Stimulant Use Trends and Impact: Emerging Harm Reduction and Clinical Strategies

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STIMULANT USE: IMPACTS AND INTERVENTIONS

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NYSACHO Symposium, September 12th, 2025

OUTLINE

- What are Stimulants?
- Why Do People Use Stimulants?
- What is Stimulant Use Disorder?
- Impact of Stimulants
- Trends for Stimulant Use Disorder
- Interventions to Engage and Treat People Who Use Stimulants
- Recommendations/Take Home Messages
- Resources and References

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WHAT ARE STIMULANTS?

- Stimulants are substances that increase **alertness, attention and energy** by elevating levels of **neurotransmitters** such as **dopamine, norepinephrine, and serotonin**.
- These substances can be **naturally occurring** (e.g., caffeine, coca) and/or are **synthetic and illicit** (e.g., cocaine, methamphetamine) and **medical** (e.g., methylphenidate, methamphetamine).

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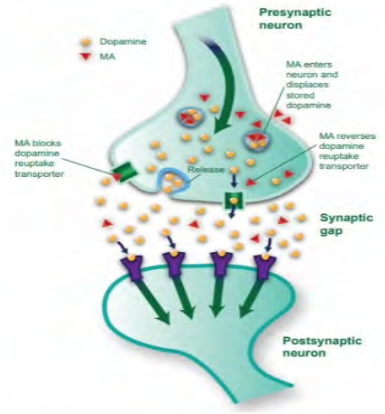
Source: Suen et al, 2024; DeVido, 2020 & Zhang et al, 2022

COCAINE COMPARED TO METHAMPHETAMINE

Cocaine:

- Derived from coca plant.
- Block reuptake of neurotransmitters.
- Rapid and intense effect.
- Names include, “coke”, “crack”.



Methamphetamine:

- Fully synthetic.
- Increase release of and blocks reuptake of neurotransmitters.
- Longer-lasting and stronger due to release and reuptake.
- Names include “crystal meth”, “speed”, “ice”.

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Source: Hersey et al, 2024; Alves, 2024; SAMHSA 2020; ciaosf.org; Suen et al, 2022 & Coffin, 2024

WHY PEOPLE USE STIMULANTS?

- People may use these drugs for **recreational purposes, sexual enhancement, performance enhancement, weight loss** or **to counteract the depressant effects of opioids**.
- Stimulants can create temporary **euphoria, energy, improved mood, and combat fatigue,** leading people to use them for social, work, or study-related reasons.
- However, **chronic stimulant** use often results in **significant physical** and **psychological health issues**.

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Source: Gould et al, 2009; Riley et al, 2017 & Riley et al, 2022

DIAGNOSTIC AND STATISTICAL MANUAL - 5 CRITERIA FOR STIMULANT USE DISORDER

- A medical condition characterized by problematic stimulant use that causes significant harm or distress.
- Biological – tolerance and withdrawal.
- Psychological – craving and preoccupation.
- Social – interferes with important activities and used in dangerous situations.
- Failure to fulfill obligations due to stimulant use.
- Failed attempts to reduce use.
- Continued use despite health or social problems.

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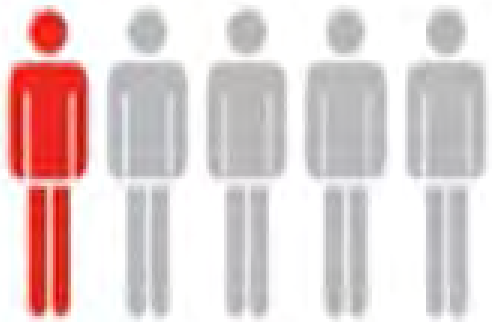
STIMULANT USE DISORDER



1 in 5 people who use cocaine regularly have a cocaine use disorder.[31]

Half of people who use methamphetamine regularly have a methamphetamine use disorder.[32]

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Source: ADAI UW, 2025, Suen et al, 2024 & A.S.A.M, 2024

IMPACT OF STIMULANT USE

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CARDIOVASCULAR and CEREBROVASCULAR TOXICITIES

- **Over time, heavy use of stimulants,** e.g., cocaine and methamphetamine, causes **cardiovascular and cerebrovascular toxicities.**
- Cardiovascular diseases (CVDs) associated with stimulant use encompass a broad range of conditions affecting the **heart and blood vessels.**
- Cerebrovascular disease are conditions affecting the blood vessels of the brain, such as a stroke
- This is worsened by other activities such as **extended periods of binge use of stimulants, smoking tobacco and alcohol use** that damage the systems over time.

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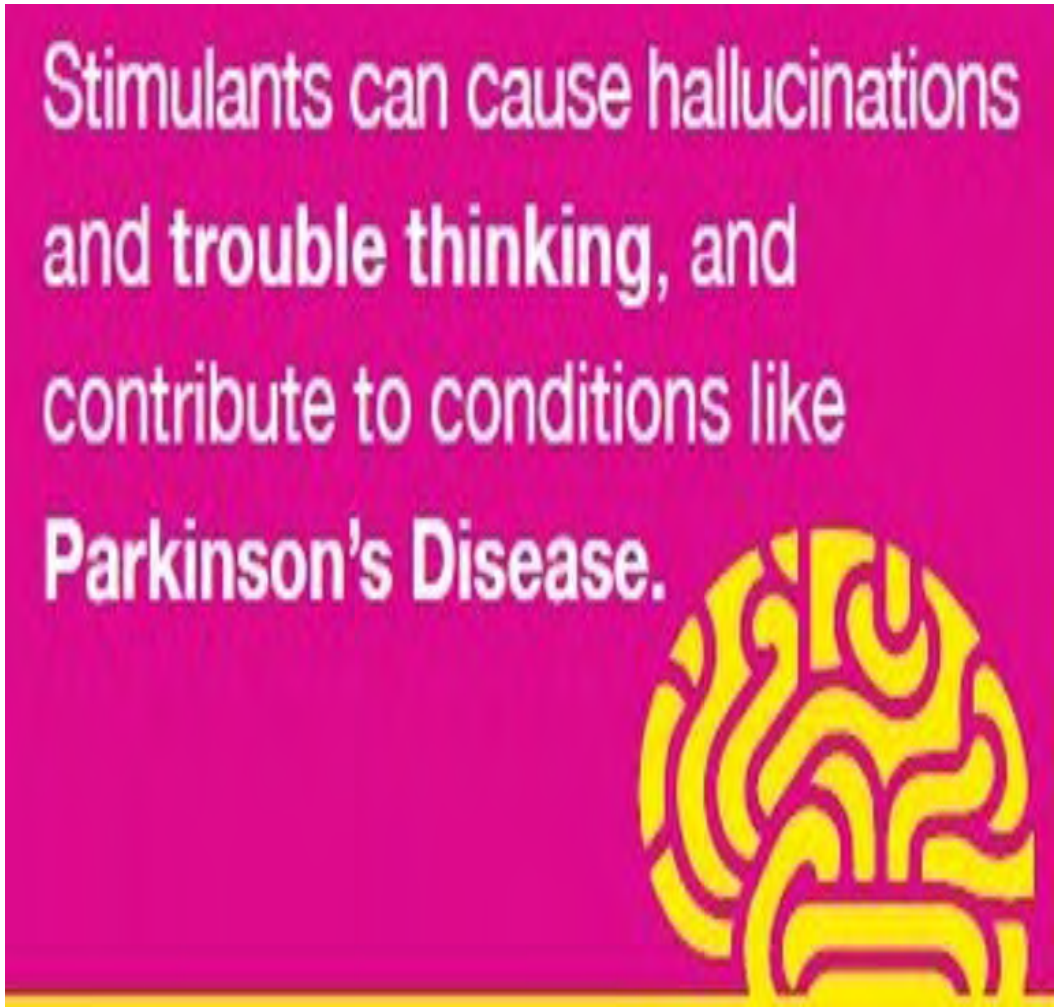
Source: ciaosf.org; Lopez et al, 2023 & Libby et al, 2011

NEUROPSYCHIATRIC TOXICITIES

- Memory loss.
- Cognitive dysfunctions.
- Psychiatric conditions:
  - Paranoia/Hallucinations.
  - Anxiety/Terror.
  - Agitation/Aggression.



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Source: Hersey et al, 2024; Alves, 2024; SAMHSA 2020; ciaosf.org; Suen et al, 2022 & Coffin, 2024

OTHER PHYSICAL IMPACTS

Acute (Immediate):

- Hyperthermia.
- Dehydration.
- Seizures.
- Acidosis.
- Jaw grinding.
- Headaches.

Chronic (Long term):

- Skin ulcers/Dermatologic conditions.
- Lung diseases/Pulmonary conditions.
- Sexually Transmitted Infections (STIs) and HIV.
- Dental Issues.

Source: Hersey et al, 2024; Alves, 2024; SAMHSA 2020; ciaosf.org; Suen et al, 2022 & Coffin, 2024

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STIMULANT USE DATA AND TRENDS

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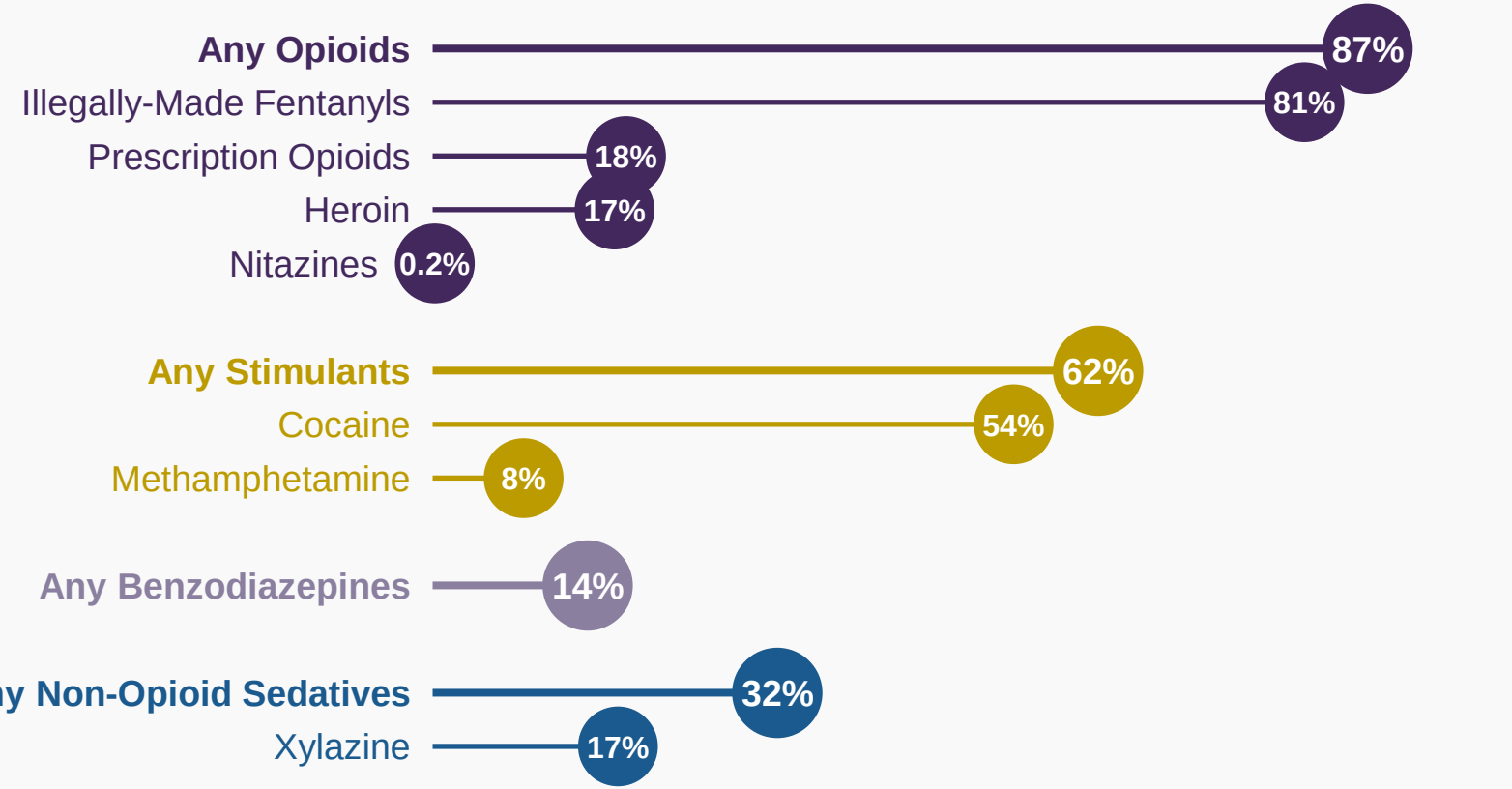
TOXICOLOGY PROFILE OF NEW YORK OVERDOSE DEATHS, 2023

Most overdose deaths involved illegally-made fentanyl(s), often with other substances, like stimulants, present in the body.



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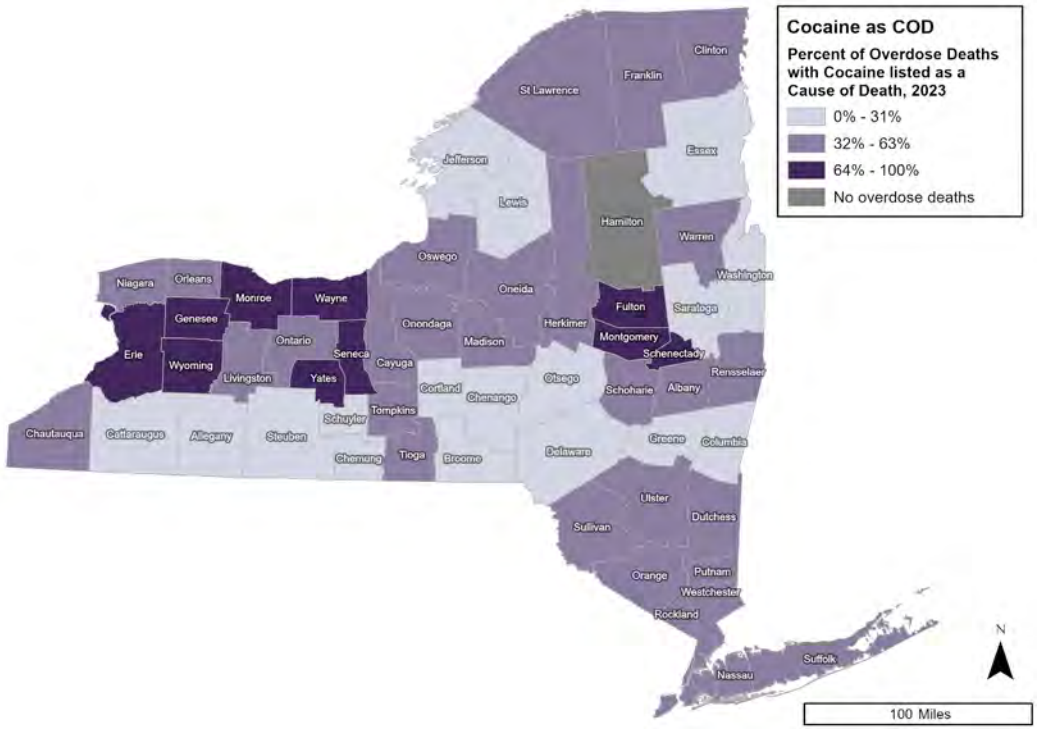
Percent of overdose deaths where select drugs and drug classes were listed as a cause of death

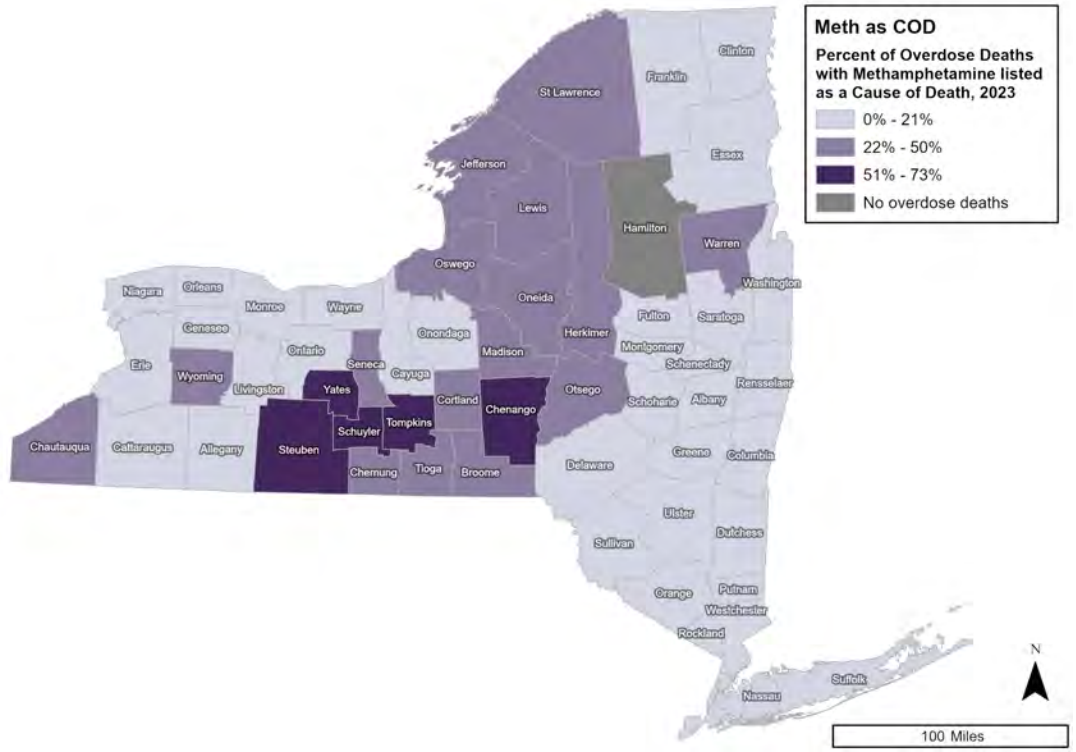
Source: State Unintentional Drug Overdose Reporting System, 2023

TRENDS IN COCAINE AND METHAMPHETAMINE
DEATH RATES, BY GEOGRAPHY(New York State)

The counties with the highest percentage of overdose deaths with cocaine listed as a cause of death are in the Capital Region and Western New York.



The counties with the highest percentage of overdose deaths with methamphetamine listed as a cause of death are in the Southern Tier.



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Source: State Unintentional Drug Overdose Reporting System, 2023

*COD = Cause of Death

Exploring differences between stimulant-involved and opioid-involved deaths

Deaths occurring between Jan 2023 – June 2024

At least 1 opioid and at least 1 stimulant as cause of death	4,187 (50%)
At least 1 opioid and NO stimulant as cause of death	2,937 (35%)
At least 1 stimulant and NO opioid as cause of death	1,004 (12%)
Neither opioids nor stimulants as cause of death	198 (2%)

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Exploring Differences between stimulant-involved and opioid-involved deaths

Deaths occurring between Jan 2023 – June 2024

Percentage of decedents, by type of overdose and race and ethnicity

The percent of stimulant-only involved deaths was higher among black, non-Hispanic decedents, versus opioid-only deaths having higher percentages among white and Hispanic decedents.

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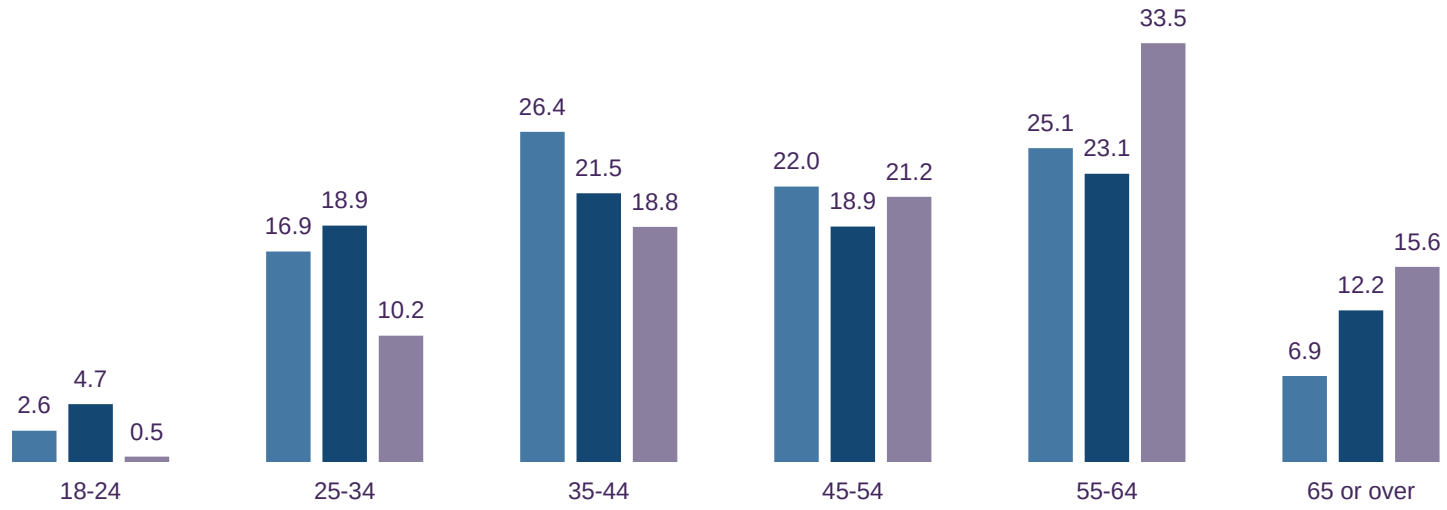
COD = Cause of Death

Exploring Differences between stimulant-involved and opioid-involved deaths

Deaths occurring between Jan 2023 – June 2024

Percentage of decedents, by type of overdose and age group



One in three (33.5%) stimulant-only involved deaths occurred among decedents ages 55 to 64.

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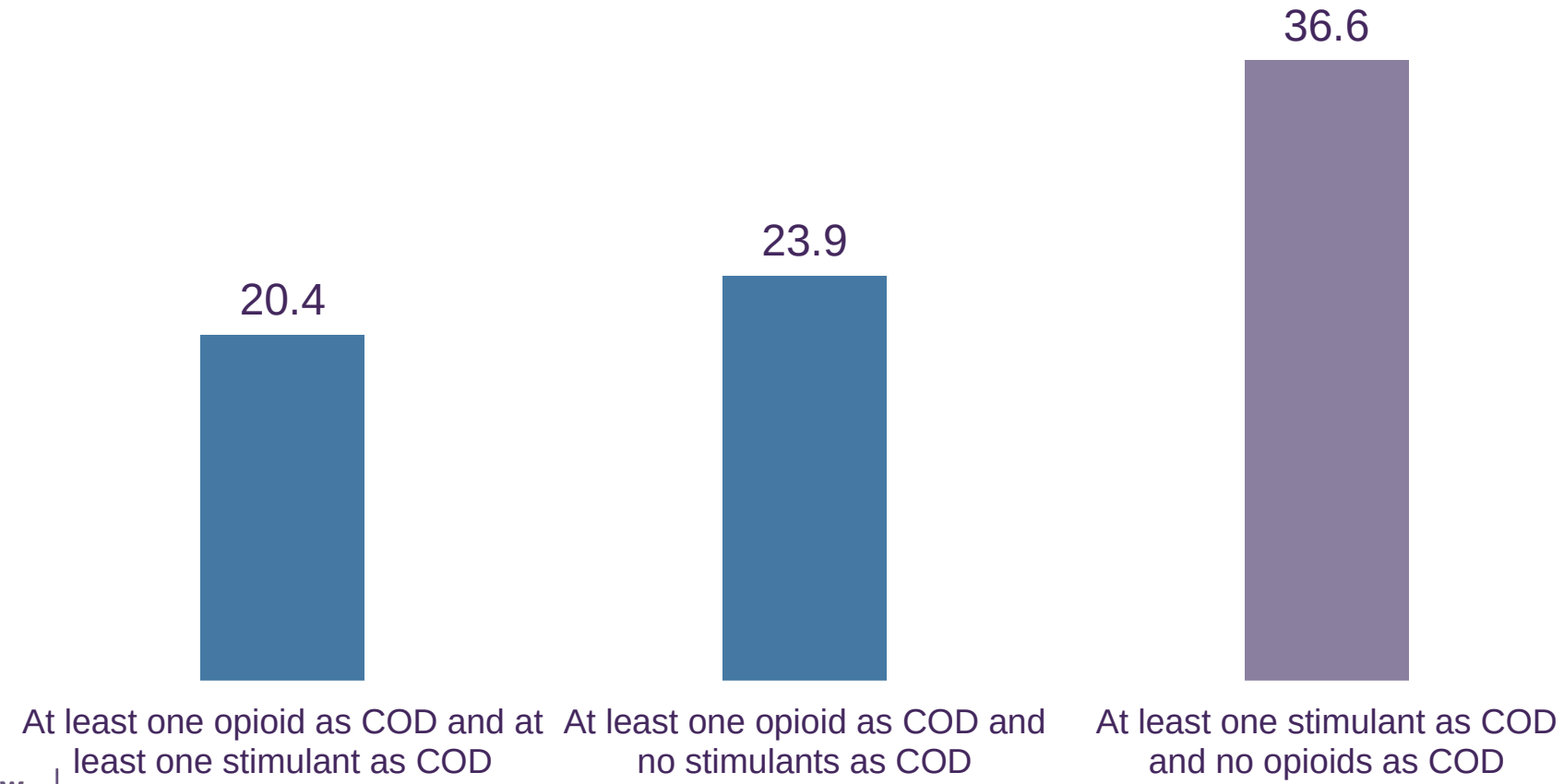
COD = Cause of Death

Exploring Differences between stimulant-involved and opioid-involved deaths

Deaths occurring between Jan 2023 – June 2024

Percentage of decedents seen in the emergency room prior to their death, by overdose type



Stimulant-only involved deaths were more likely to make it the emergency room prior to their death – almost twice as frequently than when both an opioid and stimulant were involved

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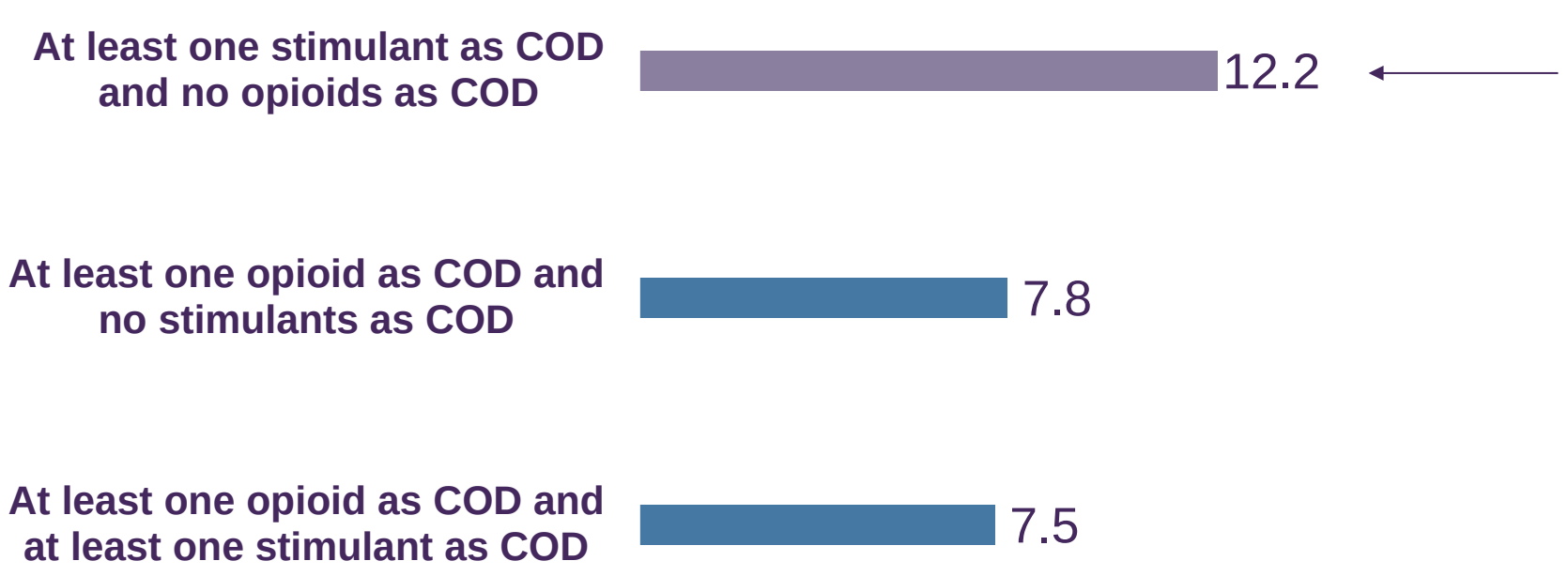
COD = Cause of Death

Exploring Differences between stimulant-involved and opioid-involved deaths

Deaths occurring between Jan 2023 – June 2024

Percentage of deaths, with bystander present but no response (Public place and strangers did not intervene), by overdose type



Stimulant-only involved deaths were more likely to have "strangers did not intervene" as a reason for bystanders not responding.

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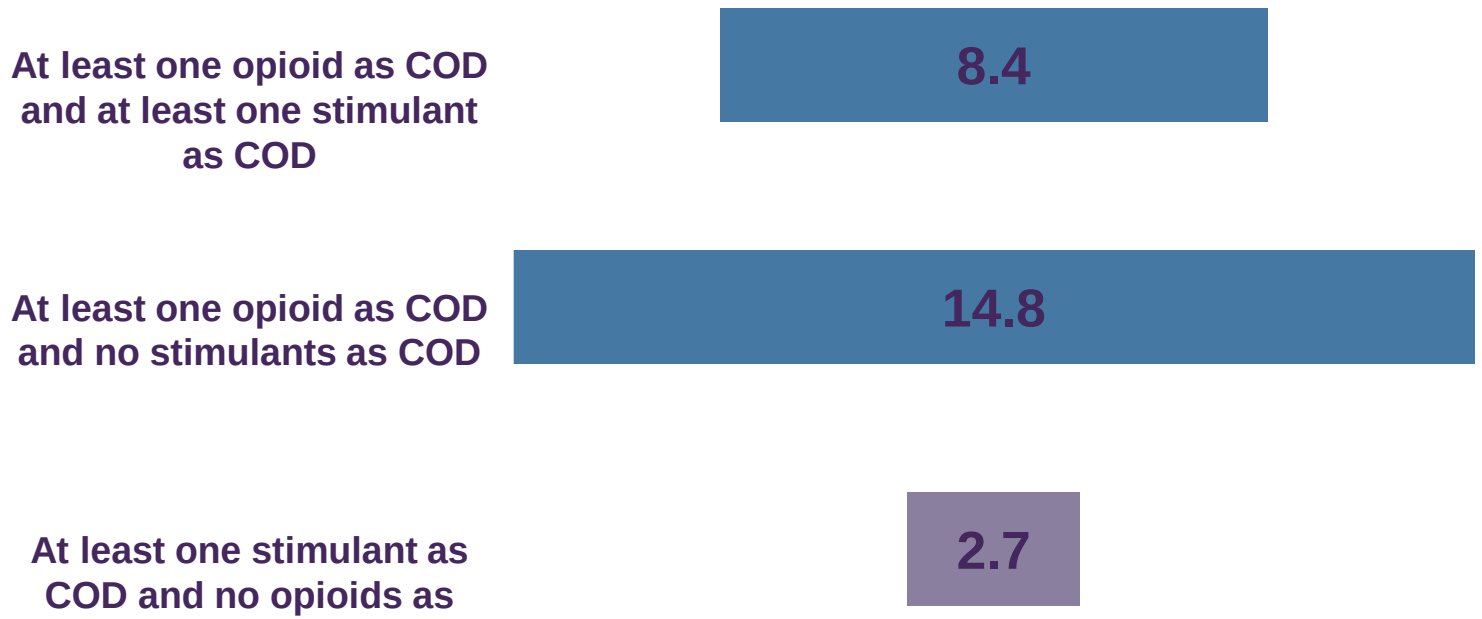
COD = Cause of Death

Exploring Differences between stimulant-involved and opioid-involved deaths

Deaths occurring between Jan 2023 – June 2024

Percentage of decedents with evidence of ever receiving treatment prior to their death, by overdose type



A history of treatment was much lower among the decedents with stimulant-only involved deaths.

COD = Cause of Death

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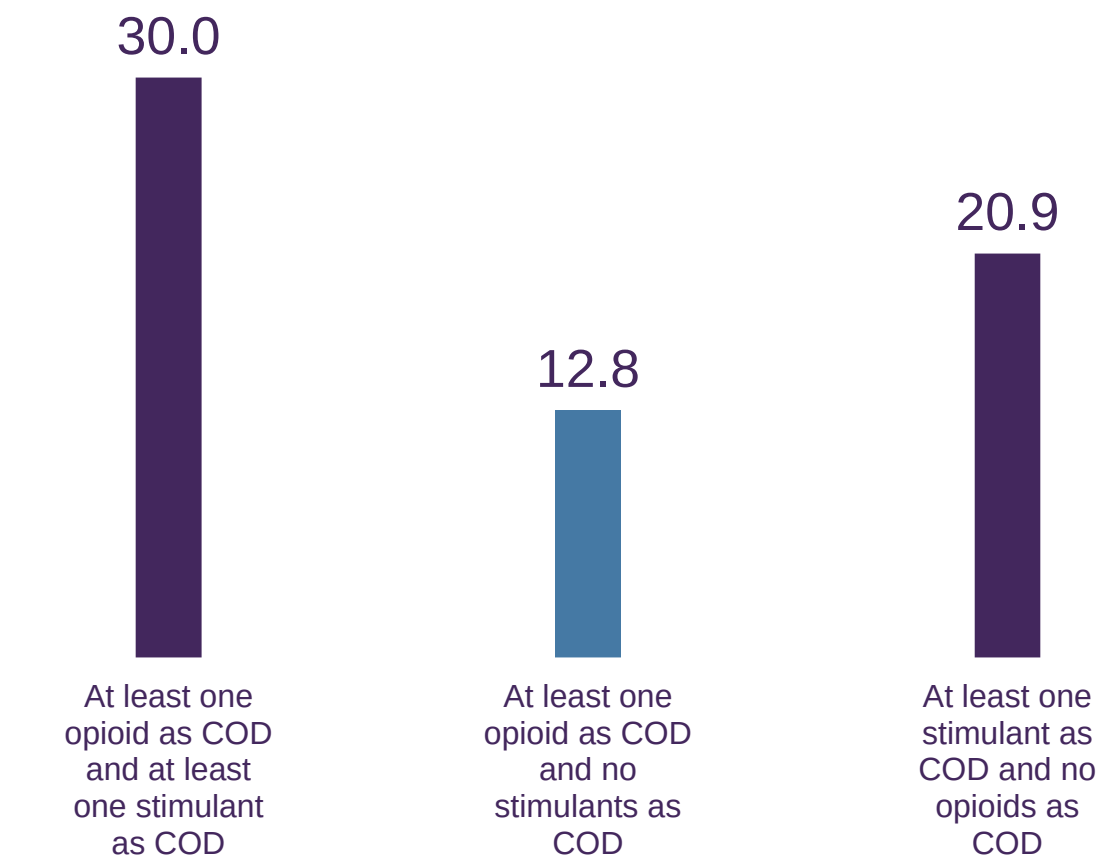
Exploring Differences between stimulant-involved and opioid-involved deaths

Deaths occurring between Jan 2023 – June 2024

Percentage of decedents with evidence of smoking as route of administration at scene of death, by overdose type



Evidence of smoking as route of administration was more common among deaths involving stimulants than opioid only deaths.

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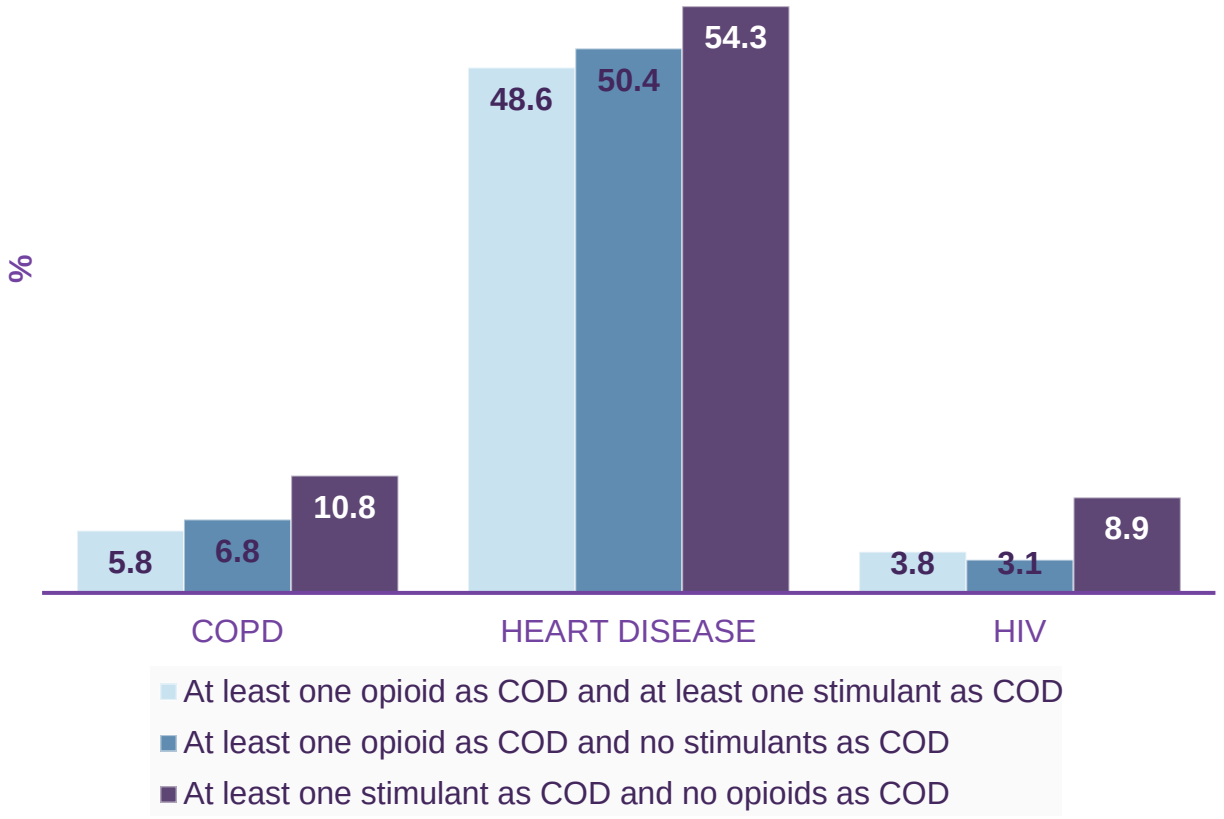
COD = Cause of Death

Exploring Differences between stimulant-involved and opioid-involved deaths

Deaths occurring between Jan 2023 – June 2024

Percentage of decedents with evidence of select chronic conditions, by overdose type



The decedents with stimulant-only involved deaths had higher percentages of heart disease, chronic obstructive pulmonary disease and HIV.

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COD = Cause of Death
COPD = Chronic Obstructive Pulmonary Disease
HIV = Human Immunodeficiency Virus

INTERVENTIONS TO ENGAGE AND TREAT PEOPLE WITH STIMULANT USE DISORDER

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INTERVENTIONS FOR STIMULANT USE DISORDER

Harm Reduction Approach and Services:

- Low threshold, trauma informed engagement and care.
- Safer use and safer sex supplies and education.
- Naloxone and overdose education and safety planning.
- Drug checking Services and drug testing supplies.
- HIV/Hepatitis C (HCV) screening and care.
- Link to other supportive and treatment services.

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HARM REDUCTION PROGRAM ENGAGEMENT

- Harm reduction programs have long been effective in addressing public health issues among people who use drugs by engaging people who use drugs and connecting them to services.
- Syringe service programs have historically provided and engaged underserved racial and ethnic populations in New York State.
- People who use drugs who access a Syringe Service Program are 5x more likely to enter substance use treatment.

"I don't think I would feel as reluctant here as I would other places to participate in programs or speak to people. Because, like I said, this is a judgment-free zone. And there's not many of those places like that" – ACR Health

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WHAT ARE SAFER INHALATION SUPPLIES?

- Tools/Equipment that are used to smoke/inhale or snort substances, also known as “Smoking Supplies”.
- Items include:
  - Pipes: to inhale smoke - includes straight stems, hammer and bubble pipes.
  - Mouthpieces: prevents lip burns - can be rubber or silicone.
  - Screens, wires, push sticks: hold substance in place.
  - Foil: a surface to smoke drugs.
  - Hygiene, lip balm/gum and safer sex supplies, education materials.

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HARM REDUCTION PROGRAM ENGAGEMENT

- Providing safe use supplies can connect users with health services, education, and treatment resources, facilitating earlier interventions and reducing long-term healthcare costs.
- Most of the New York State First Tier Syringe Exchange Programs (FTSEP) are providing safer inhalation supplies due to the increased need with participants transitioning from injecting to inhalation and a tool to engage with a broader range of people who consume substances by inhalation only.
- Ambiguous legislation on distribution of smoking supplies limits funding for supplies.

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REDUCING INFECTIONS AND INJURIES

- It is common for people to share smoking equipment, especially when there is a lack of supply.
- There is potential for the spread of infectious disease through sharing smoking equipment (ex. COVID-19; tuberculosis, hepatitis C).
- Injecting substances increases the risk of infectious diseases, including HIV, hepatitis C, soft-tissue and invasive infections.
- Lack of access to adequate safe and durable smoking supplies and disposal options leads to the use of makeshift and broken equipment that can lead to burns and other injuries and the prevalence of unsafe, discarded materials (e.g., broken pipes, makeshift foil) in public areas.

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OVERDOSE PREVENTION

- Inhalation of substances like opioids or methamphetamine typically results in a slower onset compared to injecting, giving users more time to assess potency and effects.
- Safe inhalation supplies encourage users to transition from injecting and smoking may pose a lower risk of overdose than injection.
- Access to naloxone can prevent fatal opioid overdoses.

"I also have the Xylazine and the fentanyl test strips, but I mean fentanyl is in like everything nowadays. And the Xylazine, I feel like is more dangerous because you don't feel it coming, then all of a sudden, you know, you're out. So, like I try to avoid the Xylazine. So, whenever I do pick up, I do test to make sure it doesn't have it, or at least I know that it has a Xylazine in it." – Catholic Charities Care Coordination Services

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INTERVENTIONS FOR STIMULANT USE DISORDER

Behavioral Health Interventions:

o Contingency Management.

o Community Reinforcement Approach.

o Matrix Model.

o Exercise Supported Recovery.

o Seeking Safety.

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Source: ciaosf.org; Alves, 2024; Coffin, 2024 & Suen et al, 2024

INTERVENTIONS FOR STIMULANT USE DISORDER

Co-location of Stimulant Use Disorder clinics and Traditional Hospitals, that include:

- Embedded Addiction Services.
- Continuity of Care.
- Community Integration.
- Accessibility.
- Communication and Engagement Approach.

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Source: ciaosf.org; Alves, 2024; Coffin, 2024 & Suen et al, 2024

PROMISING MEDICATIONS FOR STIMULANT USE DISORDER TREATMENT/MANAGEMENT

- **Bupropion** - reduces stimulant and tobacco use.
- **Mirtazapine** - reduces stimulant use for men who have sex with men (MSM) and transgender.
- **XR (Extended Release) Naltrexone -** often prescribed with bupropion, reduce stimulant and alcohol use.
- **Topiramate** - reduces stimulant cravings and alcohol use.

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Source: Journal of Addiction Medicine, 2024; ciaosf.org; Coffin, 2024 & Suen et al, 2024

PROMISING MEDICATIONS

Stimulants:

- **Modafinil** - mild stimulant, helps with ongoing engagement for certain groups.
- **Lisdexamphetamine -** for withdrawal.

Note:

- It is legal in New York to prescribe stimulants for persons with a Stimulant Use Disorder.
- Consultation with an Addiction Specialist is strongly recommended.
- Close and frequent patient monitoring with comprehensive documentation, is strongly recommended.

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Source: Journal of Addiction Medicine, 2024; ciaosf.org; Coffin, 2024 & Suen et al, 2024

MEDICATIONS FOR RELATED CONDITIONS

- **Statins and Hypertensives:** to reduce cholesterol/artery thickening and reduce blood pressure**.**
- **Opioid Use Disorder Treatment:** buprenorphine/methadone.
- **HIV treatment and prevention:**
  - HIV PrEP (Pre-Exposure Prophylaxis)/ PEP(Post-Exposure Prophylaxis)
  - HIV treatment.
  - Doxy-PEP (Doxycycline Post-Exposure Prophylaxis).
- **STI (Sexually Transmitted Infection) Treatment.**
- **HCV (Hepatitis C) Treatment.**
- **Antipsychotics:** to reduce psychotic episodes.

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RECOMMENDATIONS

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RECOMMENDATIONS TO PROVIDERS AND INSTITUTIONS OF CLINICAL PRACTICE

- Establish dedicated services for people who use stimulants and expand integrated, trust-based care models for stimulant use with emphasis on continuity, peer support, and evidence-informed practice.
- Building innovative strategies and engagement opportunities for individuals who do not typically access services such as women and adolescents.

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RECOMMENDATIONS TO PROVIDERS AND INSTITUTIONS OF CLINICAL PRACTICE

- Strengthening provider capacity through updated clinical education, guideline development, and psychiatric engagement for stimulant use disorder.
- Prioritize comprehensive, granular, and inclusive research on stimulant use disorders grounded in individual variation and social determinants of health.

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RECOMMENDATIONS TO COMMUNITY BASED ORGANIZATIONS, EMERGENCY MEDICAL SERVICES, EMERGENCY DEPARTMENTS, AND LAW ENFORCEMENT

- Reframe emergency encounters as strategic opportunities for engagement and not just crisis response.
- Develop a coordinated continuum of harm reduction services as a gateway to health care access.
- Build trust and advance equity through culturally responsive communication and workforce transformation.
- Innovate multisectoral systems of care that center flexibility, human dignity and low barrier access.

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RECOMMENDATIONS TO POLICY MAKERS AND FUNDERS

- Prioritize and allocate targeted funding for program development and research addressing stimulant use and cardiovascular disease.
- Develop sustainable harm reduction models through tailored reimbursement and workforce investment.
- Establish a statewide framework for early identification and school-based engagement around youth stimulant use risk.

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TAKE HOME MESSAGE!

- Stimulant use disorder has left individuals, families, and communities **feeling hopeless**. But there is **hope!**
- There are powerful, **evidence-based tools** that can prevent, manage, and meaningfully improve outcomes for those affected.
- These **tools can be adapted and replicated** into actionable, compassionate strategies, that can **prevent and/or treat** a disorder and **restore lives and rebuild resilience.**

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RESOURCES

- The ASAM/AAAP (American Society of Addiction Medicine/American Academy of Addiction Psychiatry) Clinical Practice Guideline on the Management of Stimulant Use Disorder, 2024 Stimulant Use Disorder Guideline
- New York State Department of Health, AIDS Institute Clinical Guidelines, Substance Use Care, updated 2024 Home - Substance Use Care
- Center for Innovative Academic Detailing on Opioids and Stimulants | San Francisco
- Boston Medical Center/Grayken Center for Addiction Training and Technical Assistance Upcoming trainings | Training | Grayken Center for Addiction TTA | Boston Medical Center

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ACKNOWLEGMENTS

- New York State harm reduction programs and participants.
- Interviewed stimulant experts in United States and Canada.
- The National Association of County and City Health Officials (NACCHO): Smoking Supplies Survey (2023) and Research team.

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THANK YOU!

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