MDMA – Pills	8,716	\$130,740
Other Narcotics	335.79 lbs.	\$671,580
Other Narcotics (pills)	252,753	\$6,318,825
	Total Value	\$65,406,616

National Drug Control Strategy 2022

- Reduction of overdoses and SUDs
- Reduction of alcohol use and vaping in 12 to 17-year-old group
- Increase the number of syringe service programs (SSPs) and drug safety checking
- Increase treatment admissions, and behavioral health personnel, including peer-led organizations
- Increase treatment court training and implementation
- Increase MOUD in prisons (medications for opioid use disorder)



“Social media” drug strategy

FAQs for Alcohol Trends 2023



- **Is the beverage alcohol industry growing?**
 - Yes, in the U.S., alcohol consumption increased by 45 million cases.
- **How fast is the alcohol industry growing?**
 - The industry is expected to grow by 10.51% each year through 2025.
- **What is the next alcohol craze?**
 - Herbal and botanical flavors will be popular across all types of alcohol, including RTDs. Spirit brands will be innovating while still trying to make the beverage experience more accessible.
- **What is the fastest growing product in the drinks industry?**
 - Ready-to-drink products are currently the fastest growing product in the industry and are expected to earn an additional 8% of the market by 2025.
- **What are some U.S. beverage alcohol trends in 2023?**
 - Craft beers will experience a resurgence as innovative new flavors continue to enter the market.

Alcohol Statistics

- By age 18, youth show high rates (>74%) of lifetime alcohol consumption (having had at least one drink during their lifetime)
- High rates of current drinking (having had at least one drink during the past week): 25% overall, 48% for 18-year-olds
- A proportion of youth report starting drinking by the completion of their elementary education (by age 13: 15%)

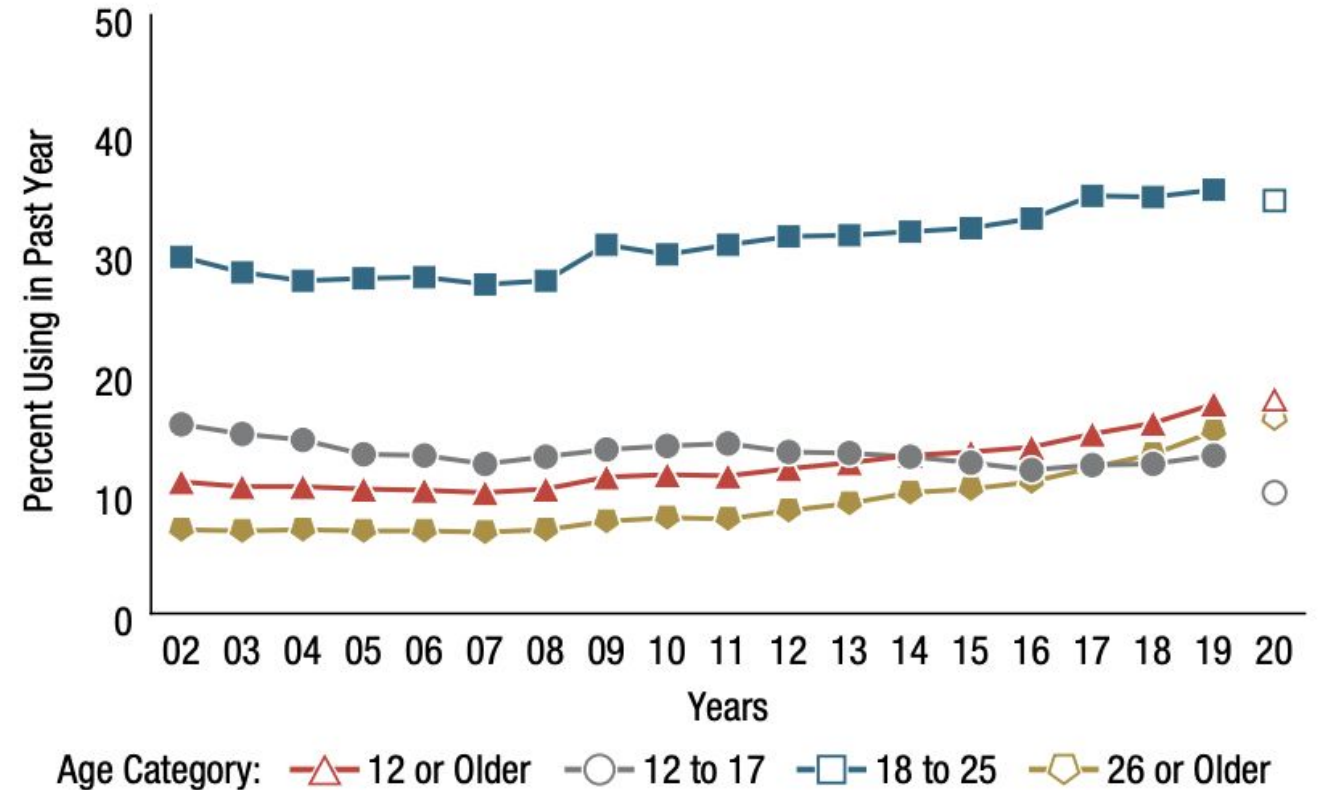
Alcohol Use Disorder

- 1.7% of 12- to 17-year-olds have AUD.
- 407,000 teenagers aged 12- to 17-years-old met the criteria for Alcohol Use Disorder (AUD) in the last year.
- 12.1% of children 17 years and under live with at least one parent with alcohol use disorder.

Marijuana Use

- 6.9% of 12th graders use marijuana daily.
- 43.7% have tried marijuana in their lifetime.
- 35.2% consumed marijuana in the last year.
- 62.8% of 12th graders who used marijuana in the last year consumed marijuana via vaping.

Figure 11. Past Year Marijuana Use: Among People Aged 12 or Older; 2002-2020



Note: There is no connecting line between 2019 and 2020 to indicate caution should be used when comparing estimates between 2020 and prior years because of methodological changes for 2020. Due to these changes, significance testing between 2020 and prior years was not performed.



 [News Release](#)

Marijuana and hallucinogen use among young adults reached all time-high in 2021

NIH-supported study also found past-month vaping levels rebound after early pandemic drop

5 Vaping Trends That Will Continue in 2023

E-cigarette use has grown substantially over the years with many high school students and younger generations opting to vape rather than smoke.

1. Smaller is better
2. Diversity of flavors
3. Disposable devices
4. Nicotine salts
5. Tech-oriented devices





Vaping THC: Police working to slow flood of illegal cartridges



RENATTA SIGNORINI
Wednesday, April 19, 2023 5:01 a.m.



RENATTA SIGNORINI | TRIBUNE-REVIEW

Criminal activity surrounding cartridges containing THC oil or liquid has been getting attention from police.

Police say they are facing a challenge keeping up with crimes in the wake of the popularity of vaping THC.

Oil or liquid containing THC — the psychoactive component of marijuana — is funneled into cartridges and used with an e-cigarette.

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Legal

Facebook, Twitter, Email, Pinterest, LinkedIn, Instagram, YouTube

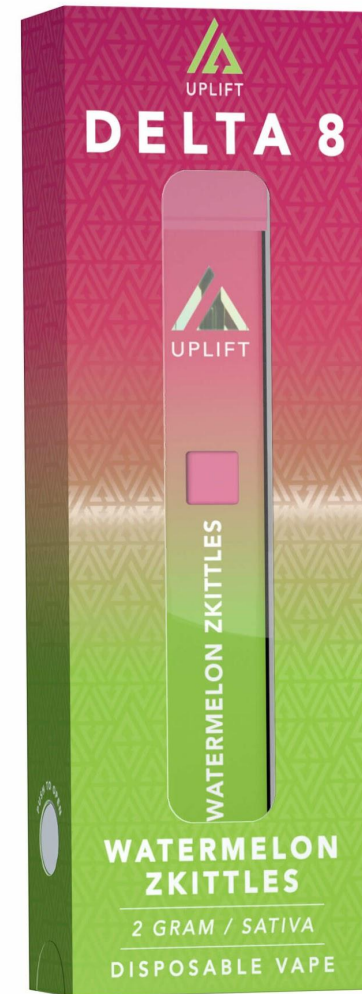
HEALTH CARE

RJR uses California as test market for skirting upcoming national menthol cigarette ban

The tobacco giant launched “cool” and “crisp” cigarettes that use a synthetic coolant instead of menthol — and sales of the products are zooming in the Golden State.



Is Delta 8 Legal?



From Psilocybin Nasal Sprays to Transdermal Ayahuasca, Inside the New Wave of Psychedelics

- Aya Biosciences, a California-based cannabinoid and psychedelic drug development company, alone is investigating more than 70 psychedelic compounds for eating disorders, pain, addiction, and a number of other conditions.
- Gilgamesh, a pharmaceutical company developing drugs based on psychedelics, is currently running three drug discovery programs: one for depression and anxiety, one for substance use disorders such as opioid use disorder, and one for a take-home drug for ADHD and mood or anxiety disorders.
- Tactogen, the pharmatech startup working on “the next generation of MDMA-like medicines,” with an interest in developing a milder form of MDMA that can be taken at home as opposed to with a therapist
- ATAI, which is developing nine compounds including a derivative of mitragynine, the active compound in Kratom
- Cybin Corporation, which is synthesizing a sublingual strip of psilocybin, the psychoactive component in magic mushrooms
- Mindmed, is researching 18-mc, a synthetic derivative of ibogaine for opioid use disorder, among a number of other psychedelics.

8:43 ↗



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How To Buy Magic Mushrooms Online and Be Safe Doing It

🕒 July 9, 2022 👤 Oliver

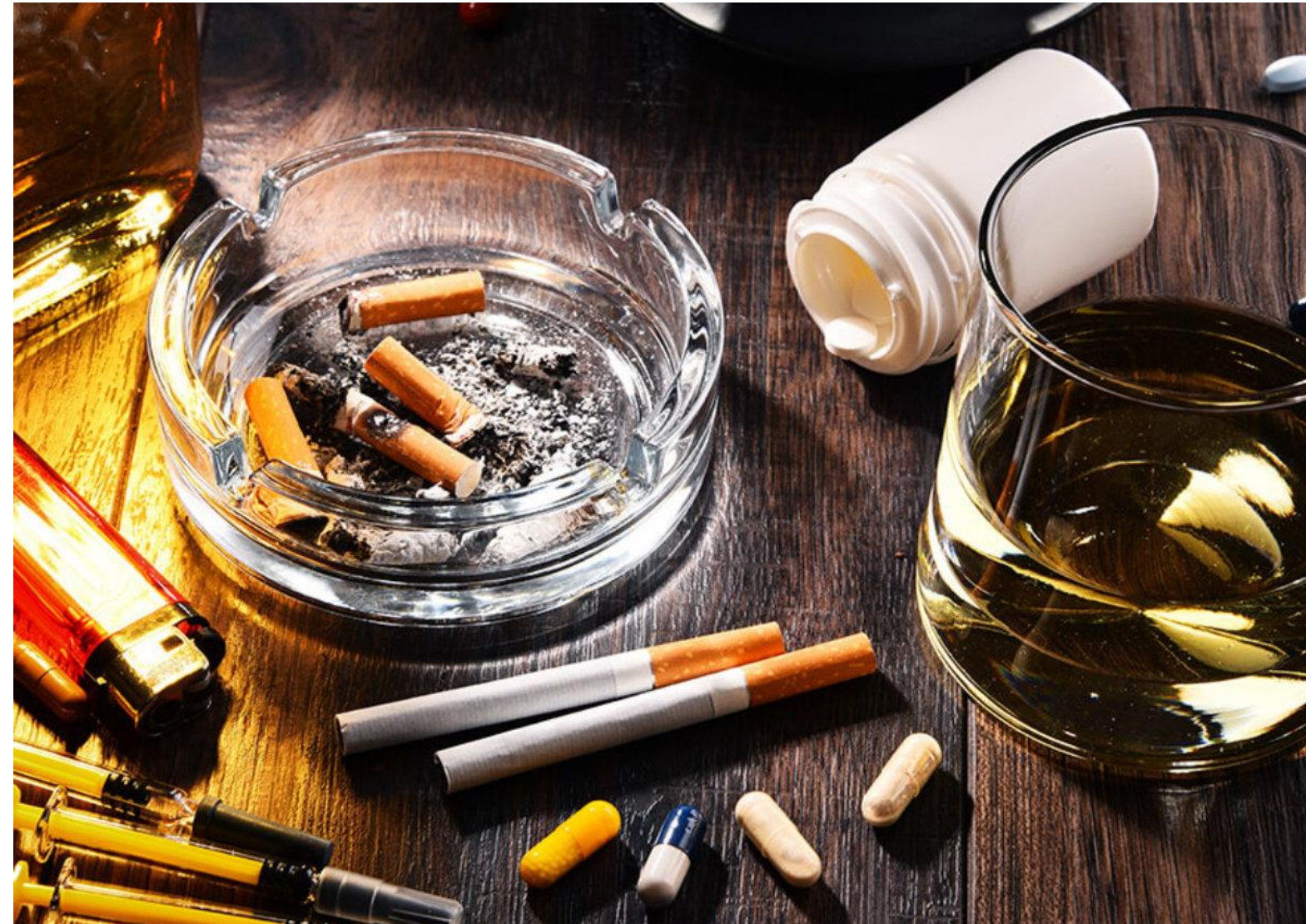
📁 Happy Mushrooms 💬 49 Comments



See how to buy magic mushrooms online, on the street or in the wild. Discover how to be safe doing it even it is illegal where your at.

Polysubstance Abuse

- Common in those with an OUD
- Nicotine, alcohol, other opioids including prescribed opioids, benzodiazepines (and other sedatives), stimulants including cocaine and amphetamine-related compounds (methamphetamine)



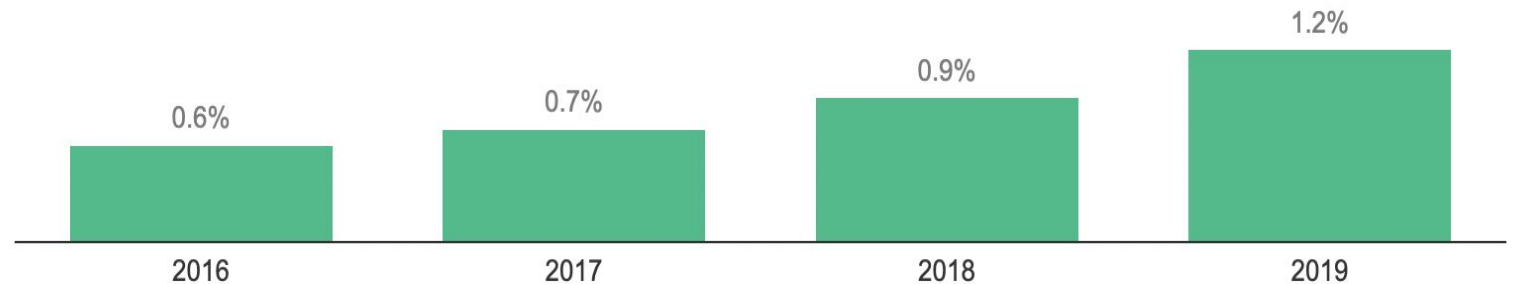
MOUD

- Between 2017 and 2019, the national distribution of methadone increased 12%
- Buprenorphine prescriptions dispensed increased by 9% nationally,

Figure 5

Share of Medicaid Enrollees With at Least One Prescription Used to Treat OUD or Opioid Overdose, 2016-2019

Share of Enrollees with a Prescription Number of Prescriptions Per Enrollee



NOTE: 44 states and DC were included in this analysis. 6 states (AR, FL, MA, MS, NC, VA) were excluded due to missing or inconsistent data. Analysis includes Medicaid and CHIP prescriptions.

SOURCE: KFF analysis of the T-MSIS Research Identifiable Files, 2016-2019. • [PNG](#)



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HEALTH



Black Americans are now dying from drug overdoses at a higher rate than whites

March 2, 2022 · 2:15 PM ET

Heard on [All Things Considered](#)

By [Brian Mann](#)

STATE of MIND

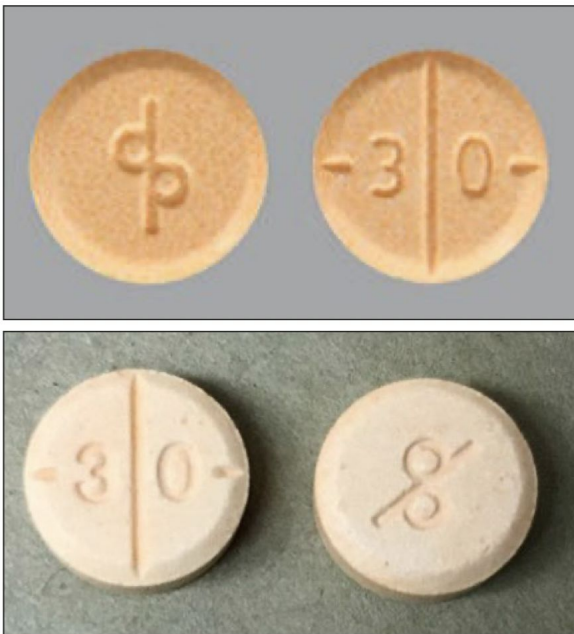
Why Adderall Is So Hard to Find Right Now

BY MARY HARRIS MARCH 26, 2023 • 9:00 AM



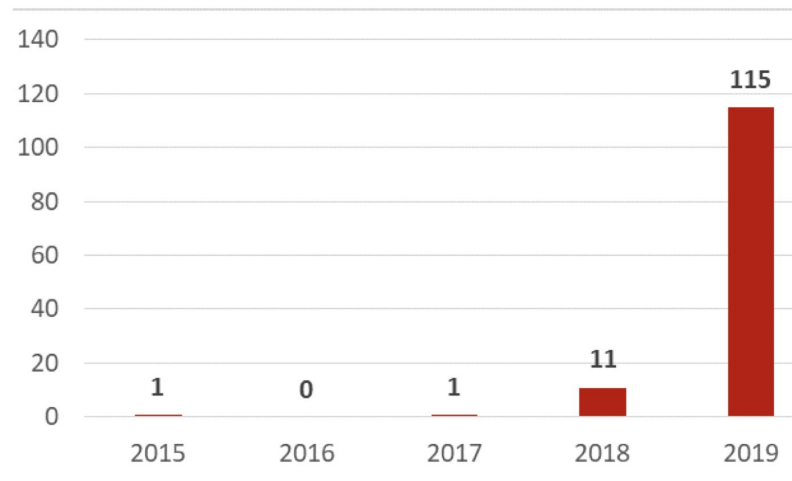
Methamphetamine

Figure 20. Legitimate Adderall Tablets (Top) and Counterfeit Tablets (Bottom) Containing Methamphetamine



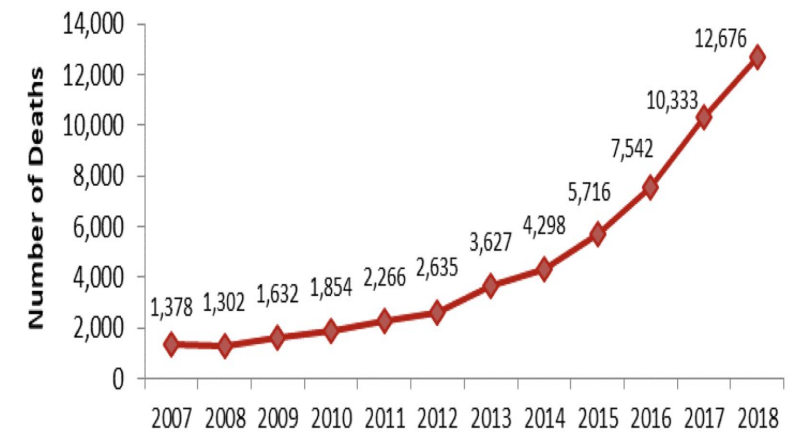
Source: Northwest High Intensity Drug Trafficking Area

Figure 19. EPIC NSS Seizure Totals for Methamphetamine in Pill Form



Source: El Paso Intelligence Center, National Seizure System

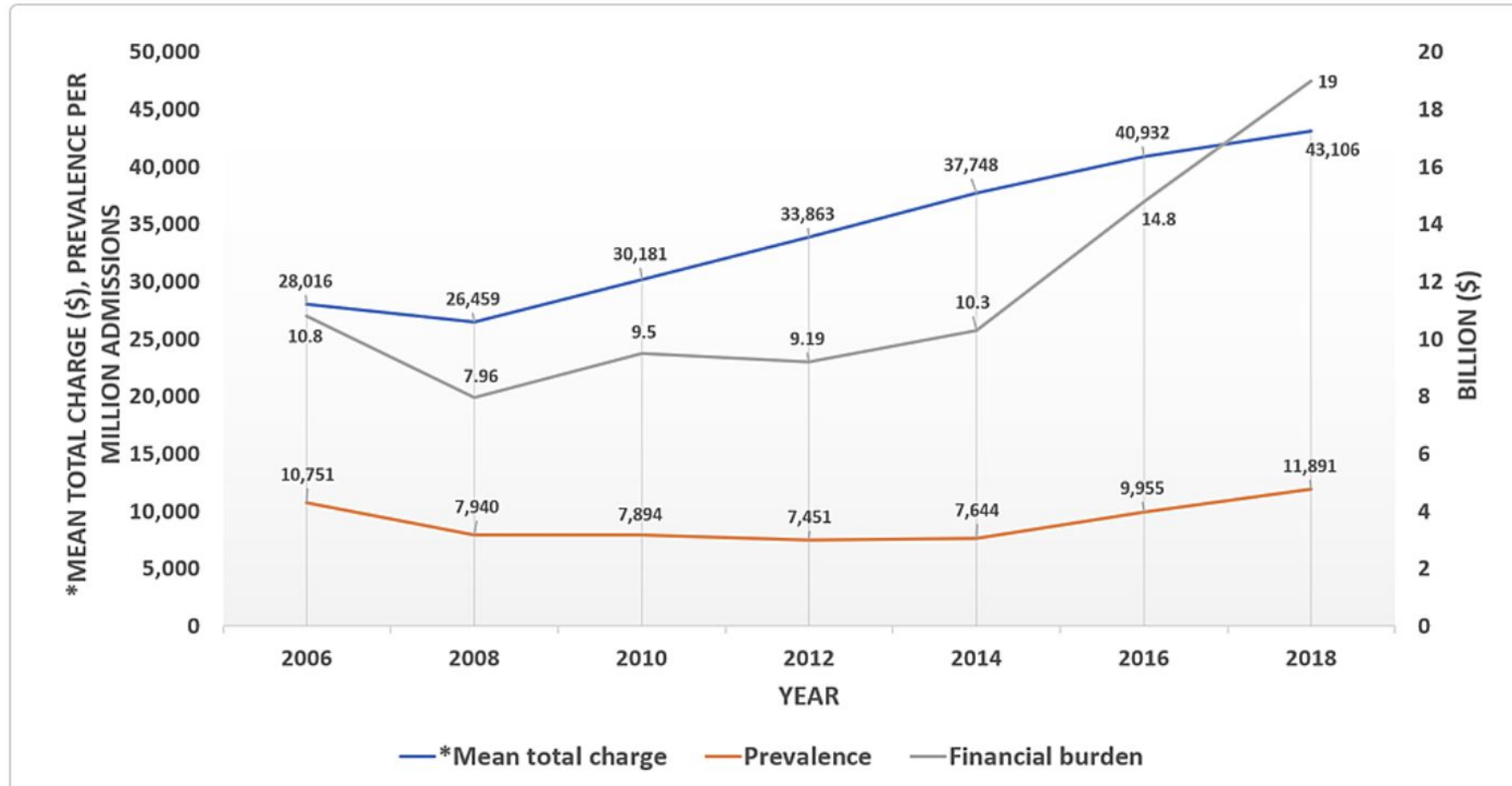
Figure 13. Psychostimulant-involved Drug Poisoning Deaths, 2007 - 2018



Source: National Center for Health Statistics/Centers for Disease Control and Prevention

Cocaine

- Between 2012 and 2018, the rate of cocaine-related overdose deaths increased from 1.4% to 4.5%.
- In 2013, there were fewer than 5,000 cocaine-related deaths worldwide compared to 10,000 in 2016.



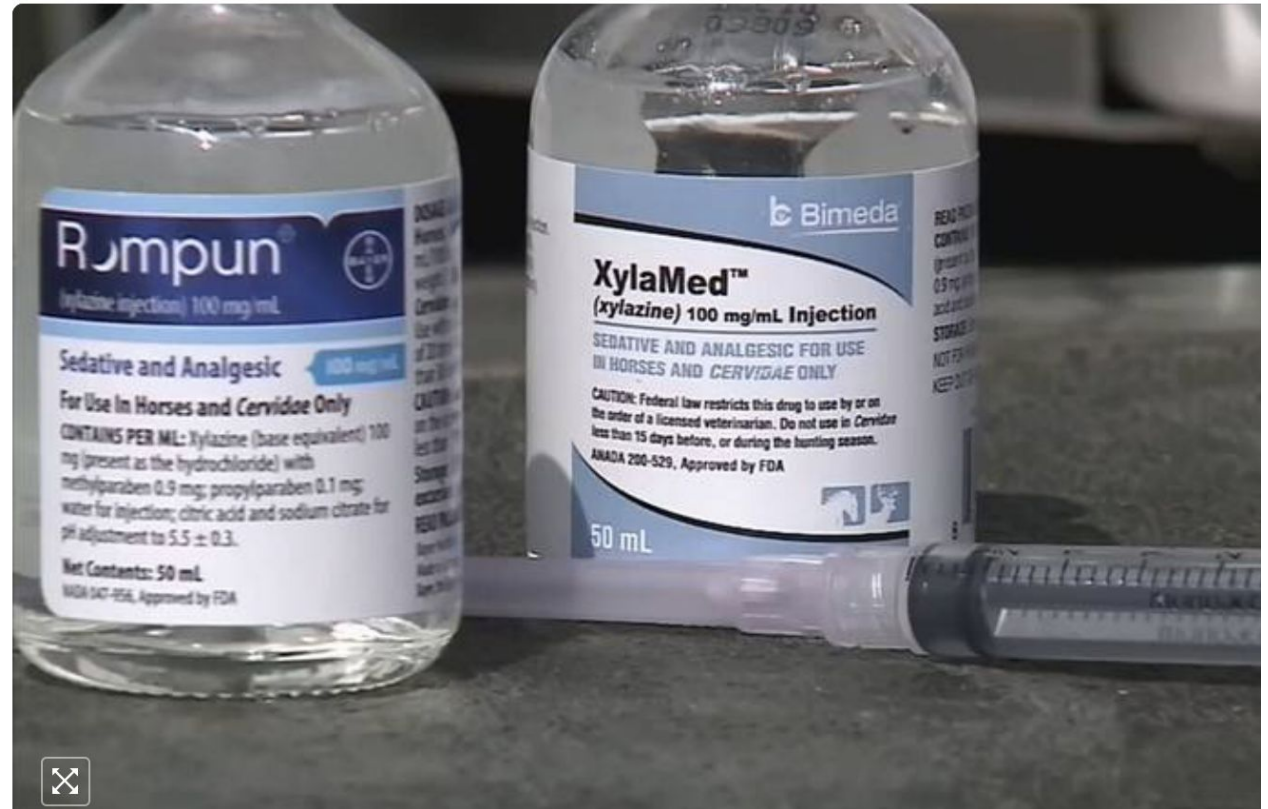
NATIONAL

Lawmakers call on DEA to ramp up fight against surge in use of 'zombie drug' xylazine



By **Samantha Manning**, **CMG Washington News Bureau**

March 30, 2023 at 6:38 pm EDT



Codeine & Promethazine (and Sprite)

Yeah

Yeah

Droppin' the Wock'

*Droppin' the Wock' in the
mother***n' Sprite, yeah*

Yeah

Droppin' the Wock' in the Sprite

Droppin' the Wock' in the Sprite

Droppin' the Wock' in the Sprite

Yeah, uh, yeah

Droppin' the Wock' in the Sprite

Sippin on Wock' with no ice

Poppin' a Perc' for the night



Forty-three druggings, seven deaths: New York clubgoers face wave of violent robberies



Medical examiners found drugs in the victims' bodies that included fentanyl, cocaine, ethanol, and 3-fluorofentanyl

New and Emerging Drugs of Abuse

MARCH 2021

New psychoactive substances (NPS) are “substances of abuse, either in pure form or a preparation, that are not controlled by [international drug conventions], but which may pose a public health threat.”

Butonitazene and Isotonitazene

Etizolam

Grey Death and Smurf Dope

Khat

Lean

Tianeptine/Tianaa

Purple Heroin

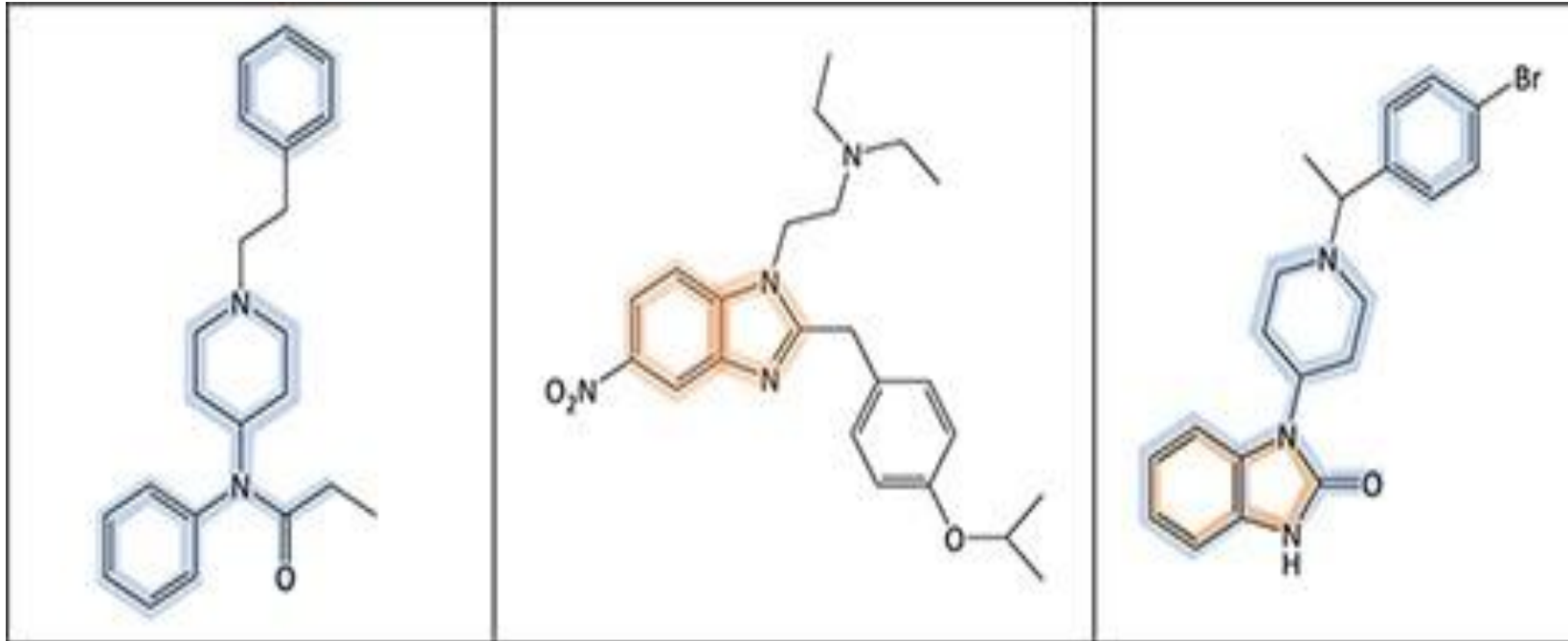
Xylazine

Butonitazene and Isotonitazene



- Synthetic substances of the benzimidazole structural class are being trafficked and abused for their opioid-like effects.
- In the late 1950s, the pharmaceutical research laboratories of the Swiss chemical company CIBA Aktiengesellschaft synthesized numerous substances in this structural class.
- These benzimidazole-opioids are not approved for medical use in the United States. Ten of these benzimidazole-opioids are controlled in schedule I of the CSA
- Pharmacology similar to fentanyl and morphine, bound to and activated the mu-opioid receptor
- Toxicology analyses co-identified some of these benzimidazole-opioids with other opioids, stimulants, and benzodiazepines.

Figure 1. Chemical structures of fentanyl (left), isotonitazene (middle) and brophine (right). Brophine shares ...





Etizolam

- A "thienodiazepine" which is a structural relative of "benzodiazepine"
- Approved for medical use in other countries

Grey Death and Smurf Dope

- Gray death is a color that is often compared to cement or concrete. The substance can be found in a variety of textures and sizes. It can appear in larger rock-like chunks or as a gray powder substance.
- May contain heroin, fentanyl, carfentanil, U-47700
- "Smurf Dope" is meth and other drugs, usually potent opioids, dyed blue for identification and marketing purposes



Khat

- Khat is a green, leafy plant typically grown in the Arabian Peninsula and many parts of Africa. It is chewed for its stimulant effect. The World Health Organization classified khat as a drug of abuse in 1980.
- Its principal components, cathine and cathinone, are considered controlled substances in the United States.
- Synthetic cathinones are marketed as cheap substitutes for other stimulants such as methamphetamine and cocaine. Products sold as Molly (MDMA) can contain synthetic cathinones instead.
- synthetic cathinones are chemically similar to drugs like amphetamines, cocaine, and MDMA.
- *3,4-methylenedioxypropylone* (MDPV), Flakka

Tianeptine/Tianaa

- An atypical tricyclic antidepressant (TCA)
- Sold in US as a supplement
- Activity at the mu-opioid receptor
- Very short half-life, which means its effects don't last very long in the system. This leads users to increase dosages and using more often
- Mississippi, Alabama, Michigan, Tennessee, Georgia, Indiana, and Ohio have banned its use

Users getting hooked on 'gas station heroin' pills that have 'painful opioid-like' withdrawals: report

By [Melissa Klein](#)

March 11, 2023 | 2:14pm | Updated



Purple Heroin

- Purple in color
- Samples have contained: fentanyl, acetaminophen (the ingredient found in Tylenol), flualprazolam (an illicit sedative similar to Xanax), buspirone (an anti-anxiety drug), niacinamide (a form of Vitamin B) and, most notably, a new drug named ***brorphine***
- A powerful synthetic opioid, though it is not a fentanyl analog. Not approved for any medical uses and it is not readily detectable in standard hospital blood tests.
- Its potency is similar to that of fentanyl

			
Clonazolam	Etizolam	Etizolam	Desalkylflurazepam

Benzo Dope

- Nonapproved benzos combined with opioids, or single-source
- Withdrawal complicates situation
- Detection difficult



Xylazine/Tranq Dope

- Opioids that contain the veterinary tranquilizer *xylazine*
- Fentanyl has a short duration of action
- Adding xylazine gives the fentanyl “legs,” meaning it extends the high.
- Xylazine “gives the dope more of a heroin effect, it’s a good rush.”
- Use detected originally in early 2000’s in Puerto Rico



PUBLIC SAFETY ALERT

DEA Reports Widespread Threat of Fentanyl Mixed with Xylazine

FROM AFP NEWS

US Labels 'Tranq' Drug Linked To Fatal Overdoses As 'Emerging Threat'

By AFP - Agence France Presse April 12, 2023

Emerging Threat of FAAX **(fentanyl-adulterated or associated xylazine)**

- Federal \$46 billion drug budget request to Congress can be used to respond.
- If the budget request is not approved, there could be the option to reallocate money within the Office of National Drug Control Policy.
- Such funds could be used to:
 - Test drugs on the street for xylazine
 - Collect data on FAAX
 - Invest in care for people exposed to FAAX
 - Develop potential treatments for a xylazine-related overdose.

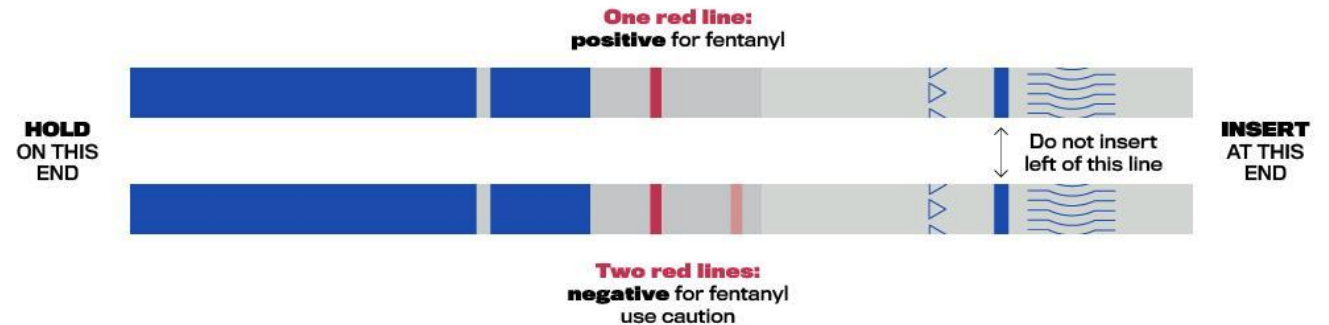
Gabapentin Presents High Potential for Misuse

- Gabapentin has known abuse potential and has been reported as an agent highly pursued use in potentiating opioids.
- 24% of patients with prescriptions for both gabapentin and opioids had at least 3 prescription claims surpassing specified dosage thresholds compared with the 3% and 8% of patients prescribed gabapentin or opioids alone,
- Abuse of gabapentin in concert with opioids has been associated with a 4-fold raised risk of respiratory depression,
- Gabapentin grew from 39 million prescriptions in 2012 to 64 million prescriptions in the United States in 2016, making it the 10th most prescribed medication that year.

Test Strips



FENTANYL TEST STRIPS



Syringe Service Programs (SSPs)

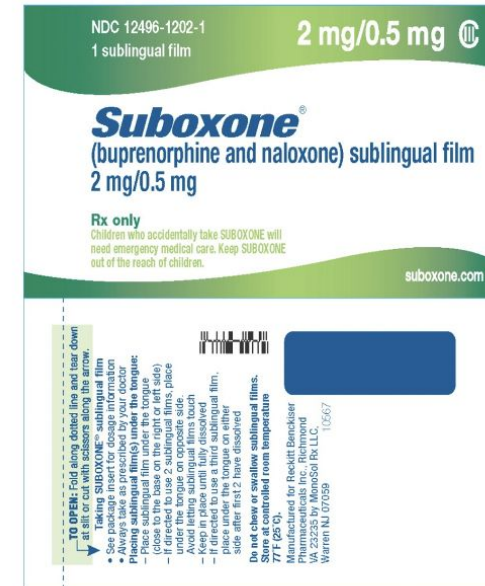
- State legislatures typically must authorize SSP operations in order to exempt programs from laws that criminalize drug paraphernalia, such as the syringes these programs distribute.
- While the opioid crisis has led to a near-doubling of such legislative authorizations between 2014 and 2019, 19 states—including 14 that are experiencing, or at risk for, an outbreak—still have not explicitly authorized syringe programs.
- Furthermore, many states that permit SSP implementation do not provide the programs with any funding and impose additional laws or regulations that require programs to deviate from best practices, hindering their effectiveness.

Treatment for Opioid Use

- Medications for Opioid Use Disorder (MOUD) aka MAT
 - Methadone
 - Buprenorphine (Suboxone, Sublocade)
 - Naltrexone (Vivitrol)
 - Psychotherapy
 - Cognitive Behavioral Therapy (CBT)



Methadone



Buprenorphine



Naltrexone

Treatment for Stimulant Use

Currently, there are no accepted FDA-approved pharmacotherapy treatment options available for cocaine or methamphetamine use disorders

(Experimental Interventions)

- Psychostimulants (methylphenidate, dexamphetamine)
- Bupropion
- SSRIs, Antidepressants
- Topiramate
- Naltrexone

Psychotherapy

- Contingency Management, CBT



Treatment Alcohol Use

- Medications include:
 - Naltrexone
 - Acamprosate
 - Disulfiram (Antabuse)
- Psychotherapy
 - CBT
- Peer Support

Alcoholics
Anonymous

Treatment for Cannabis Use

- Cognitive-behavioral therapy
- Contingency management
- Motivational enhancement



**THANK
YOU!**

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Michaelpalladini.com

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