The New Frontier of Psychoactive Drug Surveillance

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ROCKY MOUNTAIN POISON & DRUG SAFETY
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RMPDS/RADARS® System 19th Annual Scientific Meeting

Total Registrants	350+
Government	100
Academic	175
Industry/Pharma	25
Other	50+

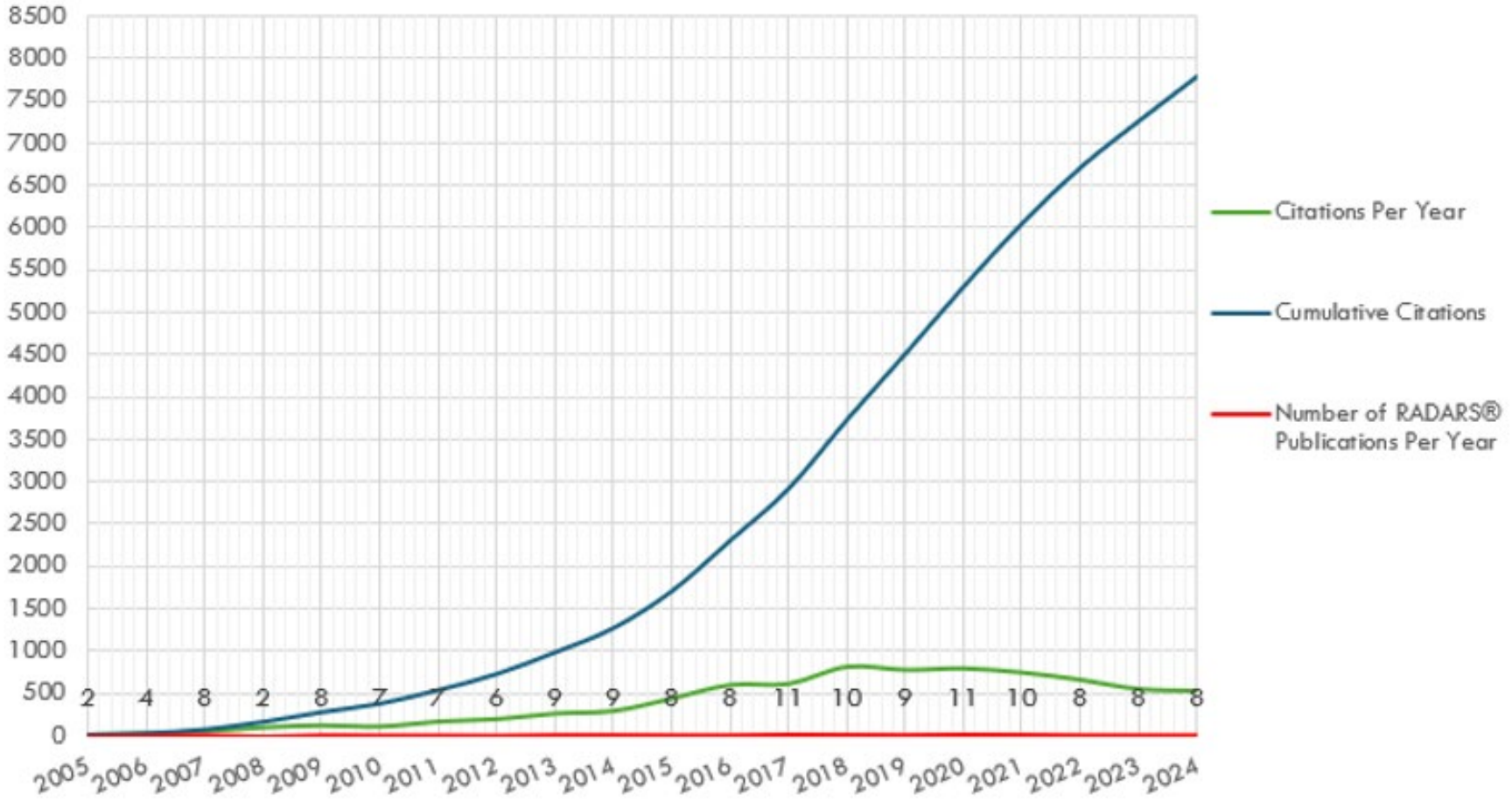
Jess Kryzenske, Senior Product Manager

Thanks for your interest (and your questions/comments) as we go through the meeting!

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RADARS® System Publications Through 2024



Publications from RMPDS - 2025

- **Psychedelic Trips: Travel Within the United States to Use Psychedelic Drugs After Legalization**. Black JC, Rockhill KM, Fox EJ, et.al. Ann Emerg Med
- **People entering opioid substance use treatment have low rates of naloxone knowledge and possession**. Bredenberg E, Olsen H, Ladka M, et al. Drug Alcohol Dependence
- **Comparison of heroin and fentanyl use in US nationally representative surveys.** Pytell JD, Christine PJ, LeMasters K, et al. Addiction Science & Clinical Practice
- **Polysubstance Use Profiles Among the General Adult Population, United States, 2022**. Rockhill KM, Black JC, Iwanicki J, Abraham A. American Journal Public Health
- **The Rise of Psilocybin Use in the United States: A Multisource Observational Study**. Rockhill KM, Black JC, Ladka MS, et al. Annals Internal Medicine
- **Use of Causal Framework to Evaluate Effect of Abuse Deterrent Properties of Extended-Release Oxycodone on Tampering in a Real-World Settings**. Rockhill KM, Burkett H, Dart R, Black JC. Pharmacoepidemioogyl Drug Safety.
- **Clinical effects of psychedelic substances reported to United States poison centers: 2012 to 2022**. Simon MW, Olsen HA, Hoyte CO, Black JC, et al. Ann Emerg Med.

Figure 2. U.S. Overdose Deaths*, Select Drugs or Drug Categories, 1999-2023

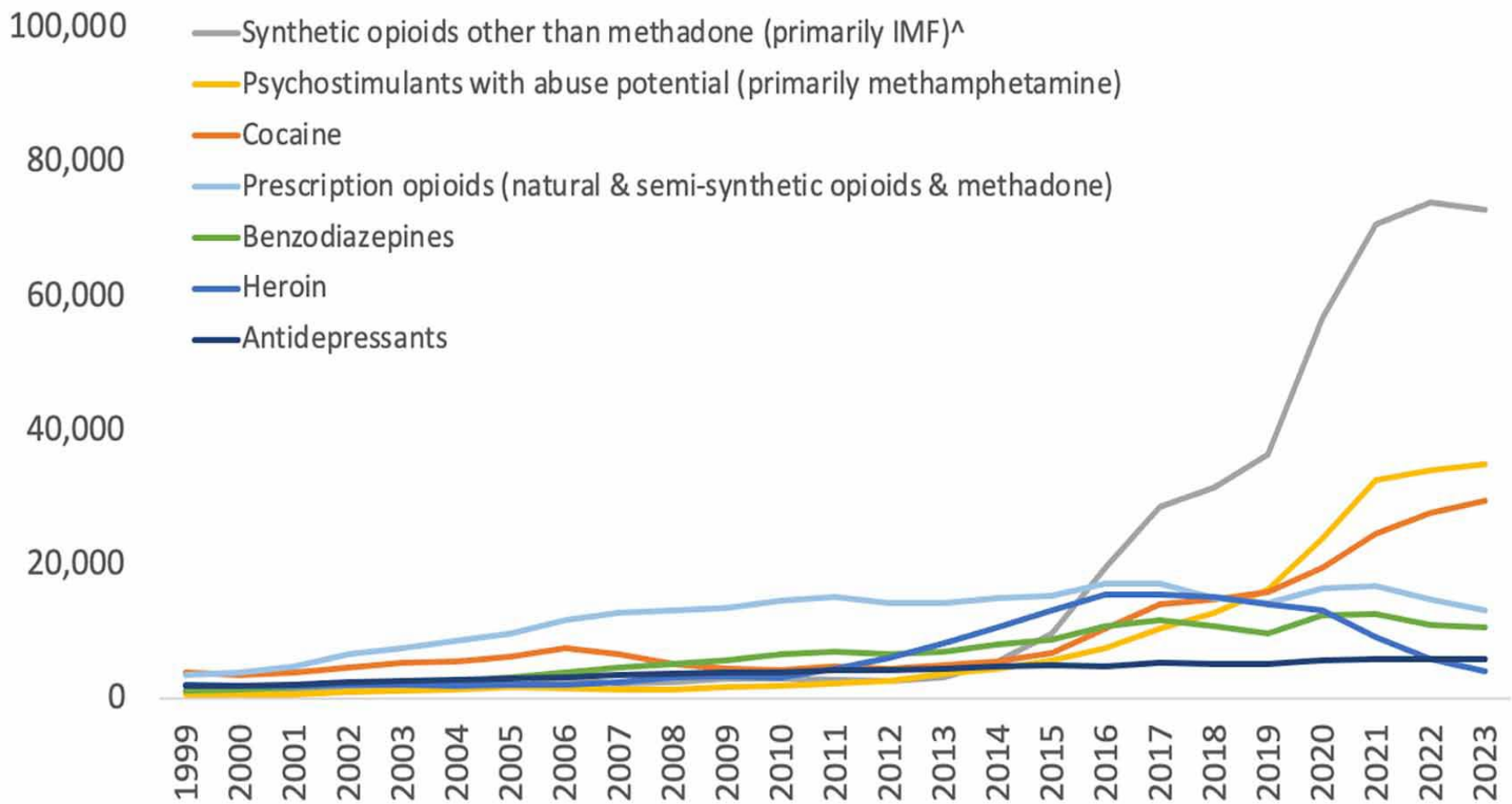
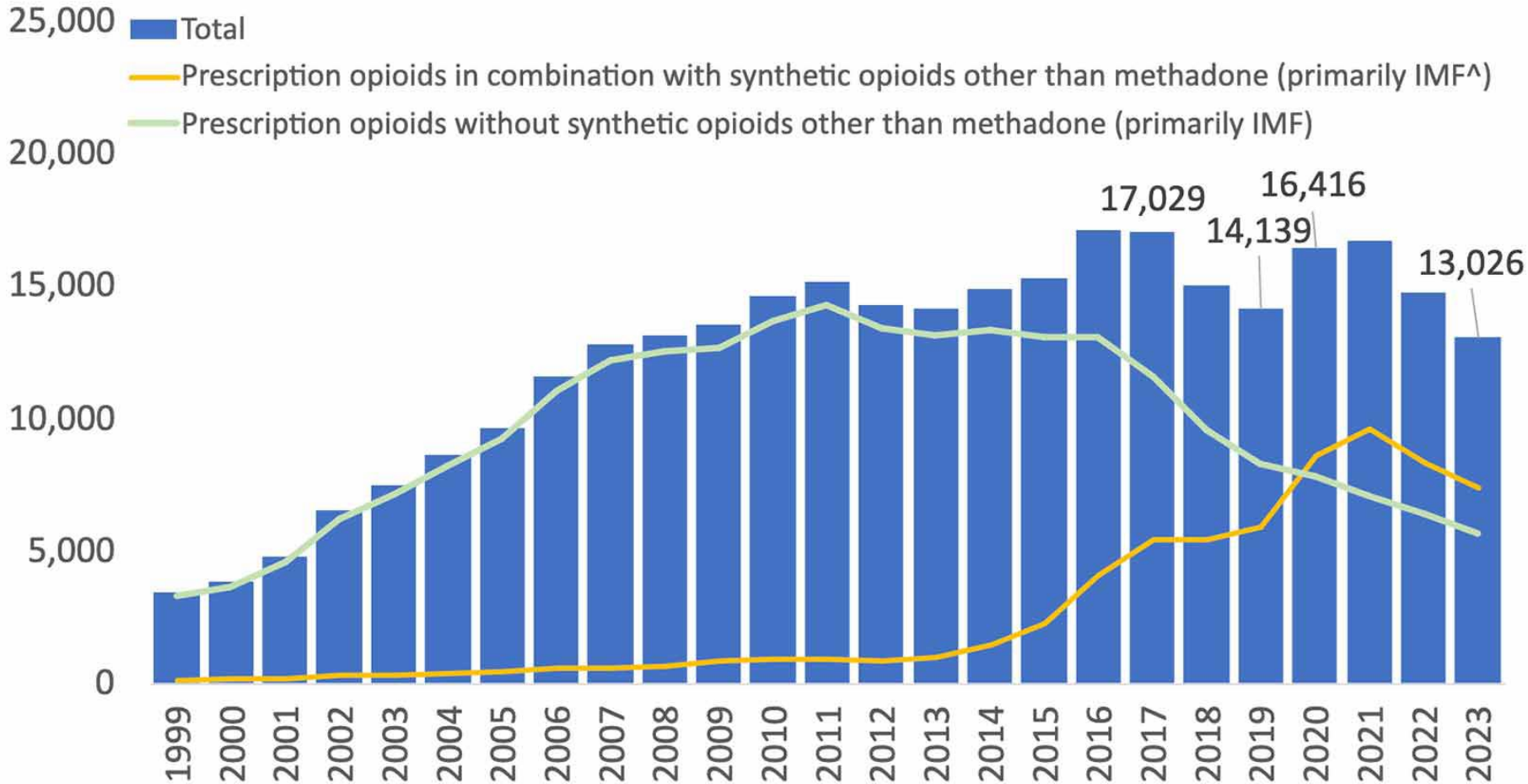
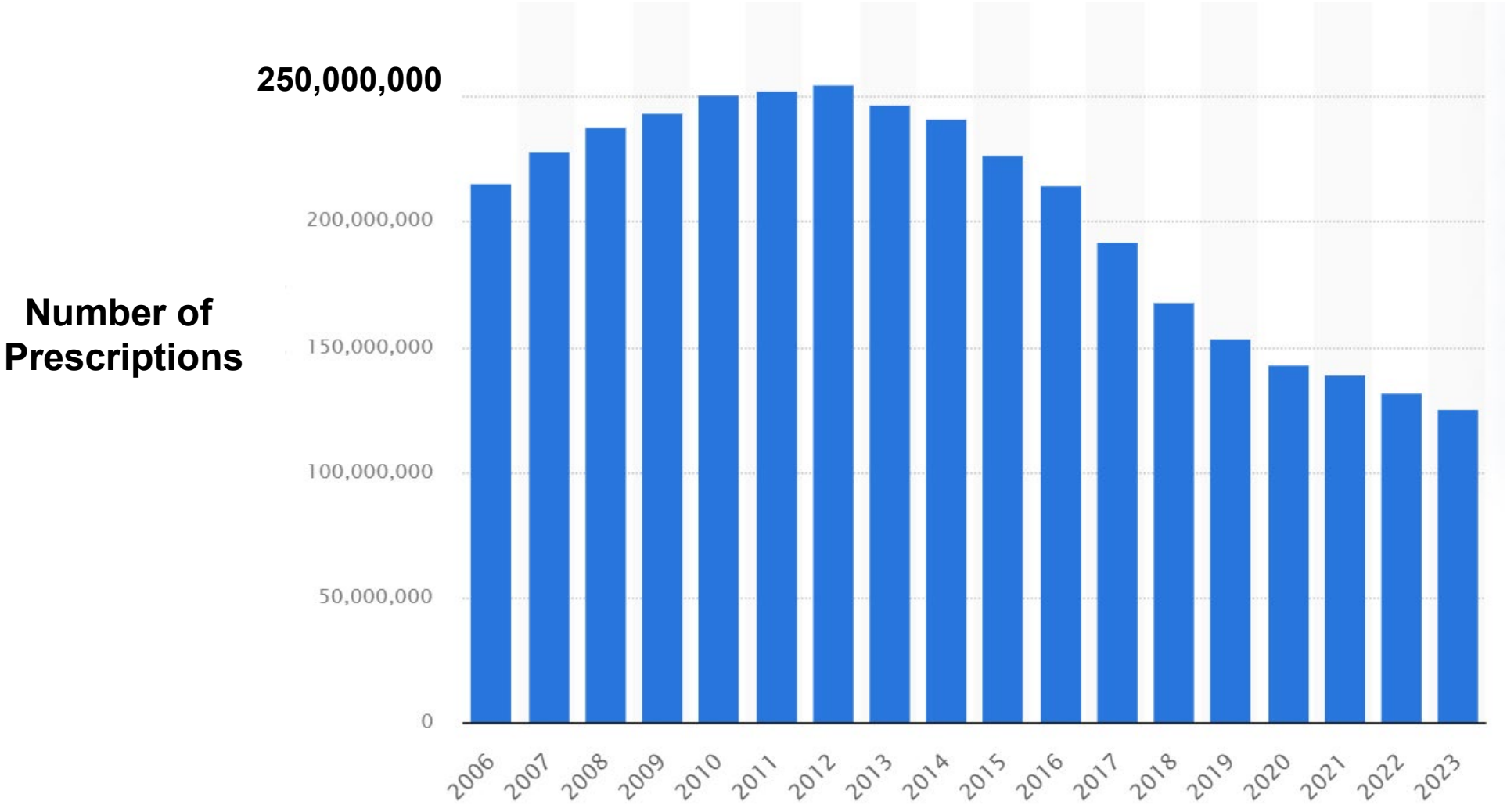


Figure 4. U.S. Overdose Deaths Involving Prescription Opioids*, 1999-2023

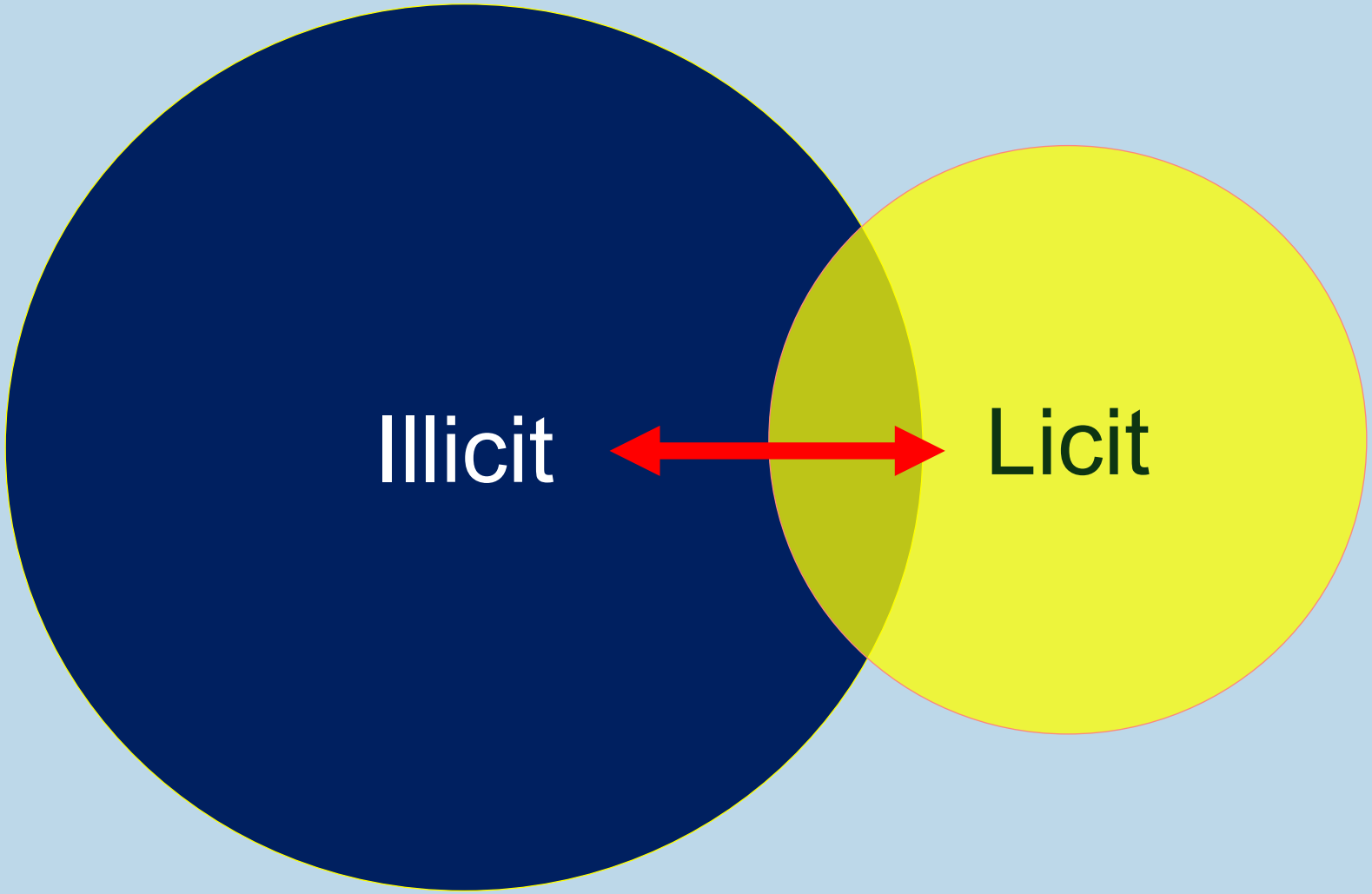


Number of Opioid Prescriptions Continue to Decrease



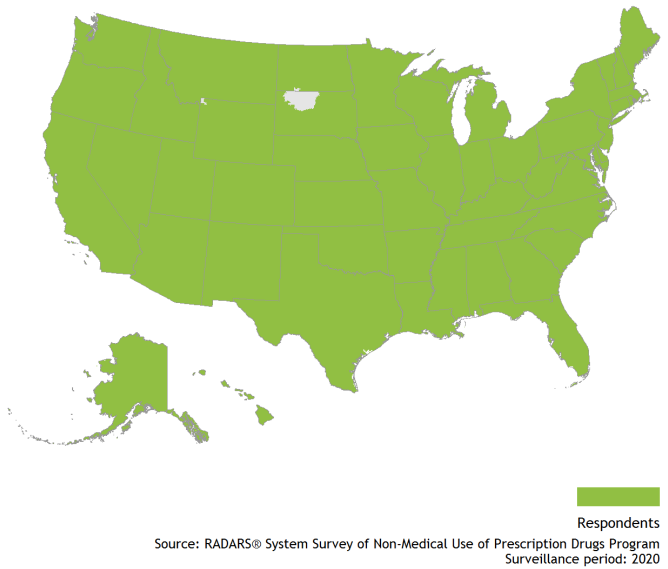
https://www.statista.com/statistics/753149/total-number-of-opioid-rx-prescriptions-in-us/

What is Role of Prescription Medications in the US Drug Supply?

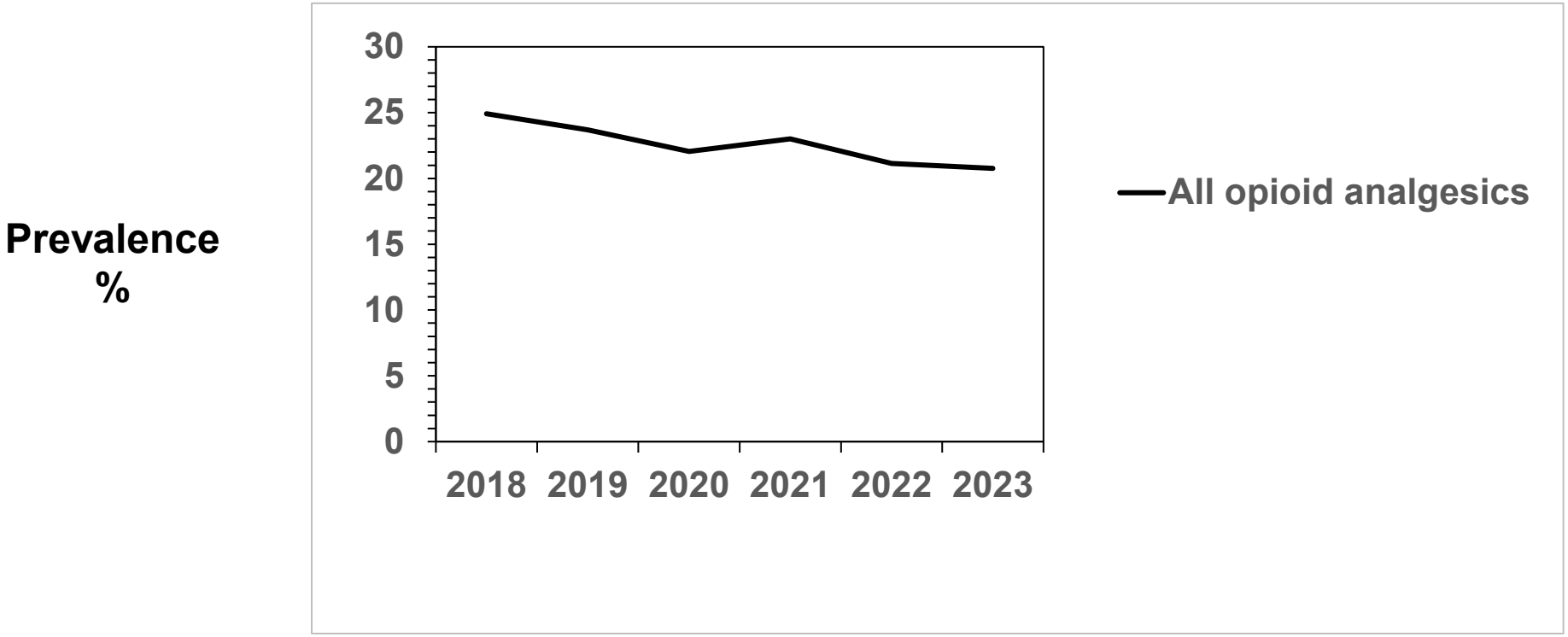


RADARS® System Nonmedical Use of Rx Drugs (NMURx)

- Online survey administered twice yearly and a total of 60,000 respondents annually.
- Collects data about lifetime and recent non-medical use, misuse and abuse of prescription and illicit medications.
- NMU: use “in a way not directed by your healthcare provider, even just once or just a little”
- Sources, reasons, routes, patterns of use
- Periodically validated over the past 6 years

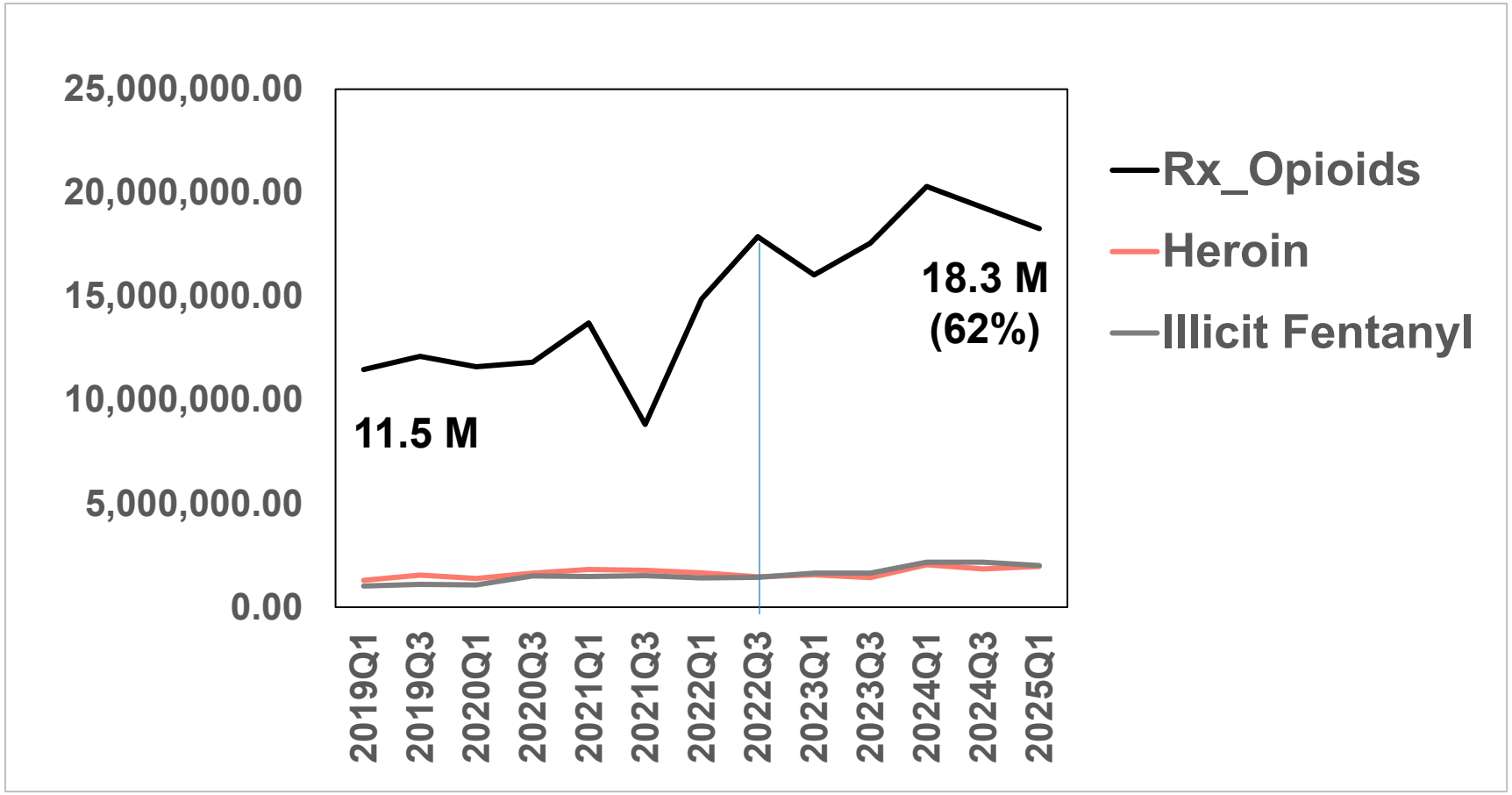


Prescription Opioid Use is Decreasing in the United States



Source: NMURx 2019-2025

Number of Rx Opioid Nonmedical Users is Increasing



Source: NMURx 2019-2025

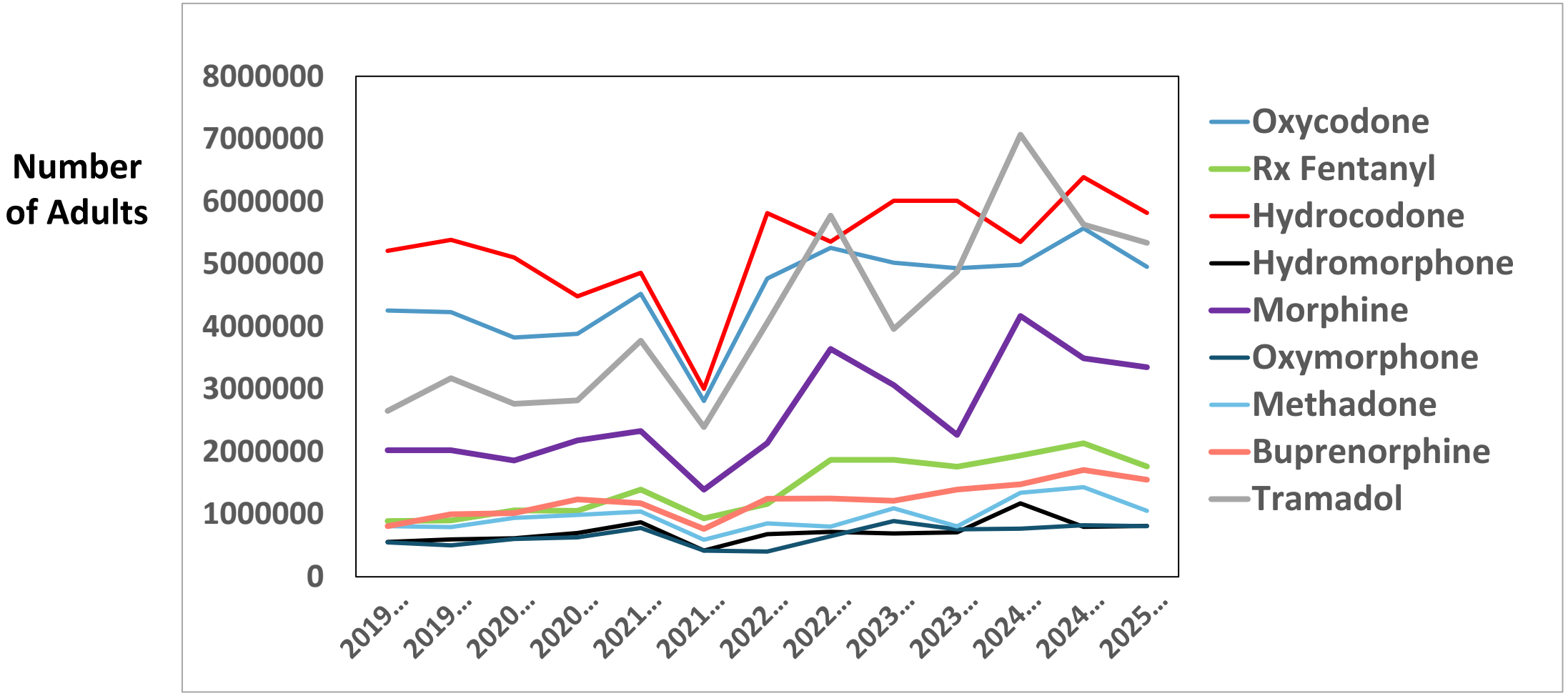
NMU: use "in a way not directed by your healthcare provider, even just once or just a little"

Illicit Opioids: Heroin and Illicit Fentanyl Also Increasing



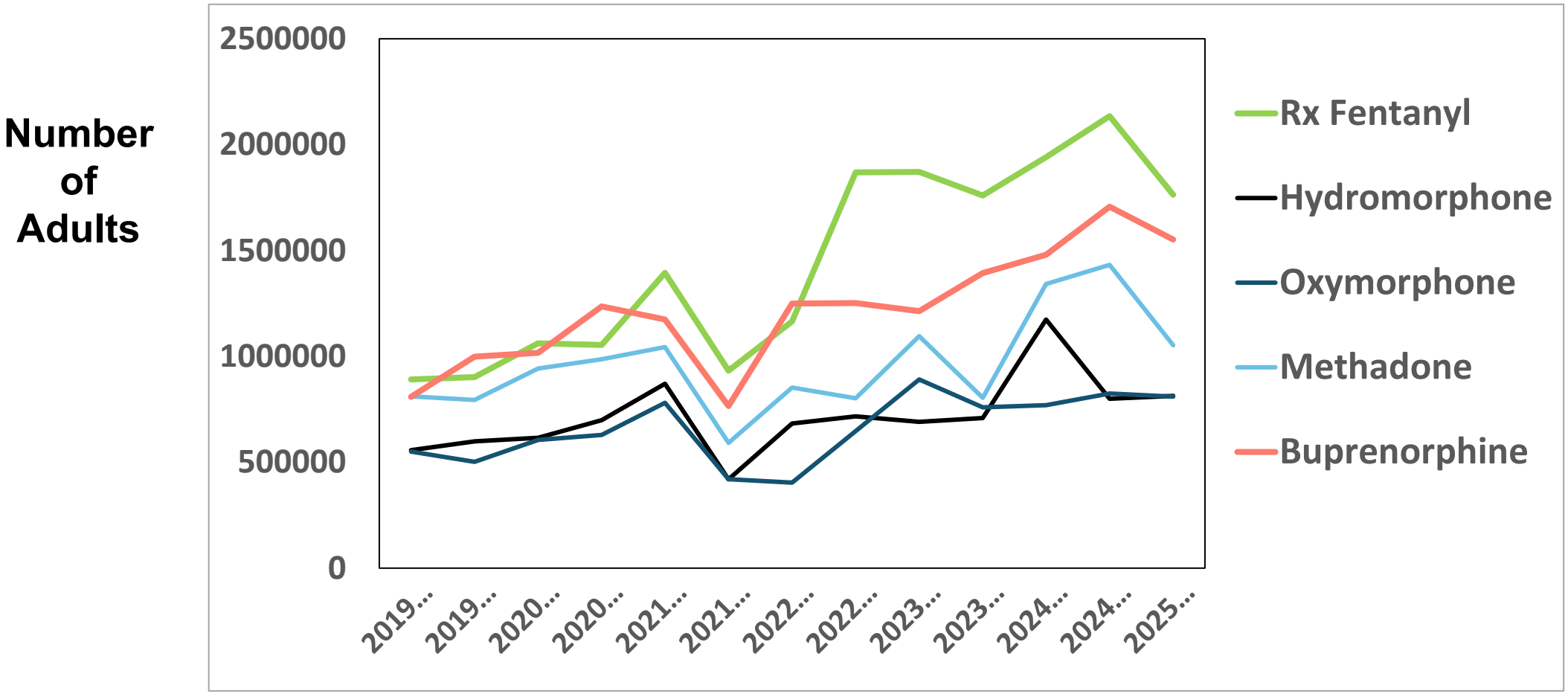
Source: NMURx 2019-2025

NMU of Most Rx Opioids Increasing
Tramadol, Morphine, Fentanyl, Buprenorphine Largest Increases



Source: NMURx 2019-2025

Focus on Lower Volume Drugs: Fentanyl, Buprenorphine, Methadone Have Large Relative Increase

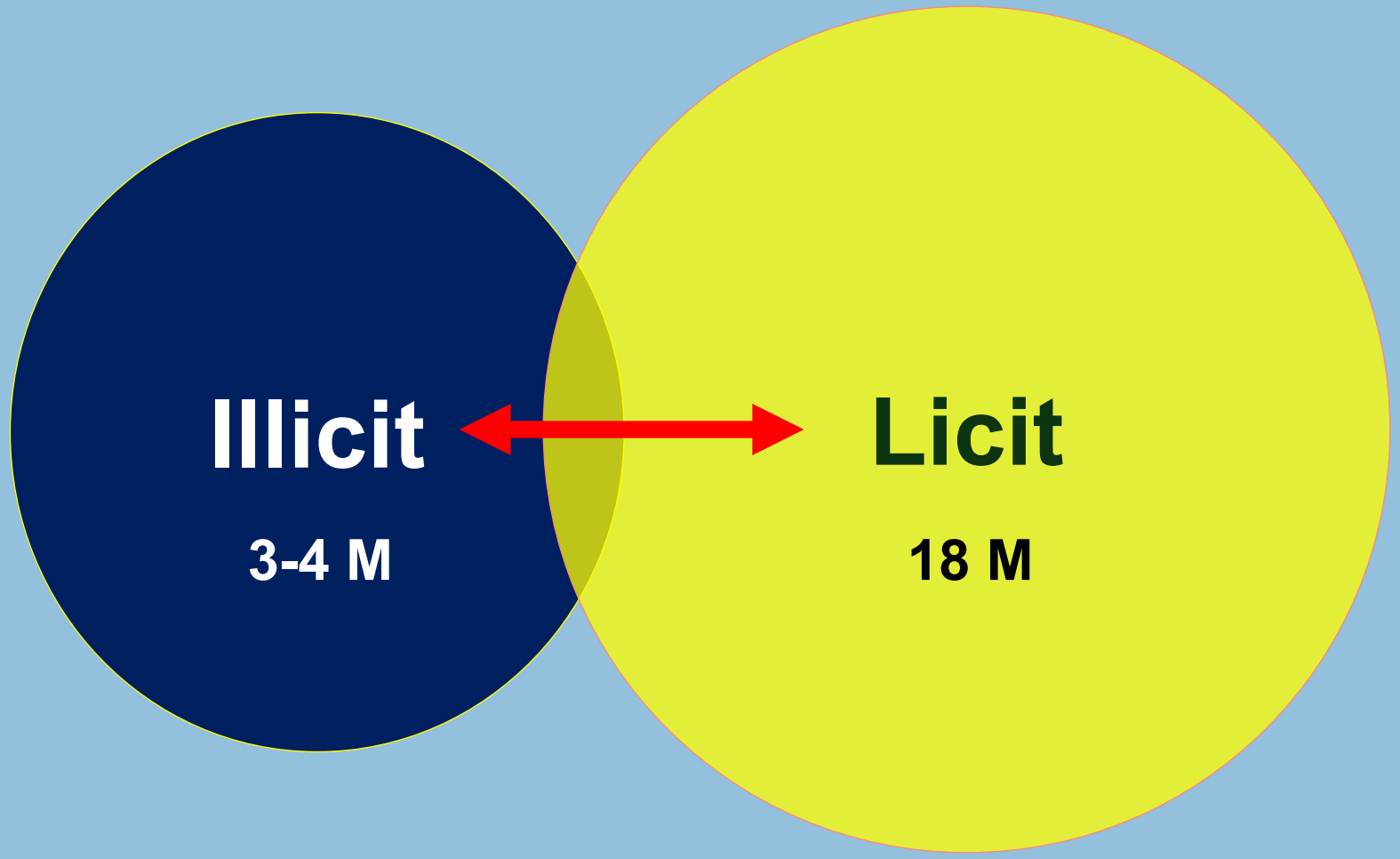


Source: NMURx 2019-2025

Discussion

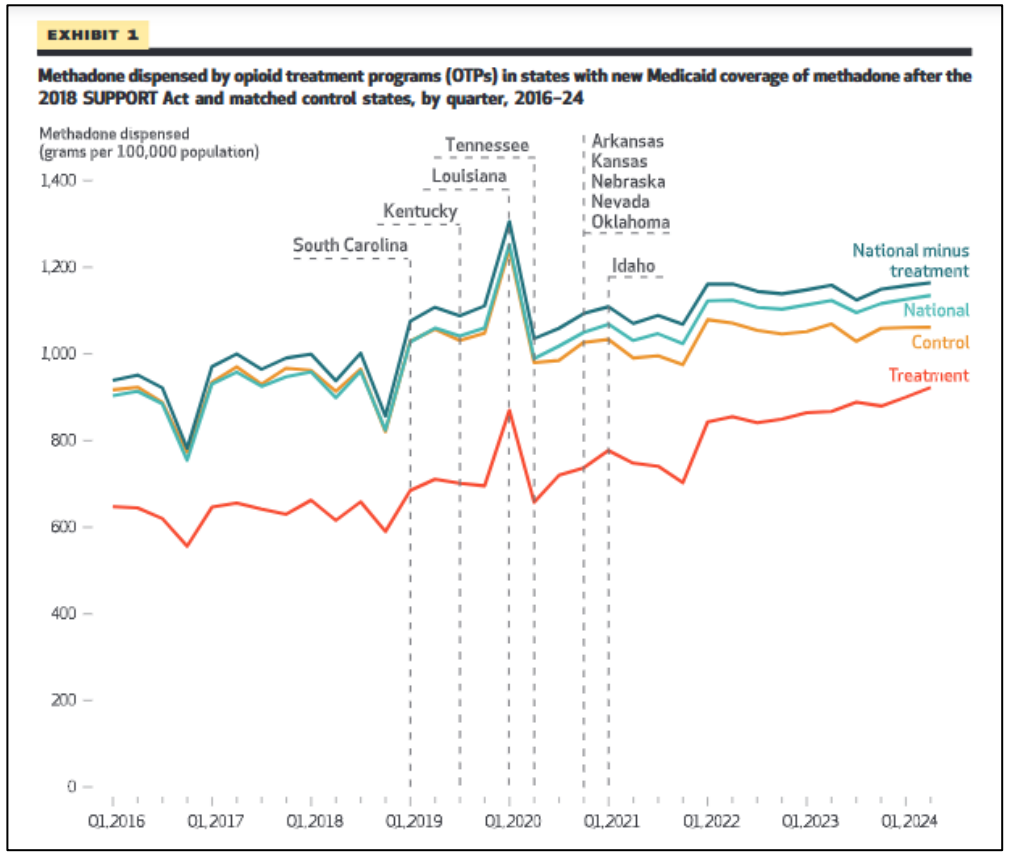
- NMURx reports increasing trends over the past 5 years.
- What is the role of prescription drug availability on the NMU or abuse of medications?

Nonmedical Use



Why Would Methadone and Buprenorphine NMU Increase?

Increase in Methadone Dispensed by Opioid Treatment Programs, 2016 -2023

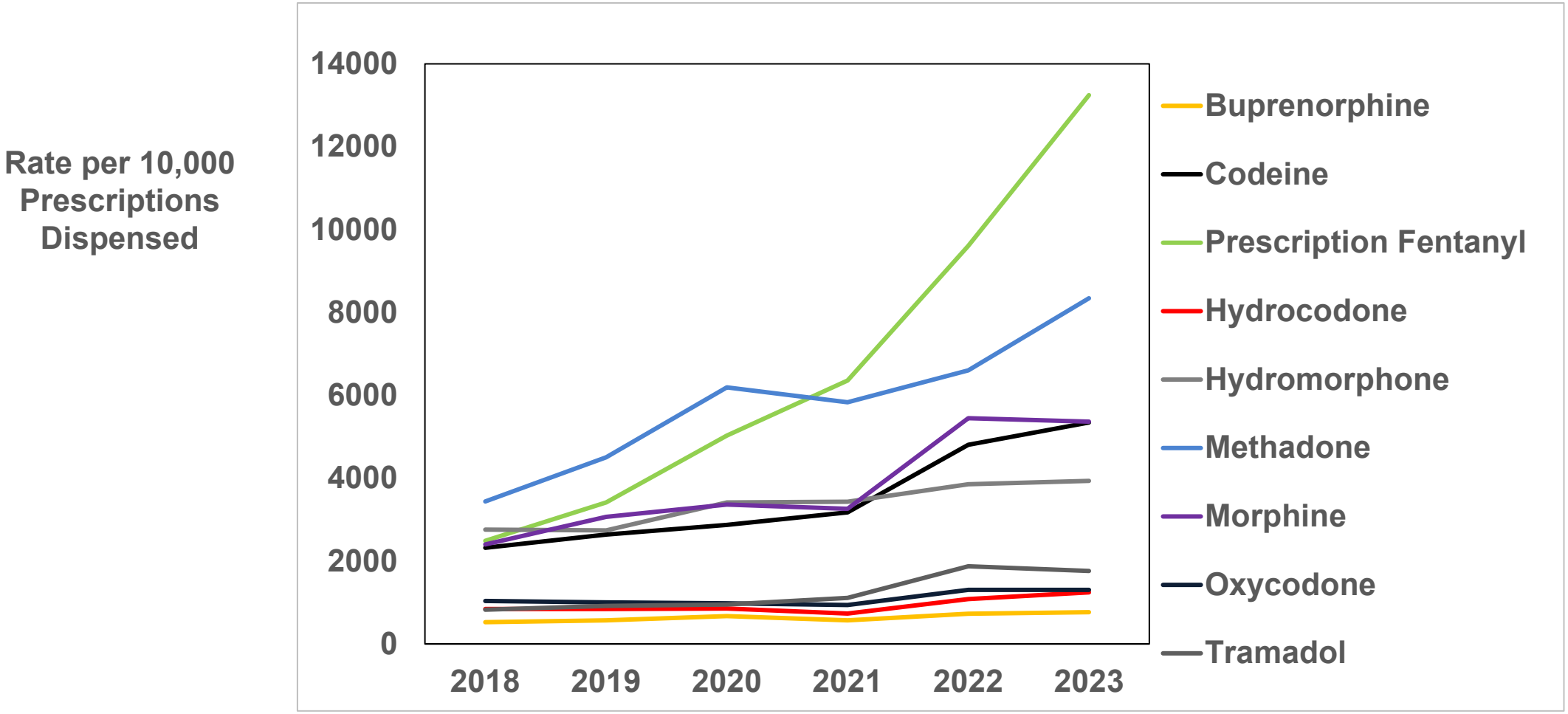


https://www.healthaffairs.org/doi/epdf/10.1377/hlthaff.2025.00319

Why Would Rx Fentanyl Increase?

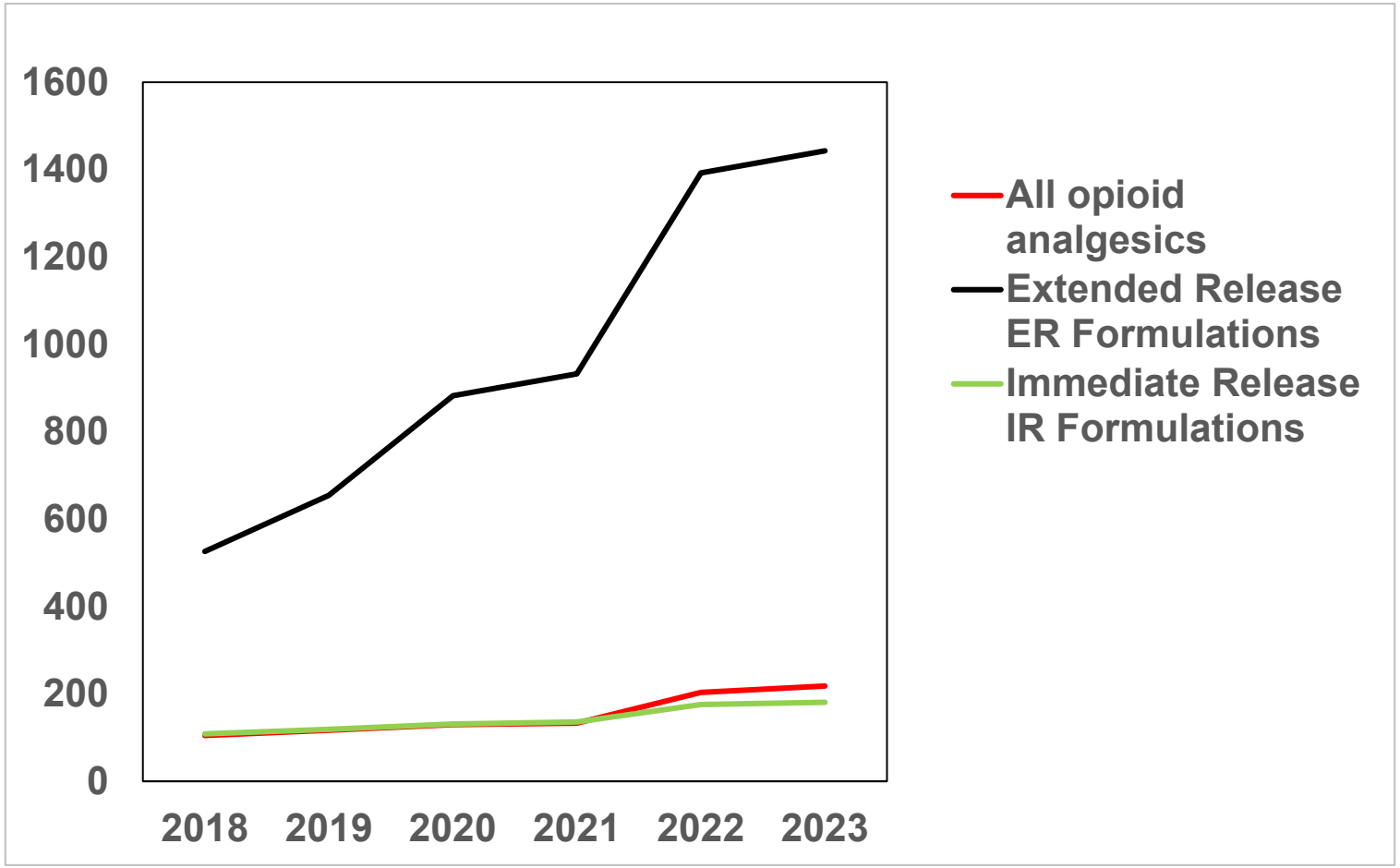
- Prescriptions for fentanyl decreased
- Preferential availability to nonmedical users vs. legitimate users?
- Misidentification of counterfeit fentanyl by respondent
  - Why would this change over the past 6 years?
- Is misidentification important?
  - Still useful to see which people think they are buying fentanyl

NMU of Rx Opioids Increased Further After Adjustment for Prescription Volume



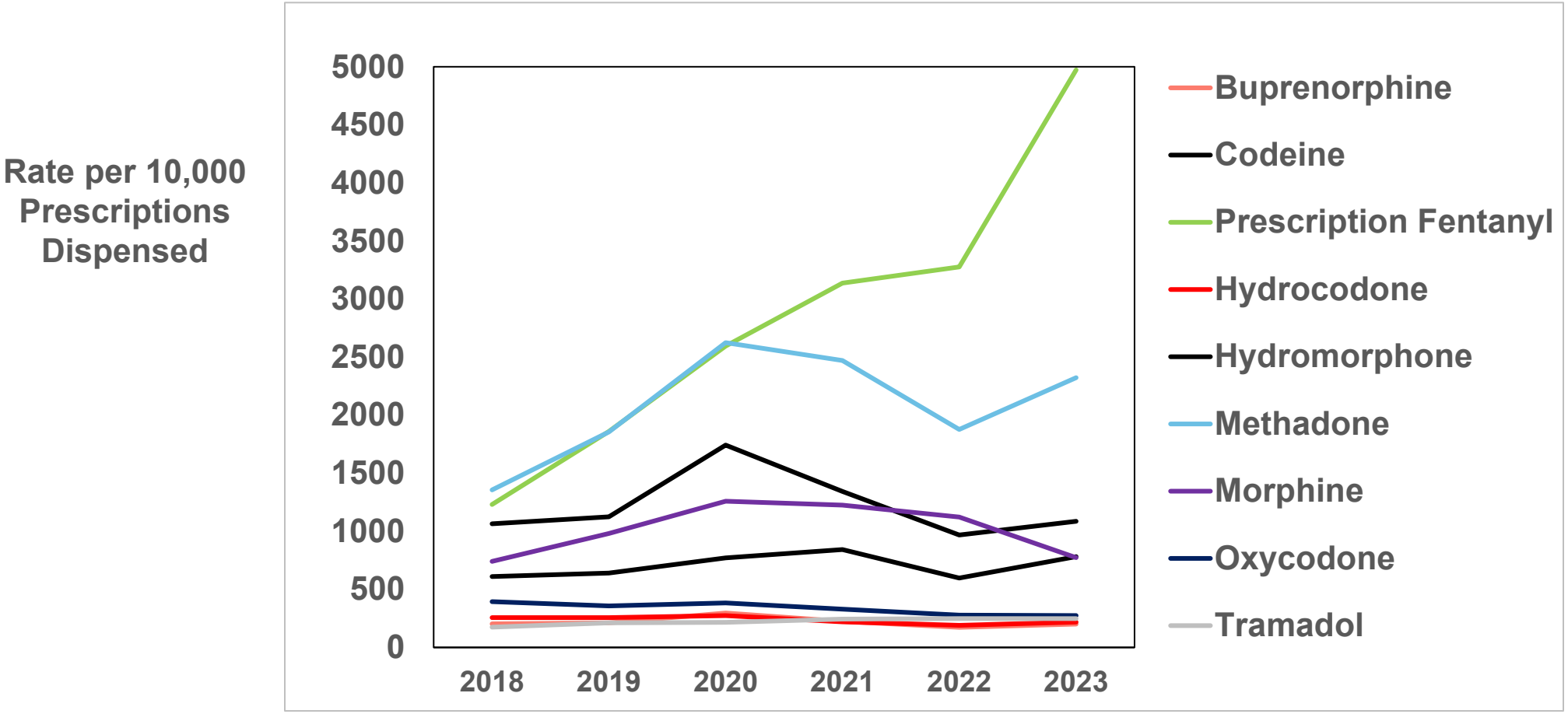
Source: NMURx 2019-2025

Rx Adjusted Analysis: NMU of ER Opioids Increased 3-fold per Rx



Source: NMURx 2019-2025

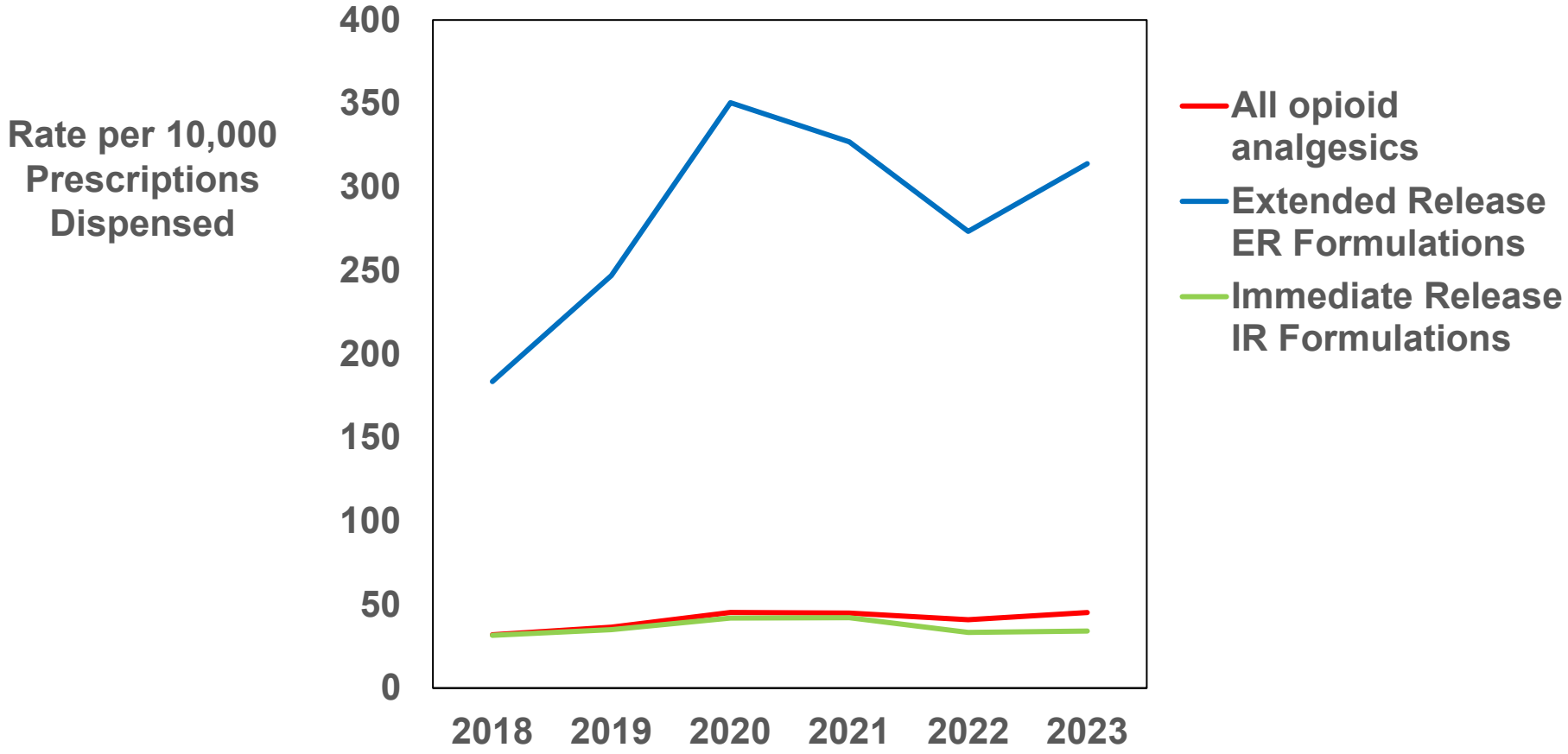
NMURx Definition of Abuse is Not Increasing for All Opioids



NMURx Definition of Abuse: “for enjoyment or to get high” or “to come down from a high or another drug.”

Source: NMURx 2019-2025

Abuse Also Increased For ER Formulations



Are NMURx Results in Conflict with Other Measures?

- The rate of Misuse in the National Survey of Drug Use and Health is lower and has been flat for 2021 – 2023



NMU Definition is Inclusive to increase sensitivity

= FDA Designated Outcomes

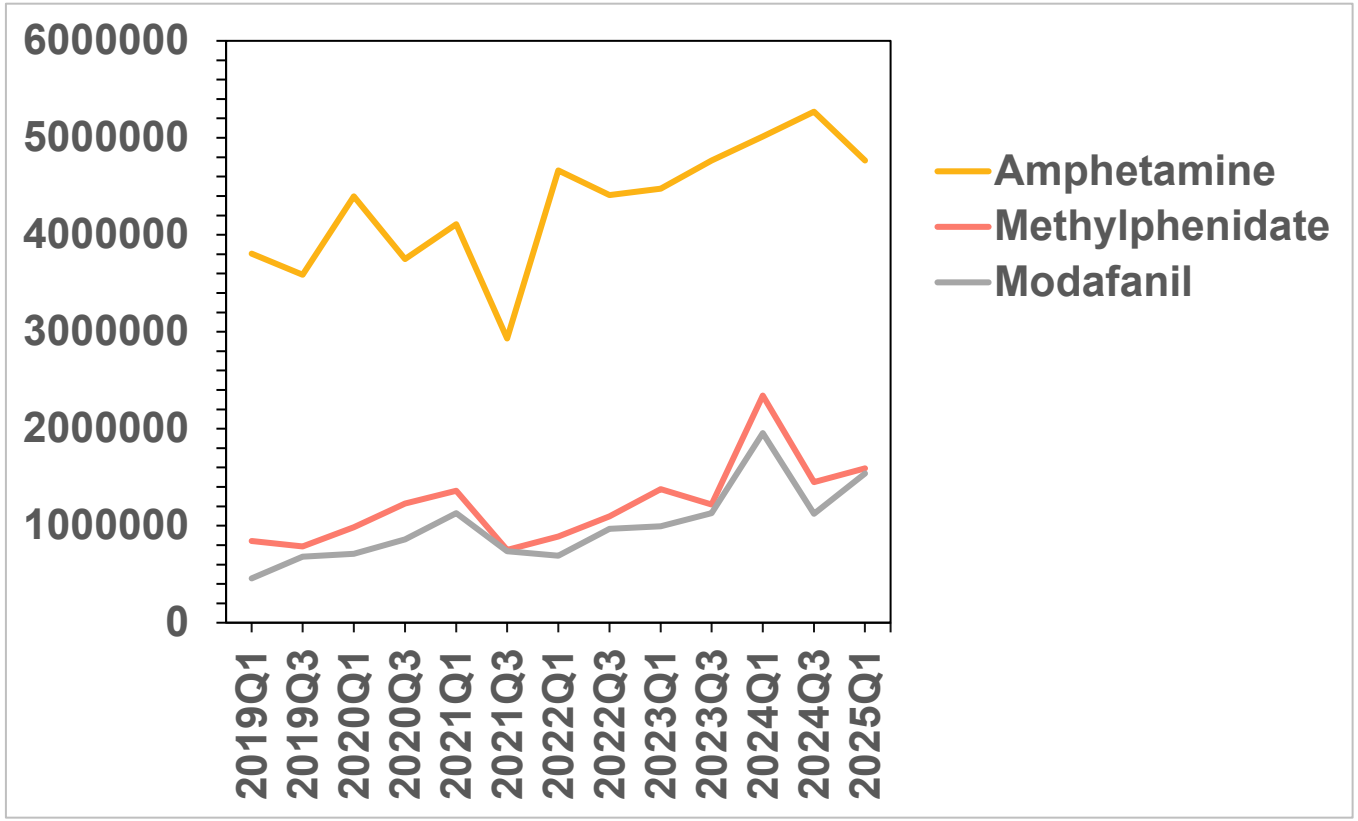
NSDUH Definition of Misuse: in any way a doctor did not direct. This includes use without a prescription, or using a prescription in greater amounts, more often, or for a longer duration than prescribed. The respondent must pass a battery of screener questions.

Questions

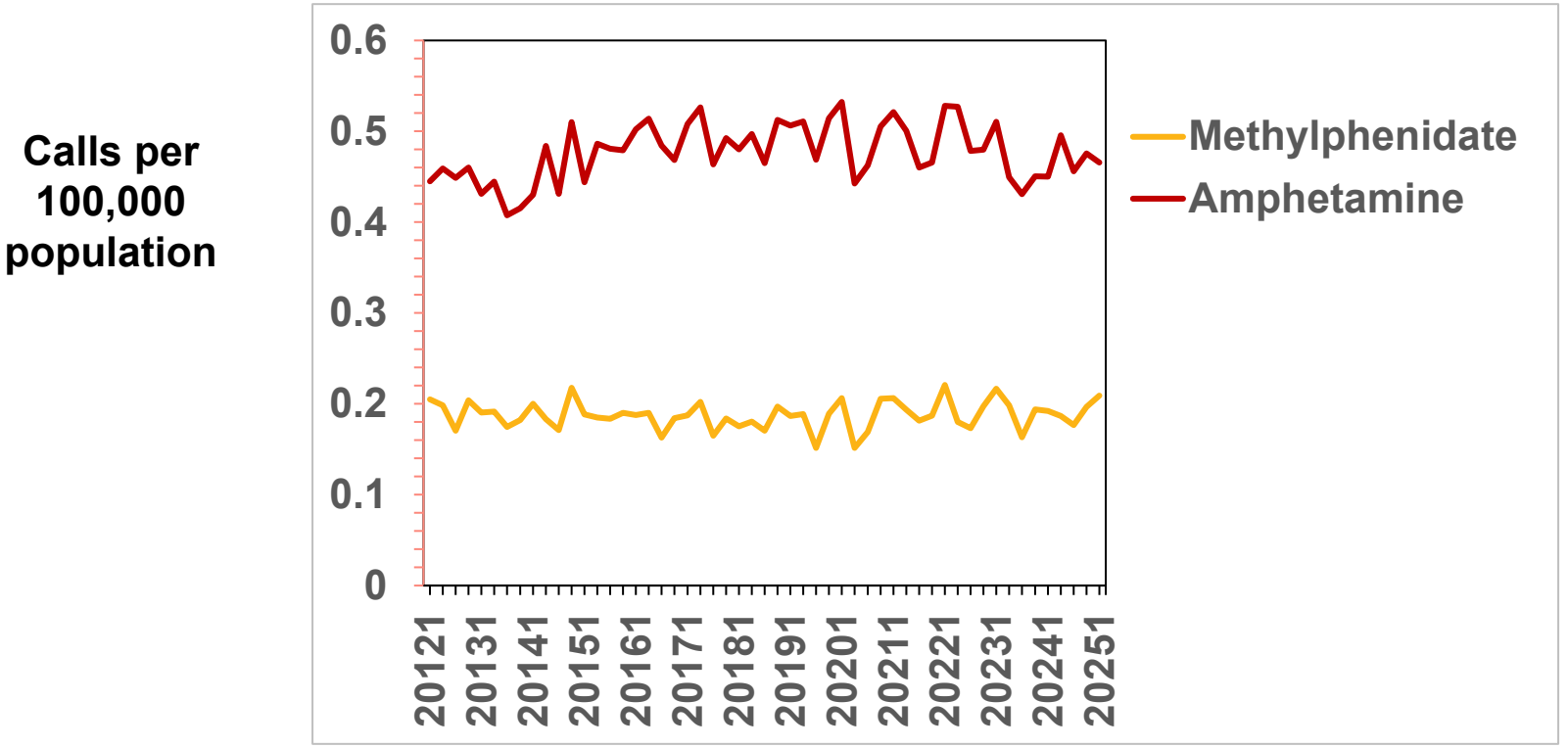
- Do opioid prescribing guidelines block legit patients obtaining opioids?
- Does increase in NMU herald future increases in abuse other FDA endpoints?
- What is the role of Rx opioids in the drug supply? Primary source, rainy day? Etc.
- Why are ER formulations rising the most?
- Is it actually true that the fentanyl increase is due to illicit? Is this a new “brand”?
- Is diversion and misuse of methadone and buprenorphine truly good?
- Better characterization of the relation between NMU, Misuse, Abuse and Death
- What is the role of age?
  - Drug source?
  - Route of NMU?
- Concurrent drug use like stimulants or gabapentin?.
- Why are extended release formulations rising the most?

NMU of Prescription Stimulants Increasing Gradually

Number of Adults



Poison Center Program Prescription Stimulant Cases Notable, Not Rising



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Figure 6. U.S. Overdose Deaths Involving Stimulants (Cocaine or Psychostimulants with Abuse Potential), 1999-2023

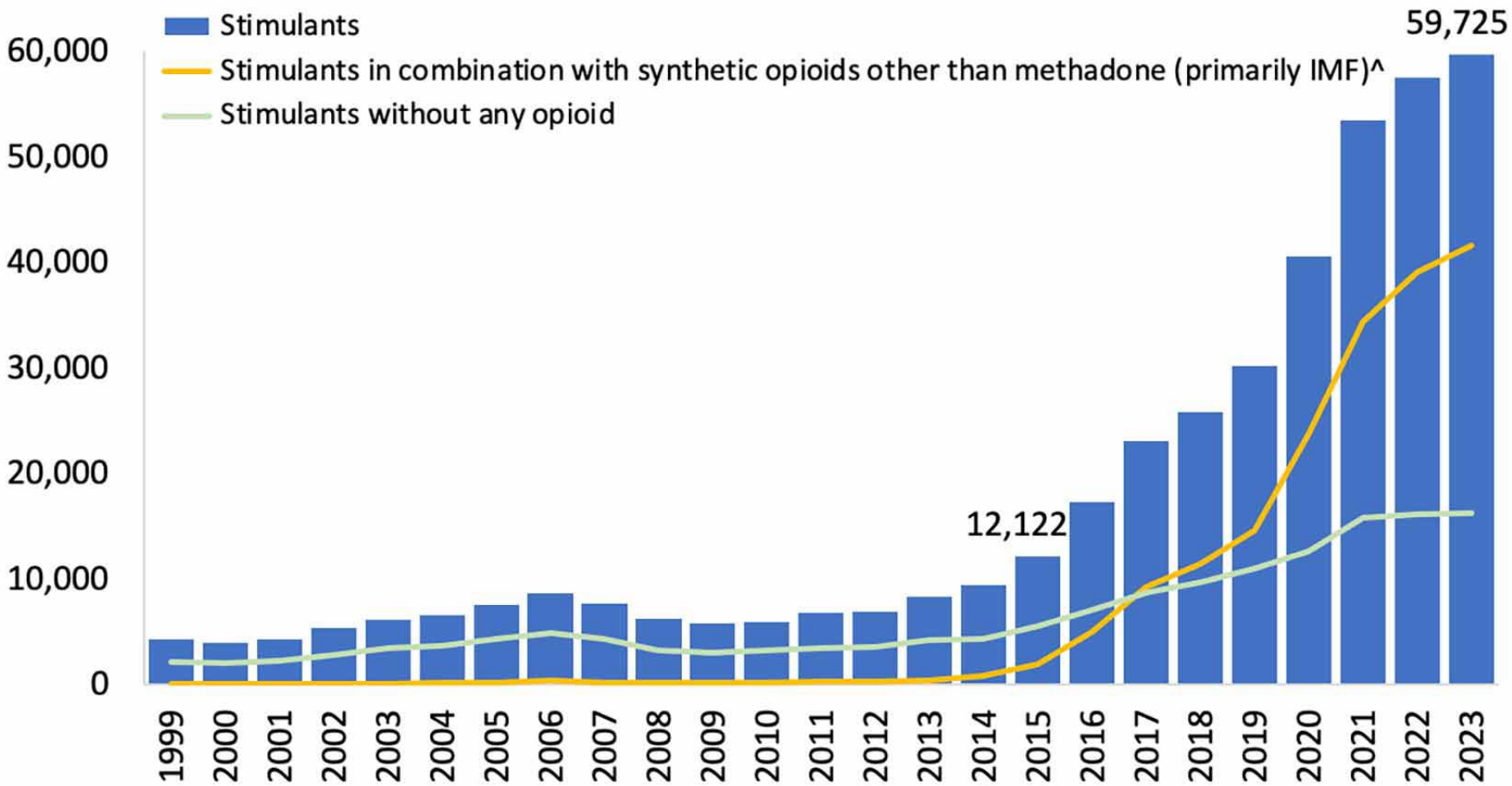
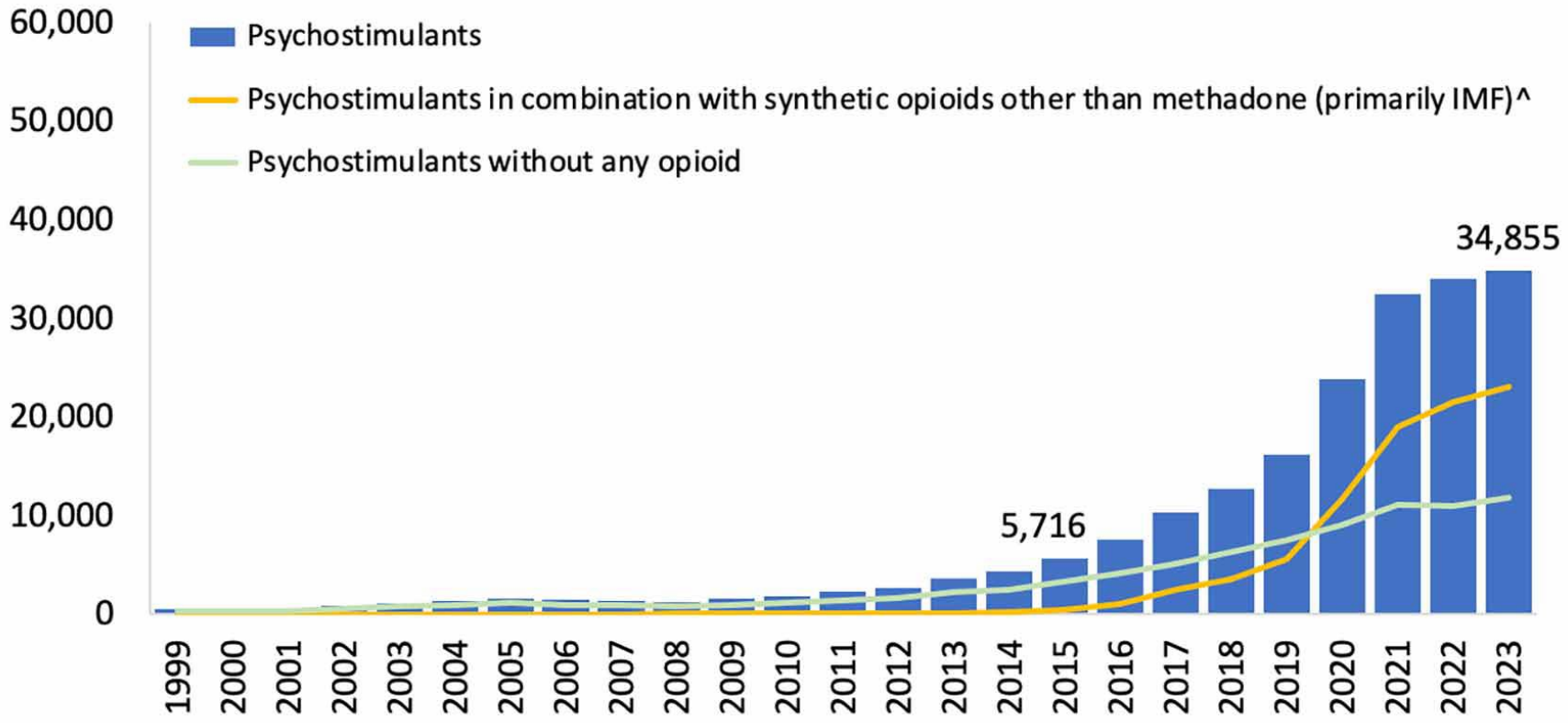


Figure 7. U.S. Overdose Deaths Involving Psychostimulants with Abuse Potential*, 1999-2023



Psychostimulant = methamphetamine, amphetamine, methylphenidate, and MDMA

Questions

- We have known for decades that there is a unique relationship between opioids and stimulants.
- What is the role of prescription stimulants in rising mortality from psychostimulants?
- All of the previous questions mentioned for opioids

Psychedelics

- MDMA
- Psilocybin
- Ketamine/esketamine
- LSD
- DMT, 5-MeO-DMT
- Ibogaine
- Ayahuasca
- Mescaline



The Rise of the Psychedelic Medications

- Smoking cessation
- Alzheimer's
- Anorexia nervosa
- Depression and AUD
- Lyme disease
- Obsessive-Compulsive disorder
- Anxiety, depression, PTSD
- Romantic relationships



Types of Psychedelic Users – Set and Setting

- Supervised v unsupervised
- Experienced v Unexperienced
- Tested drug, Untested drug
- Constructive use, Unconstructive use
- Spiritual v non spiritual
- Purely recreational
- Combinations







Environment for Psychedelic Products at State or Federal Level

Psychedelic therapeutic agents will be used appropriately

- Variety of other conditions, concomitant drugs

Most patients will benefit

- Unexpected benefits may emerge - Rapidly expanding indications

Misuse will occur

- Off-label use, variation in psychological support

Competition – Pharmaceutical, State programs, illicit

- Misidentification with illicit or state regulated products

Adverse Events

- Expected: numerous minor events
- Serious events, Expected, Unexpected (including death)

Stigma (positive and negative)

National Survey Investigating Hallucinogenic Trends (NSIHT)

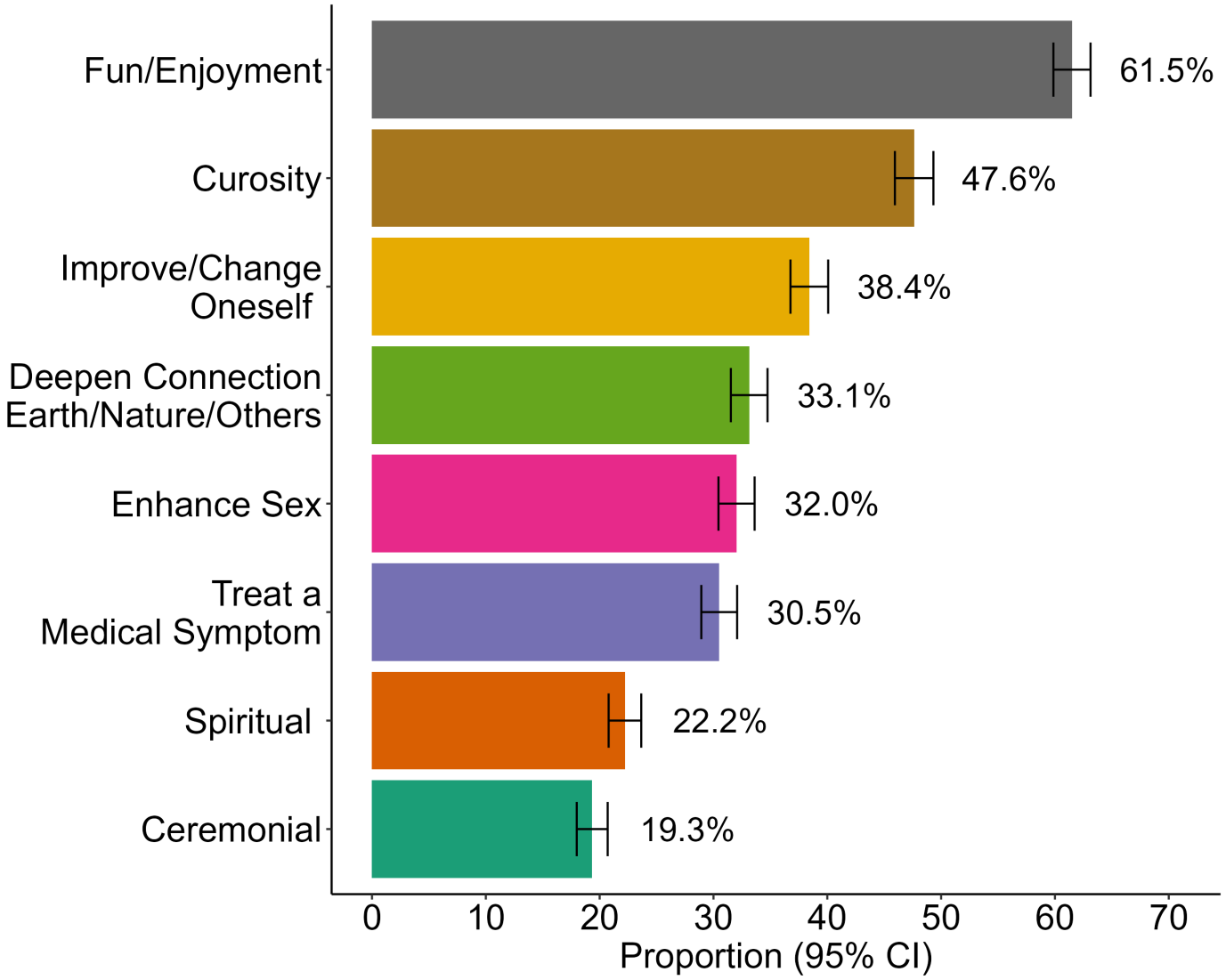


- Largest ongoing survey of adult psychedelic users in the US. Includes every state.
- Online panel - neutral pool of participants, enriched in neither psychedelic drug enthusiasts nor naysayers.
- Data combined with RMPDS national drug use survey to represent national use
- Validated scales to measure mental health symptoms
- Validated survey methodology[2-3]

Key Measures:

- Prevalence of use across 16 substances
- Detailed reason for use
- Demographics
- Recency/frequency of use
- Perceived benefits

NSIHT: Reasons for Use, All Psychedelics

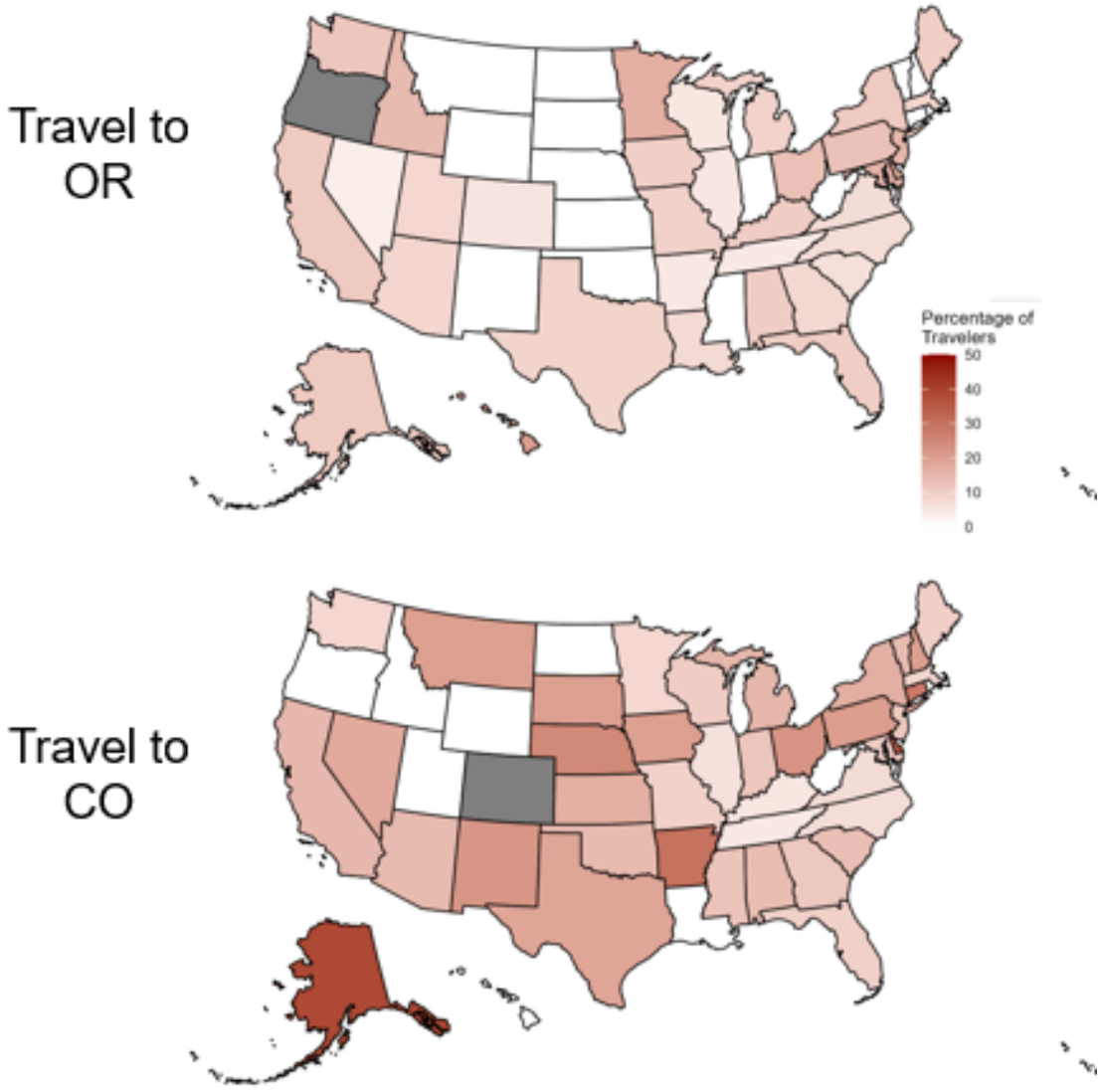


68.1% used **psilocybin** for Fun/enjoyment

26.8% used **psilocybin** to treat a medical symptom

NSIHT Data, 2024

Psychedelic Tourism



Black JC, Rockhill KM, Fox EJ, et al. Psychedelic Trips: Travel Within the United States to Use Psychedelic Drugs After Legalization. Ann Emerg Med. 2025 Jun 30.

Sentinel Poison Center Program (Pilot)



- Augmented poison center data capture – key source of safety information relied upon by FDA
- Safety outcomes including adverse events, healthcare utilization and medical outcomes
- Designed to differentiate between illicit and prescription use
- Complements national poison center database National Poison Data System (NPDS)
- Single center pilot underway, national pilot pending

Captures nuanced context information:

- Set/setting
- Reason for use
- Source and dose

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First Session Speakers



Matthew Ellis, PhD, MPE

Assistant Professor
Department of Psychiatry
School of Medicine
Washington University in St. Louis



Hannah Burkett, PhD

Biostatistician III
Rocky Mountain Poison & Drug Safety (RMPDS)



Lindsay Allen, PhD

Assistant Professor
Department of Emergency Medicine
Buehler Center for Health Policy & Economics
Feinberg School of Medicine
Northwestern University



Marta Sokolowska, PhD

Deputy Center Director
Substance Use and Behavioral Health
Center for Drug Evaluation and Research (CDER), Food and Drug Administration (FDA)

Afternoon Speakers

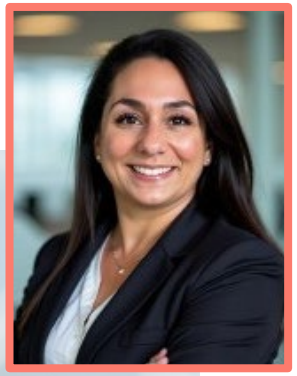
P. Todd Korthuis, MD, MPH, FASAM



Professor of Medicine Oregon Health & Science University (OHSU)

Co-Director Open Psychedelic Evaluation Nexus (OPEN)

Melissa Lavasani



Founder & CEO

Psychedelic Medicine Coalition (PMC)

RMPDS 19TH ANNUAL SCIENTIFIC MEETING

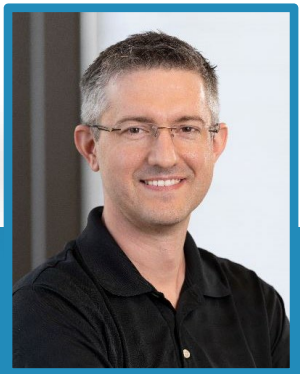
Andrew Monte, MD, PhD



Vice Chair
Rocky Mountain Poison & Drug Center (RMPDS)

Professor of Emergency Medicine
University of Colorado School of Medicine

National Survey Investigating Hallucinogenic Trends (NSIHT) Presenters



Joshua Black, PhD, MS

Senior Statistical Scientist

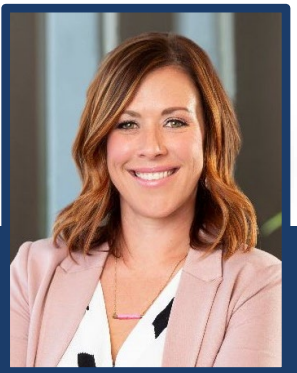
Rocky Mountain Poison & Drug Safety (RMPDS)



Ellie Fox, MPH

Senior Research Specialist

Rocky Mountain Poison & Drug Safety (RMPDS)



Kate Reynolds, MPH

Director of Research

Rocky Mountain Poison & Drug Safety (RMPDS)



Kari Rockhill, PhD, MPH

Assistant Statistical Scientist

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