Methamphetamine Use Disorder

Nora D. Volkow, M.D.

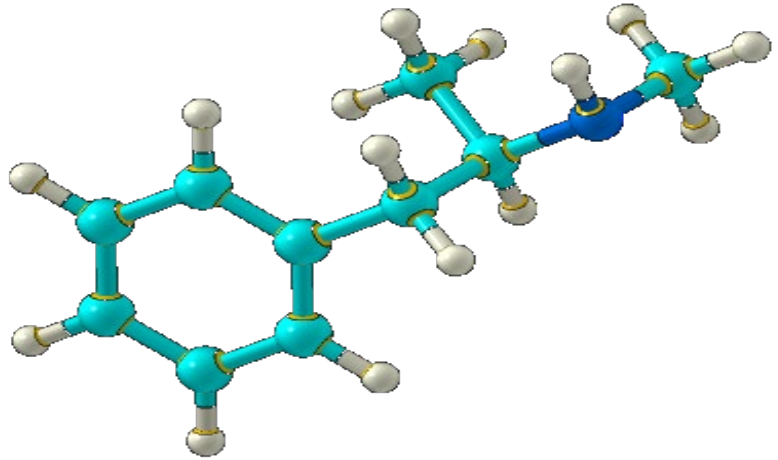
Director

National Institute on Drug Abuse

March 1, 2021

NIH National Institute on Drug Abuse
Advancing Addiction Science

Concerns with Methamphetamine

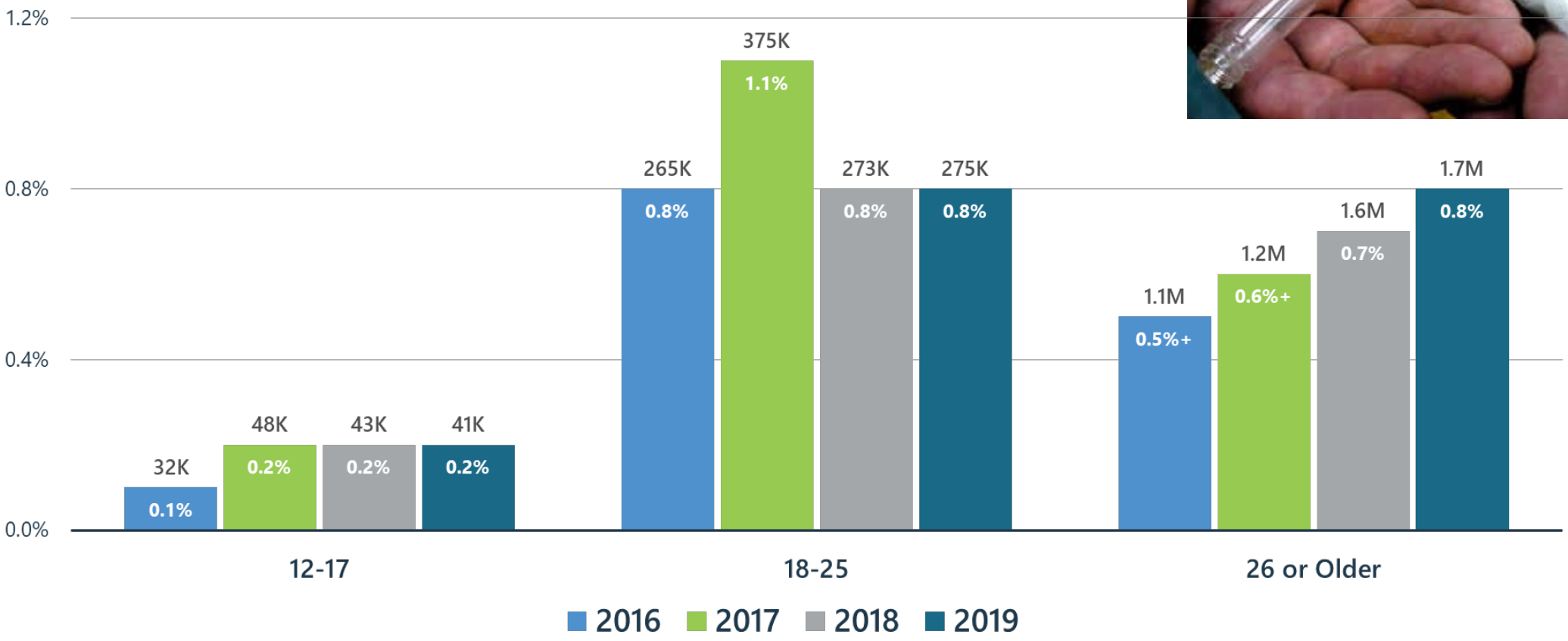


- Highly addictive
- Neurotoxic and damaging to multiple organs in the body
- Intoxication associated with impulsive risky behaviors including those that increase risk of HIV and HCV
- Can be easily manufactured in small clandestine laboratories
- NO medications available to help in its treatment

Methamphetamine Use



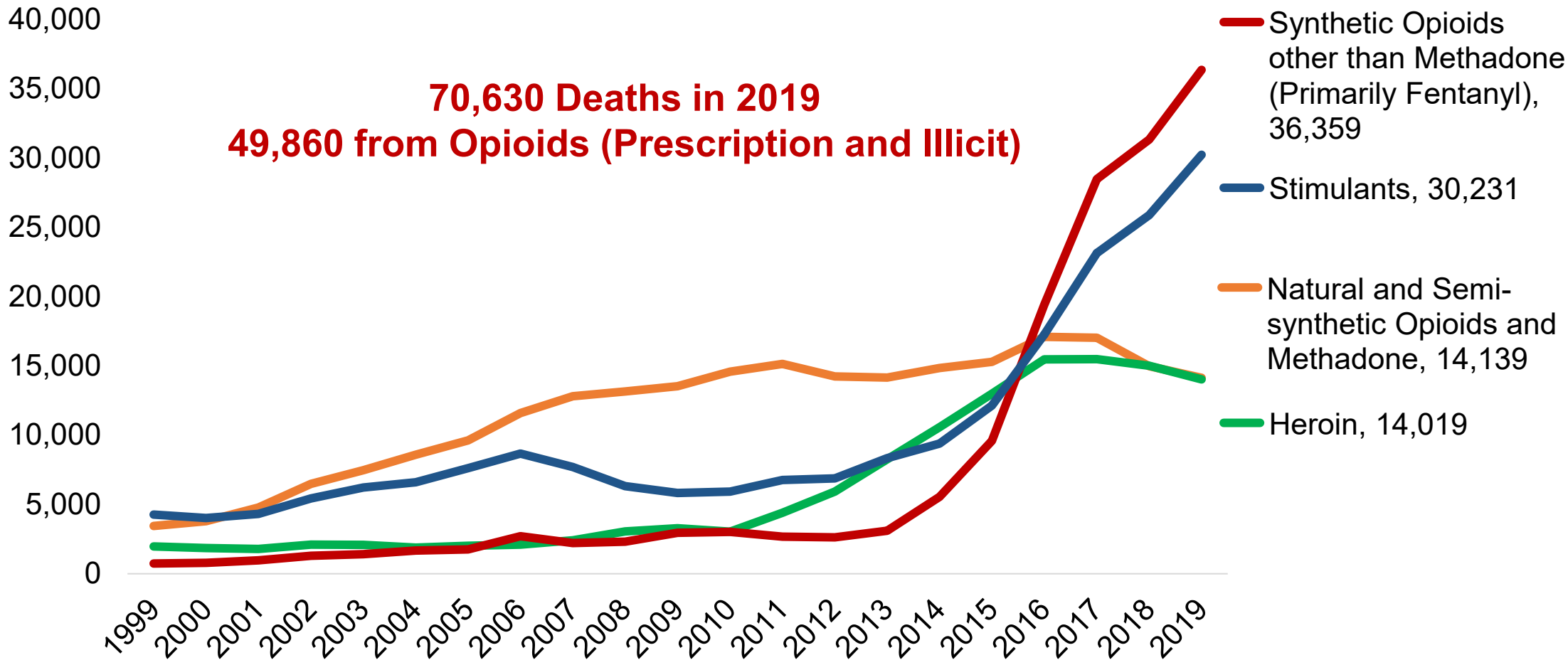
PAST YEAR, 2016-2019 NSDUH, 12+



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

Evolution of Drivers of Overdose Deaths, All Ages

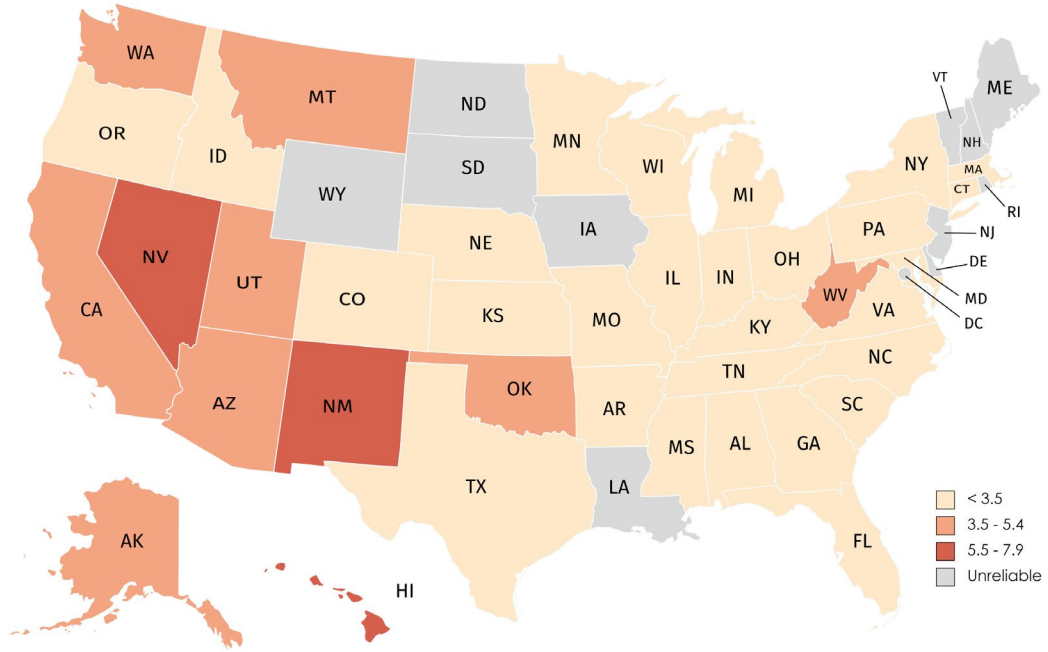
Analgesics → Heroin → Fentanyl → Stimulants



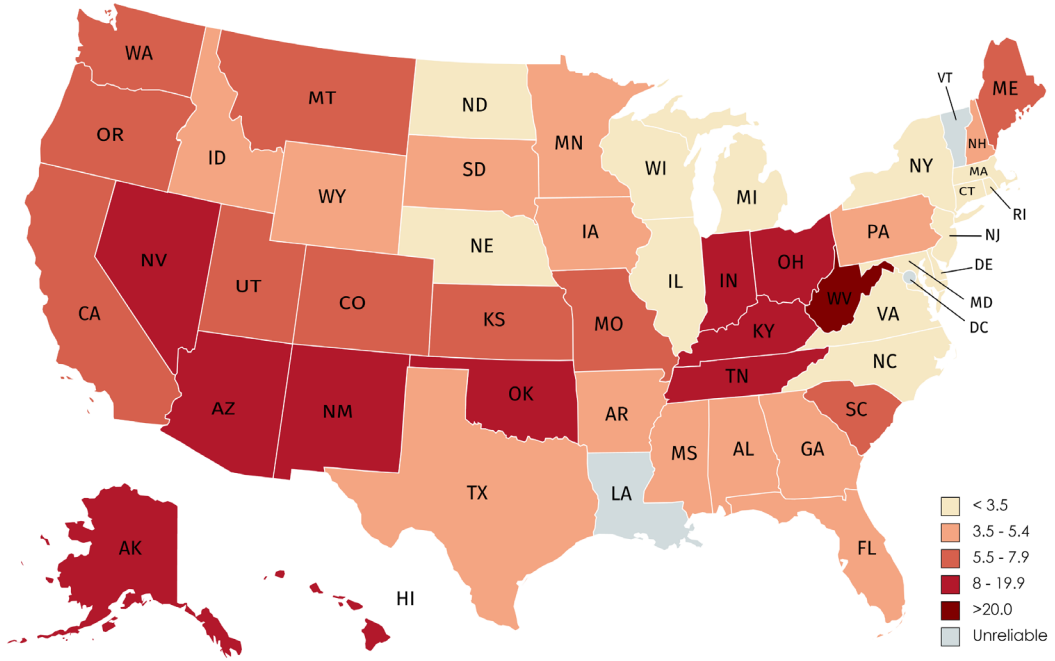
Source: The Multiple Cause of Death data are produced by the Division of Vital Statistics, National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention (CDC), United States Department of Health and Human Services (US DHHS).

U.S. overdose deaths involving methamphetamine* age-adjusted rates/100k persons

2015

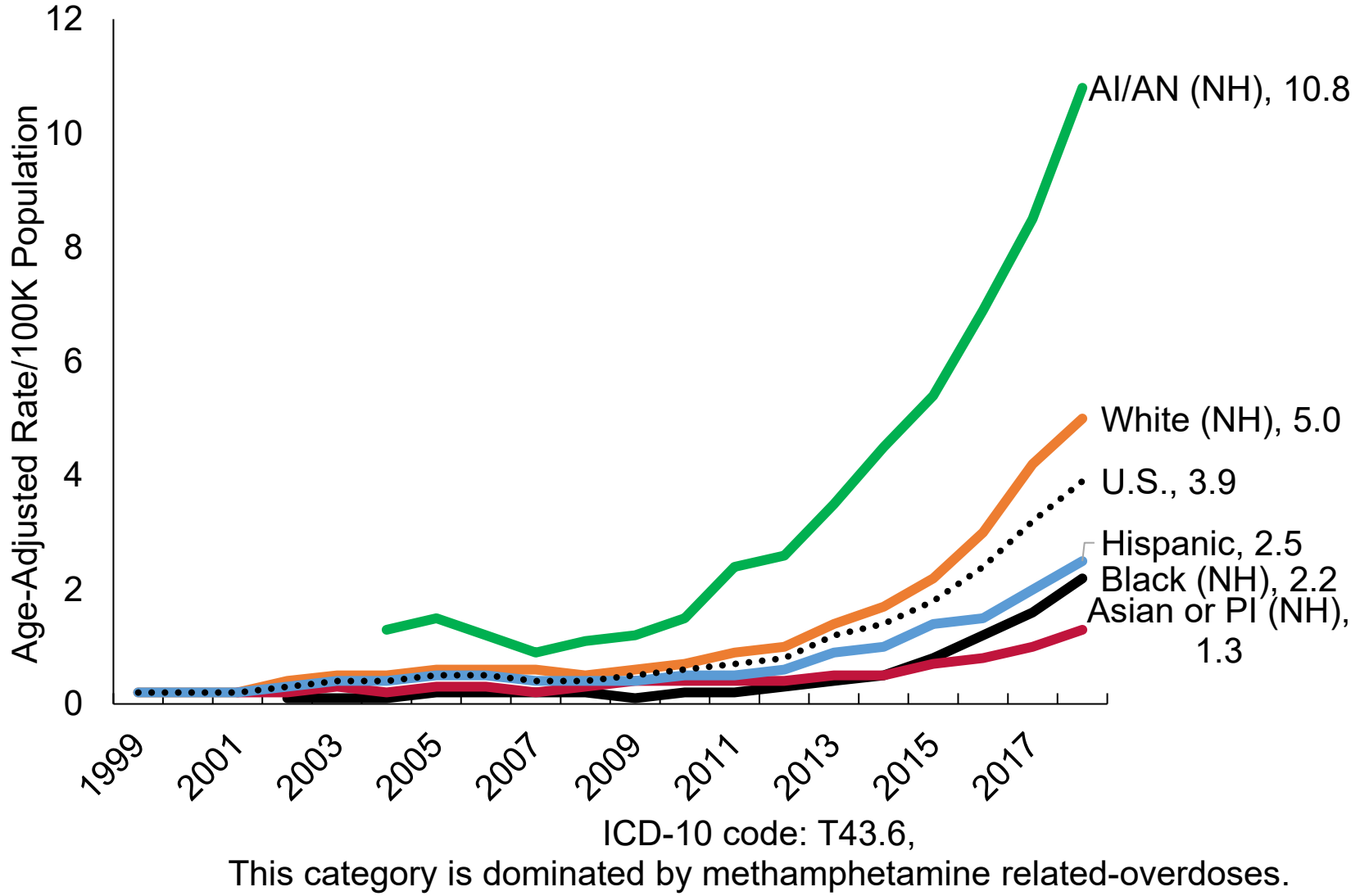


2019



*Psychostimulants With Abuse Potential ICD-10 code (T43.6). This category is dominated by methamphetamine-involved overdose deaths.
Source: CDC, National Center for Health Statistics. Multiple Cause of Death 1999-2019 on CDC WONDER Online Database, released in 2020.

U.S. Overdose Deaths Involving Psychostimulants (Mostly Methamphetamine), by Race



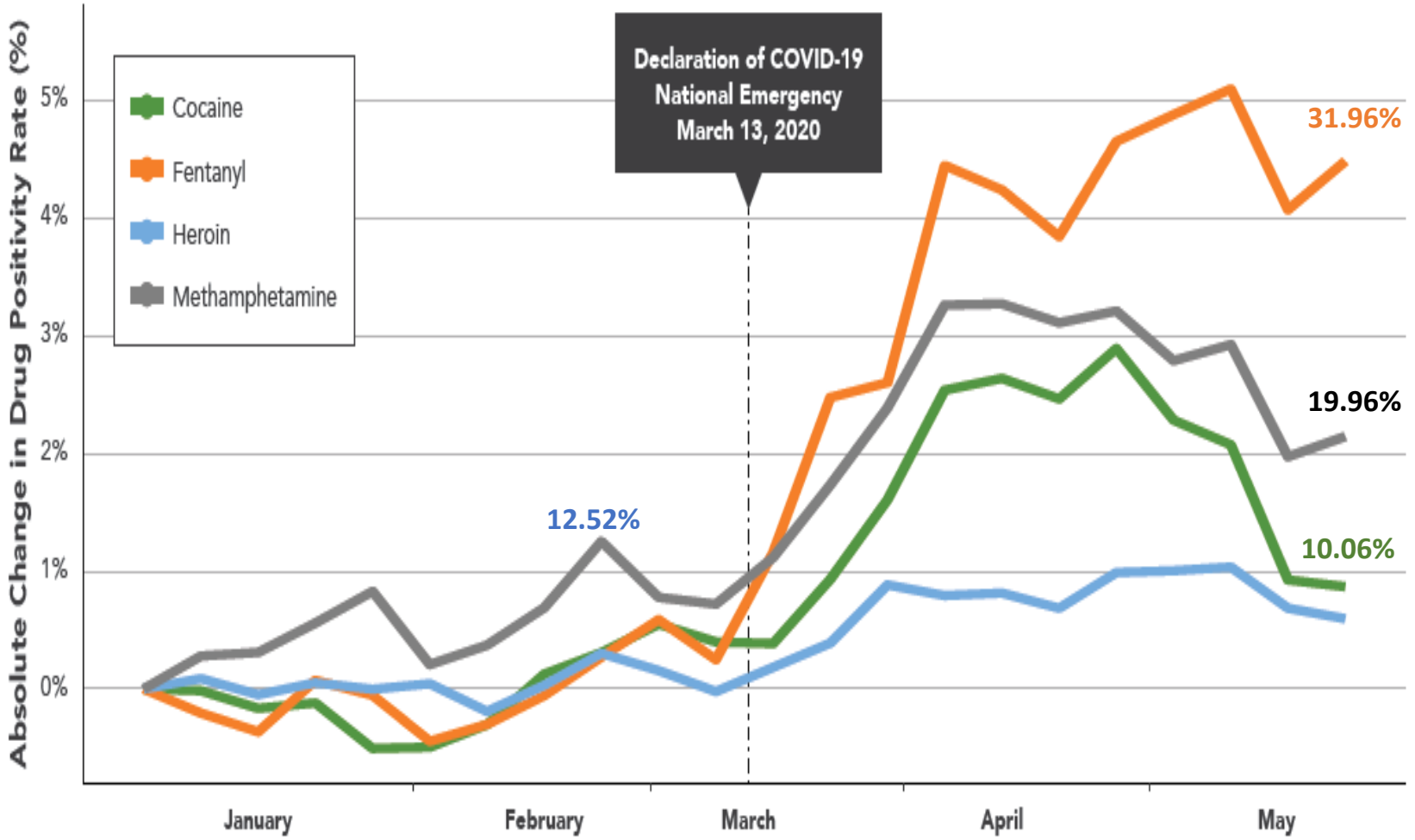
ICD-10 code: T43.6,
This category is dominated by methamphetamine related-overdoses.

Source: CDC WONDER

Intersection Between Drug Crisis and COVID-19



Drug Use Increase During COVID



Millennium Health Signals Report™ COVID-19 Special Edition: Significant Changes in Drug Use During the Pandemic
Volume 2.1 Published July 2020

Overdose Deaths Increased Again in 2019 (and early 2020*)

	ALL DRUGS	HEROIN	NAT & SEMI – SYNTHETIC	METHADONE	SYNTHETIC OPIOIDS	COCAINE	PSYCHO-STIMULANTS (mainly meth)
July 2019 *	69,266	14,793	12,203	2,875	33,704	15,031	14,941
March 2020*	75,687	14,145	12,349	2,837	40,756	17,465	18,033
July 2020*	86,001	14,427	13,259	3,315	50,122	19,542	20,406
July 2019-July 2020 Change	**+24.2%**	**-2.5%**	**+8.7%**	**+15.3%**	**+48.7%**	**+30.0%**	**+36.6%**

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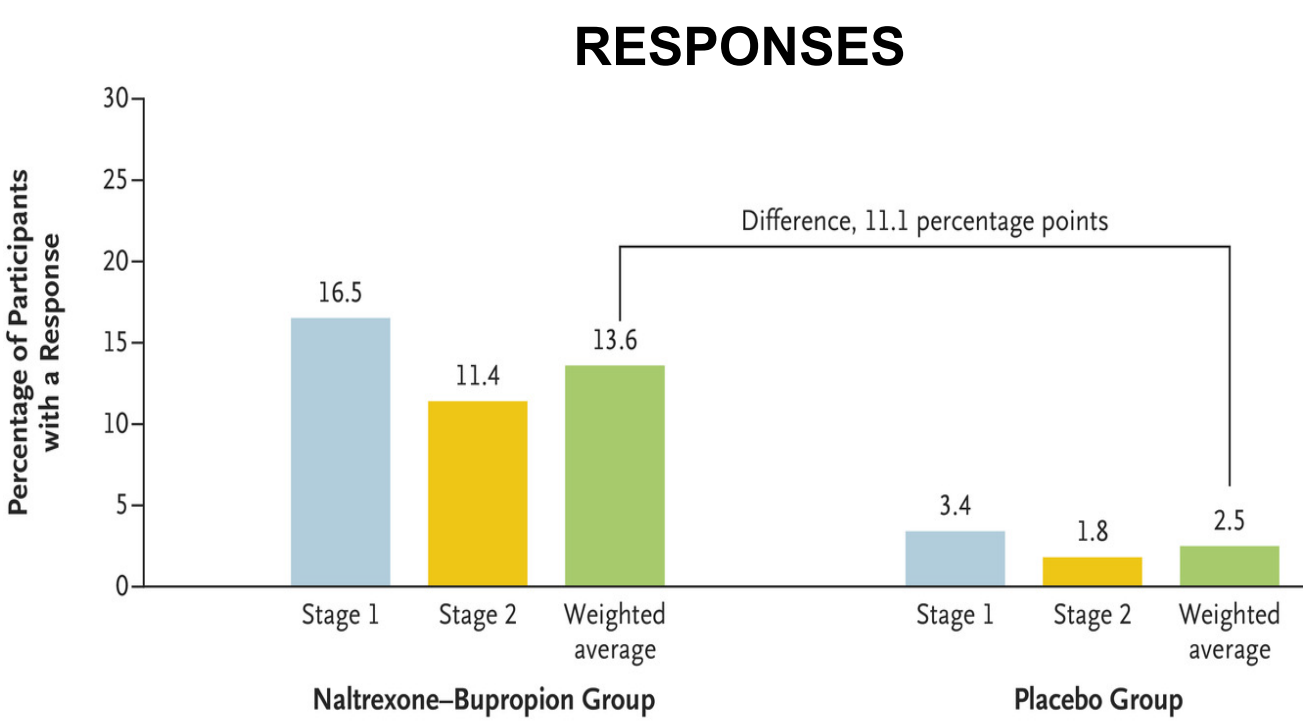
*NCHS Provisional Drug Overdose Death Counts: *https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm*

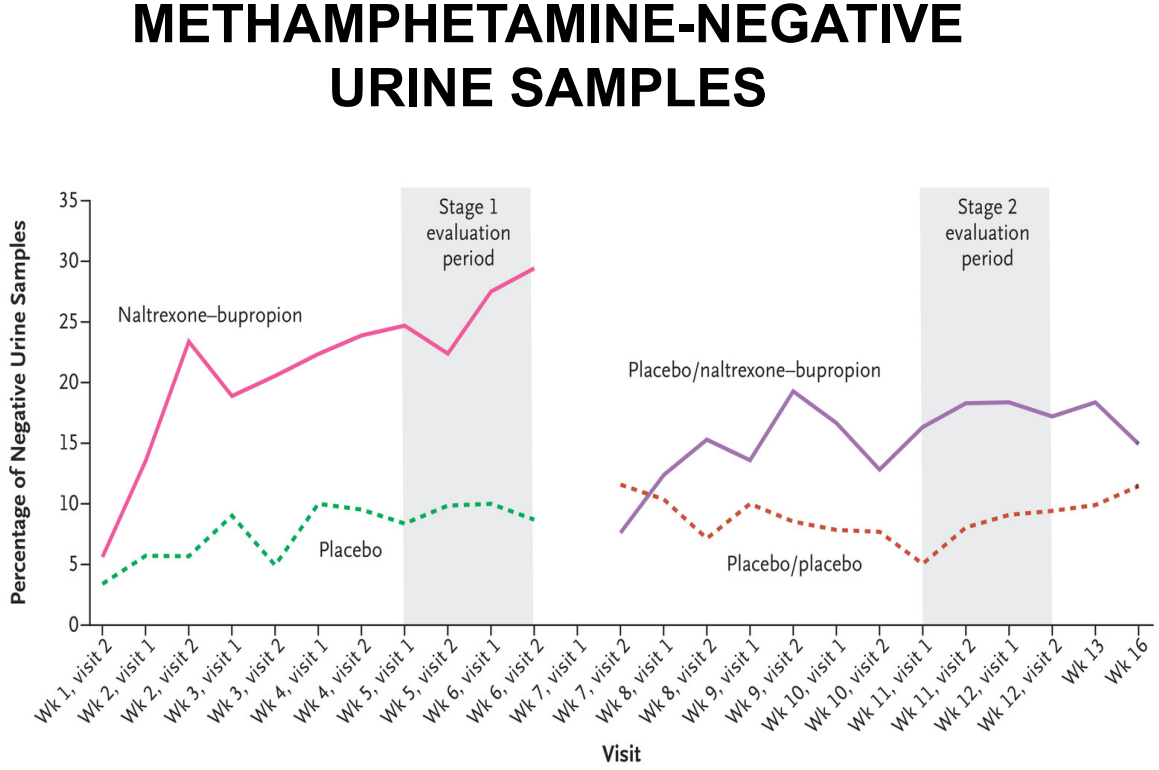
Treating Methamphetamine Use Disorder

- No FDA approved medications
- Behavioral therapies: Most effective intervention is **contingency management** (uses rewards for evidence of abstinence) **combined with a community reinforcement approach** (uses a range of recreational, familial, social, and vocational reinforcers, to make non-drug-using lifestyle more rewarding than substance use).
- Studies on the effectiveness of CM have provided over $200 per year, and up to $2,000/year. Most treatment programs receiving federal funds are allowed $75/patient per year.

De Crescenzo et al., PLoS Medicine 2018; 15(12): e1002715.

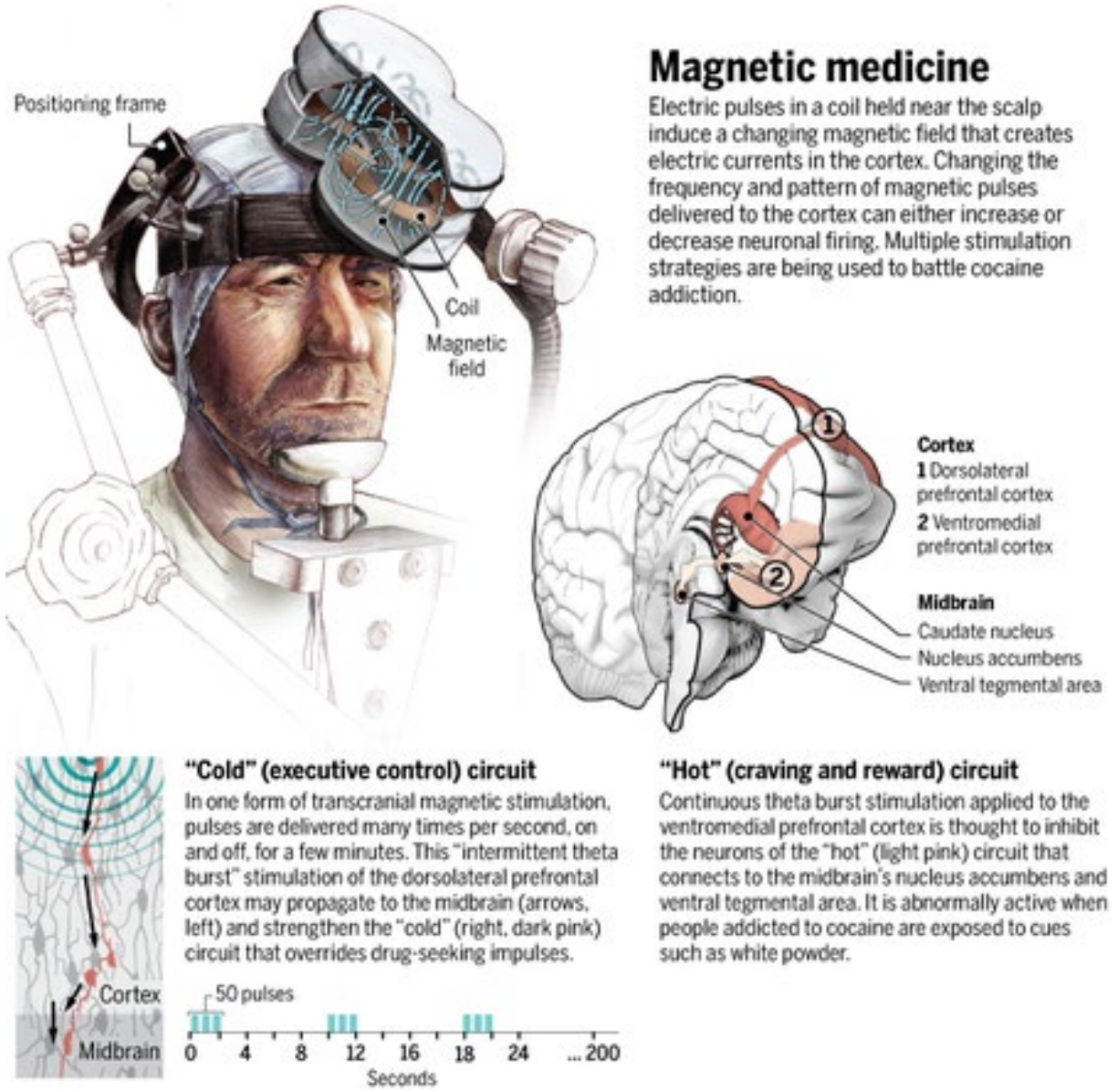
Combination Treatment (Bupropion + Naltrexone) For Methamphetamine Use Disorder





Trivedi MH, et al. Trial of Bupropion and Naltrexone in Methamphetamine Use Disorder. New England Journal of Medicine. January 14, 2021.

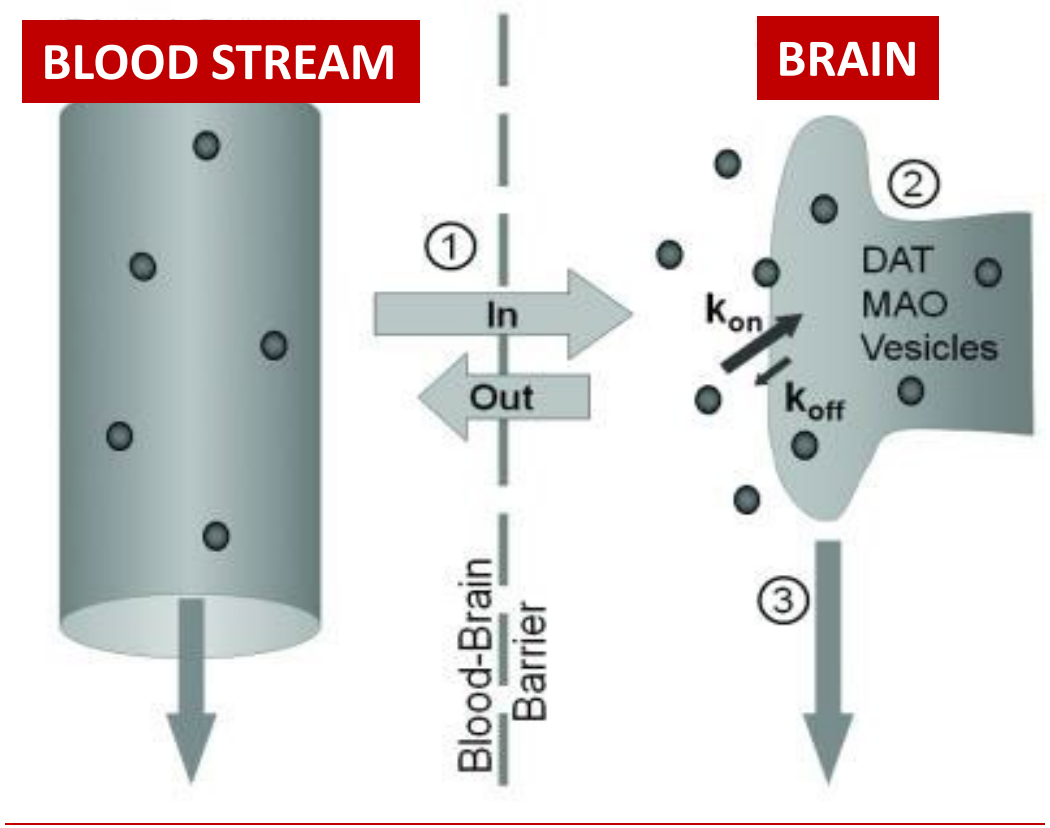
Transcranial Magnetic Stimulation: Methamphetamine Addiction



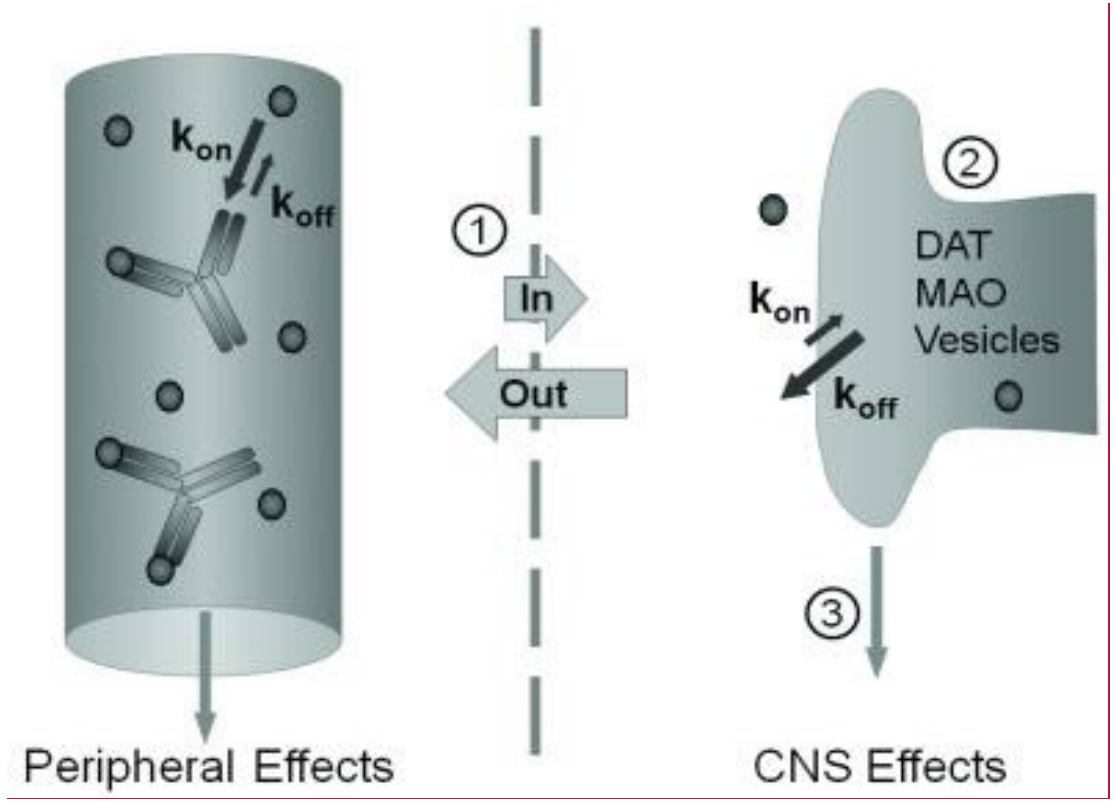
Wadman, Science 2017.

Methamphetamine Effects in the Brain

BEFORE Anti-Meth Antibody Treatment



AFTER Anti-Meth Antibody Treatment



Gentry WB et al., Human Vaccines 2009; 5(4): 206-213.

THANK YOU!