

National Core Curriculum –Three Hour Virtual Overview, 2nd Edition

Part 1:
Stimulants: What Are They and
Who Uses Them?



ATTC

Addiction Technology Transfer Center Network
Funded by Substance Abuse and Mental Health Services Administration

Presented by: Beth A. Rutkowski, MPH, Director of Training, UCLA
ISAP/Co-Director, Pacific Southwest ATTC (HHS Region 9)

MPATTC, March 9, 2021

Curriculum Overview and Introductions



ATTC

SAMHSA
Substance Abuse and Mental Health
Services Administration

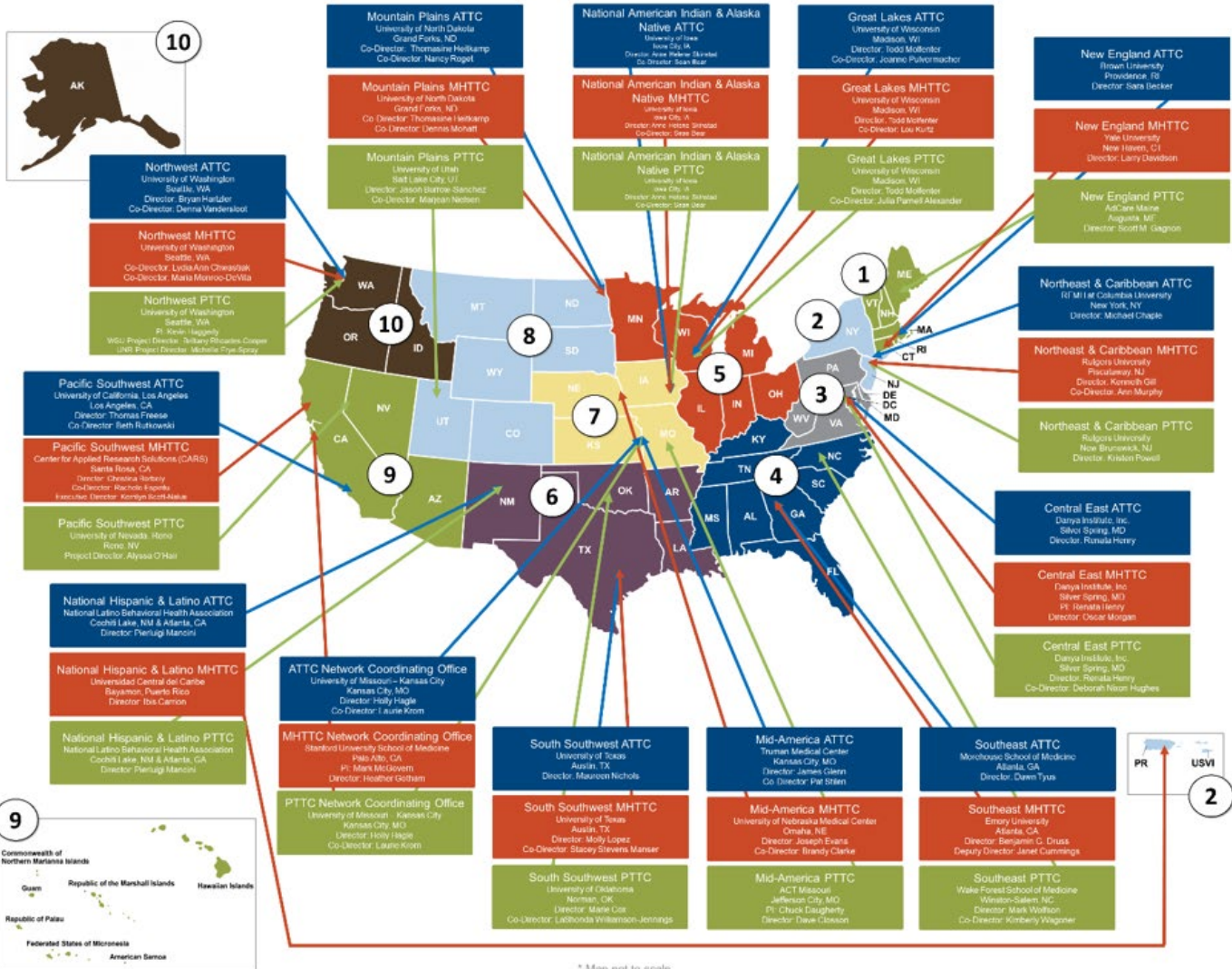
About the ATTC Network



- **The ATTC Network is an international, multidisciplinary resource for professionals in the addictions treatment and recovery services field.**
- Established in 1993 by the Substance Abuse and Mental Health Services Administration (SAMHSA), the ATTC Network is comprised of 10 U.S.-based Centers, 2 National Focus Area Centers, and a Network Coordinating Office.
- Together the Network serves the 50 U.S. states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and the Pacific Islands of Guam, American Samoa, Palau, the Marshall Islands, Micronesia, and the Mariana Islands.

The U.S.-Based TTC Network

TTC Technology Transfer Centers
 Funded by Substance Abuse and Mental Health Services Administration



* Map not to scale.

ATTC Stimulant Workgroup Members



Co-Chairs

- Thomas E. Freese, Region 9
- Jeanne Pulvermacher, Region 5
- Beth A. Rutkowski, Region 9

Members

- James Campbell, Region 4
- Bryan Hartzler, Region 10
- Holly Ireland, Region 3
- Laurie Krom, Lena Marceno, and Viannella Halsall, ATTC NCO
- Mary McCarty-Arias, Region 2
- Maureen Nichols, Region 6
- Nancy Roget, Region 8

Stimulant 101 National Curriculum



- Core Daylong Curriculum
- Condensed Three-Hour Live Virtual Overview
- Conference Keynote Presentation
- Supplemental Modules
 - Child welfare issues, gender differences, stimulant use in the context of polysubstance use, rural vs. urban differences, meth use and HIV among MSM, stimulants and HIV, and recovery approaches
- Culture Modules
 - African American, American Indian/Alaska Native, and Latinx Populations

Three-Hour Virtual Overview



- Core Curriculum content provided in three 1-hour sessions:
 - Part 1: Stimulants - What are they and who uses them?
 - Part 2: Impact of Stimulant Use on the Brain and Body
 - Part 3: Effective Treatment Approaches and Recovery Supports

Core and Virtual Curriculum Authors



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Special Acknowledgements



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- **UCLA Integrated Substance Abuse
Programs Training Department**

Daylong Curriculum Outline



- **Module 1:** Curriculum Overview and Introductions
- **Module 2:** The Scope of Stimulant Use in the United States and Beyond
- **Module 3:** Impact of Stimulant Use on the Brain and Body
- **Module 4:** Stimulant Use among Populations with Unique Concerns
- **Module 5:** Stimulants and HIV
- **Module 6:** Treatment Considerations for People who Use Stimulants
- **Module 7:** Long-Term Recovery Supports

Educational Objectives



At the end of Part 1 of the Stimulant 101 virtual training, participants will be able to:

1. Identify three specific national patterns and trends in stimulant use.
2. Recall the three manufacturing processes for methamphetamine.
3. Specify at least three key differences between cocaine and methamphetamine.

Language Matters

The use of affirming language inspires hope and advances recovery.

LANGUAGE MATTERS.

Words have power.

PEOPLE FIRST.

The ATTC Network uses affirming language to promote the promises of recovery by advancing evidence-based and culturally informed practices.



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Part 1 – Stimulant 101 Virtual Overview

The Scope of Stimulant Use in the United States and Beyond



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What we know...globally



- Amphetamine-type stimulants (ATS) constitute the 3rd most widely used illicit drug category in the world, following cannabis and opioids
- The type of ATS used varies by region
 - Amphetamines in Europe and the Middle East
 - Methamphetamine in the US, Australia, and SE Asia
- Different precursors used in the manufacturing process

Types of Stimulant Drugs: ATS

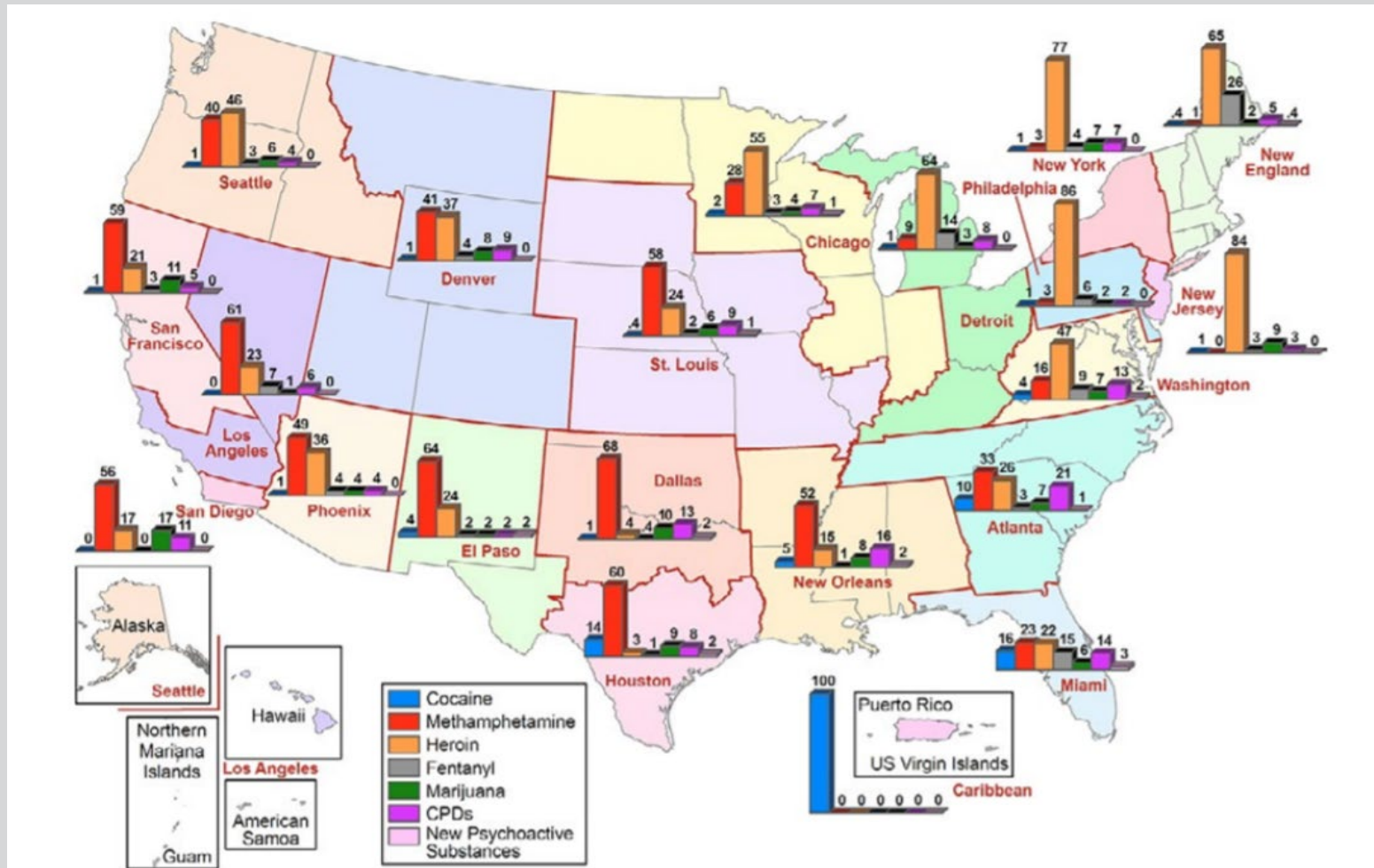
- Approximately 27 million people use stimulants worldwide
- **Methamphetamine**
 - Powder: inhaled, smoked, injected
 - Crystal/Ice: smoked
 - Tablets: orally, crushed and inhaled, smoked, injected (e.g., Captagon)
- **Amphetamine**
 - Powder, Tablets, Liquid: orally, injected, smoked
- **Major regions of use:**
 - Eastern and SE Asia
 - Australia and Oceania
 - North America
 - Increases in Central, Eastern and Northern Europe
 - Increases in Middle East
 - Increases in South Africa

Types of Stimulant Drugs: Cocaine



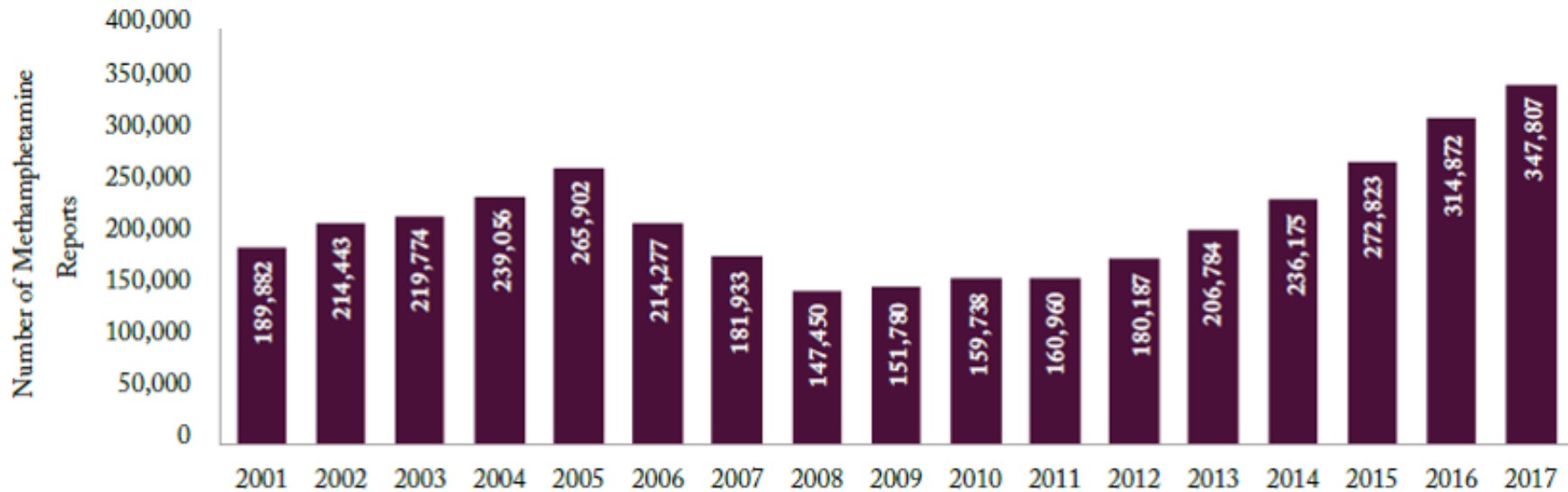
- Approximately 19 million people use cocaine worldwide
- Cocaine Powder (sniffed, injected, smoked)
- “Crack” (smoked)
- Major regions of use:
 - South America
 - North America (predominantly major urban centers disproportionately impacts African American community)
 - Increases in Central and Western Europe
 - Increases in South and Western Africa

Greatest Drug Threat by Field Division as Reported by State and Local Agencies: 2017



SOURCE: U.S. DEA, 2017

Methamphetamine Reports have Increased Nationally, NFLIS, 2001-2017



SOURCE: U.S. DEA, 2019

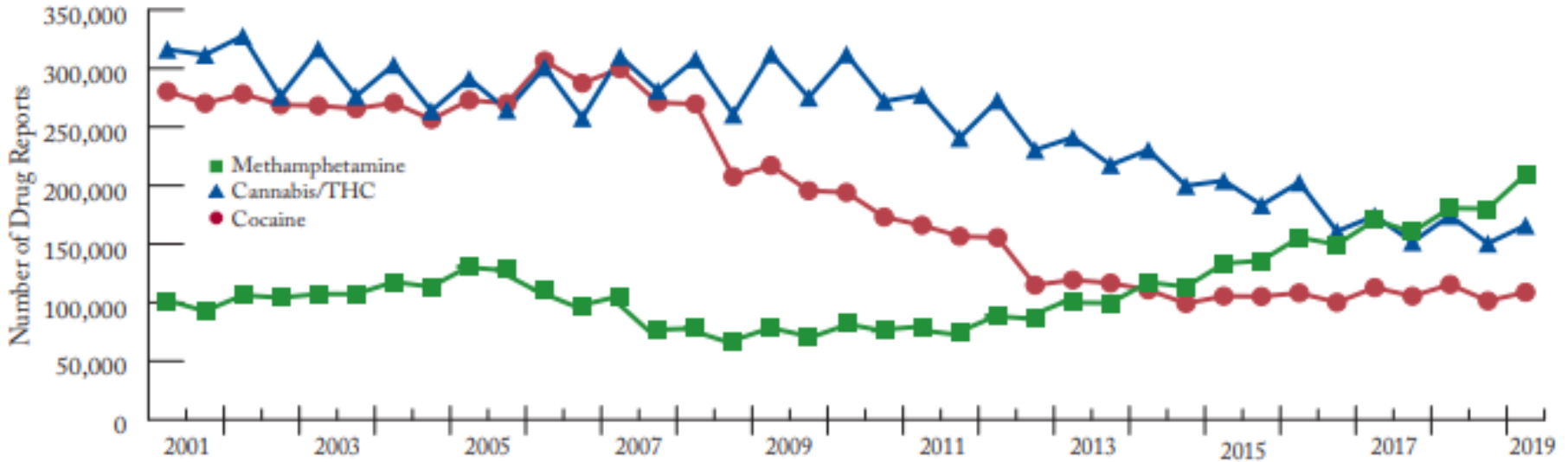
Polling Question #1



What is the estimated primary stimulant according to trends in 2019?

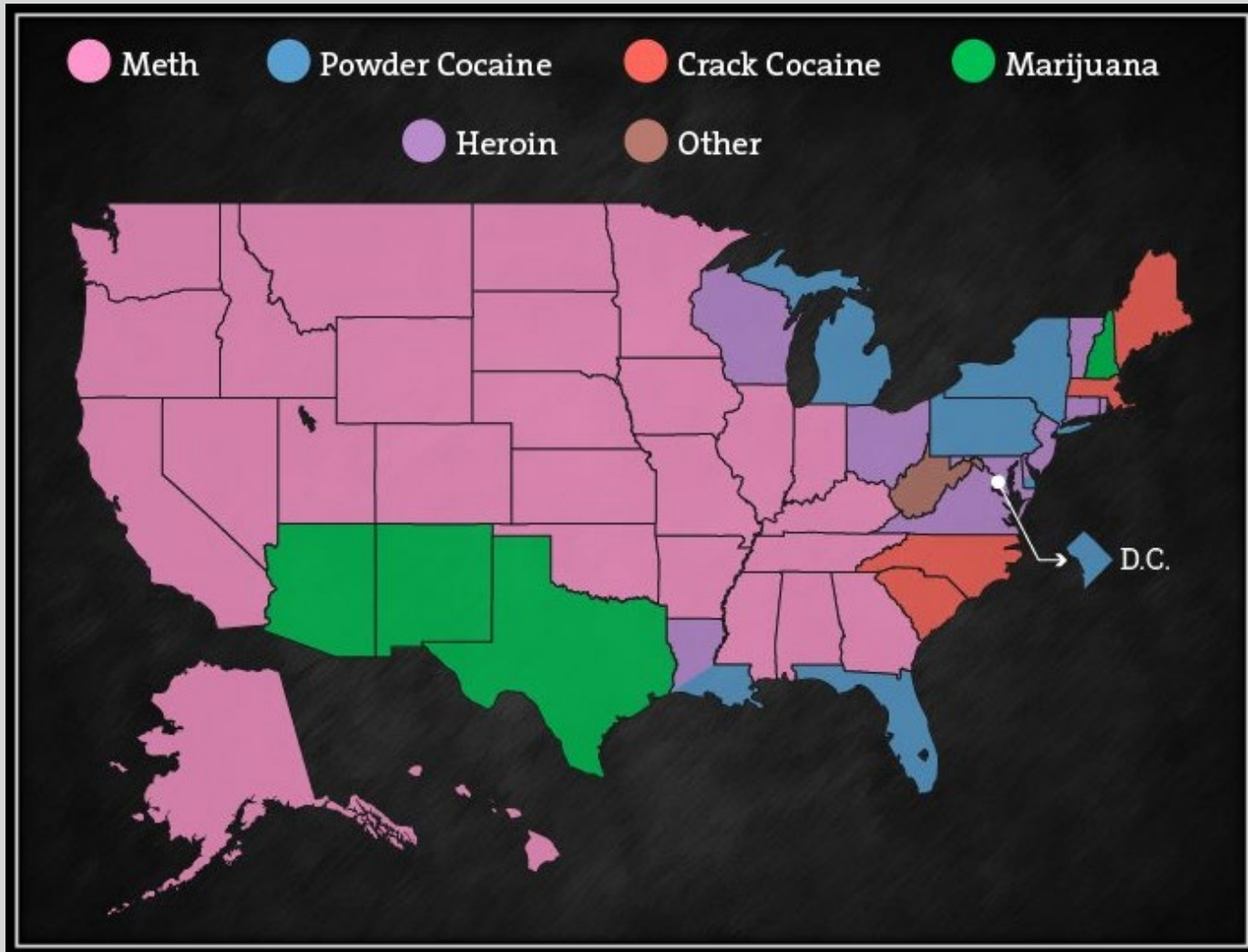
- Cocaine
- Methamphetamine
- Cannabis/THC

National Trend Estimates for Stimulants and Cannabis, NFLIS, 2001-2019



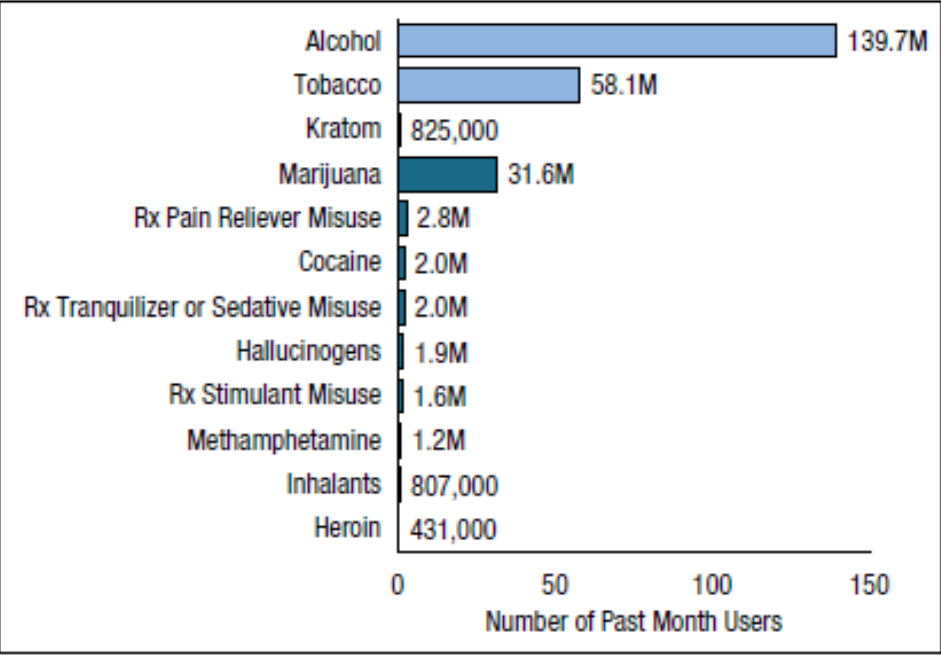
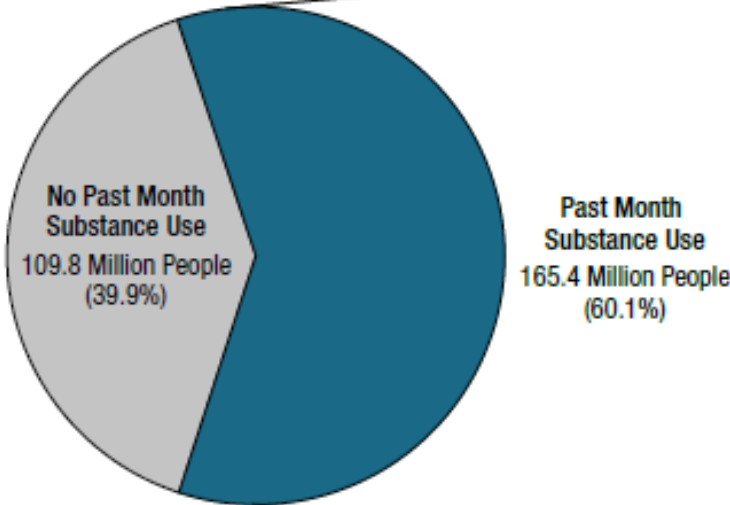
SOURCE: U.S. DEA, 2020

Top Drug Offenses, by State



SOURCE: Abadi, 2016

Numbers of People Reporting Past Month Substance Use among those Aged 12 or Older: 2019

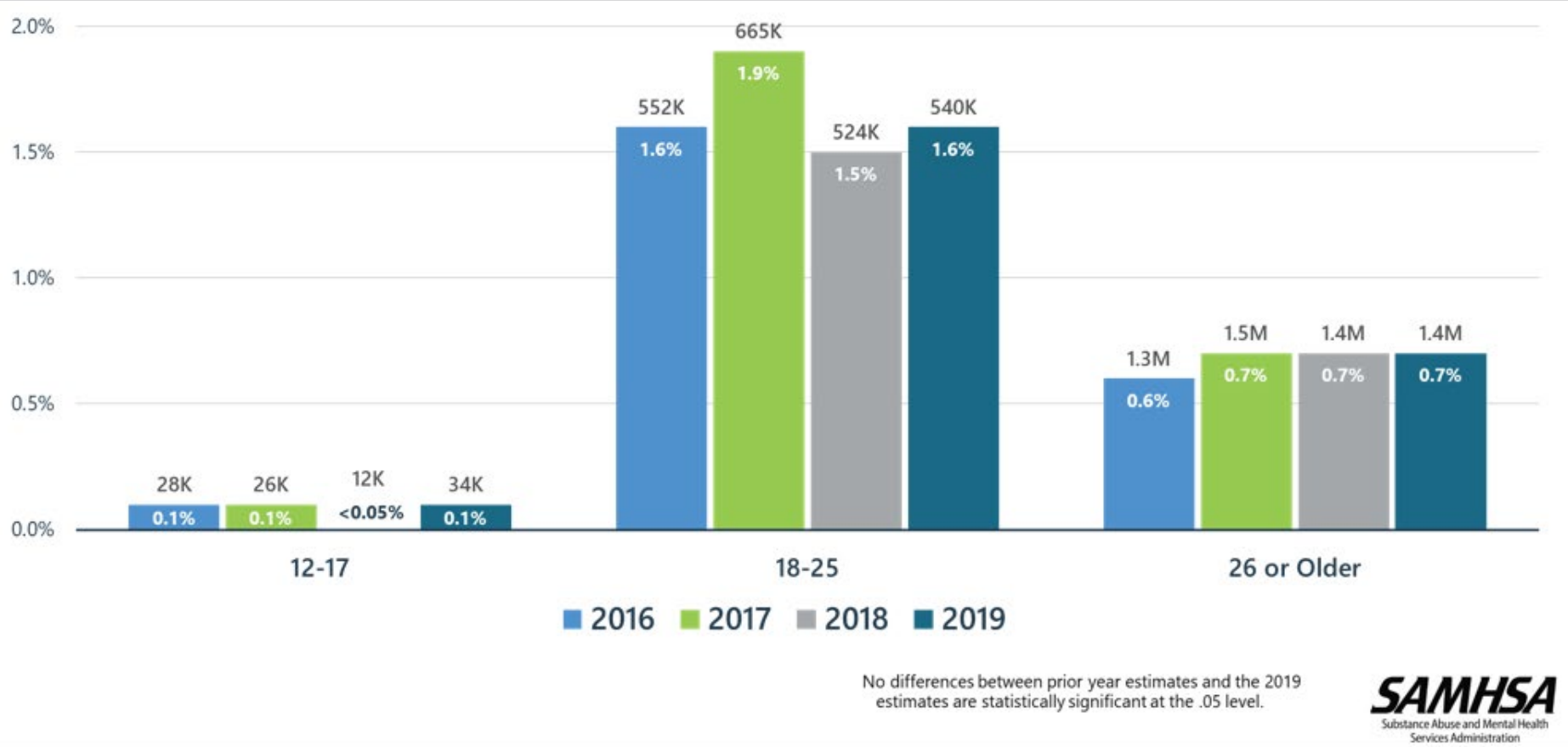


Rx = prescription.

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

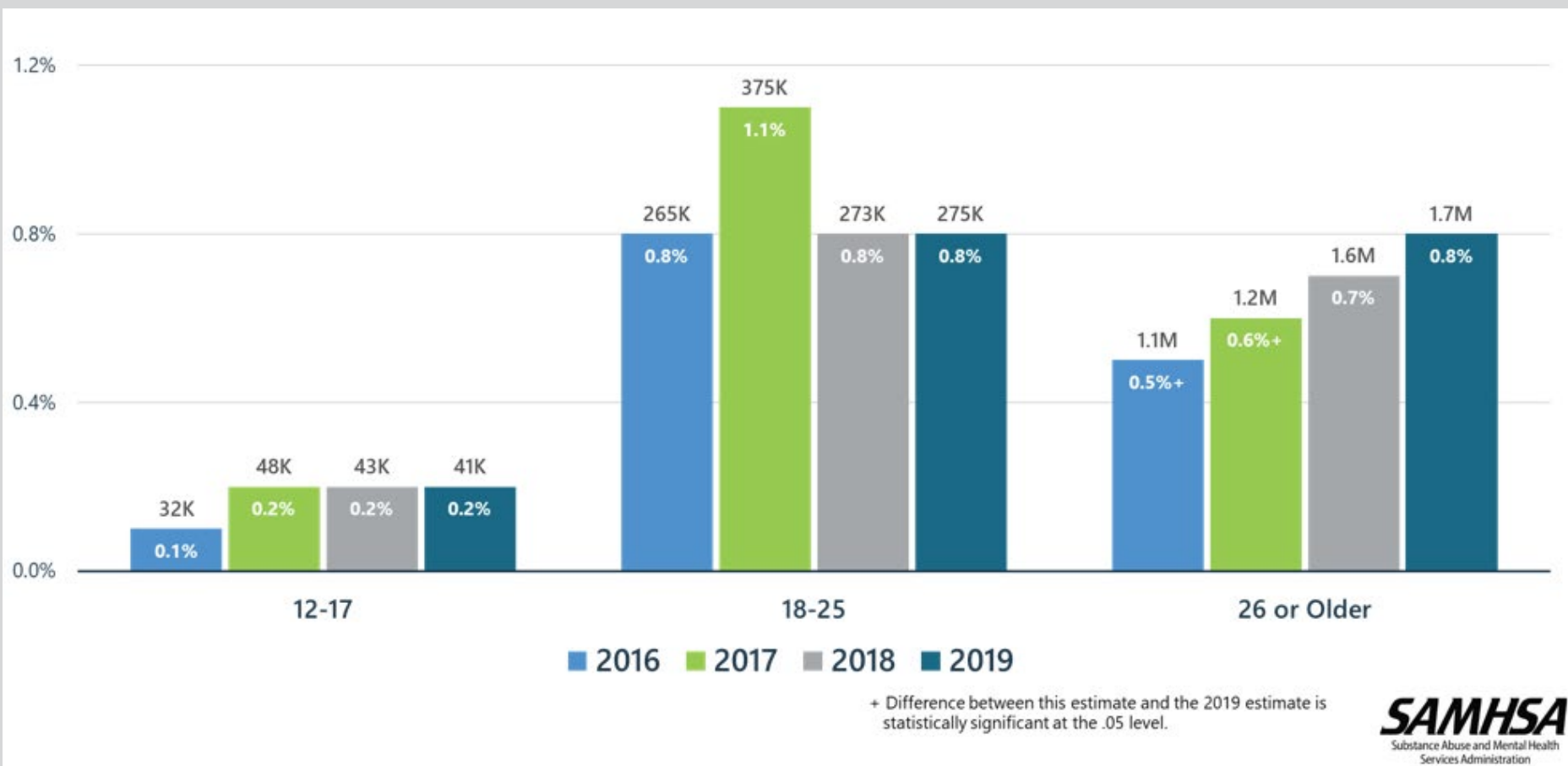
Note: The estimated numbers of current users of different substances are not mutually exclusive because people could have used more than one type of substance in the past month.

Trends in Past Year Use of Cocaine, 2016-2019



SOURCES: McCance-Katz, 2020; SAMHSA, 2020

Trends in Past Year Use of Methamphetamine: 2016-2019



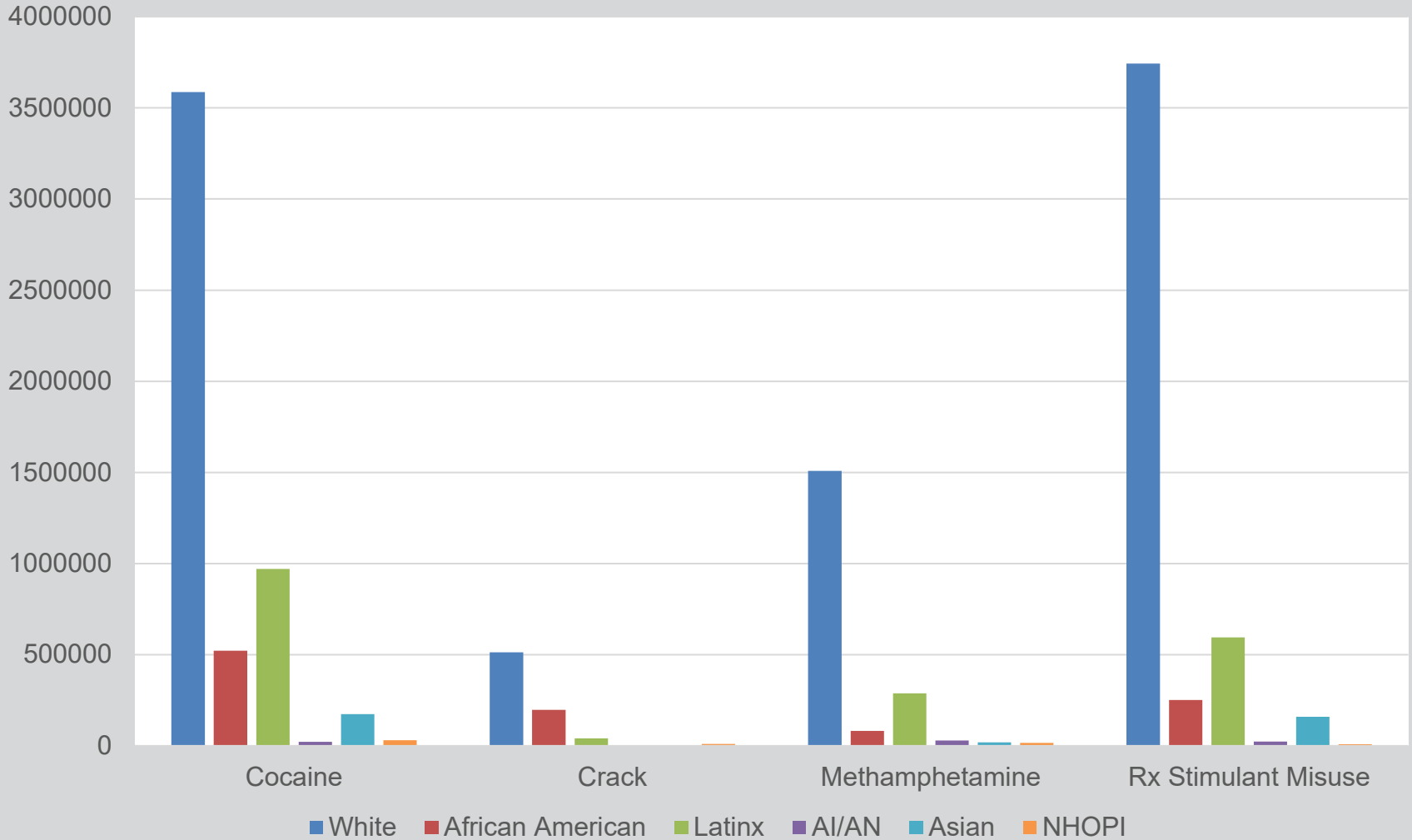
Trends in Past Year Misuse of Prescription Stimulants: Significant Decrease in Young Adults (18-25)



+ Difference between this estimate and the 2019 estimate is statistically significant at the .05 level.

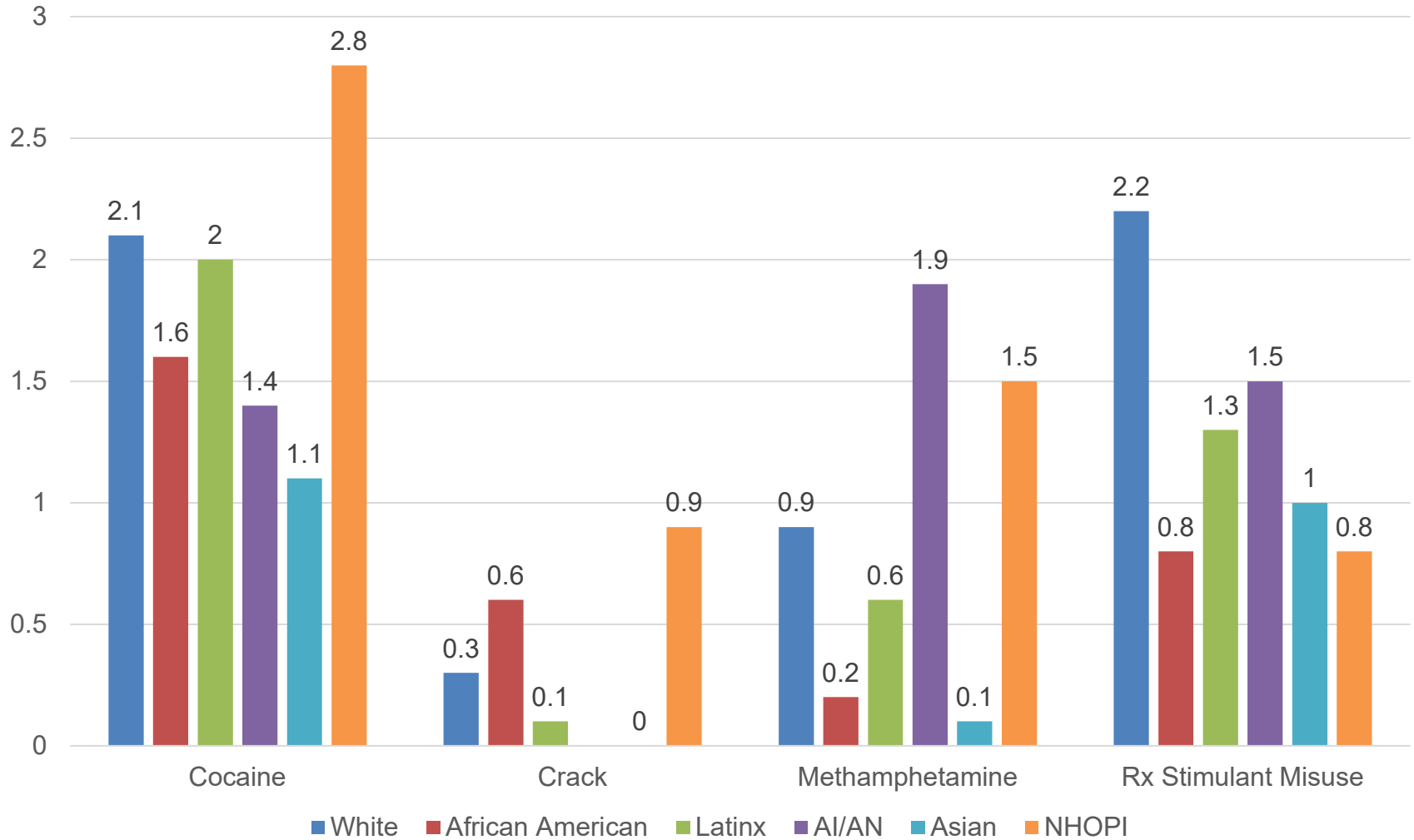


Past Year Use (in Thousands) of Stimulants by Racial/Ethnic Group, 2019



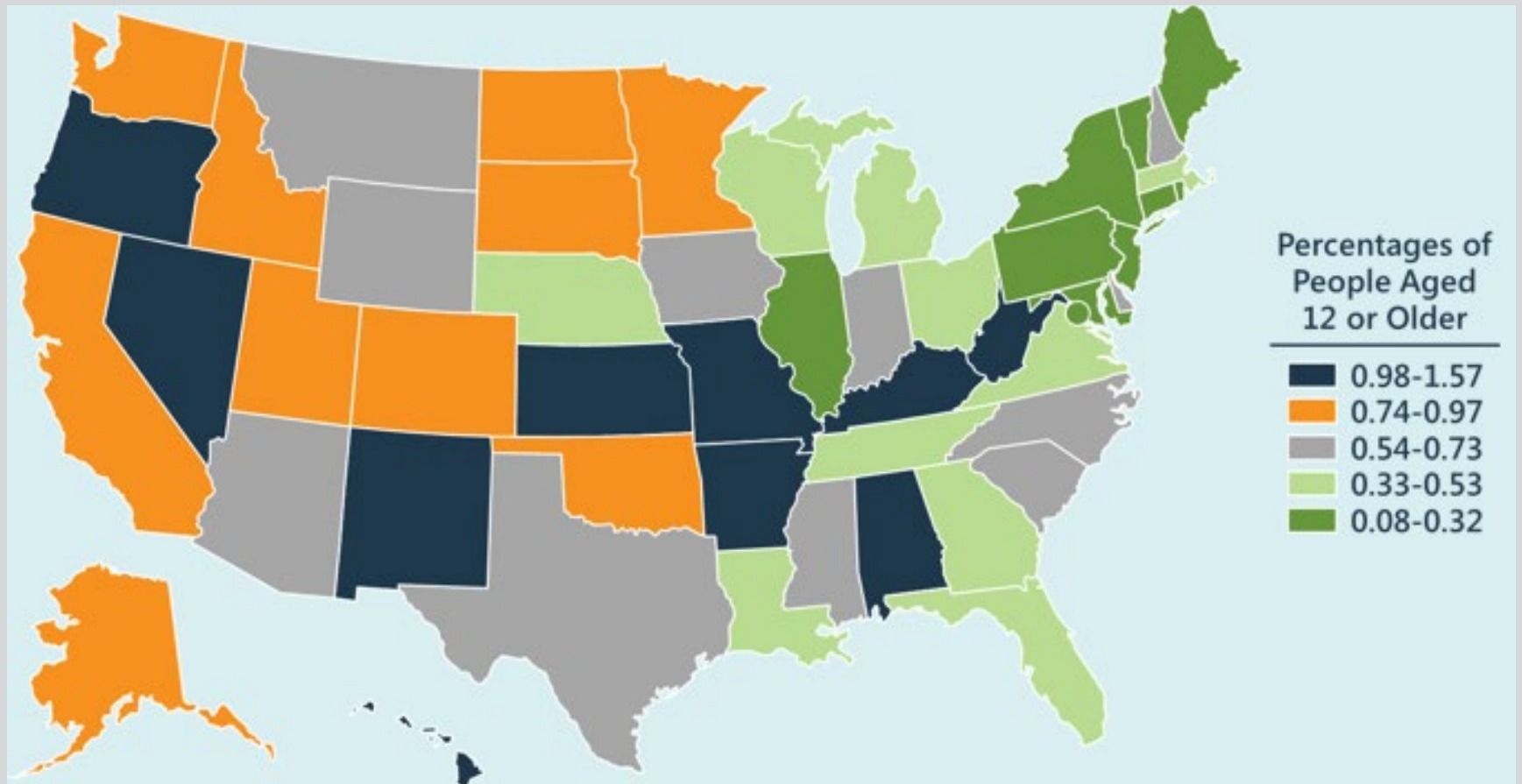
SOURCE: SAMHSA, 2020

Past Year Use (as Percentages) of Stimulants by Racial/Ethnic Group, 2019



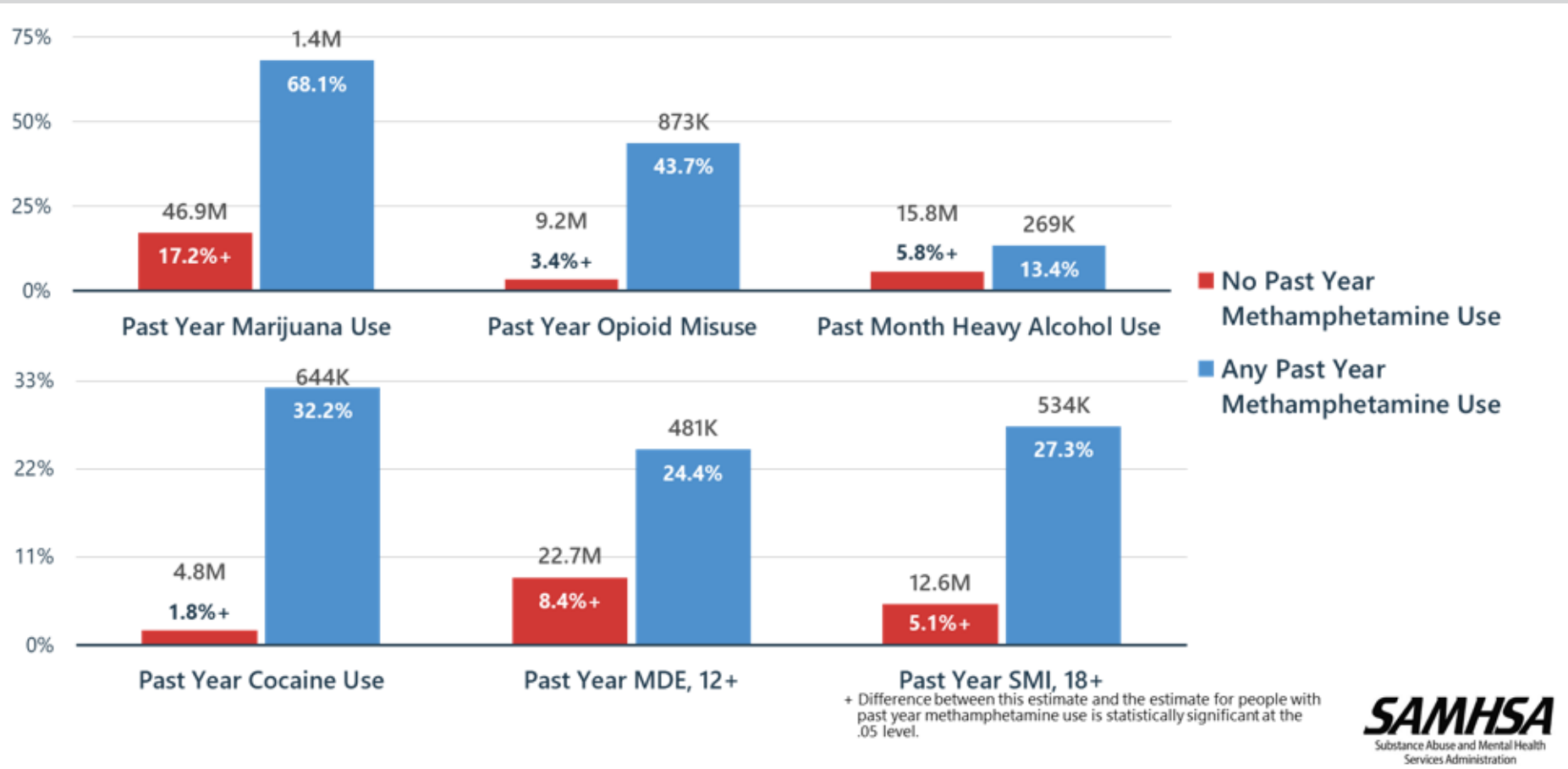
SOURCE: SAMHSA, 2020

Past Year Use of Methamphetamine by State, 2016-2017



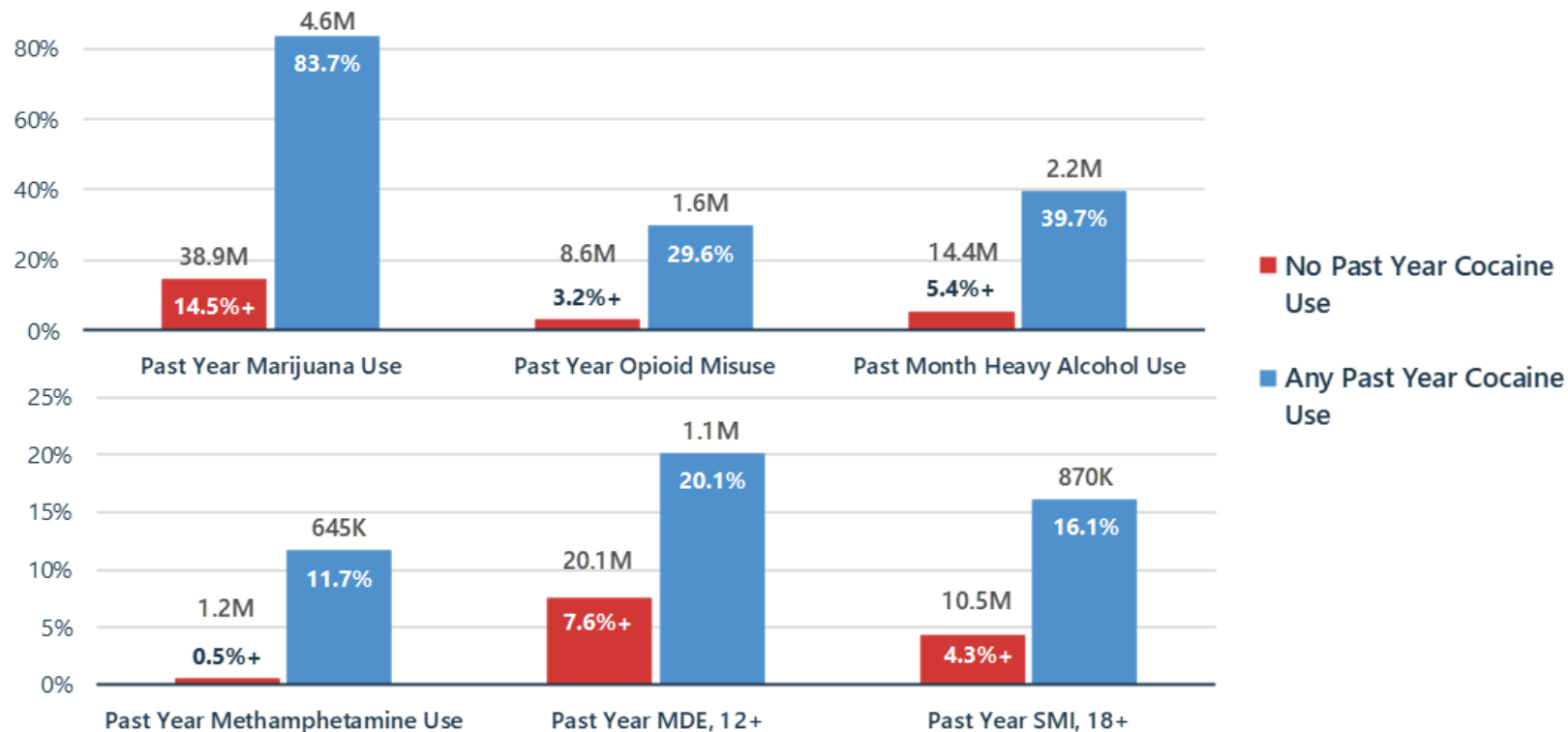
SOURCES: McCance-Katz, 2019; SAMHSA, 2019

Methamphetamine Use Related to Other Substance Use, Depression, and Serious Mental Illness, 2019

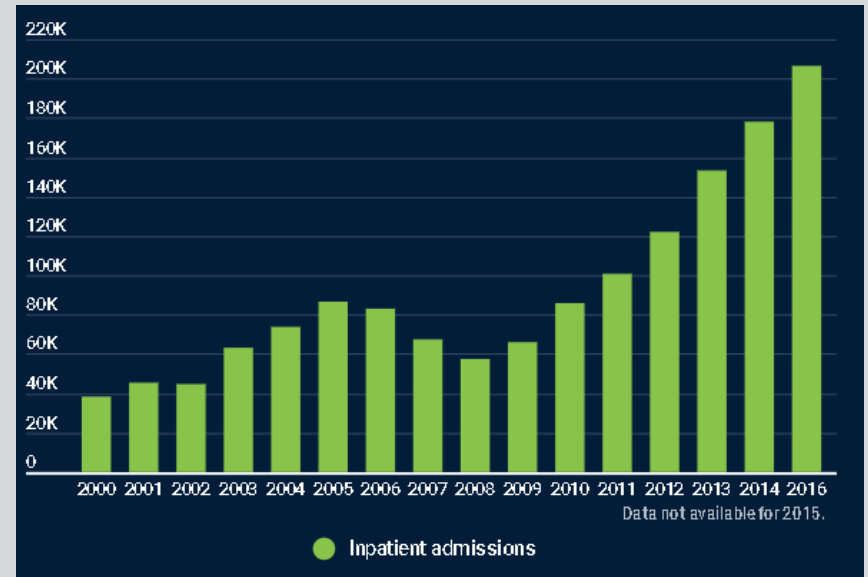
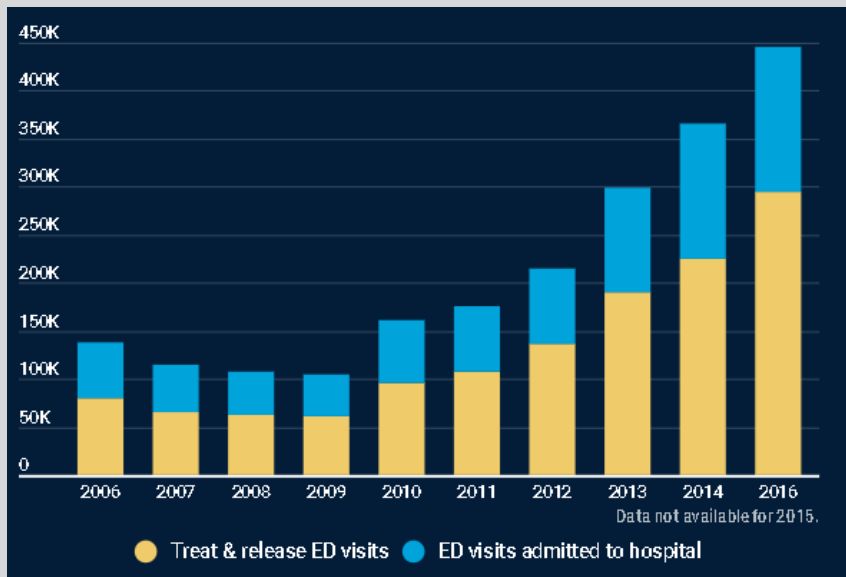


Cocaine Use Related to Other Substance Use, Depression, and Serious Mental Illness, 2018

PAST YEAR/MONTH, 2018 NSDUH, 12+



The Impact of Methamphetamine on the U.S. Hospital System



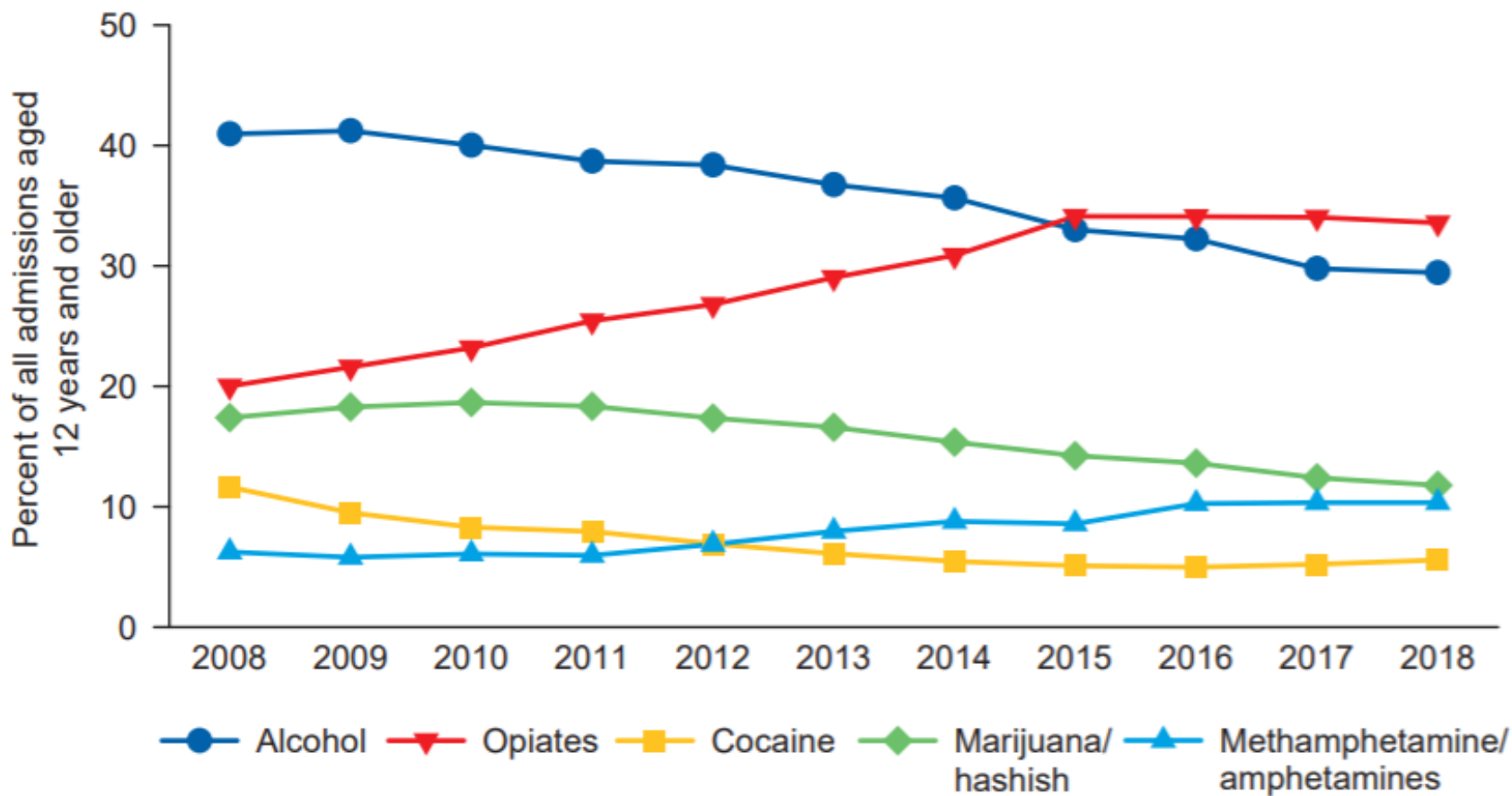
Polling Question #2



What was the primary substance reported at admission to publicly funded treatment programs in the US in 2017?

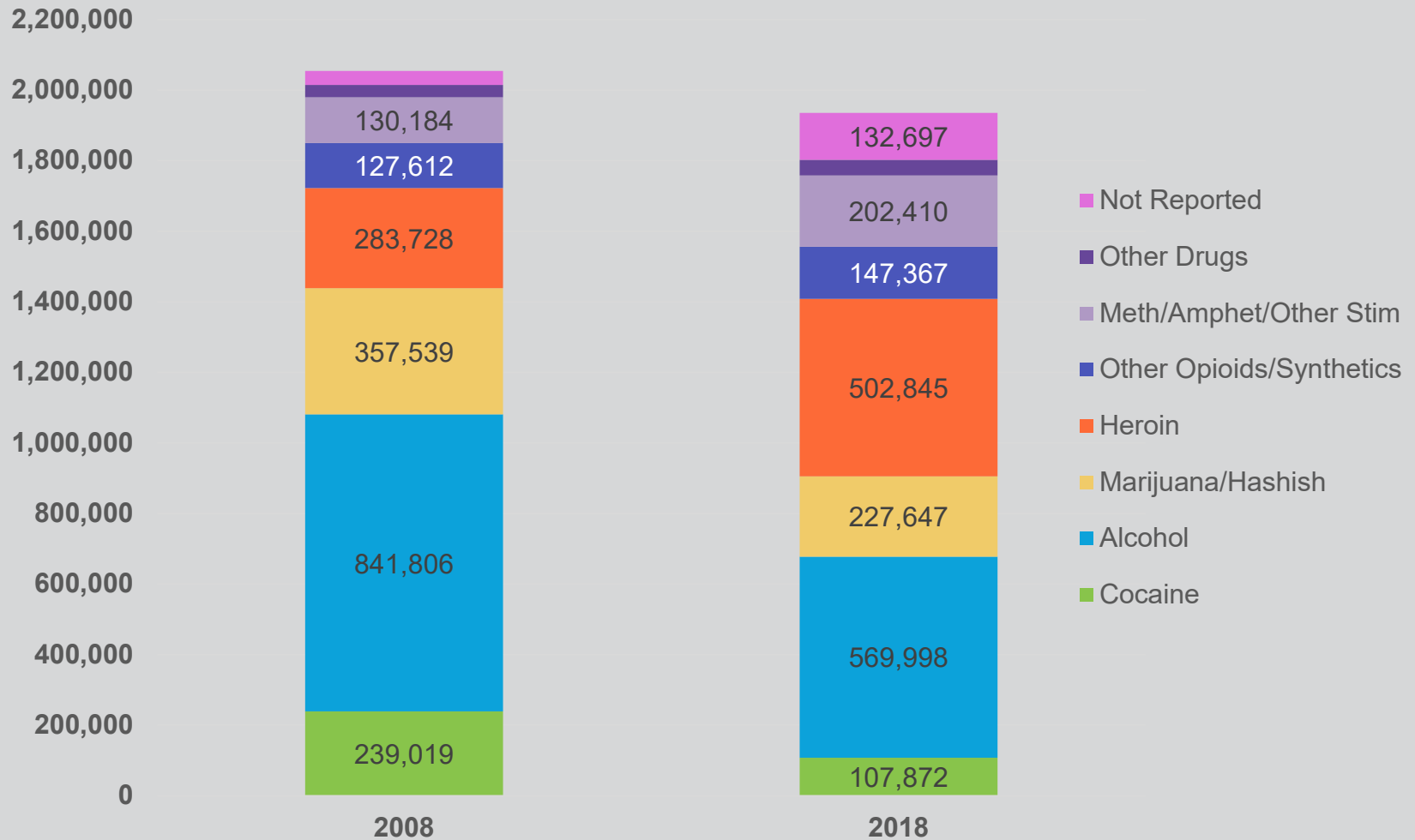
- Cocaine
- Alcohol
- Marijuana
- Opiates
- Methamphetamine/amphetamines

Primary Substance of Abuse at Admission, 2008-2018



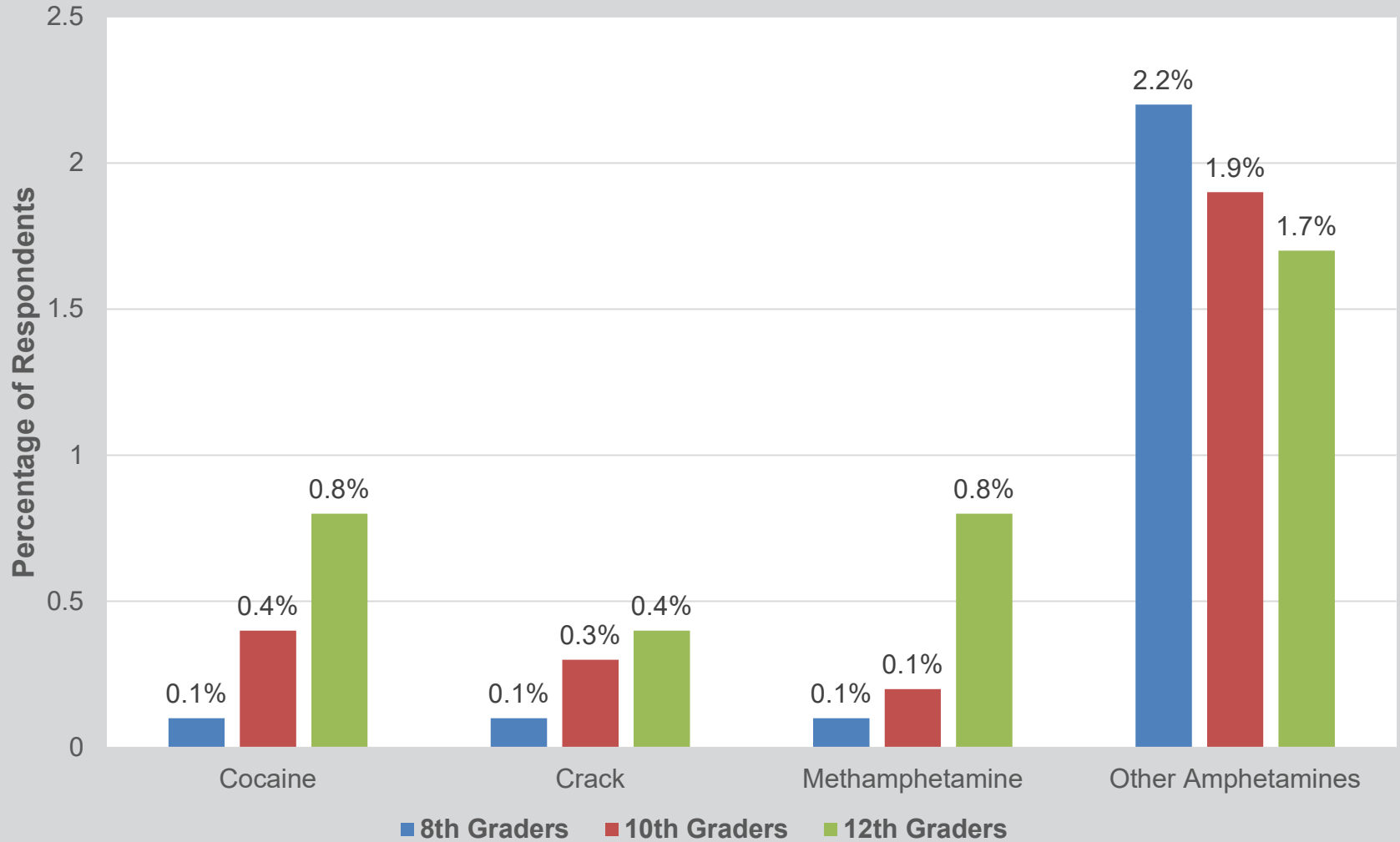
SOURCE: SAMHSA, 2020

Increases in Treatment Admissions Seen for Select Psychoactive Substances, 2008-2018



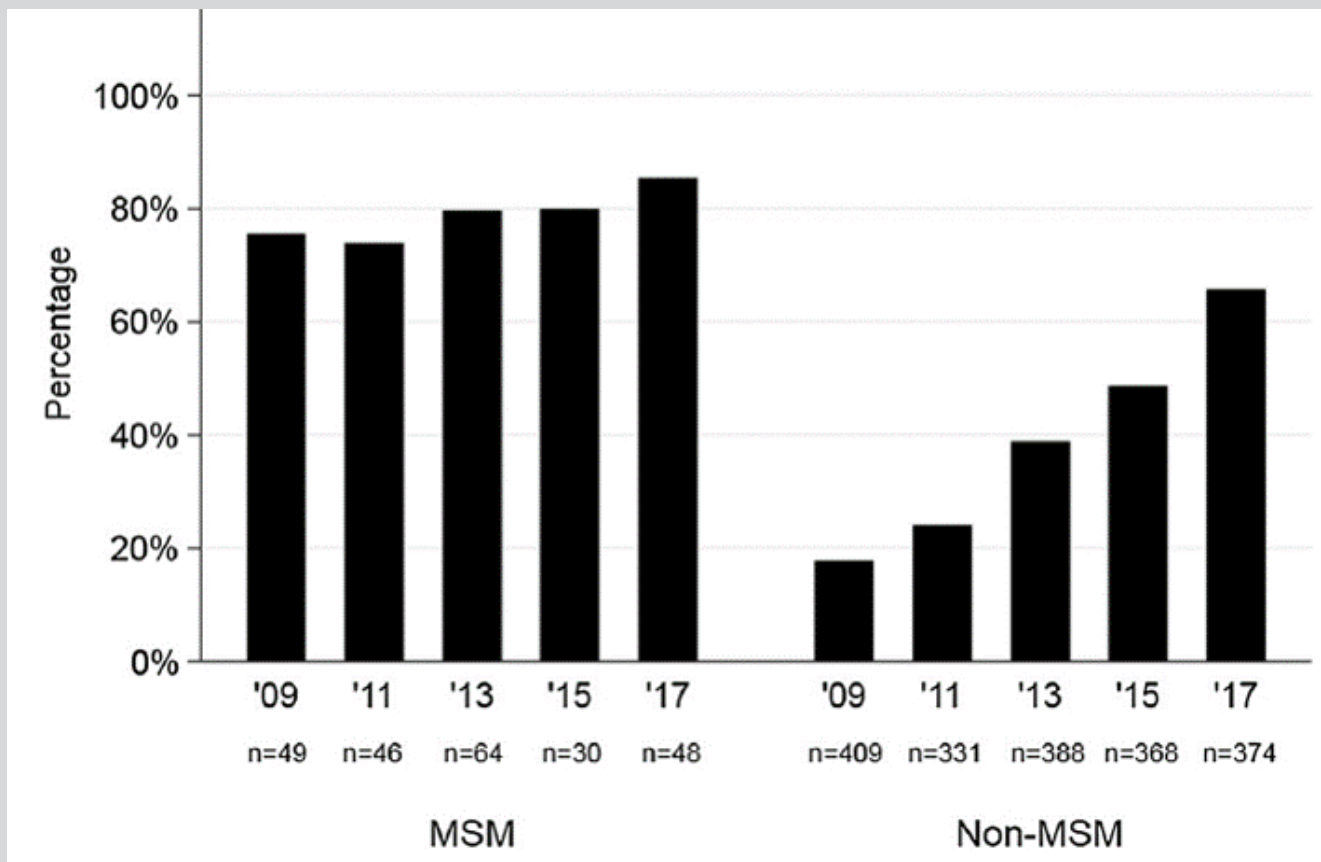
SOURCE: SAMHSA, 2020

Past Month Use of Stimulants among 8th, 10th, and 12th Graders: 2020



SOURCE: Johnson et al., 2021

Increasing Injection of Methamphetamine among Non-MSM who Inject Drugs

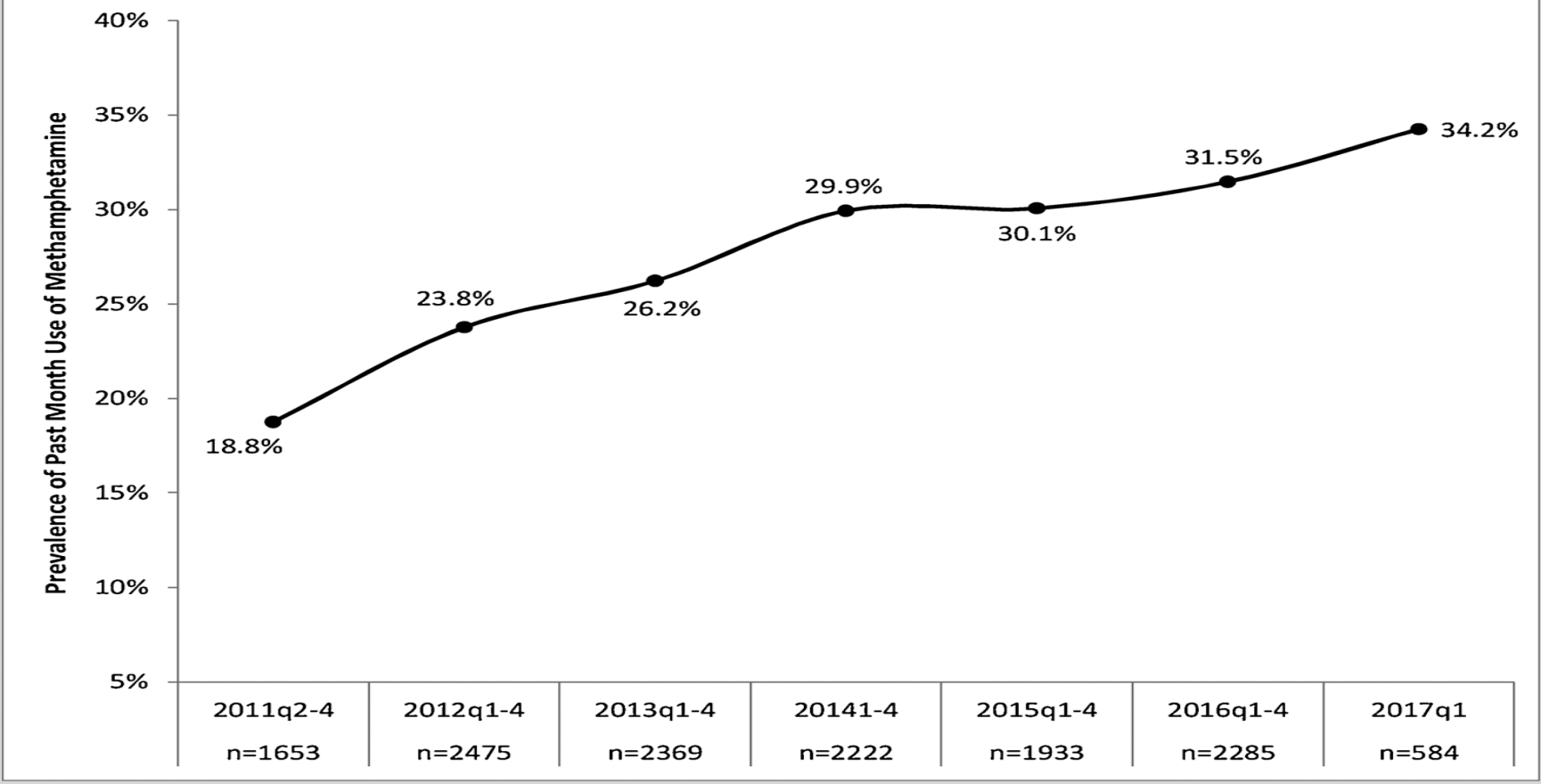


SOURCE: Glick et al., 2018

Methamphetamine and Opioid Co- Ingestion – What are the Issues?

- A **synergistic effect occurs** when using meth and an opioid together (i.e., the result of using both is greater than either alone)
- The stimulant effect counterbalances the depressant effect, thus **increasing overdose risk** (respiratory depression AND cardiac arrest)
- The **most potent effect** seems to be in the **first 90 minutes** of co-ingestion

Past Month Use of Methamphetamine among People Seeking Treatment for an Opioid Use Disorder

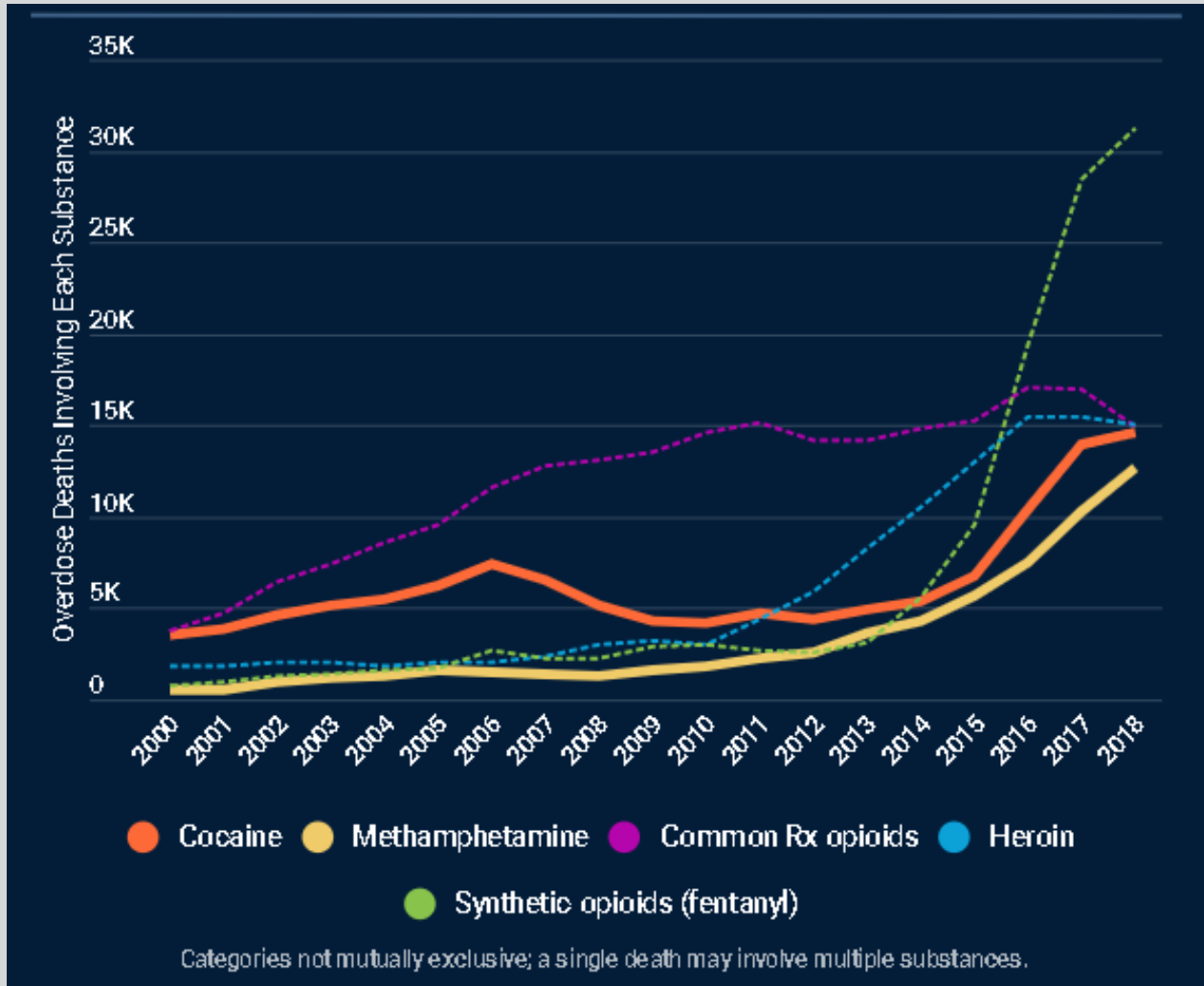


SOURCE: Ellis et al., 2018

What are Some Treatment Implications for Methamphetamine and Opioid Co-Ingestion?

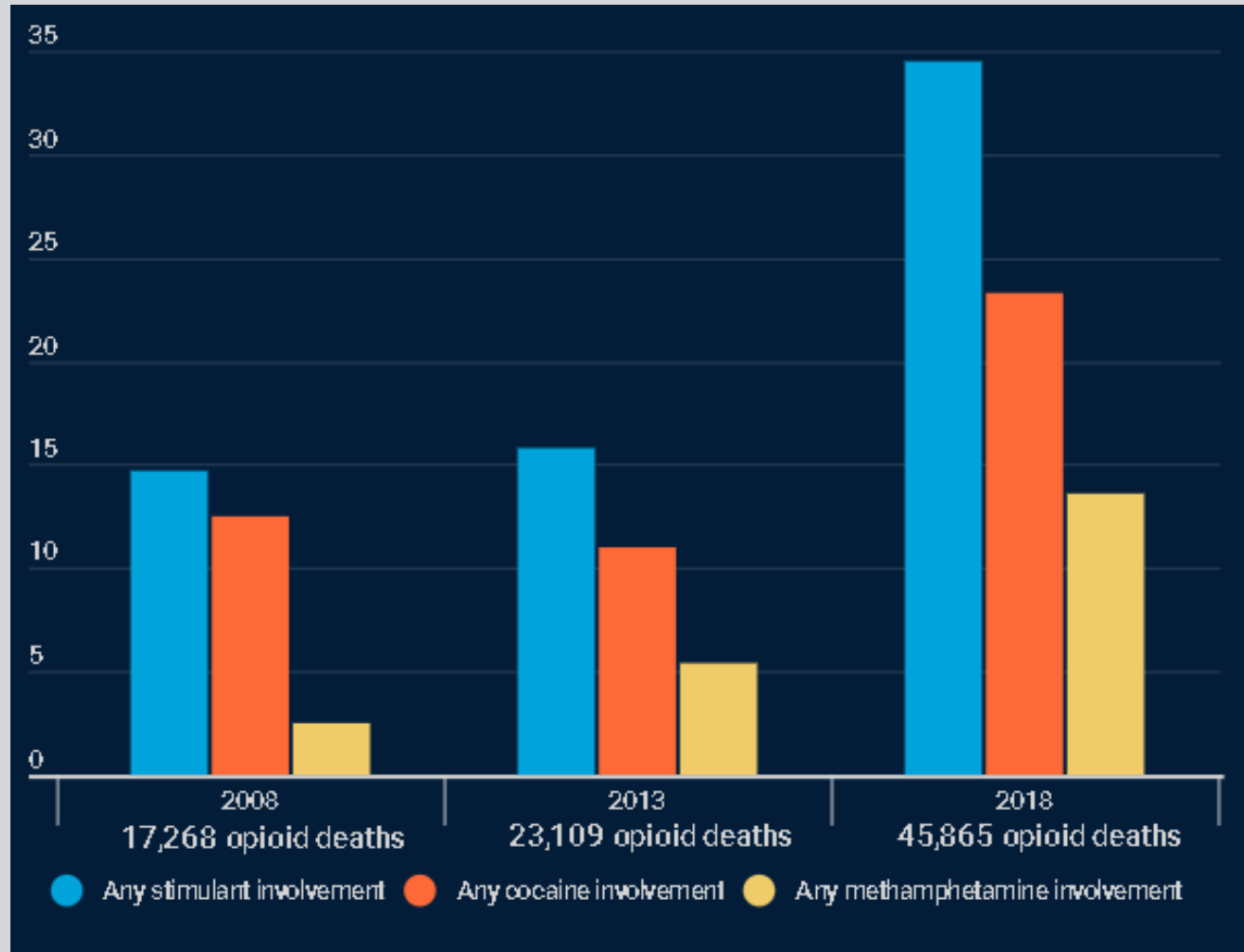
- Make sure you have sufficient **naloxone kits** available for overdoses
 - Because of the interaction effect, it may require more than one dose to counteract the effects of meth and heroin
- Combine **medication-assisted treatment for heroin with contingency management for meth**
 - It may be better to use buprenorphine rather than methadone, since methadone and meth would still have a potent interaction (for people who relapse on meth during treatment)
- **Exercise** may help to **reduce methamphetamine use and reduce depression and anxiety symptoms**

An Emerging Pattern of Increased Deaths Involving Stimulants



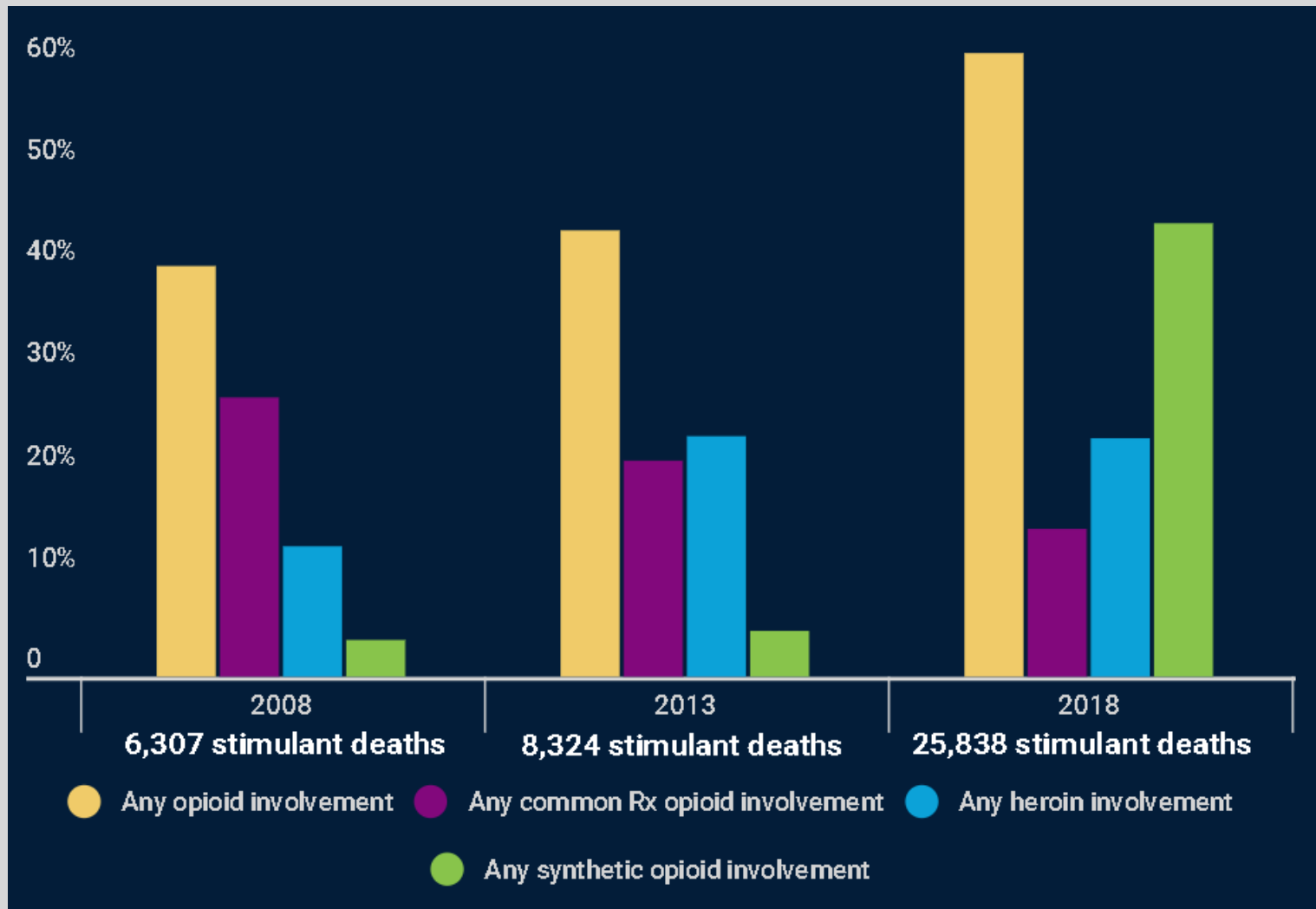
SOURCE: NIHCM Foundation, 2020

A Growing Percentage of Opioid-Related Deaths also Involve Stimulants



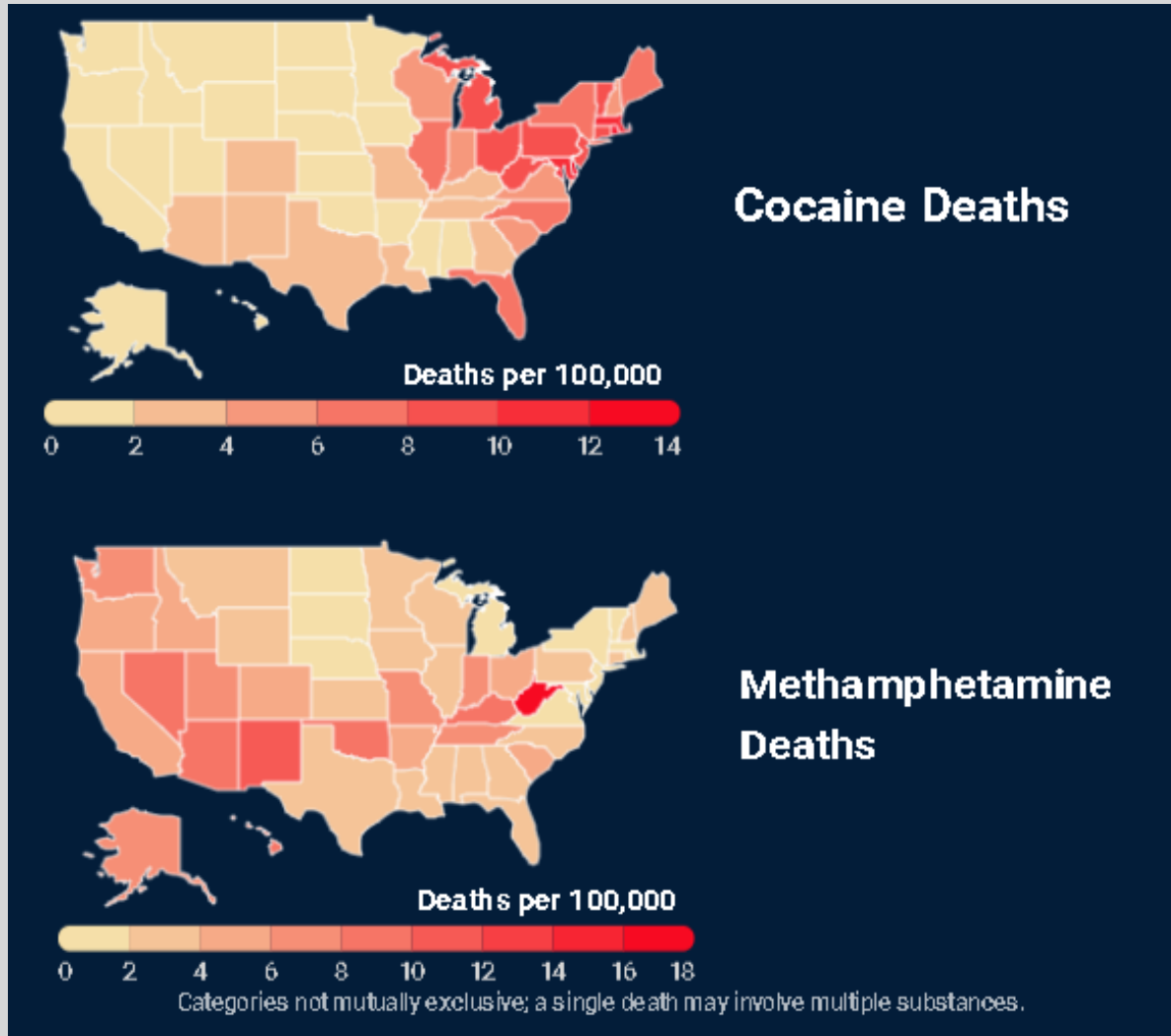
SOURCE: NIHCM Foundation, 2020

Increases Seen in Stimulant-Related Deaths that also Involve Opioids



SOURCE: NIHCM Foundation, 2020

Geographic Differences in Stimulant-Related Deaths, 2018



SOURCE: NIHCM Foundation, 2020

Chat Activity



- Please answering the following questions:
 - What were 2-3 useful, interesting, and/or surprising pieces of information you got from the information on the scope of the problem?
 - How will you use this information in your work?



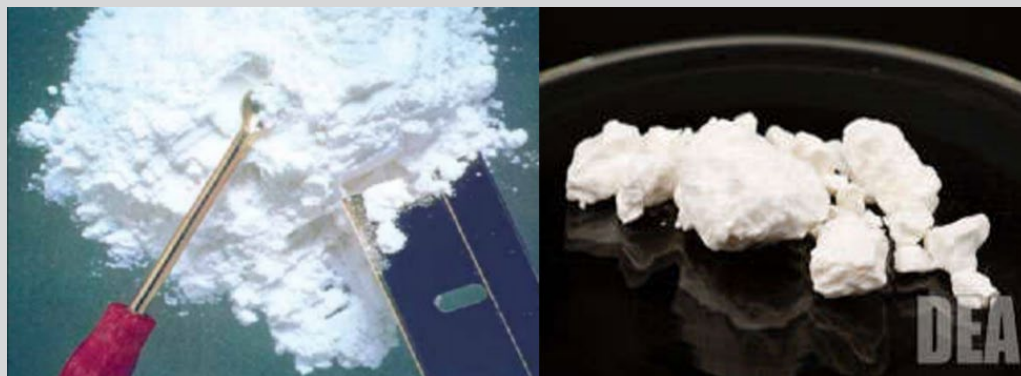
Stimulants: What are We Talking About?

The Broader Classification: Stimulants

Methamphetamine



Powder and Crack Cocaine



Forms of Cocaine

- Powder cocaine (Hydrochloride salt)
- Smokable cocaine (Crack, rock, freebase)
- Cocaine half-life: ~1-2 hours

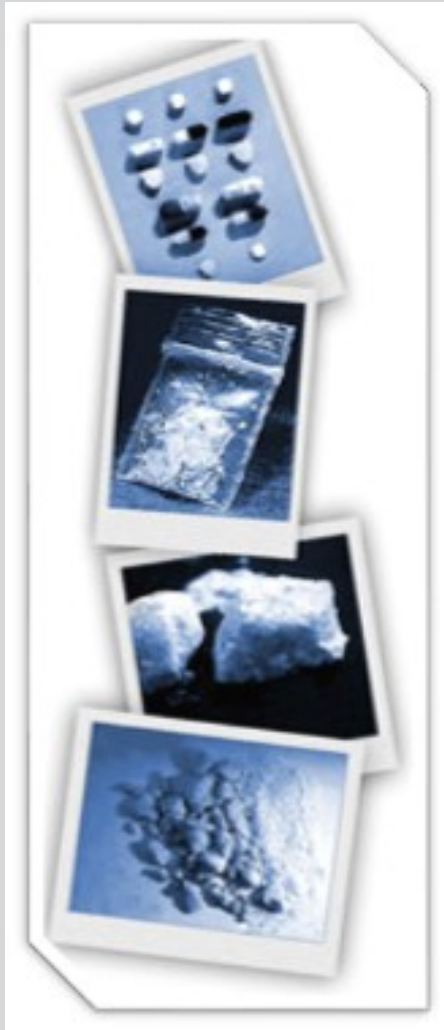


Crack in More Detail

- The **freebase form** of cocaine that has been processed from the powdered cocaine hydrochloride form to a substance that can be **smoked**.
- Processed with **ammonia or sodium bicarbonate** (baking soda) and **water**, and **heated** to remove the hydrochloride.
- **High experienced** in less than 10 seconds.
- **Inexpensive** both to produce and to buy.



Methamphetamine



Methamphetamine Powder

*Description: Beige/yellowy/
off-white powder*

Base / Paste Methamphetamine

*Description: 'Oily', 'gunky', 'gluggy' gel,
moist, waxy*

Crystalline Methamphetamine

*Description: White/clear crystals/rocks;
'crushed glass' / 'rock salt'*

Types of Stimulants: Methamphetamine

Amphetamine-Type Stimulants (ATS)

- Methamphetamine
 - Speed, crystal, ice, yaba, shabu, tina
- Amphetamine
- Pharmaceutical products used for ADD and ADHD

Methamphetamine half-life: 8-10 hours

- 50% of drug is removed from the body within 8 hours

Methamphetamine: Patterns of Use

- Either **smoking or injecting** causes an immediate, intense “rush” which **lasts a few minutes**
- Snorting or oral ingestion produces euphoria—a high, but not an intense rush.
 - **Snorting** produces effects **within 3 to 5 minutes**
 - **Oral ingestion** produces effects within **15 to 20 minutes**
- Often abused in “**binge & crash**” pattern
 - “Run”: foregoing food and sleep while continuing to take the drug for up to several days

Types of Stimulants: Prescription Stimulants



- Stimulant medications (e.g., amphetamines) are often prescribed to treat individuals diagnosed with attention-deficit hyperactivity disorder (ADHD)
- Stimulants enhance alertness and concentration
- May be diverted from medical use to non-prescription use
- Amphetamines increase wakefulness and have been misused by:
 - military, pilots, truck drivers, and other workers to keep functioning past their normal limits

Methamphetamine Manufacturing Processes – Three Methods

1. Ephedrine/Pseudoephedrine Based

“Nazi Method”-lithium, anhydrous ammonia

Cold method-red phosphorus, iodine crystals

“One Pot” and “Shake and Bake” cooking using dry ammonia nitrite and cough syrup rather than liquid anhydrous ammonia

2. **P2P/Phenylacetone** (Illegal in US-Schedule II, precursors legal in Mexico). Now cooked in large laboratories in Mexico with expert chemists

3. **New synthetic method** emerging with P2P precursor and phenylacetic acid as pre-precursor—nitro styrene

A Quick History of Methamphetamine



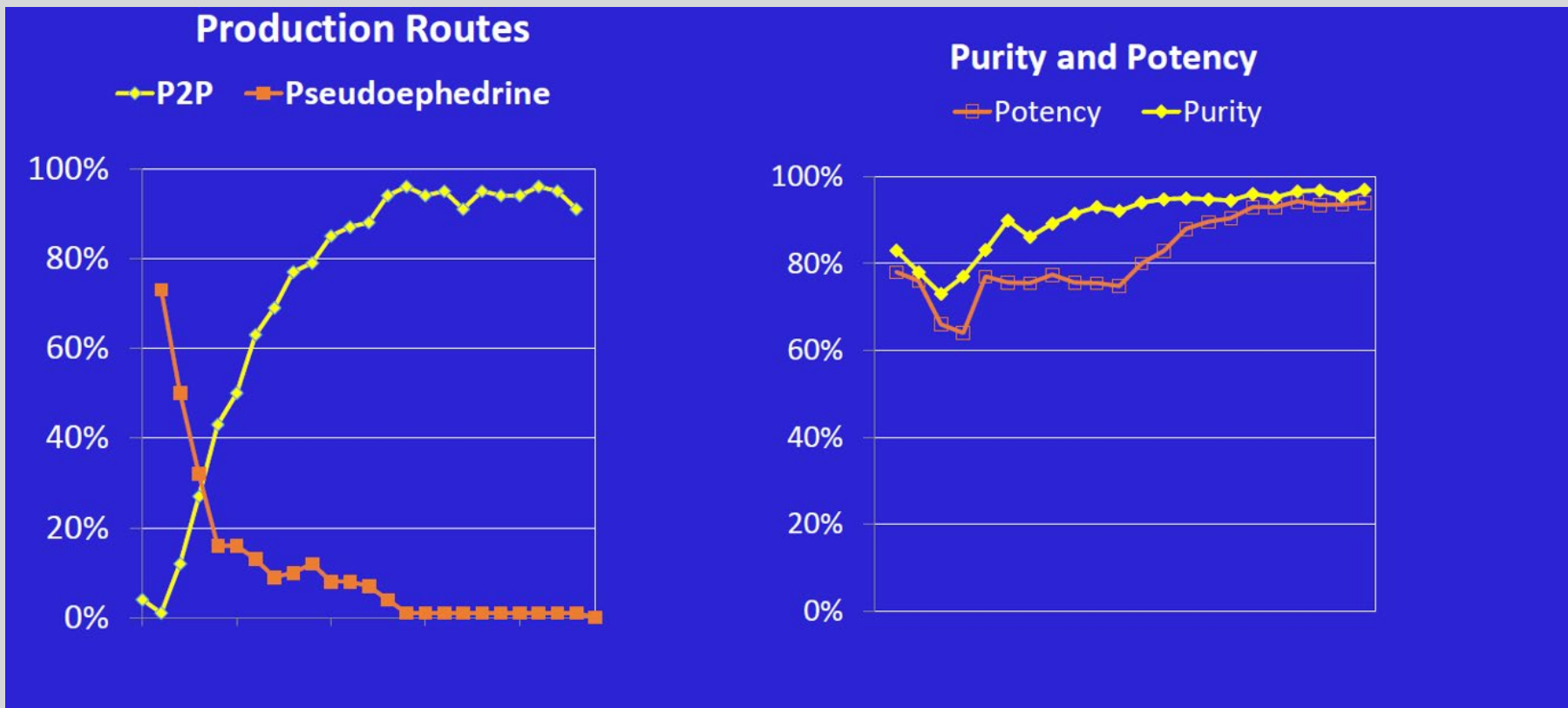
- **Before 1970:** Amphetamine could be purchased over the counter
- **1970-1980:** Meth made using the P2P phenyl propanone method. Bikers carried the product in their “crank cases”
- **1980:** P2P becomes schedule II in the US but is still legal in Mexico. Meth in US is made from pseudoephedrine (PSE)
- **2005:** PSE regulated by CMEA in US and banned in Mexico
- **2009:** Significant shift from PSE to P2P as precursor
- **2014:** New alternative P2P recipe (nitro styrene)

Reduction of Methamphetamine Availability



- In 2005, Congress passed the Combat Methamphetamine Epidemic Act (CMEA), which put pseudoephedrine products behind the counter.
- Although some meth makers tried “smurfing,” meth cases plummeted.
- With no more meth lab explosions on the nightly news, the public forgot about the drug.
- Mexican drug cartels stepped in improving production using the P2P Method with higher potency and lower price (\$2,000 per pound)

DEA Methamphetamine Profiling Program: National Data, 2006-2018



SOURCES: Maxwell, 2019;
U.S. DEA, 2019

Cocaine vs. Methamphetamine



Methamphetamine

- Stimulant
- Man-made
- Smoking produces a long-lasting high
- 50% of drug is removed from body in 12 hours
- Increases dopamine release and blocks dopamine re-uptake
- Limited medical use

Cocaine

- Stimulant and local anesthetic
- Plant-derived
- Smoking produces a brief high
- 50% of drug is removed from body in 1 hour
- Blocks dopamine re-uptake
- Limited use as a local anesthetic (surgical)

Differences in Patterns of Use: Methamphetamine vs. Cocaine

People who Use Methamphetamine

- Take the drug at the **beginning of the day** and take additional doses at **2 to 4 hour intervals** throughout day

People who Use Cocaine

- Take the drug in the **evening** and take additional doses **continuously over a period of several hours**

Summary



- Psychostimulant use is increasing in the US
- Rates of use vary by racial/ethnic group and by location across the US
- Purity and potency have both increased because of the way that it is made.
- Stimulant related deaths are increasing with rates varying significantly across the country
- Co-ingestion of stimulants with opioids is also increasing
- **In part 2, we will examine the way that stimulants impact function of the individual's body and brain.**

Resources for Continued Learning



- ATTC Network's Focus on Stimulant Misuse Web Page:
<https://attcnetwork.org/centers/global-attc/focus-stimulant-misuse>
- Evidence-Based Resource Guide Series: Treatment of Stimulant Use Disorders:
<https://store.samhsa.gov/product/Treatment-of-Stimulant-Use-Disorder/PEP20-06-01-001>
- Northwest ATTC's Contingency Management for Healthcare Settings Self-Paced Online Course:
<https://healthknowledge.org/course/search.php?search=Contingency+Management>

Thank You For Your Time



- For questions, please email Beth (brutkowski@mednet.ucla.edu) or Thomas (tfreese@mednet.ucla.edu)
- Components of this curriculum are posted to the ATTC website at: <https://attcnetwork.org/centers/global-attc/focus-stimulant-misuse>
- For additional information regarding SUD-related Training/TA, please visit: <http://www.attcnetwork.org>
- For additional information regarding HIV/AIDS-related Training/TA, please visit: <https://aidsetc.org/>