Overamping Unpacked: Managing the Acute Effects of Stimulant Use

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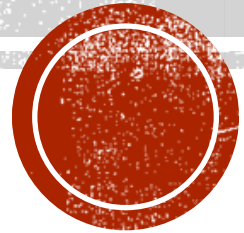
OVERAMPING UNPACKED: MANAGING THE ACUTE EFFECTS OF STIMULANT USE

NYSACHO STATEWIDE HARM REDUCTION SYMPOSIUM, 9/11/25

Kelly S. Ramsey, MD, MPH, MA, FACP, DFASAM

Kelly S. Ramsey Consulting, LLC



DISCLOSURES

Dr. Ramsey has no significant financial disclosures.

LEARNING OBJECTIVES

After attending this session, learners will be able to:

- Identify how stimulants affect the body and understand how the route of administration affects onset of effects
- Define overamping or a stimulant overdose, better understand how people who use stimulants (PWUS) see overamping, discuss the epidemiology of stimulant overdoses, discuss risk factors and prevention for overamping, recognize signs and symptoms of overamping
- Respond to overamping: recognize when overamping is an emergency, how to apply non-pharmacological strategies, and how to utilize pharmacological strategies

HOW DO STIMULANTS AFFECT THE BODY? DOES ROUTE OF ADMINISTRATION MATTER?

HOW DO STIMULANTS AFFECT THE BODY?

- Stimulants can increase the body's temperature and reduce the body's ability to dissipate that excess heat.
- Central nervous system stimulants promote the release of dopamine, serotonin, and norepinephrine and block the re-uptake of dopamine.
- Increased levels of these neurotransmitters in the central nervous system can produce effects like increased energy, alertness, feelings of euphoria.
- Dosage, purity, tolerance, route of administration, and other substance interactions can all affect the type of feelings a person using stimulants may have and the behaviors they may display.

CDC, A Stimulant Guide, 2022

METHAMPHETAMINE USE: SOCIAL COGNITION IS AFFECTED

"The mental operations that underlie social interactions, including perceiving, interpreting, and generating responses to the intention, disposition, and behavior of others."

- Theory of mind:
  - The cognitive ability to make inferences about others' mental states and to use them to understand and predict behavior
- Facial expression recognition:
  - Impaired independently; associated with aggressive behavior

Thanks to Joshua Blum MD for use of his slide
Martin A and Mark V. Medlink Neurology
Potvin S, et al. *Addictive Behaviors* 2018; Uhlmann A, et al. *Metabolic Brain Disease* 2017

THE ROUTE OF ADMINISTRATION MATTERS

- The route in which a substance is administered significantly affects how it is metabolized by the body (pharmacokinetics)
- The route impacts the experience of the substance effects (onset, potency), risk for physiological dependence, and both acute and chronic medical and psychological complications of use.
- Injection drug use (IDU) is the most potentially harmful route of administration.
  - IDU delivers a large bolus directly into the bloodstream with rapid transport to the brain, increasing the experience of acute intoxication and overdose risk.
- Substances ingested via smoking/vaping/sniffing are filtered through organs, such as the lungs or the liver, before being absorbed in the brain.
- Stimulant overdoses can occur with any method of administration, including oral consumption.

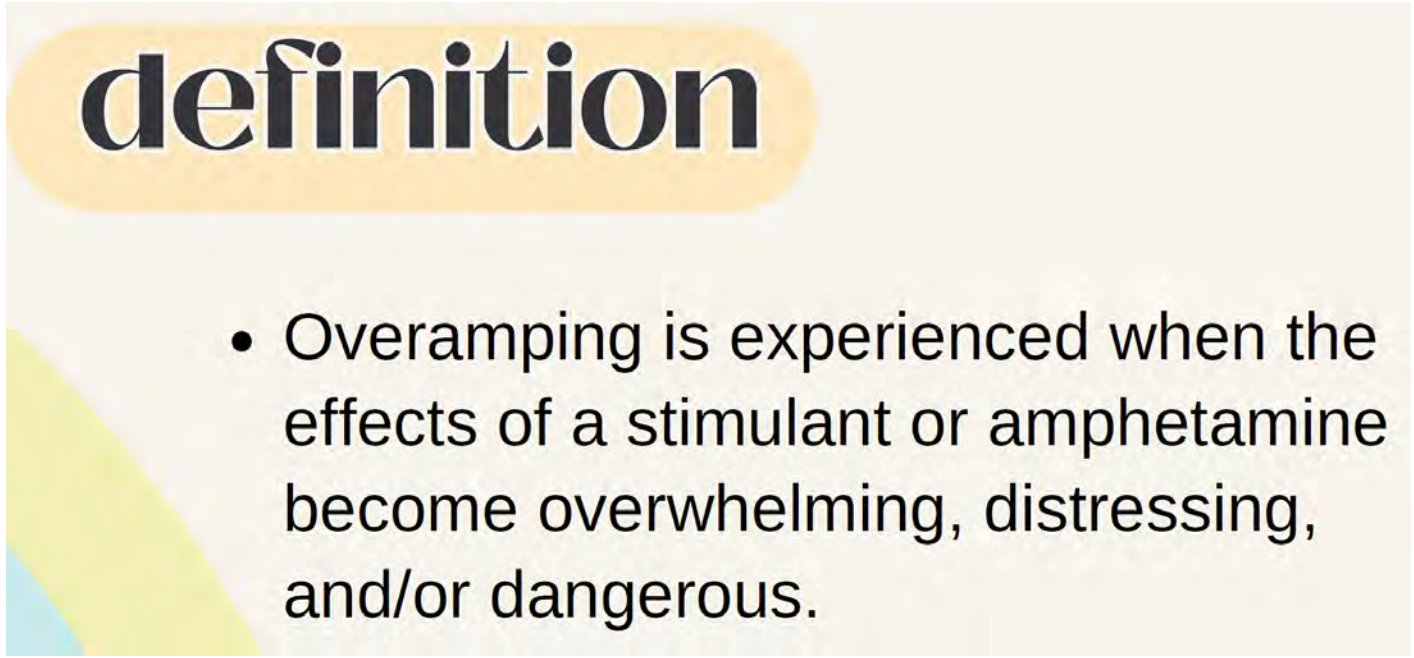
CDC, A Stimulant Guide, 2022

Grayken Center for Addiction Training and Technical Assistance, Boston Medical Center

Novak and Kral, 2011; Vann, et al, 2009; Porrino, 1993

OVERAMPING UNPACKED: DEFINITION, PERCEPTION OF PWUS

LEVEL SETTING: WHAT IS THE DEFINITION OF OVERAMPING?



DEFINING OVERAMPING

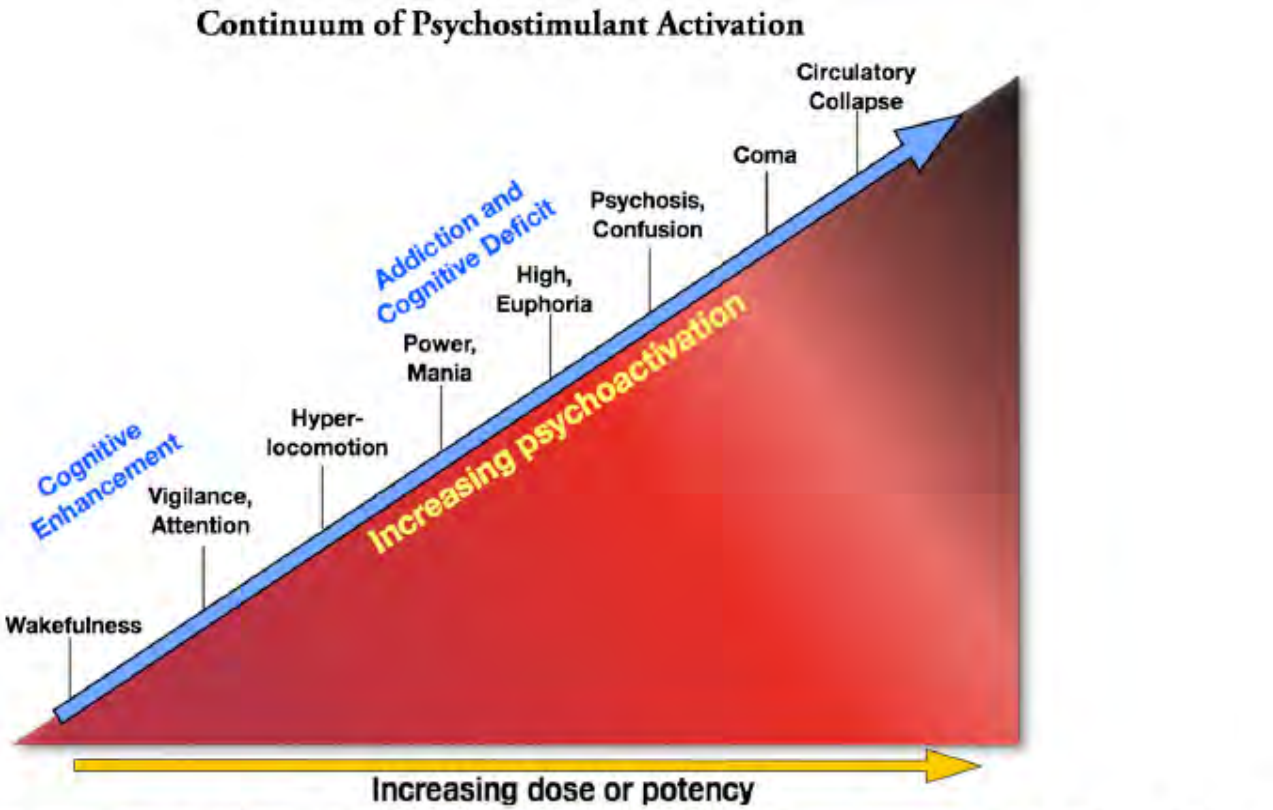


Fig. 10. Continuum of psychostimulant activation. Increasing cognitive activation as stimulant dose increases initially produces increased wakefulness and cognitive enhancement. These are the desired therapeutic effects. As dose increases, a sense of power and euphoria can ensue; these are the effects addicts seek and are accompanied by cognitive deficits. Higher doses can result in overdose, psychosis, coma, and eventual circulatory collapse.

Overamping tends to begin after someone has experienced euphoria for an extended period of time or has used a dose that exceeds the level of euphoria desired.

Wood, S, et al. Pharmacol Rev, 2013

"IT'S CALLED OVERAMPING": EXPERIENCES OF OVERDOSE AMONG PEOPLE WHO USE METHAMPHETAMINE

- **Background:** In the current study, they explored qualitative narratives of methamphetamine overdose and strategies used by PWUD to reduce the undesirable effects associated with methamphetamine use.
- **Methods:** They conducted 21 qualitative interviews with people >18 years old who reported using methamphetamine in the previous 3 months in Nevada and New Mexico. Interviews were recorded, transcribed, and analyzed using qualitative thematic analysis.
- **Results:** Respondents described a constellation of psychological and physical symptoms that they characterized as "overamping," experienced on a continuum from less to more severe. Reports of acute, fatal methamphetamine overdose were rare. Few reported seeking medical attention for undesirable effects (usually related to psychological effects). General self-care strategies such as sleeping and staying hydrated were discussed.
- **Conclusions:** When asked directly, the respondents claimed that acute, fatal methamphetamine overdose is rare or even impossible. However, they described a number of undesirable symptoms associated with overconsumption of methamphetamine and had few clinical or harm reduction strategies at their disposal.

Harding, RW, et al. Harm Reduct J, 2022

CHARACTERIZING STIMULANT OVERDOSE: A QUALITATIVE STUDY ON PERCEPTIONS AND EXPERIENCES OF "OVERAMPING"

- **Background:** The dominant focus of North America's current overdose crisis has been opioids, resulting in considerable research and harm reduction efforts to address opioid-related overdose risks. Less attention has been paid to people who use stimulants (PWUS) despite recent increases in stimulant use and stimulant-involved overdoses (i.e., "overamping"). Stimulant users' definitions, risk factors and experiences of, and responses to, overamping are poorly understood, thereby putting PWUS at heightened risk of adverse health outcomes. This study explored how PWUS understand, experience, and respond to overamping.
- **Methods:** In-depth qualitative interviews were conducted with 61 PWUS in Vancouver, Canada's Downtown Eastside neighborhood. Thematic analysis of interviews focused on contextualizing stimulant overdoses, including how PWUS understand, define, experience, and respond to overamping.
- **Results:** Participants associated overamping experiences with commonly identified signs and symptoms, such as rapid onset, elevated heart rate, incontinence, and audio-visual hallucinations, but also reported more serious indicators of overamping, such as unconsciousness, cardiac arrests and seizures. Their findings demonstrate that, among PWUS, there was no unified understanding of overamping such as with opioid overdose and individual experiences had substantial variation in severity and presentation. This impacted the ability to adequately respond to stimulant overdoses, which were primarily self-managed through methods including stabilizing breathing, polysubstance use, and cold showers.
- **Conclusion:** Given the growing role of stimulants in North America's overdose crisis, there is an urgent need to improve the identification of stimulant overdoses in real world settings. Their findings identified a gap in current understandings of stimulant overdose, and demonstrate the need for public health and harm reduction interventions to better address overamp risk among PWUS, including harm reduction campaigns to disseminate information regarding identifying signs of, and proper responses to, overamping.

Mansoor, M, et al. Int J Drug Policy, 2022

CHARACTERIZING STIMULANT OVERDOSE: A QUALITATIVE STUDY ON PERCEPTIONS AND EXPERIENCES OF "OVERAMPING"

- Opioid and stimulant overdoses have distinct physiological profiles and behavioral manifestations, with unresponsiveness, hypoxia, and reduced respiratory effort characterizing the former, and agitation, increased heart rate and body temperature, and/or cardiac arrest characterizing the latter. This puts PWUS at high risk, as overamping produces a unique set of physical complications that cannot be reversed with naloxone.
- Given the increase in stimulant-involved overdose and mortality, and the unique physiological characteristics of stimulant overdose, it is critical to better understand "overamping" as they occur in real world contexts to further understandings of how to identify and intervene in order to prevent morbidity and mortality of PWUS.

Mansoor, M, et al. Int J Drug Policy, 2022

CHARACTERIZING STIMULANT OVERDOSE: A QUALITATIVE STUDY ON PERCEPTIONS AND EXPERIENCES OF "OVERAMPING"

- Narratives around overamping experiences were probed with questions such as "When it comes to stimulants, what do words like "overdose" and "overamp" mean to you?" and "Can you tell me about what happened during your **most recent** stimulant-related overdose/ramp?"
- In this paper we draw on a sub-sample of interviews with 61 participants, 27 of whom reported experiencing overamping and the remaining 34 participants had witnessed someone overamping and/or discussed their perspectives regarding overamping.
- Most study participants had not heard of the term "overamp" prior to being interviewed, although nearly all could recognize the symptoms of stimulant overdose. Some participants did not consider the term overamp as referring to an overdose per se, but instead understood it as an extended period of sleep deprivation coupled with heavy methamphetamine use.
- Approximately half had direct experience with stimulant overdose, however participants often did not consider themselves to have experienced overamping until some of the characteristic symptoms were described by the interviewers. Rather, many participants did not consider their experiences as overdoses due to more commonly associating the term "overdose" with opioid-specific overdose presentations, specifically loss of consciousness.

Mansoor, M, et al. Int J Drug Policy, 2022

CHARACTERIZING STIMULANT OVERDOSE: A QUALITATIVE STUDY ON PERCEPTIONS AND EXPERIENCES OF "OVERAMPING"

- Stimulant overdoses were mainly attributed to overuse or binge use, stimulant potency, and polysubstance use. Among participants who had experienced or witnessed overamping firsthand, a predominant view was that overuse relative to one's tolerance led to stimulant overamping. In some instances, overamping was reportedly the result of a binge pattern of use as opposed to using "too much" in a single dose.
- The variability in potency of the unregulated illicit stimulant supply drove participants to use larger amounts of stimulants, potentially increasing their risk of overamping. Many expressed that the purity of stimulants available in Vancouver had been declining. Therefore, participants resorted to using larger quantities to achieve the same high that previously potent stimulants used to bring.

Mansoor, M, et al. Int J Drug Policy, 2022

CHARACTERIZING STIMULANT OVERDOSE: A QUALITATIVE STUDY ON PERCEPTIONS AND EXPERIENCES OF "OVERAMPING"

- ***Experiences of overamping***
- Participants frequently described the symptoms of overamping as a significantly high heart rate, excessive sweating, as well as difficulty breathing coupled with feelings of paranoia and anxiety. These experiences occurred across different routes of administration and were commonly described as the defining features of the onset of an overamp and as remaining throughout the course of the experience.
- Those with firsthand experience of an overamp emphasized the rapid onset of symptoms. These symptoms were markedly distinct from the usual effects of the substance and were described as "*overwhelming,*" often occurring quickly and unexpectedly.
- Reported symptoms included profound restlessness and a need to move around to offset these symptoms.
- Even when symptoms align with those characteristic of stimulant overdose, individuals often associate their experience with being "too high" rather than overdose, further underscoring the normalization of overamping symptoms, and suggesting that a certain symptom severity (e.g., loss of consciousness, seizures) must be achieved to be considered an overdose.
- Other participants expressed difficulties with verbal communication and motor coordination, as well as incontinence, dissociation and/or visual hallucinations for the duration of the overamp.

Mansoor, M, et al. Int J Drug Policy, 2022

CHARACTERIZING STIMULANT OVERDOSE: A QUALITATIVE STUDY ON PERCEPTIONS AND EXPERIENCES OF "OVERAMPING"

- Unconsciousness and/or memory lapses reportedly occurred either in conjunction with seizures or in isolation, but were not a consistent feature across all participant accounts of overamping. Similarly, reports of heart attacks and sudden cardiac arrests were experienced or witnessed by only a few participants.
- While the medical literature indicates that stimulant use represents a significant cardiac risk factor contributing to heart attacks or cardiac arrests the reported incidence of either was low in our sample, highlighting the wide range of symptom presentations that constitute overamping and that heart attacks and cardiac arrests simply represent the most extreme end on a spectrum of possible overamp presentations.

Mansoor, M, et al. Int J Drug Policy, 2022

CHARACTERIZING STIMULANT OVERDOSE: A QUALITATIVE STUDY ON PERCEPTIONS AND EXPERIENCES OF "OVERAMPING"

- ***Responses to overamping***
- The novelty of overamping complicated the management of the overdose. Most participants reported self-managing overamping due to the unique presentation and rapid onset, as well as the lack of awareness that they were in the midst of an overdose experience.
- Such strategies were often learned anecdotally from other PWUS and included administering other substances (e.g., cannabis, benzodiazepines, opioids) believed to counteract the overamp, cold showers, running around, or using paper bags or breathing techniques to modulate their heart rate.
- However, the lack of formally established overamp response strategies or medical interventions (e.g., naloxone) contributed to a shared understanding that the best practice for managing an overamp was to "*ride it out.*"

Mansoor, M, et al. Int J Drug Policy, 2022

CHARACTERIZING STIMULANT OVERDOSE: A QUALITATIVE STUDY ON PERCEPTIONS AND EXPERIENCES OF "OVERAMPING"

- A number of participants attested to the use of relaxation techniques to manage symptoms, perhaps due to the perceived similarities between an overamp and a panic attack.
  - Examples include encouraging breath modulation to manage hyperventilation and increased heart rate and reducing sensory stimulation. Others discussed using sunglasses to block out lights, speaking in calm, lowered tones, or simply trying to talk through the experience – strategies that attempt to reduce the physiological stress of an overamp, and acknowledge that while it cannot be reversed, it may be managed.
- Conversely, other participants felt that pacing, running, or engaging in some form of movement helped mitigate overamping effects.
- Another overdose response strategy was cold showers. This was perceived as a reasonable response due to excessive sweating symptoms, and the need to "shock" the body. However, there were conflicting understandings of the safety of using cold showers as a response strategy.

Mansoor, M, et al. Int J Drug Policy, 2022

CHARACTERIZING STIMULANT OVERDOSE: A QUALITATIVE STUDY ON PERCEPTIONS AND EXPERIENCES OF "OVERAMPING"

- Very few respondents felt that medical attention was necessary, explaining that self-management of their overamping symptoms was an adequate strategy in avoiding any critical consequences.
- The few who did choose to seek medical intervention credited it with saving their lives as they experienced life-threatening overamps involving heart attacks and/or seizures.
- The lack of evidence-based guidance on overamp reversal, within the context of a scale-up of opioid overdose reversal measures, has created an impression among many PWUD that such a risk does not exist for them. This underestimation of risk has been an unintended consequence that has far-reaching implications on participant willingness to seek medical attention for an adverse experience on stimulants if it did not reach a certain degree of symptom severity.

Mansoor, M, et al. Int J Drug Policy, 2022

CHARACTERIZING STIMULANT OVERDOSE: A QUALITATIVE STUDY ON PERCEPTIONS AND EXPERIENCES OF "OVERAMPING"

- With the creation and dissemination of harm reduction material that outlines the spectrum of overamp symptoms, participants can be better equipped in recognizing their experiences as stimulant overdoses.
  - Additionally, educational material created in collaboration with PWUS and medical experts that provide descriptions of self management techniques that could be utilized in the event of an overamp would promote self efficacy and confidence in navigating themselves or others through overamping.
  - Certain techniques identified by the participants in this study such as reducing sensory stimulation by dimming the lights or turning off music, modulating breathing, having a peer calm them and supervise them, and taking a walk or a jog should be included as potential response strategies for self-management of overamping.
  - Further, participants frequently had conflicting understandings of the safety of response strategies (e.g., cold showers) and whether medical attention was necessary. The use of cold showers is also contentious and existent harm reduction messaging advises the use of cool wet cloth on areas such as the forehead and back of the neck instead.
- Whereas most self-directed response strategies were relatively benign, attempting to offset an overamp with other substances, especially using benzodiazepines or opioids, complicates both overamp presentations and response and should be advised against.

Mansoor, M, et al. Int J Drug Policy, 2022

REFLECTION WITH ATTENDEES

- Are your staff trained to recognize overamping?
- Have you experienced patients/clients overamping at your office/clinic/facility?

EPIDEMIOLOGY OF STIMULANT OVERDOSES

WHAT IS A STIMULANT OVERDOSE?

- In simple terms, a **stimulant overdose occurs when someone is experiencing effects of stimulants so severe that their health or safety may be at risk.**
- Stimulants include methamphetamine, cocaine, crack cocaine, and amphetamines such as medications prescribed for the treatment of ADHD.
- The effects of stimulants on the human body can vary greatly based on multiple factors such as underlying health issues, type of stimulant, route of administration, and dose.
- Therefore, not all stimulant overdoses look the same.
- Due to the variable nature of stimulant overdoses, some have referred to potentially life-threatening emergencies resulting from the use of stimulants as "stimulant toxicity" or as "overamping." These terms refer to the same kinds of stimulant-related emergencies.

CDC, A Stimulant Guide, 2022

STIMULANT OVERDOSE V. OPIOID OVERDOSE

- A stimulant overdose is commonly characterized by dangerous overheating or other potentially dangerous symptoms, and often the individual experiencing the overdose remains conscious.
- Opioid overdose is typically characterized by severe difficulty breathing or not breathing at all (decreased respirations and decreased oxygen saturation); the person is nonresponsive and unconscious.

CDC, A Stimulant Guide, 2022

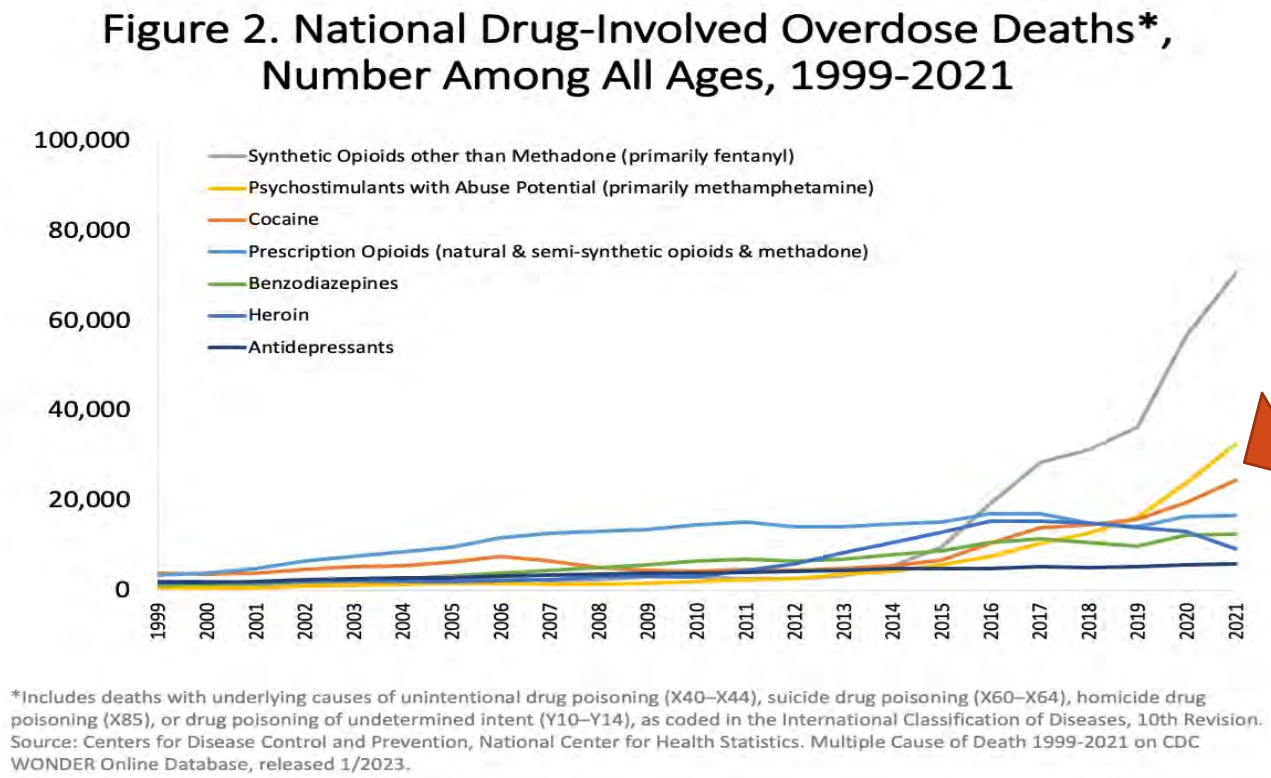
SOCIETAL COST OF STIMULANT USE

Centers for Disease Control and Prevention. (2019). *Annual surveillance report of drug-related risks and outcomes - United States*. Washington DC: U.S. Department of Health and Human Services.

CDC

NATIONAL OVERDOSE DEATHS, 1999-2021

U.S. overdose deaths involving psychostimulants other than cocaine, largely methamphetamine, increased 180% among adults under age 65 between 2015 and 2019



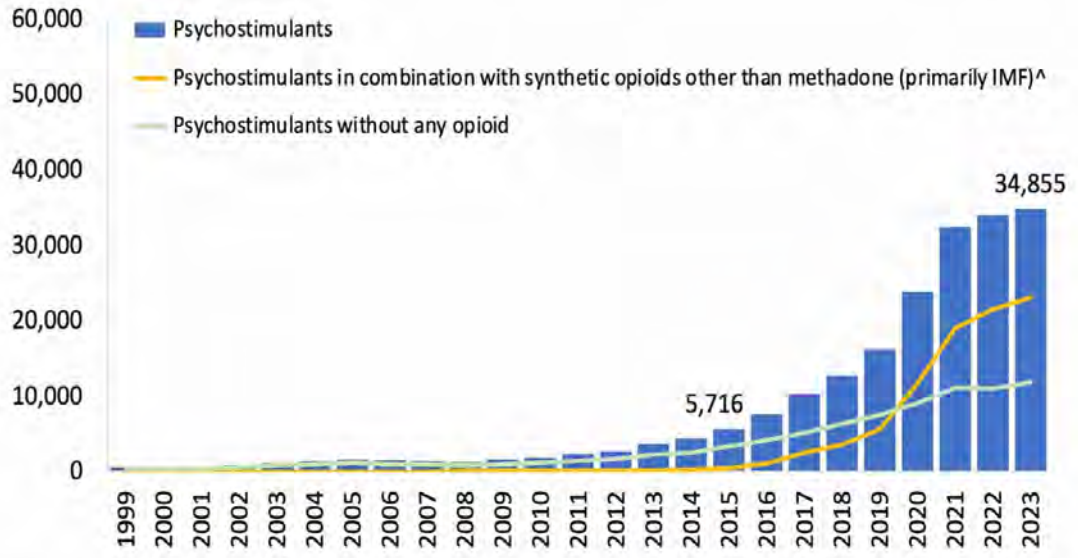
- From 2004 to 2019, death rates for overdoses involving cocaine were generally higher among Black persons than other racial and ethnic groups, and death rates for overdoses involving psychostimulants were generally higher among American Indian/Alaska Native (AI/AN) persons than among other racial and ethnic groups.

- From 2013 to 2019, most racial and ethnic groups experienced increases in rates of overdoses involving both cocaine and opioids and rates of overdoses involving both psychostimulants and opioids.

CDC WONDER, 1/2023
Han, et al, 2021

OVERDOSE DEATHS INVOLVING METHAMPHETAMINE

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

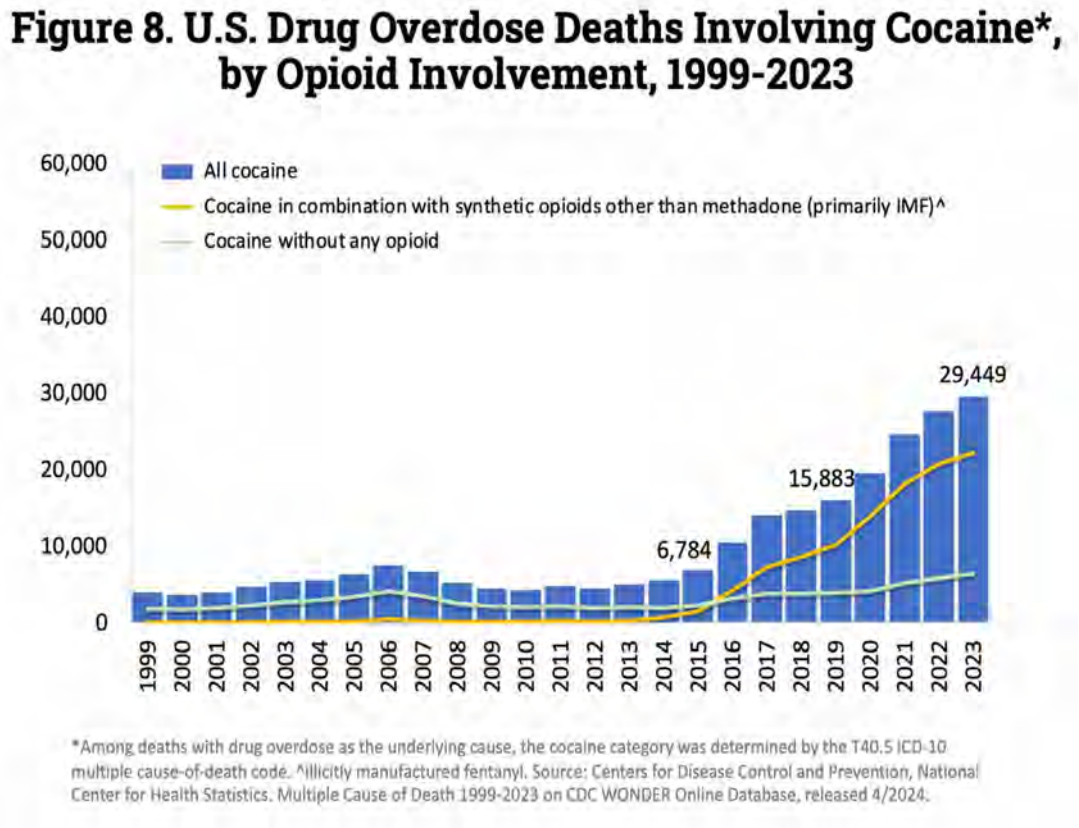


*Among deaths with drug overdose as the underlying cause, the psychostimulants with abuse potential (primarily methamphetamine) category was determined by the T43.6 ICD-10 multiple cause-of-death code. Abbreviated to *psychostimulants* in the bar chart above. ^illicitly manufactured fentanyl. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2023 on CDC WONDER Online Database, released 4/2024.

- Drug overdose deaths involving psychostimulants with misuse potential rose from 5,716 in 2015 to 34,855 deaths in 2023. The number of deaths involving psychostimulants has increased steadily since 2014 regardless of opioid involvement; however, those with IMF are the main driver of these deaths.

CDC

OVERDOSE DEATHS INVOLVING COCAINE



- Drug overdose deaths involving cocaine rose steadily from 6,784 in 2015 to 15,883 in 2019. From 2019 to 2023, cocaine-involved deaths rose 85% to 29,449 deaths. The number of deaths with IMF increased significantly since 2015 and is the main driver of cocaine-involved overdose deaths (Source: CDC WONDER).

CDC

DRUG OVERDOSE DEATHS INVOLVING STIMULANTS — UNITED STATES, JANUARY 2018–JUNE 2024

FIGURE 1. Percentage of overdose deaths (N = 309,274), by type of stimulant*,†,§,¶,**,†† involved§§ (A) and by combinations of stimulants involved (B) — State Unintentional Drug Overdose Reporting System, United States,¶¶ January 2021–June 2024

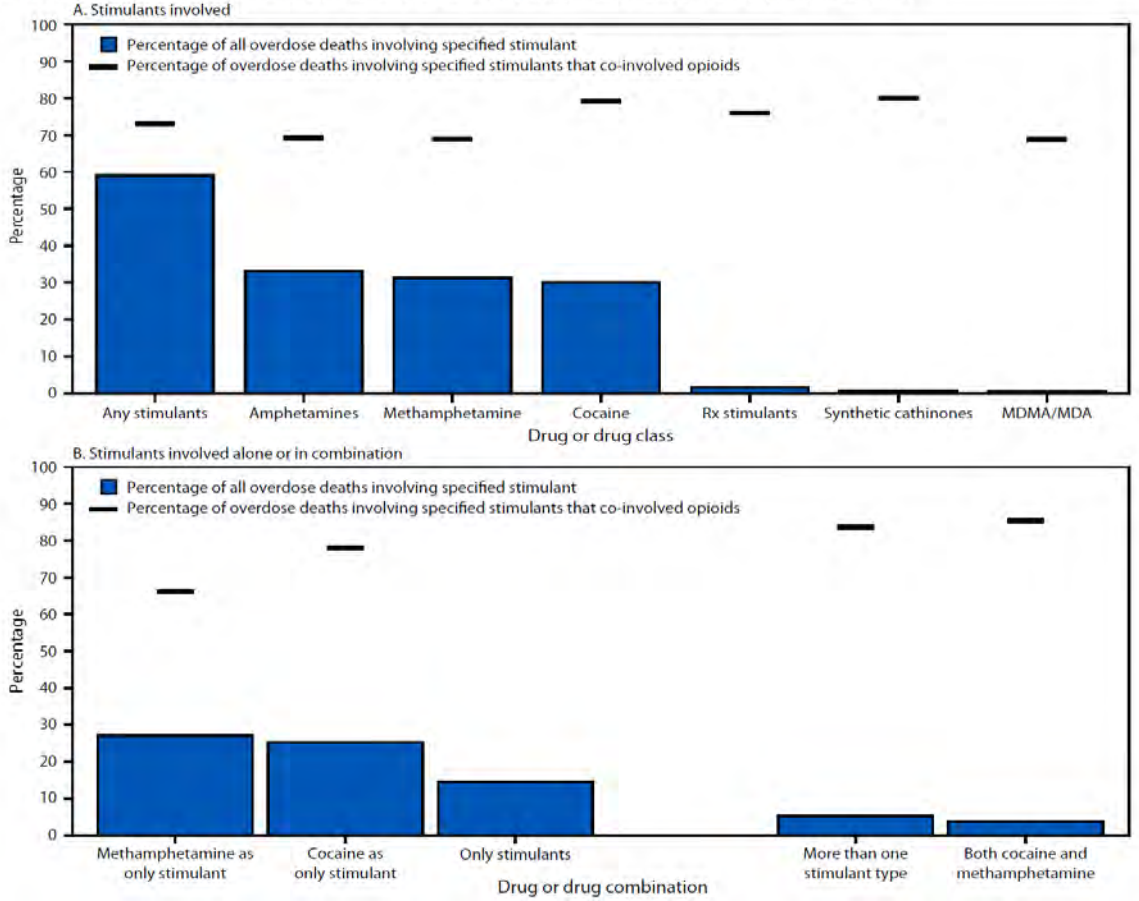
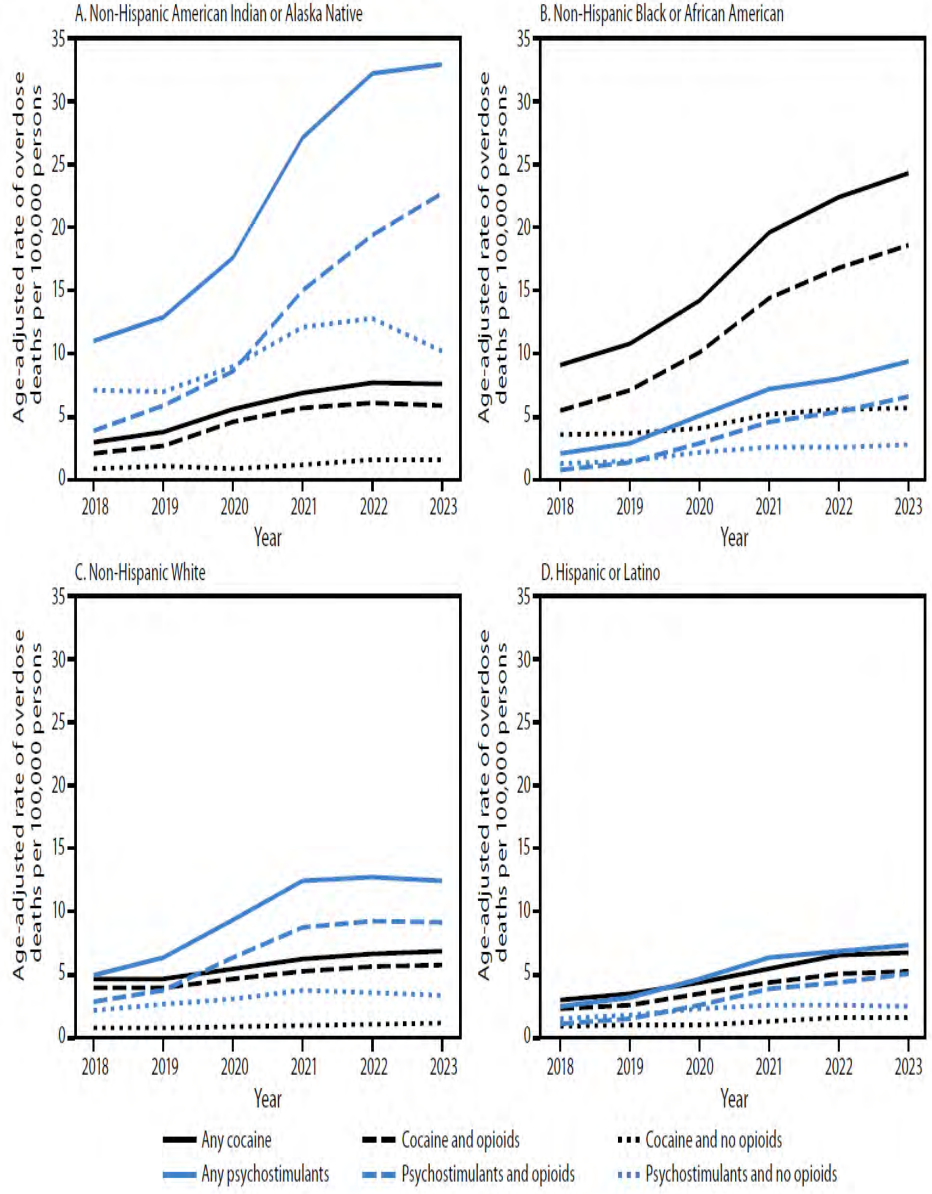
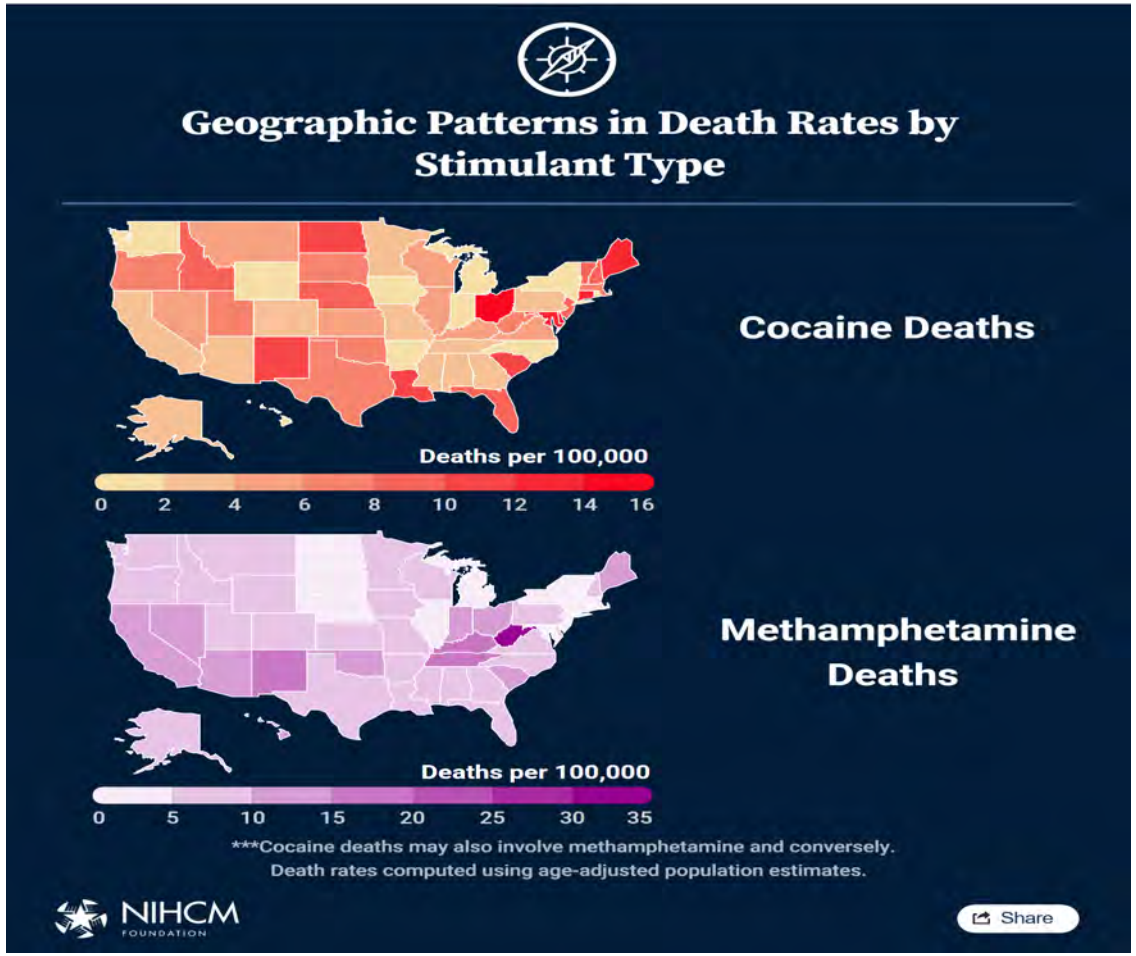


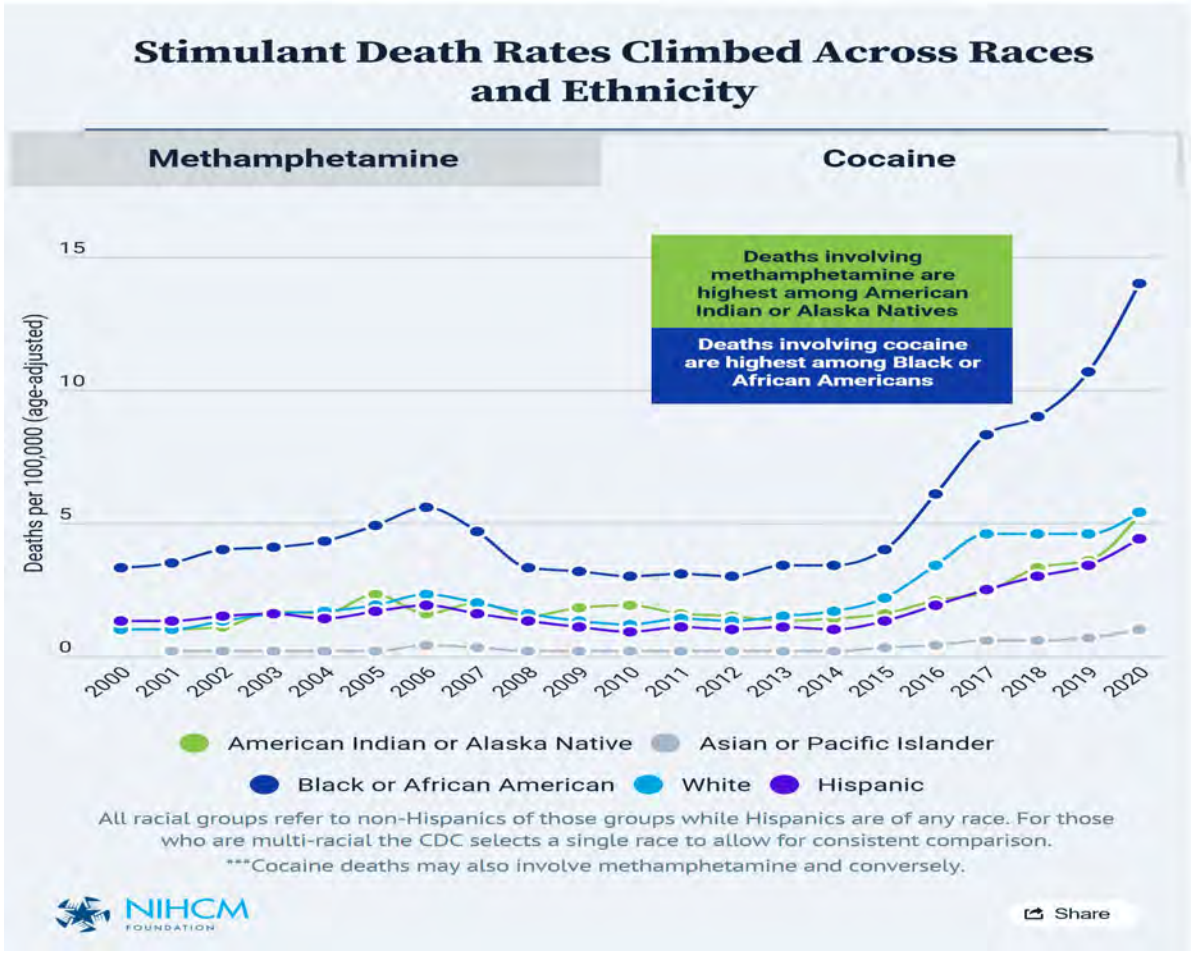
FIGURE 2. Age-adjusted rates* of overdose deaths† involving stimulants and co-involving opioids,§,¶ by race and ethnicity** and year of death — National Vital Statistics System, United States, 2018–2023



Tanz, LJ, et al. MMWR, 2025

CHARTING THE STIMULANT OVERDOSE CRISIS

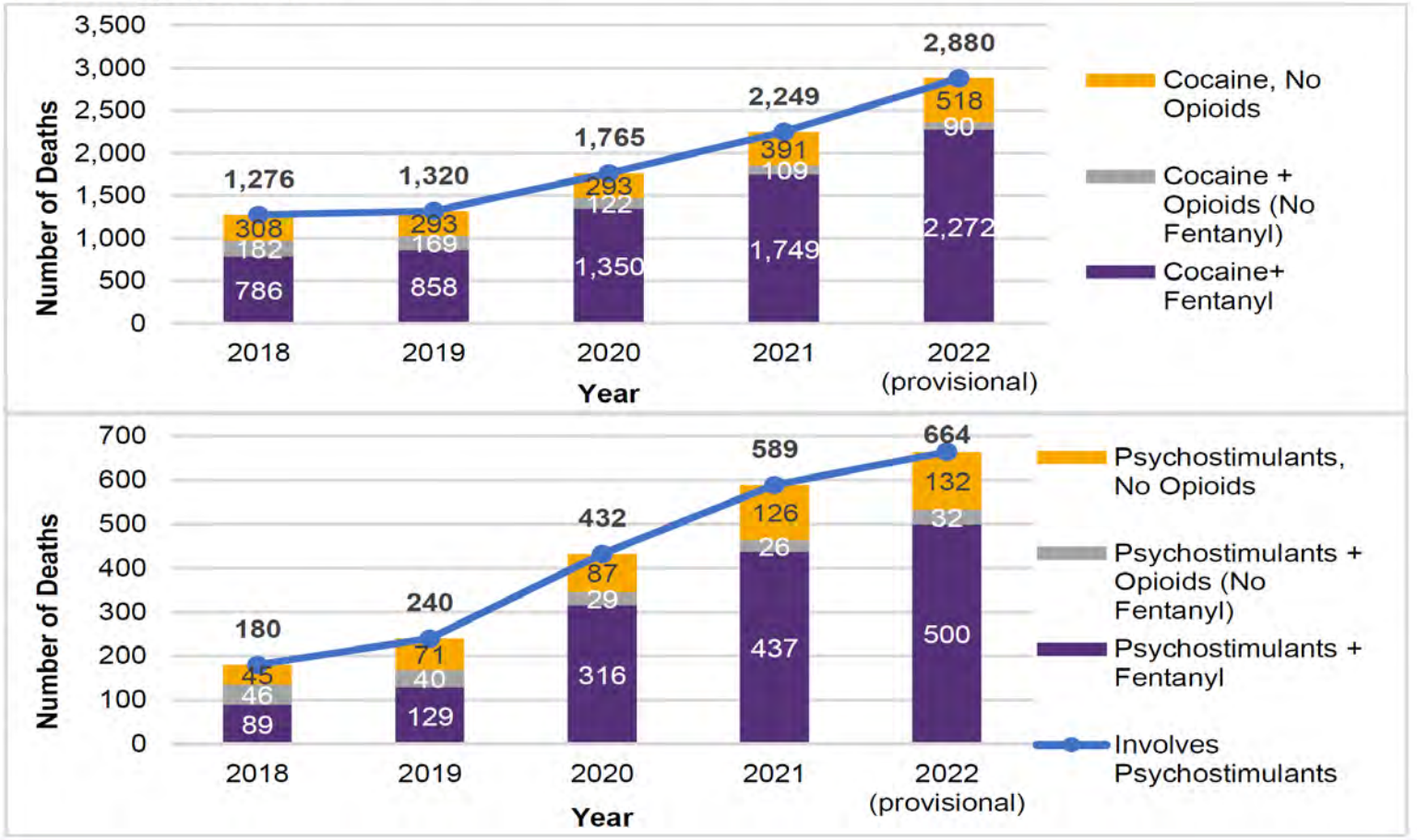




NIHCM Foundation, 2022

OVERDOSE DEATHS INVOLVING STIMULANTS, NYS, 2018-2022

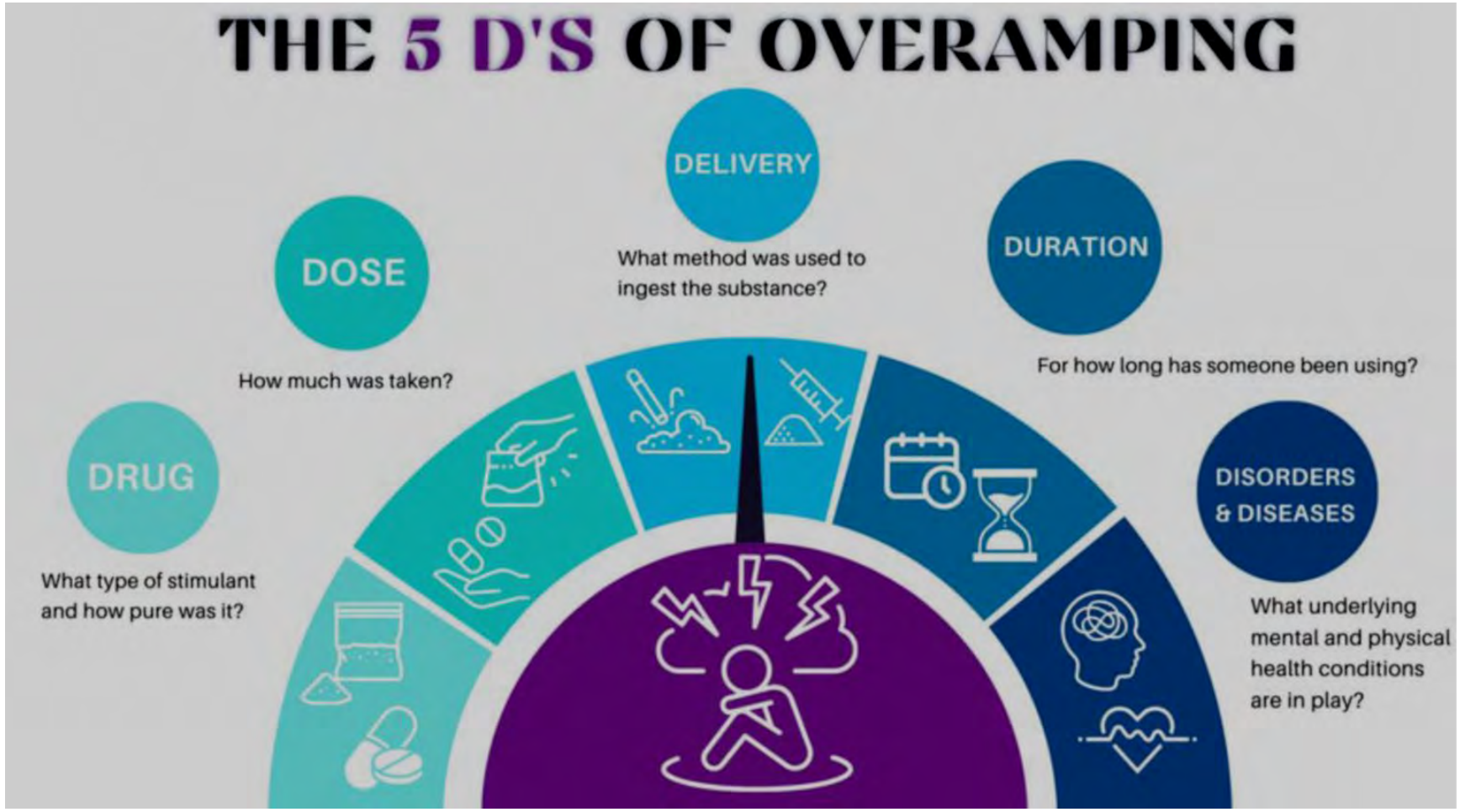
Figure 1: Drug Overdose Deaths Involving Cocaine and Psychostimulants Among New York Residents, 2018-2022



NYS OASAS, Stimulant Use and StUD in NYS, Addiction Data Bulletin, February 2024, No. 2024-02

OVERAMPING UNPACKED: RISK FACTORS, PREVENTION, SIGNS AND SYMPTOMS

RISK FACTORS FOR OVERAMPING



Grayken Center for Addiction Training and Technical Assistance, Boston Medical Center
Alves et al., 2024

THE FIVE "D"S OF OVERAMPING

- **Drug**: The type of stimulant someone takes as well as its purity greatly impacts the response someone may have. Some stimulants have direct effects on dopamine increasing the likelihood of an overamping situation.
- **Dose**: The amount of the substance that someone uses has a direct effect on the response that they will experience.
- **Delivery**: How the substance is delivered (route of administration) also contributes to the availability of the substance in the body.
- **Duration**: How long someone has been using for is another indicator for the risk of overamping. Using for several days in a row without a break increases the risk for a serious event.
- **Disorders/Diseases:** Underlying health conditions, including mental health conditions, may affect someone's likelihood of experiencing overamping even in the setting of using small amounts or for a limited amount of time.

HOW CAN OVERAMPING BE PREVENTED?

- **Getting enough sleep.** Sleep is the best medicine. Lack of sleep increases the chance of overamping because even without substances, little to no sleep can severely impact a person mentally and physically.
- **Maintaining adequate hydration and adequate nutrition** (e.g., consumption of nutrient dense snacks) **while using**.
- **Start low and slow.** Starting with a smaller dose when they get a new bag can help them safely gauge what feels like the right amount for them. Same goes for if they're using somewhere new or with new people — reducing their dose and taking it slow can make it easier to check in with themselves about how they feel.
- **Pay attention to the dose.** If a person has a scale, weighing out their stuff can help them notice if there's a dose that consistently makes them feel uncomfortable and what dose feels just right. Remember, the drug supply is often unreliable and potency can change from batch to batch, seller to seller, and city to city. What looks like the same dose can feel different **depending on where it came from and how they take it.**
- **Take care of the body, however a person can.** This could look like taking a shower, taking a walk, or eating fruits and vegetables.
- **Switching to a different route of use** (e.g., sniffing rather than injecting)
- **Limiting use/taking breaks between each use event**
- **Adhering to medications for both psychiatric and non-psychiatric treatments to reduce flares of conditions that may increase the risk of overamping.**
- **Identifying safe places to go should an overamping event occur.**

WHAT ARE THE POTENTIAL PHYSICAL SIGNS AND SYMPTOMS OF OVERAMPING?

- Jerking movements
- An inability to stay still
- Chest pain/angina
- Irregular breathing
- High body temperature
- Passing out (but still breathing)
- Uncontrollable teeth grinding
- Racing heartbeats
- Severe headache
- Nausea or vomiting
- Muscle stiffness or paralysis
- Fainting, but not unconscious
- Seizure
- Hyperthermia
- Hypertension
- Acidosis
- Rhabdomyolysis
- Neutropenia
- QRS widening
- Insomnia
- Xerostomia/dry mouth

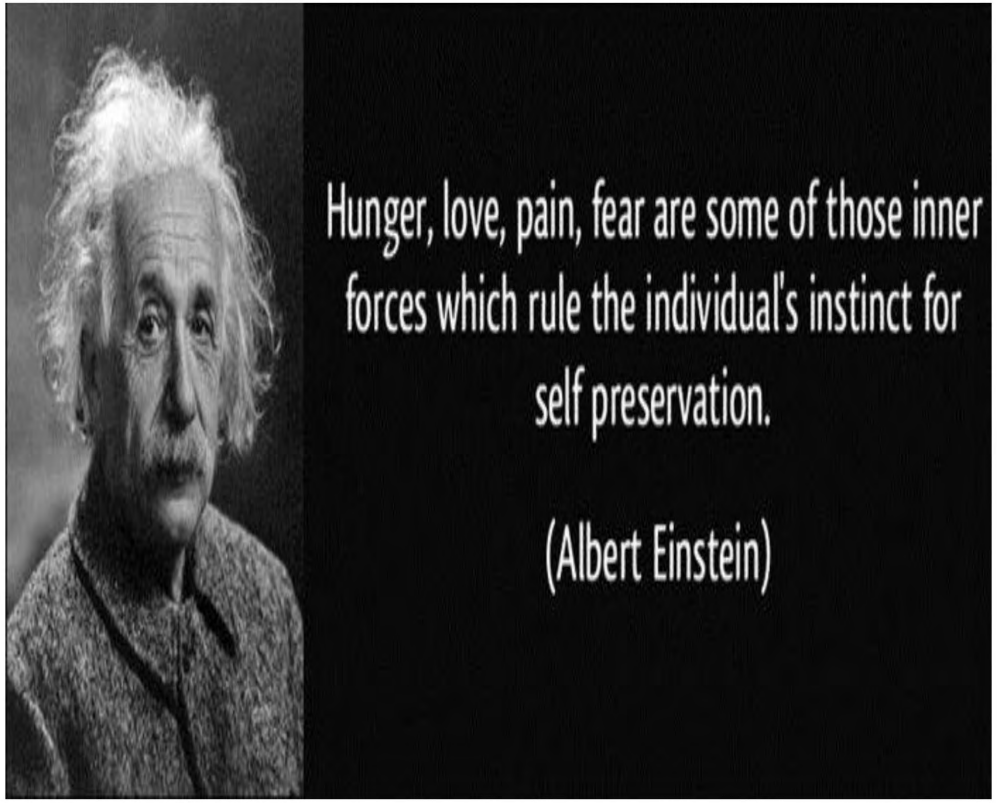
Next Distro
The Everywhere Project
The ASAM/AAAP Clinical Practice Guideline on the Management of Stimulant Use Disorder, 2024
NYC DOHMH, Safety Tips for People Who Use Stimulants

WHAT ARE THE POTENTIAL MENTAL SIGNS AND SYMPTOMS OF OVERAMPING?

- Confusion
- Restlessness
- Hypervigilance
- Intense panic
- Hallucinations: auditory, visual, tactile
- Protective behaviors (see next slide)
- Delusions
- Trauma response
- Extreme paranoia
- Extreme agitation
- Increased aggressiveness
- Suicidal ideation
- Enhanced sensory awareness
- Altered perception of reality
- Persecutory perceptions of the world

Grayken Center for Addiction Training and Technical Assistance, Boston Medical Center
The Everywhere Project
Next Distro
NYC DOHMH, Safety Tips for People Who Use Stimulants

WHAT ARE PROTECTIVE BEHAVIORS?



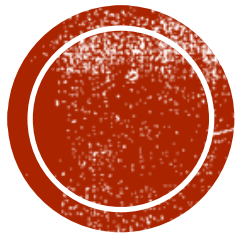
- Protective behaviors are ways in which people act instinctually for self-preservation.
- Protective behaviors include hypervigilance, panic, anxiety, fear, agitation, defensive posturing, and increased sensory awareness.
- Altered persecutory perceptions of reality force patients to go into survival mode.
- Acts of aggression, violence, or hypervigilance often occur in the setting of patients fearing for their lives.

PARANOIA V. PSYCHOSIS

Paranoia may be a symptom of psychosis. However, psychosis requires multiple symptoms:

1) Delusions: stories or ideas that are not rooted in reality

2) Hallucinations: seeing, hearing, feeling, smelling or tasting things that are not there



RESPONDING TO OVERAMPING

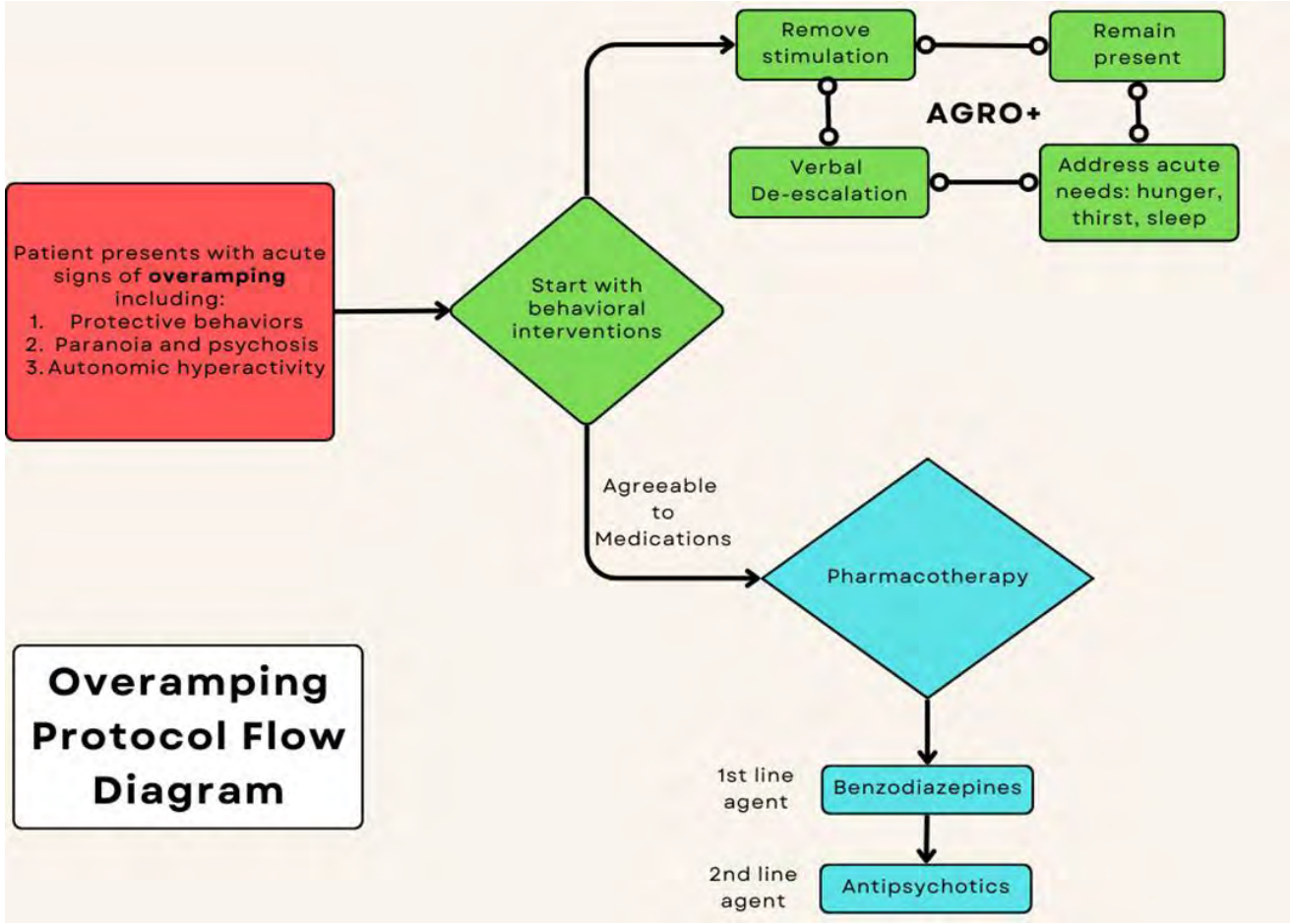
OVERAMPING AND HARM REDUCTION CONSIDERATIONS

- **INITIAL MANAGEMENT:**
- Symptom Recognition: It is important to recognize the signs and symptoms of overamping.
- Ideally, patients should be managed in the ambulatory clinical space where they know the staff members and feel safe to prevent further distress and avoid potentially escalating and unsafe situations in the emergency department. However, if patients exhibit the following signs or symptoms, emergency management is needed immediately:
  - Inability to protect airway
  - Hypertension that persists despite pharmacological measures and is accompanied by emergent symptoms (chest pain, headaches, vision changes)
  - Hyperthermia of over 40 °C (104°F)
  - Seizures

WHAT CAN YOU DO WHEN SOMEONE IS OVERAMPING AND IT ISN'T AN EMERGENCY?

- **Cool them down.** Place ice packs or a cool, wet towel under their armpits and knees, crack a window, or sit in front of a fan or in the shade.
- **Hydrate and nourish them.** Have them drink some water or a sports drink like Gatorade and eat a nutrient-dense snack. Avoid drinks with caffeine, which can increase the intensity of their experience. If Gatorade isn't available, a salty snack or a small amount of salt mixed into water will help their body systems stay balanced and replenish nutrients.
- **Rest.** Encourage them to take a nap, close their eyes, or lay or sit down somewhere comfortable. They can practice breathing or meditation exercises, or listen to some calming music.
- **Shower.** A cool or warm shower can help bring mental and physical relief.
- **Change up their environment.** Encourage them to take a walk, get some fresh air, or move to a more comfortable place.
- **Physical contact.** Massaging themselves, or having someone else massage them can help ground them in their body.
- **Have them talk to themselves or someone else about what is happening.** It can be very powerful to name their feelings and remind them that what they are experiencing is temporary.
- **Avoid using more, different substances, including alcohol.** It can be tempting to use benzodiazepines or other sedatives to help move out of overamping. Taking benzodiazepines, especially in combination with heroin or alcohol can raise the risk for more serious complications like respiratory depression. A safer choice would be to drink some herbal tea, like chamomile.

AMBULATORY MANAGEMENT OF OVERAMPING



If an overdose is suspected:

- Assess the scene
- Assess the person: airway, breathing, and circulation
- Call 911
- Attempt to de-escalate the patient, if appropriate
- Stay with the person until help arrives
- Should the person suddenly become unresponsive perform CPR until help arrives.

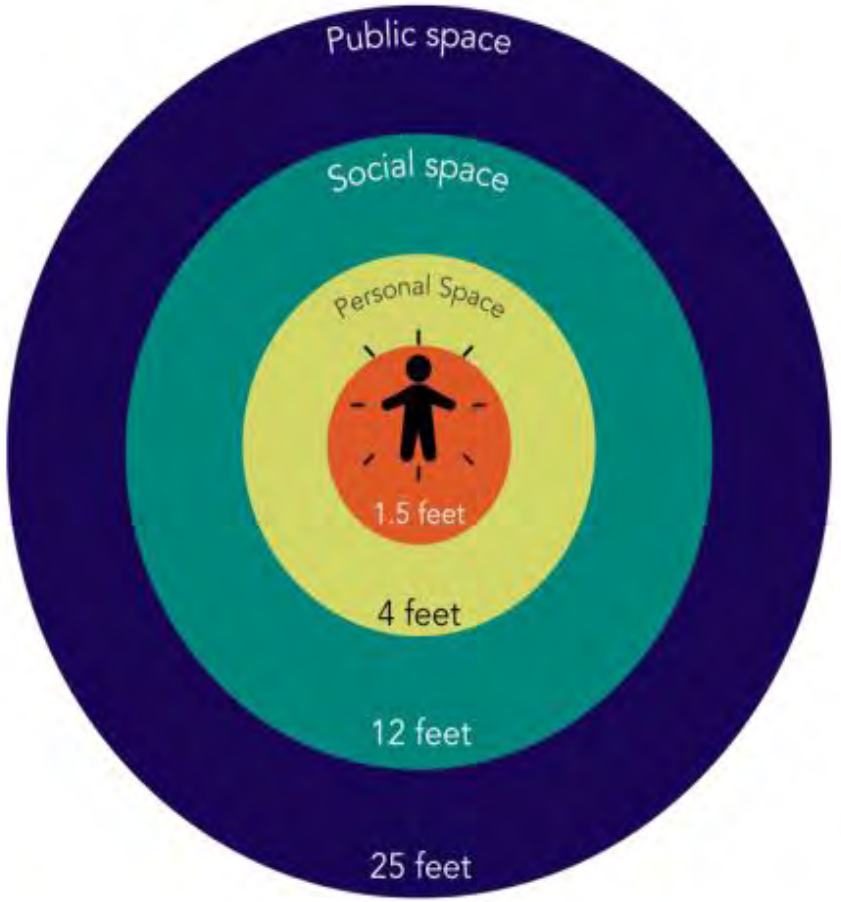
Alves et al., 2024

BEHAVIORAL DE-ESCALATION

Grayken Center for Addiction Training and Technical Assistance, Boston Medical Center
Substance Abuse and Mental Health Services Administration, 2021; Alves, et al., 2024

BEHAVIORAL DE-ESCALATION

- Ensure your own safety: access to an exit, a safe distance, never approach a patient with a weapon.
- Avoid cornering the person, avoid prolonged eye contact, and avoid sudden, potentially threatening gestures.
- Minimize stimulation and distractions.
- Maintain composure—remember this isn't personal!



Grayken Center for Addiction Training and Technical Assistance, Boston Medical Center
Substance Abuse and Mental Health Services Administration, 2021; Alves, et al., 2024

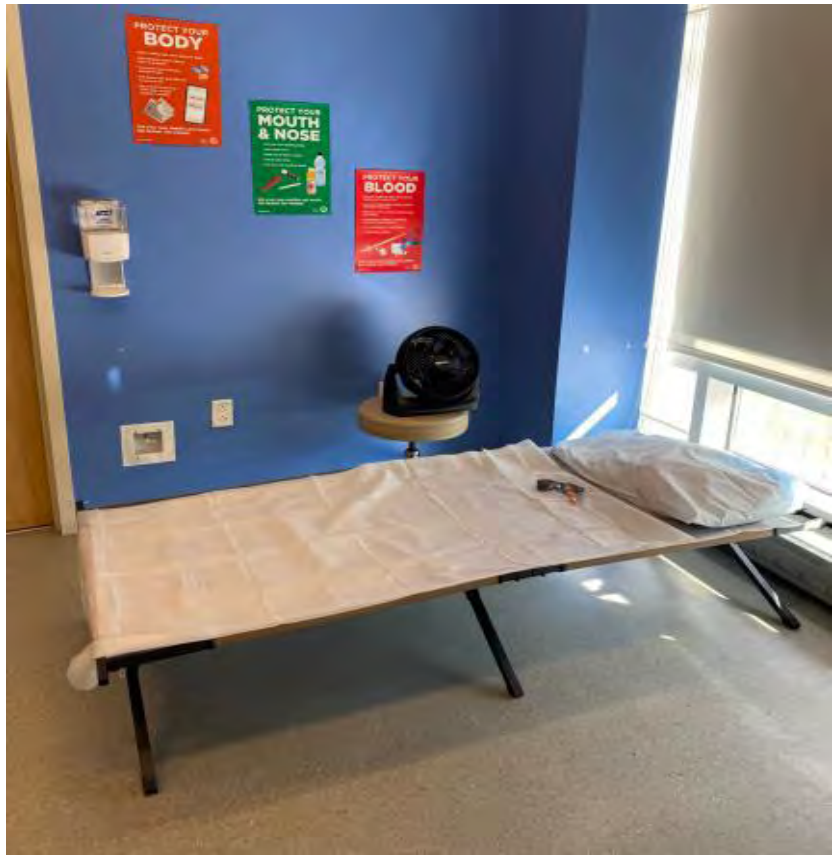
VERBAL DE-ESCALATION

- Actively listen and convey empathy.
- Validate their concerns without endorsing delusions.
  - "I understand how you could feel that way."
  - "This must be very scary to feel like people are after you."
- Assist the patient in developing a short-term plan.
  - "Other people who have felt similar to you found it helpful to…."
  - Short-term plans should focus on patient safety and ideally begin development of rapport with the patient to promote further engagement in treatment.

Grayken Center for Addiction Training and Technical Assistance, Boston Medical Center
Substance Abuse and Mental Health Services Administration, 2021; Alves, et al., 2024

ENSURING A SAFE SPACE

- Patients with symptoms of **overamping ideally** are promptly brought to a **"cool-down" space** (the space will look differently depending on the facility).
- **Non-pharmacological interventions to reduce symptoms:**
  - Sunglasses and ear plugs to reduce external stimuli
  - Electrolyte repletion and chewing gum to reduce dehydration
  - A cot with blankets and pillows to address symptoms of sleep deprivation



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OVERAMPING AND HARM REDUCTION CONSIDERATIONS: NON-PHARMACOLOGICAL MANAGEMENT

- Do not leave a patient alone if clinical judgment indicates that they are an immediate threat to themselves or others. If possible, keep a consistent "reference person" in contact with the patient at all times, usually a staff person who can act as the main point person while the patient is experiencing the altered perception of reality.
- Avoid physically restraining patients, as this can lead to an increase in agitation or development of rhabdomyolysis and hyperthermia.
- To maintain the safety of clinic personnel, keep escape routes open for the patient to prevent them from feeling cornered, and avoid abrupt movements that could be misinterpreted by patients with hypervigilance.

MEDICATIONS FOR OVERAMPING

- It is possible for patients experiencing overamping to present to the clinical setting while acutely impaired.
- Behavioral health interventions are the mainstay of treatment for overamping. However, when behavioral interventions alone do not control symptoms, medications may be useful if allowed based on organization-specific policies and associated licensing.
- In the event that the patient is having profound physiological dysfunction secondary to overamping, refer the patient to emergency medical services for a more comprehensive evaluation and treatment plan.

OVERAMPING AND HARM REDUCTION CONSIDERATIONS: PHARMACOTHERAPY MANAGEMENT

- **Oral or intramuscular medications should only be administered to consenting patients.**
  - If patients do not consent to oral or intramuscular medication administration and the non-pharmacological approaches are not effective in managing protective behaviors, providers should weigh the benefits and harms of escalating care to the emergency department.
  - Permissibility regarding the administration of these pharmacological agents may vary based on organization policies and state regulations.
- Pharmacotherapy is appropriate for patients with **persistent hyperactive vital signs, protective behaviors, excessive paranoia, and overt psychotic symptoms**. The goal of pharmacotherapy is to produce a calming effect that will ultimately reduce protective behaviors.

PHARMACOLOGICAL MANAGEMENT OF PSYCHOSIS FROM OVERAMPING

	Medication	Soft Max	Notes
1st line	Midazolam 2-5 mg IV/IM/IN Q5-15min PRN	10 mg	• High doses may be needed
	Lorazepam 2-4mg IV/IM Q10-15min PRN	8 mg	
2nd line	Haloperidol 5mg IV/IM (repeat in 10m)	10 mg	• ↑ seizure risk • ↑ QTc prolongation • ↑ temperature due to ↓ diaphoresis
	Olanzapine 5-10mg IM (repeat in 120m)	20 mg	
3rd line	Ketamine 0.5-2 mg/kg IV or 3-5 mg/kg IM	500 mg	• Appropriate if contraindications to 1st or 2nd line agents • Appropriate if inadequate response to appropriate doses or combinations of 1st and 2nd line agents

AMBULATORY MEDICATION PROTOCOL PSYCHOSTIMULANT OVERAMPING

	Drug	Dose	Route	Monitoring
First Line Benzodiazepines	Lorazepam	0.5mg-1mg, repeat in 30-60min	PO	Monitor vital signs and for decreased agitation. If sleeping check q60min.
Second Line Antipsychotics	Olanzapine	5-10mg repeat in 120min	PO or IM	Monitor for vital signs and for decreased agitation. Assess for extrapyramidal symptoms.

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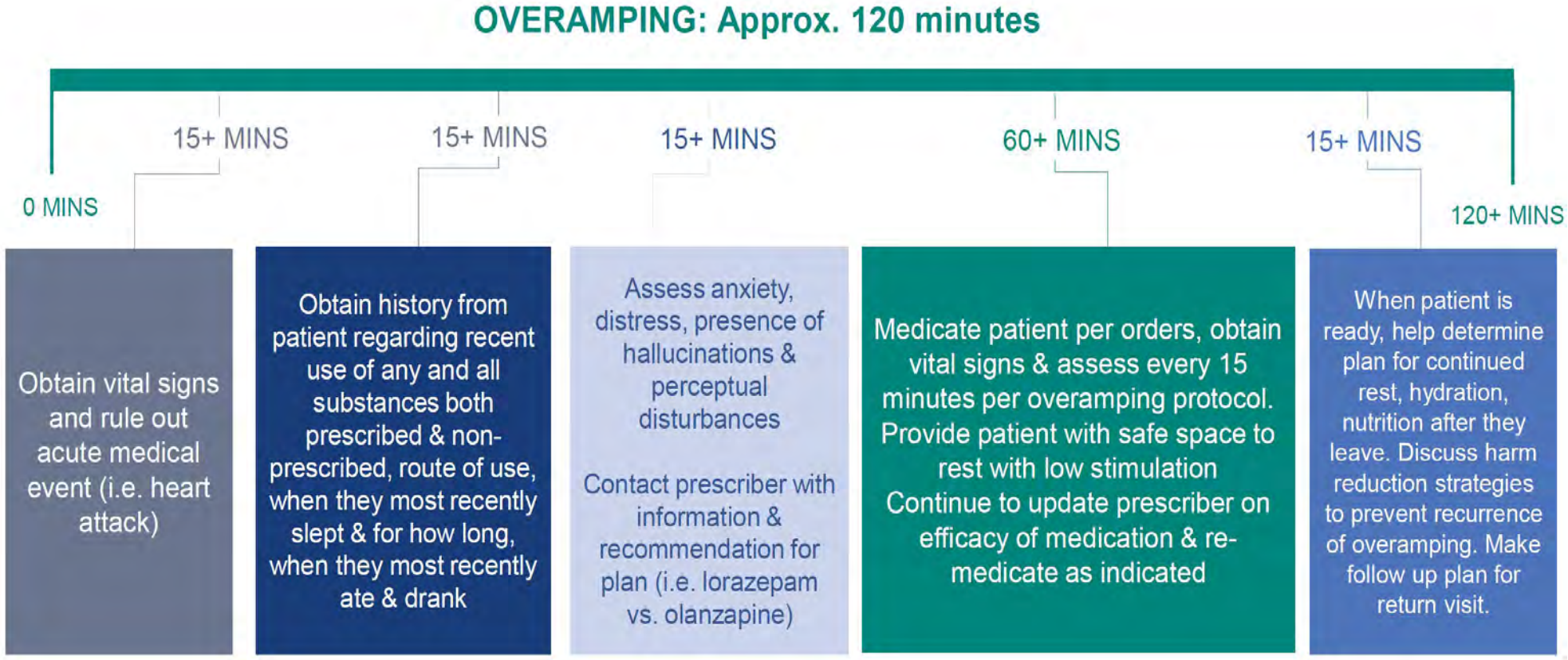
Substance Abuse and Mental Health Services Administration, 2021; Alves, et al., 2024

ACUTE NURSING VISITS FOR AMBULATORY MANAGEMENT OF OVERAMPING



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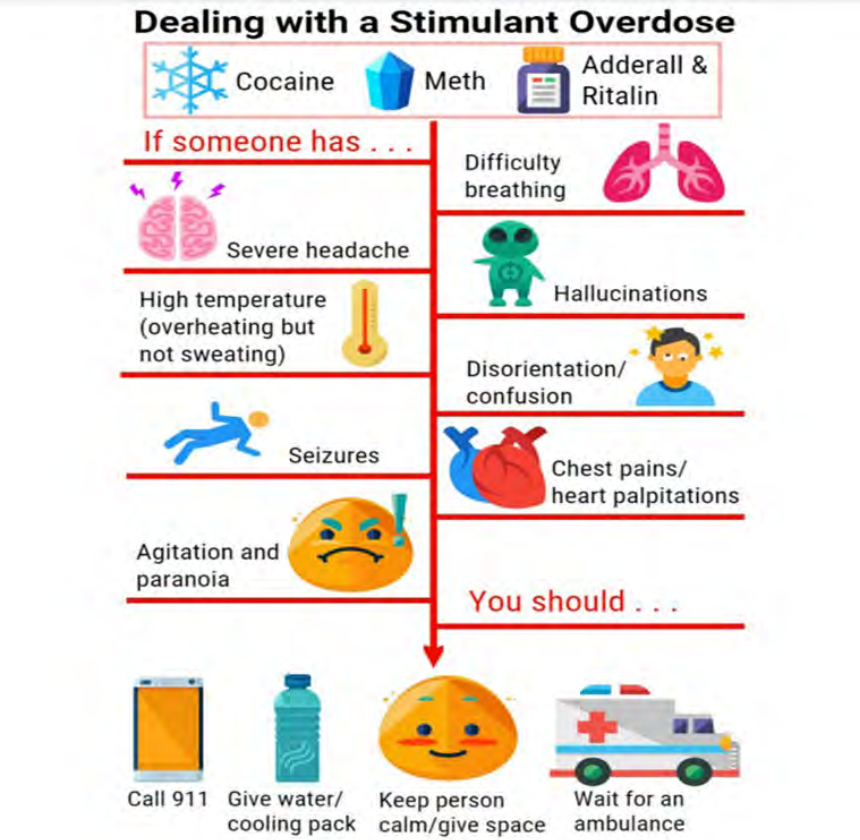
Substance Abuse and Mental Health Services Administration, 2021; Alves, et al., 2024

WHEN IS OVERAMPING AN EMERGENCY?

- ***What could potentially lethal complications of overamping look like?***
  - **hyperthermia**
  - **hypertension**
  - **tachycardia**
  - **toxic delirium**
  - **seizures**
  - **stroke**
  - **myocardial infarction**
  - **arrhythmia**
  - **cardiac arrest**
  - **psychosis**



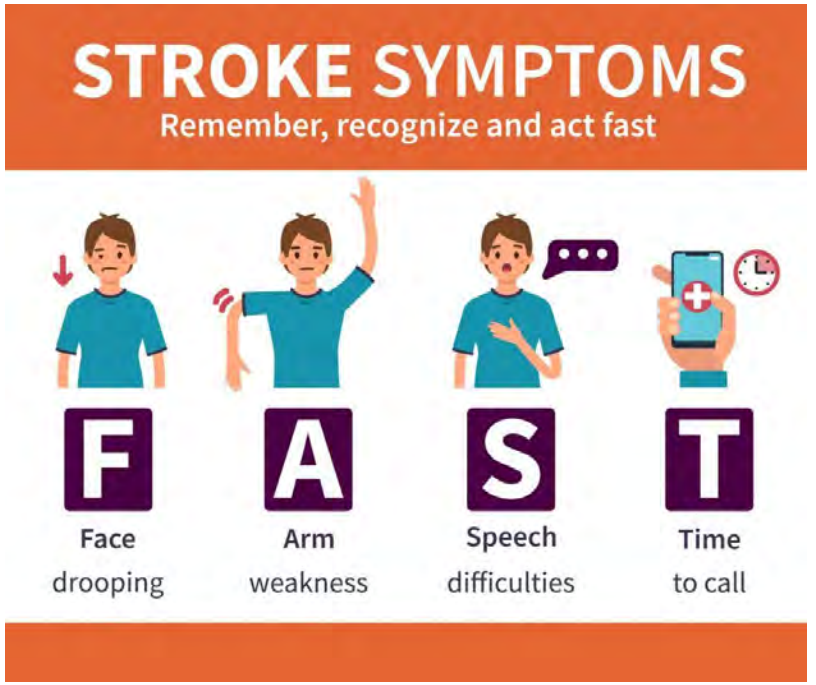
CDC

RESPONDING TO HYPERTHERMIA OR OVERHEATING

- Overheating or hyperthermia can be deadly.
- If you notice someone overheating, get them to slow down, stop agitated movements, and try to cool them down with ice packs, misting, and fan techniques.
- Make sure they are drinking water or a sports drink with electrolytes, so they don't become dehydrated.
- Place a cool, wet cloth under the armpits, on the back of the knees, and/or on the forehead.
- Open a window for fresh air.
- **Dehydration** associated with overheating can produce nausea, vomiting, headaches, and hypotension. This can lead to fainting or dizziness, especially if the person becomes orthostatic.
- Hot, dry skin is a typical sign of **hyperthermia.** The skin may become red and hot as blood vessels dilate to get rid of excess heat, sometimes leading to swollen lips.
- An inability to cool the body through perspiration causes the skin to feel dry.
- In the case of severe heat stroke, the person may become confused or hostile, and may seem intoxicated.
- When the body temperature reaches 104 F, or if the person is unconscious or showing signs of confusion, **hyperthermia is considered a medical emergency.**

RESPONDING TO A STROKE

- Strokes are caused by a blood clot that blocks a blood vessel or by an artery in the brain or a blood vessel in the brain that ruptures and bleeds into the brain.
- The symptoms of a stroke are distinct because they happen quickly:
  - Sudden numbness or weakness of the face, arm, or leg (especially on one side of the body)
  - Sudden confusion, trouble speaking, or understanding speech
  - Sudden trouble seeing in one or both eyes
  - Sudden trouble walking, dizziness, loss of balance, or coordination
  - Sudden severe headache with no known cause
- ***If you believe someone is having a stroke – if they suddenly lose the ability to speak or move an arm or leg on one side or experience facial paralysis on one side – call 911 immediately.***



RESPONDING TO A HEART ATTACK, ARRYTHMIA AND/OR CARDIAC ARREST

- Even though a heart attack may be related to substance use, it will still look like a heart attack that might not be substance-related.
- Keep an eye out for the same symptoms.
- **Things to look out for:**
  - Uncomfortable pressure, fullness, squeezing, or pain in the center of the chest.
  - Symptoms can range from mild to severe. Symptoms may come and go.
  - Discomfort in other areas, such as the neck, jaw, back, and abdomen.
  - Shortness of breath, lightheadedness, nausea, unusual fatigue, or breaking out in a cold sweat.
- If the person has lost consciousness or you notice that they are not breathing, call 911 and begin CPR if you are trained. Utilize an AED if available and trained to do so.

RESPONDING TO SEIZURES

Symptoms of general seizures	
Drooling or frothing at the mouth	Grunting or snorting
Tingling or twitching in one part of the body	Suddenly falling down
Loss of bladder or bowel control	Loss of consciousness
Temporary absence of breathing	Entire body stiffening
Uncontrollable muscle spasms with twitching or jerking limbs	Head or eye deviation (fixed in one direction)
Skin color may be very red or bluish	

Responding to a seizure
Remain calm and speak softly
Help the person into a lying down position
Put the person in the recovery position
Protect the head and body
DO NOT force anything into the person's mouth.
DO NOT try to restrain the person

RESPONDING TO SEIZURES

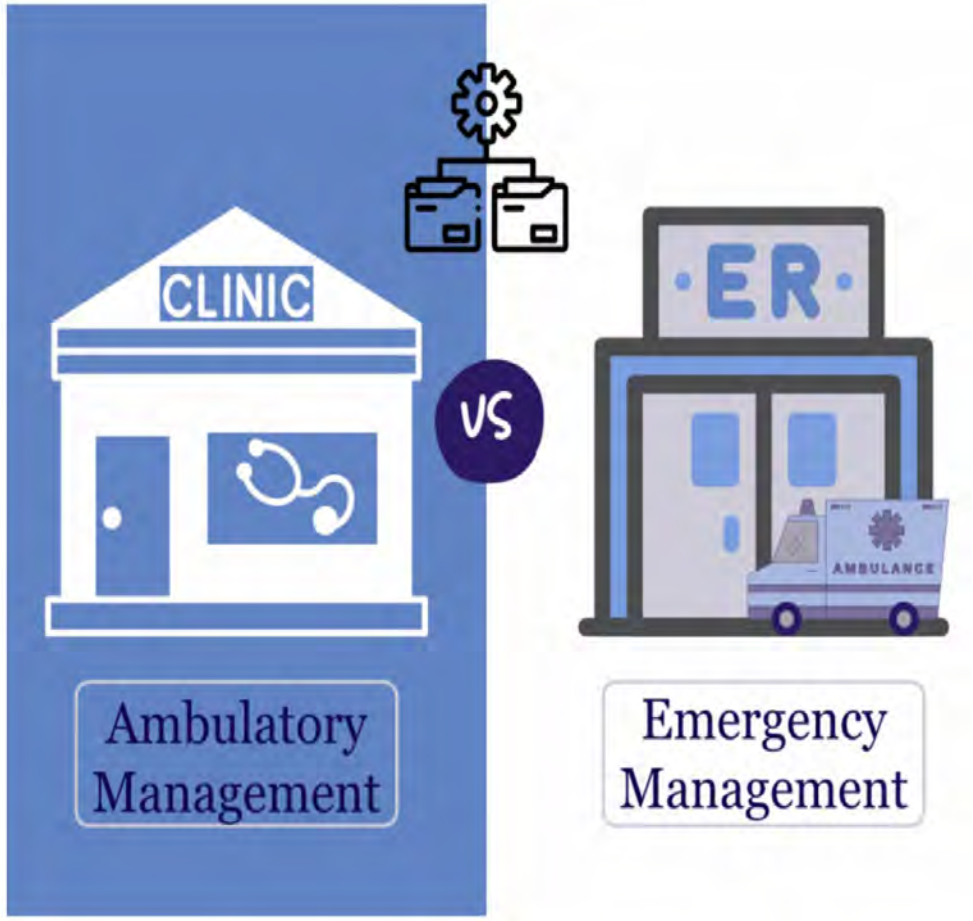
After the seizure
Arrange to have someone stay nearby until the person is fully awake
Clear the airway of saliva and/or vomit
Allow the person to rest
DO NOT offer any food or drink until the person is fully awake.

Call 911 if the:	
Seizure lasts more than 5 minutes	Person has one seizure right after another
Person appears to be injured	Person does not regain consciousness
Person is having a seizure for the first time	Person's color or condition remains poor
Person does not start breathing within one minute after the seizure has ended	

RESPONDING TO ACUTE PSYCHOSIS

- Most of the time substance-induced psychosis, or a loss of contact with reality, will not need medical care.
- Psychosis where someone is trying to hurt themselves or someone else is extremely rare. Though it can be scary to see someone you know experiencing delusions or hallucinations, it's okay to wait it out. It will usually subside after a few hours but it may take longer for some people.
- If you or someone else is in immediate danger (like using a knife to hurt themselves or someone else), paramedics/EMS can help.
- Unfortunately, there is a higher chance that the police will show up if you call 911. Mental health crisis lines like 988 may be able to provide extra support without involving the police, but they could also decide that the situation is dangerous and choose to send them anyway.
- When it comes to overamping, their setting and mindset will make all the difference. Often when individuals are overamping, it helps to reassure them that the bad trip is temporary and will end. People tend to calm down in dark quiet environments with a trusted person keeping them company. If the overamping becomes medically significant, seek immediate medical attention.

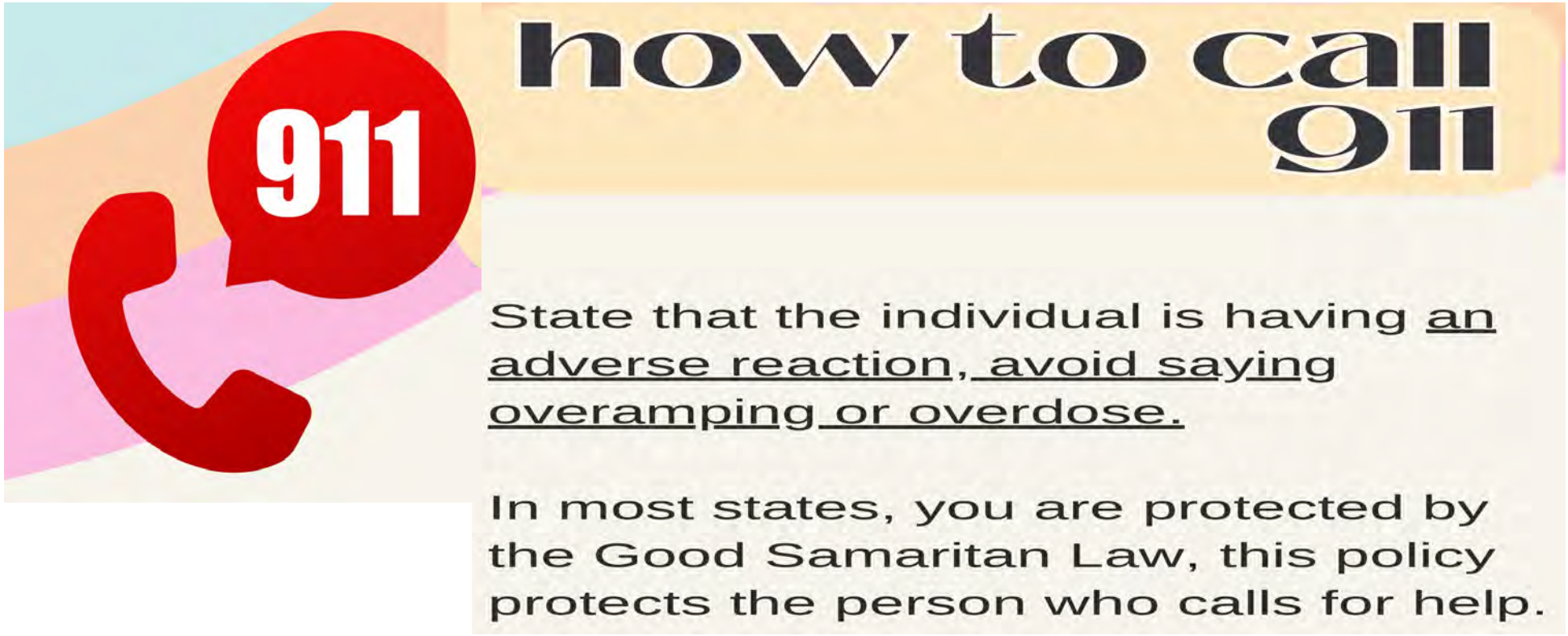
WHAT DOES THIS PERSON NEED?



What should trigger activating EMS?

- ECG changes and/or unstable angina
- Uncontrollable hyperthermia (temperature >=104F)
- Arrythmia
- Refractory choreiform movements
- Hypertensive crisis with symptoms
- Seizure
- Syncope
- Respiratory distress
- Symptoms consistent with stroke, heart attack, or cardiac arrest
- Psychosis with a weapon

ACTIVATING EMERGENCY MEDICAL SERVICES



* In NYS, the Good Samaritan Law will protect the person who activates 911.

CONSIDERATIONS FOR FIRST RESPONDERS TO MAINTAIN SAFETY AT THE SCENE

Physical conflict that may cause injury or death may be avoided by:

- Respecting the personal space of any person who has used stimulants
- Talking calmly and concisely to identify what a person who has used stimulants wants and needs
- Avoiding provocative or threatening behaviors being mindful that nonverbal cues can escalate the situation
- Calling behavioral health or medical professionals who are trained and experienced in de-escalating and responding to people who have used stimulants.
- It may be very difficult or impossible for someone who has used stimulants to keep still, control their talking or movements, hear commands, or follow direct orders from a first responder. Therefore, failing to follow orders from law enforcement officers or other emergency personnel may not be signs of aggression or willful non-compliance. The person may be temporarily incapable of responding to commands.
- Attempting to physically engage or physically restrain may increase the risk of injury to officers and civilians alike.
  - Two small studies suggest people who have used stimulants are more likely to be met by potentially lethal use of force compared to people who have not used stimulants. It was shown that many restraint related deaths following police restraint were among people who used stimulants, cathinones (synthetic stimulants), or synthetic cannabinoids.
  - Police, in particular, can increase their awareness of stimulant overdose symptoms and when to call EMS for medical intervention among people using stimulants who have been taken into custody to avoid these adverse effects

CDC, A Stimulant Guide, 2022

SHORT-TERM SAFETY PLANNING AFTER AN OVERAMPING EPISODE

- Identify a safe person
- For feelings of self-harm or suicide, seek emergency medical care
- Avoid highly stimulating situations
- Increase fluids and food intake
- Reality testing
- Ideally, refrain and/or reduce from ongoing use if feasible
- Return to the clinic or program for re-evaluation

Grayken Center for Addiction Training and Technical Assistance, Boston Medical Center
Alves et al., 2024

ONPOINT NYC: A BASELINE REPORT

- Baseline data: 23% of overdoses were stimulant-involved.
- ***About stimulant overdoses:*** Overamping refers to a stimulant overdose where the participant is displaying concerning neurological, cardiac, or mental health symptoms and can no longer self-regulate their behavior or bodily systems, potentially becoming a danger to themselves or others. Overamping usually involves consumption of cocaine, crack, synthetic cannabinoids, methamphetamine, and ketamine, either intentionally sought or unintentionally consumed.
- **Findings:** For stimulant-involved overdoses (overamping), staff focused on providing personalized support and employing system-calming strategies, including stimuli management, redirection and affirmation, cooling/heating, monitoring vitals, and hydration. Calming spaces, which include use of our garden, greatly supported these interventions.

ONPOINT NYC: A BASELINE REPORT

- **Impact:** In 146 instances, our staff actively intervened in an overamping incident that would have otherwise occurred in public. In addition, our OPCs likely prevented overamping in many other instances of stimulant use through access to a safe and calming environment.
- Overamping symptoms – like panic attacks – are often escalated by loud noises, crowded streets, moving traffic, and upset reactions of passersby. Self-soothing options are limited in these scenarios and can present in ways (e.g. ripping clothes off, running down the street, and yelling) that result in detainment by law enforcement or other emergency responders.

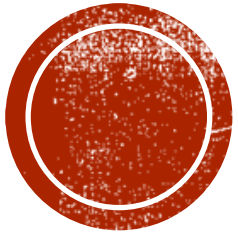
An OnPoint staff member uses de-escalation to support a participant experiencing a stimulant-involved overdose.

REFLECTION WITH ATTENDEES

- Do you have policies, procedures, and protocols in place to address overamping?
- Are all staff trained on de-escalation techniques?
- Do you have a safe space for persons who are overamping?
- Do you have medical and/or nursing staff to utilize pharmacotherapy with persons who are overamping?
- Do you have clear guidelines in place as to when 911/EMS is called for persons who are overamping?
- Do you have protocols in place to protect persons who are overamping from unnecessary engagement with law enforcement?

SUMMARY / TAKEAWAYS

- Stimulant use may result in an overamping event. There are risk factors for overamping and preventative measures to take to avoid overamping which should be known by all staff members and conveyed to PWUS.
- Overamping is a stimulant overdose. PWUS may not see themselves at risk for an overdose and may not associate overamping symptoms with stimulant overdose. PWUS should be informed regarding more concerning symptoms of overamping and when medical intervention may be indicated.
- There are many potential responses to overamping, including non-pharmacological and pharmacological interventions. Many overamping events do not require medical intervention and can be handled with behavioral and environmental interventions.
- Some overamping events can be lethal. It is imperative that staff recognize and know how to respond to potentially lethal complications of overamping, and how to support persons who are overamping while awaiting EMS.



QUESTIONS? THANKS!

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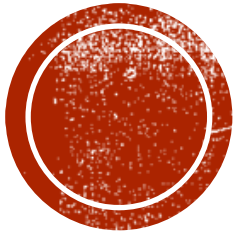
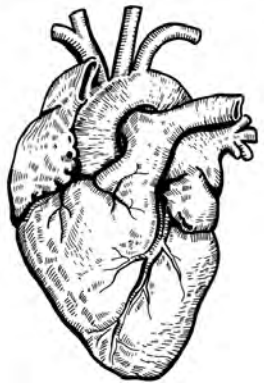


APPENDIX ON OVERAMPING

Additional resources on overamping

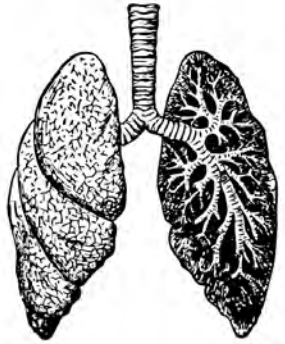
STIMULANTS AND THE BODY

CARDIOVASCULAR & CEREBROVASCULAR



Stimulant use can cause vasoconstriction, vasospasm, increased heart rate, and elevated blood pressure. As a result, people who use stimulants are at greater risk of **acute myocardial infarction**, **stroke**, **heart failure**, **arrhythmias**, and **sudden cardiac death**, even among people without a history of heart disease.

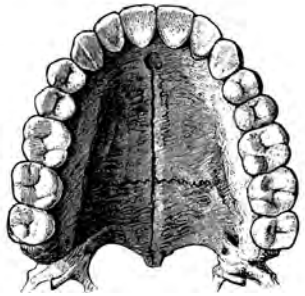
PULMONARY



Acute complications such as **alveolar hemorrhage**, **pneumothorax,** and **pneumomediastinum** have been associated with both smoking and intranasal cocaine use. Chronic cocaine use has been associated with **fibrotic lung disease** and **pulmonary vascular disease**.

STIMULANTS AND THE BODY

ORAL



Smoking disrupts saliva production. People who smoke substances are at risk of mouth and throat **burns** and **tooth decay**.

DERMAL

Injecting substances can cause **skin and soft tissue injuries** that lead to **chronic wounds** as well as local and systemic **infections**. Sharing of injection and smoking supplies is associated with the **transmission of HIV**, **hepatitis C**, and **bacterial infections**. Cocaine is often adulterated with levamisole, which can cause skin necrosis.

PREVENTING AND NAVIGATING OVERAMPING

Help patients prevent and navigate overamping

OVERAMPING: (aka "fishing out") the term used to describe negative physical or symptoms of excessive stimulant use.

- Non-emergent symptoms:
  - Physical: uncontrollable movements
  - Psychiatric symptoms: Confusion, restlessness, hypervigilance, panic, hallucinations/delusions, paranoia, agitation, aggressiveness
- Emergent symptoms:
  - Stroke (e.g., slurred speech, facial drop)
  - Chest pain
  - Hyperthermia (body temperature ≥ 104°F),
  - Seizures
  - Psychosis with concern for harm to self or others

Overamping is also known as "fishing out" because of the uncontrolled, jerking movements that often come with stimulant overuse.

PREVENTION TIPS: Try to sleep between uses, start with small doses, stay hydrated and nourished, change route of administration (overamping may occur more often with injection drug use compared to smoking or snorting).

OVERAMPING SELF-MANAGEMENT (for non-emergent symptoms): Take a break from using; Go to a safe, quiet, place to lay down; Try to drink water and eat food.

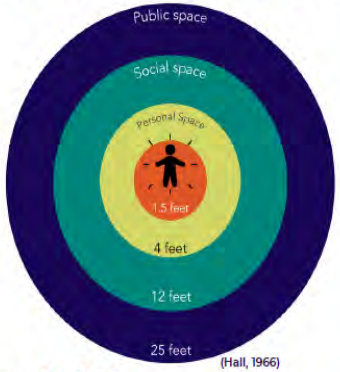
OVERAMPING CLINICAL MANAGEMENT:

- Attempt non-pharmacological de-escalation methods:
  - Verbal comfort: listen to and affirm the patient's experience.
  - Reduce environmental stimuli.
  - Do not leave the patient alone.
  - Avoid physical restraint.
  - Provide nutrition.
  - Correct electrolyte and fluid imbalances.

- Proceed to pharmacological interventions if patients experience persistent hypertension, hyperthermia, paranoia, and/or overt psychotic symptoms
  - Benzodiazepines (e.g., lorazepam)
  - Antipsychotics (e.g. olanzapine, aripiprazole)
  - Beta-blockers

OVERAMPING HANDOUT

BEHAVIORAL INTERVENTION



(Hall, 1966)

De-escalation

Do NOT:
- Approach a patient with a weapon.
- Stare directly at patients, or request eye contact
- Corner or stand over the patient.
- Make sudden gestures that could be interpreted as threatening.
- Validate the delusion/hallucination the person is experiencing.

Do:
- Be aware of your own safety.
- Minimize stimulation and distractions.
- Have an exit point/discrete way to signal for assistance.
- Use open-ended questions focus on the patient's well-being.
- Validate the emotional experience the person is having.

Scan QR code for AGRO+ De-escalation strategy in clinical practice

PHARMACOLOGICAL INTERVENTION

Pharmacological protocol:
1st line-Benzodiazepines
2nd line-Antipsychotics

Goals:
1. Resolution of most distressing symptoms of psychiatric overamping.
2. Avoid emergency room and public safety/criminal legal involvement.
3. Promote engagement with outpatient providers.

Scan QR code for Ambulatory Medication Protocol Psychostimulant Overamping.

START Clinic
617-414-7490
START@BMC.ORG
11 Melnea Cass Blvd, Boston, MA, 02119

START Stimulant Treatment and Recovery Team
Grayken Center for Addiction Training & Technical Assistance
Boston Medical Center
BSAS
BOSTON UNIVERSITY

PROVIDER'S GUIDE TO OVERAMPING

IDENTIFICATION

Recognize the impact that providing non-judgmental care and fostering a safe and supportive environment has on the quality of care and outcomes for individuals using stimulants.

(SAMHSA, TIP 33)

SYMPTOMS OF OVERAMPING

Psychiatric Symptoms
- Paranoia
- Altered perception of reality
- Persecutory perceptions of the world
- Restlessness
- Visual, Auditory, or Tactile Hallucinations
- Trauma-response
- Psychosis
- Protective behaviors: hypervigilance, anxiety, agitation, defensive posturing

Physical Symptoms
- Headache
- Nausea/Vomiting
- Jaw grinding
- Spastic movement
- Choreiform movements
- Dry mouth
- Hypertension
- Hyperthermia
- Tachycardia
- Chest pain
- Insomnia
- Seizure
- Cardiac dysrrhythmia

RESPONDING TO OVERAMPING

1. RECOGNIZING OVERAMPING

Overamping occurs on a spectrum. It may initially present with mild symptoms and progress to more severe and life-threatening symptoms with prolonged use or lack of sleep.

2. BEHAVIORAL HEALTH INTERVENTION

- Actively listen and convey empathy.
- Validate patient emotional response without endorsing delusions.
- Assist patient in developing a short-term safety plan for return to community.

3. PHARMACOLOGICAL INTERVENTION

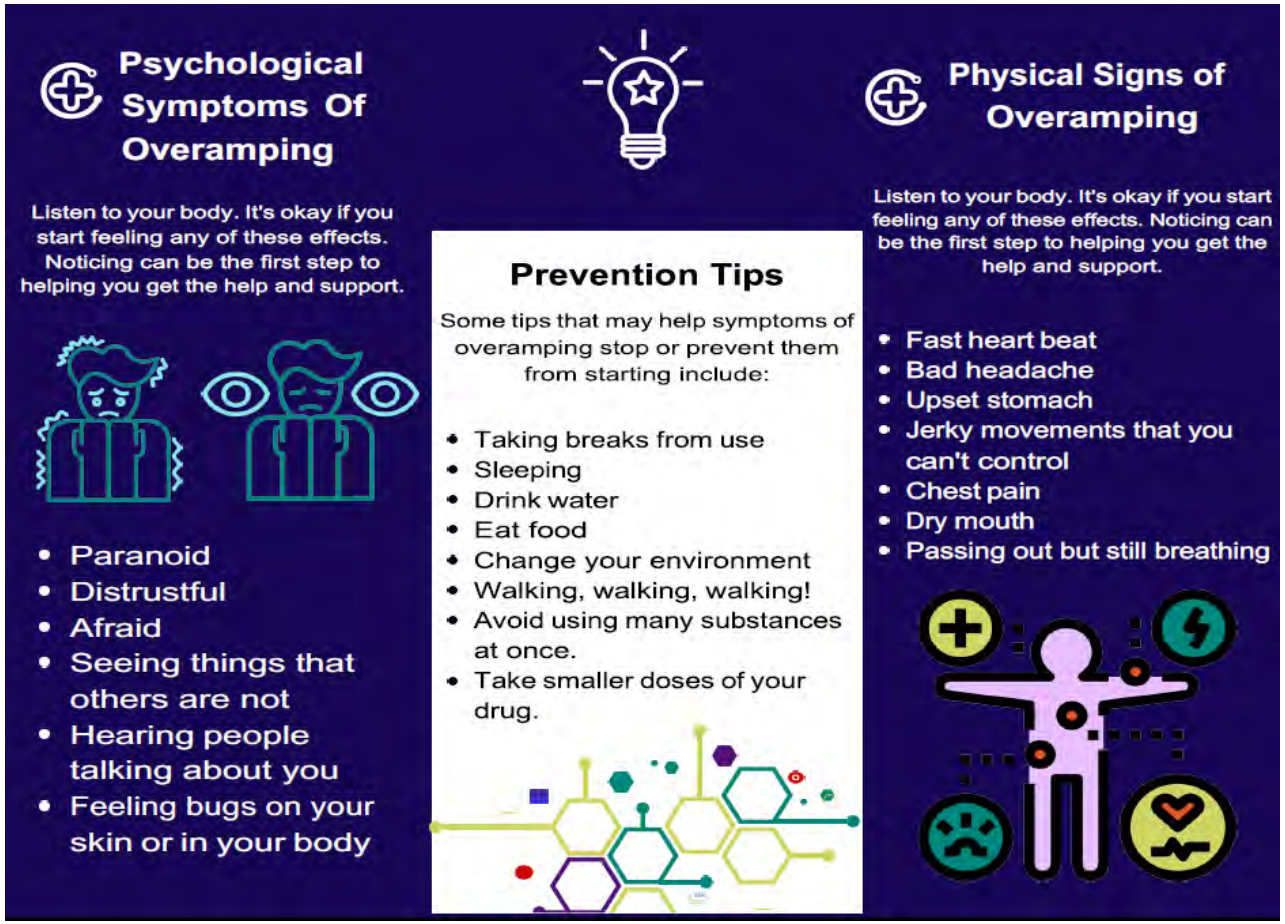
In some cases the use of psychotropic medications may be indicated to prevent worsening overamping symptoms or to resolve and episode of overamping.

POST ACUTE MANAGEMENT & CARE

Develop a post-acute care plan and safety plan for individuals who have experienced overamping, including incorporation of overamping prevention strategies.

- **Harm reduction strategies**
- **Developing a safety plan**
- **Acknowledgement of safe space/people**
- **Connect/referrals to resources/communities to build support network**
- **Safer use kits (smoking, sniffing, booty-bumping)**

OVERAMPING GUIDE



POST-OVERAMPING EDUCATION

LOCAL ANESTHETICS ('CAINES) IN THE DRUG SUPPLY

Recommendations for Clinicians

- Adulteration of street drugs contributes to the uncontrolled intake of significant amounts of LAs.
- The use of drugs mixed with LA compounds can lead to toxicity.
- Because cocaine is the drug most frequently adulterated with LA compounds, patients using large amounts of cocaine have the highest potential for being over-exposed to LAs from illicit drug sources.
- Pay attention for signs and symptoms of cardiotoxicity or methemoglobinemia from LA in users of cocaine and to a lesser extent, users of heroin/fentanyl.

Indicators of Cardiotoxicity

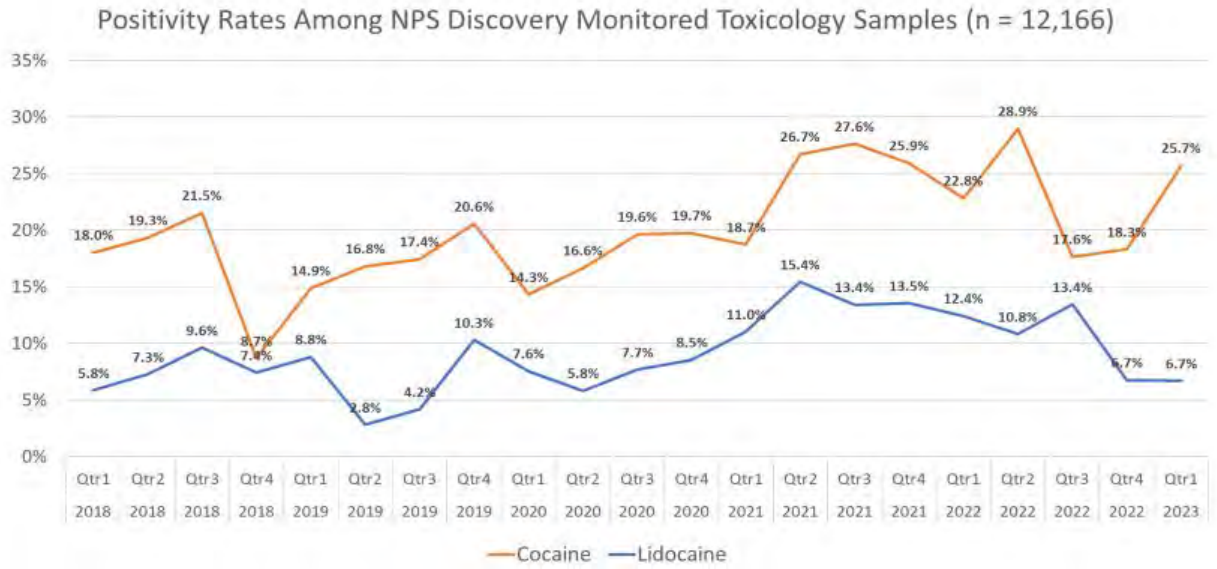
- Bradycardia or tachycardia
- Abnormal heart rhythms
- Low blood pressure
- Altered mental status (depressed level of consciousness)

Indicators of Methemoglobinemia

- Cyanosis (blue skin color)
- Low blood oxygen
- Distressed breathing
- Headache
- Dizziness
- Delirium
- Seizures

Recommendations for forensic practitioners

- Assess laboratory scope and capabilities for analyzing lidocaine, procaine and benzocaine in post-mortem, forensic, and clinical toxicological cases.
- Consider reporting on the frequency and co-occurrence with drugs with stakeholders in the jurisdiction.
- In post-mortem investigations, look for elevated levels of lidocaine in conjunction with positive cocaine or fentanyl.



CFSRE, NPS Discovery Alert, June 2023

LOCAL ANESTHETICS (LA) TOXICITY

POSSIBLE COMPLICATIONS OF LA TOXICITY

The complications that can manifest with lidocaine toxicity are as follows:

- Seizure
- Coma
- Hypotension
- Atrioventricular heart block
- Idioventricular rhythms
- Ventricular tachycardia and fibrillation
- Cardiovascular collapse and death

MANAGEMENT OF LA TOXICITY

- Call 911 as the individual will need emergency department level of care for lipid emulsion therapy via infusion.
- While awaiting EMS, consider:
  - Seizure suppression: raise the seizure threshold by administering benzodiazepines
  - Airway management: ventilate with 100% oxygen
  - Utilization of BLS/ACLS strategies and an AED to manage cardiac abnormalities while awaiting EMS

Torp, KD, et al. StatPearls, 2022
Stringer, CM, et al. StatPearls, 2023

SAFETY TIPS FOR STIMULANT USERS

- **Overamping:** a negative reaction to using stimulants; while different from overdosing, it can be life-threatening
  - Symptoms can include chest pain, dyspnea, HTN, tachycardia, hyperthermia, anxiety, paranoia, aggression
  - Tips to prevent overamping: stay hydrated, replenish electrolytes, seek medical attention, find a quiet and calm space, protect the head in case of seizure
- **Overdose:** persons will overdose if exposed to enough opioids, whether the opioid exposure is intentional (speed balling: mixing heroin with stimulants) or unintentional (fentanyl and its analogues added to the stimulant supply)
  - Tips to avoid overdose: test your drugs with fentanyl test strips (federal funds can now be used to purchase fentanyl test strips); avoid mixing drugs; use smaller amounts; carry naloxone: providers should dispense or prescribe naloxone to all persons who are actively using, regardless of the substance used (rare exceptions: if solely using alcohol and/or marijuana); don't use alone (Never Use Alone overdose prevention call line: 1-800-484-3731 https://neverusealone.com/); advise regarding mail-order naloxone and other harm reduction supplies directly to the homes of PWUD (www.nextdistro.org); consider prescribing buprenorphine for those at high risk for overdose

DISPENSE FENTANYL TEST STRIPS: BTNX FENTANYL TEST STRIP INSTRUCTIONS

Using Fentanyl Test Strips

These strips are not guaranteed to detect all forms of fentanyl. You could overdose even if the strip says there is no fentanyl in your heroin, cocaine, or other street drugs.

Testing For Fentanyl

- Prepare your shot and draw it into a syringe leaving several drops in the cooker. Do not shoot up yet!
- Set the loaded syringe aside and empty a 5ml. ampule of sterile water into the cooker.
- Stir the mixture.
- Holding a test strip by the blue end, insert it into the solution (don't go past the blue line) and leave it there for about 15 seconds.
- Wait a full minute for the test strip to process.
- Throw the cooker, and any remaining liquid away. Any remaining solution is now toxic.

One red line = positive for fentanyl

Two red lines = negative for fentanyl

A wide variety of street drugs can be laced with fentanyl. While it is advisable to test street drugs for fentanyl, there are no well-researched, established recommendations on how to test drugs with the test strips we provide. People who use fentanyl test strips provided by NOSS accept all responsibility for any injury, or death that could occur after taking drugs, whether they have been tested, or not tested, for fentanyl.

NOSS Northwest Ohio Syringe Services

Mental Health & Recovery Services Board of Lucas County

Toledo-Lucas County Health Department — Stay informed. Stay healthy.

UT Medical Center Ryan White Program

https://www.btnx.com/files/Fentanyl_Test_Strips_Instructions.pdf

HIGH CONCENTRATIONS OF ILLICIT STIMULANTS AND CUTTING AGENTS CAUSE FALSE POSITIVES ON FENTANYL TEST STRIPS

- **Background:** The opioid epidemic has caused an increase in overdose deaths which can be attributed to fentanyl combined with various illicit substances. Drug checking programs have been started by many harm reduction groups to provide tools for users to determine the composition of their street drugs. Immunoassay fentanyl test strips (FTS) allow users to test drugs for fentanyl by either filling a baggie or cooker with water to dissolve the sample and test. The antibody used in FTS is very selective for fentanyl at high dilutions, a characteristic of the traditional use of urine testing. These street sample preparation methods can lead to mg/mL concentrations of several potential interferents. We tested whether these concentrated samples could cause false positive results on an FTS.
  - **Methods:** 20 ng/mL Rapid Response FTS were obtained from BTNX Inc. and tested against 4 different pharmaceuticals (diphenhydramine, alprazolam, gabapentin, and naloxone buprenorphine) and 3 illicit stimulants [cocaine HCl, methamphetamine, and 3,4-methylenedioxymethamphetamine (MDMA)] in concentrations from 20 to 0.2 mg/mL. The FTS testing pad is divided into 2 sections: the control area and the test area. Control and test area signal intensities were quantified by ImageJ from photographs of the test strips and compared to a threshold set by fentanyl at the FTS limit of detection.
  - **Results:** ***False positive results indicating the presence of fentanyl were obtained from samples of methamphetamine, MDMA, and diphenhydramine at concentrations at or above 1 mg/mL. Diphenhydramine is a common cutting agent in heroin. The street sample preparation protocols for FTS use suggested by many online resources would produce such concentrations of these materials. Street samples need to be diluted more significantly to avoid interference from potential cutting agents and stimulants.***
  - **Conclusions:** Fentanyl test strips are commercially available, successful at detecting fentanyl to the specified limit of detection and can be a valuable tool for harm reduction efforts. Users should be aware that when drugs and adulterants are in high concentrations, FTS can give a false positive result.

Lockwood, TLE, et al, Harm Reduction Journal, 2021

HIGH CONCENTRATIONS OF ILLICIT STIMULANTS AND CUTTING AGENTS CAUSE FALSE POSITIVES ON FENTANYL TEST STRIPS

- ***When testing methamphetamine or MDMA for fentanyl, you must dilute the sample you are testing down to 2mg/ml. This is about one teaspoon of water for every 10mg of powder or crystals. If it's more concentrated, you may get a false positive result.***
- If it's more dilute, the strips may not be able to detect fentanyl or its analogues. A set of instructions has been going around telling methamphetamine users to add a few milligrams of meth into half a cup of water. **This is way too dilute!**
- As you can see, the D isomer of methamphetamine (symbolized by the plus signs) triggered a false positive at 10mg/ml and 5mg/ml, but not at 2.5mg/ml. What this means is that you only need to dilute meth down to 2.5mg/ml to avoid false positives. In our instructions we recommend 2mg/ml just to be a little extra cautious. And this dilution comes to only one teaspoon for every 10mg of meth, far lower than 118 teaspoons for 2mg of baggie residue.

Interference Testing	BTNX 20
heroin 10 µg/mL	NEG
6-acetylcodeine 10 µg/mL	NEG
quinidine 10 µg/mL	NEG
cocaine at 25 mg/mL	NEG
ketamine at 25 mg/mL	NEG
diphenhydramine 50 mg/mL	NEG
diphenhydramine 100 mg/mL	POS
diphenhydramine 150 mg/mL	POS
lidocaine 25 mg/mL	NEG
lidocaine 50 mg/mL	NEG
lidocaine 100 mg/mL	POS
lidocaine 150 mg/mL	POS
(-) methamphetamine at 25 mg/mL	NEG
(+) methamphetamine at 2.5 mg/mL	NEG
(+) methamphetamine at 5 mg/mL	POS
(+) methamphetamine at 10 mg/mL	POS
MDMA at 25 mg/mL	NEG
MDMA at 50 mg/mL	POS

https://dancesafe.org/wp-content/uploads/2019/02/2019-fent-strips.pdf and https://dancesafe.org/what-is-drug-checking/ and https://dancesafe.org/you-may-be-using-fentanyl-testing-strips-incorrectly

HARM REDUCTION STRATEGIES FOR STIMULANT USE

- Outreach and education on increased risk for overdose due to contamination
- Drug checking including increased access to fentanyl test strips
- Increased access to naloxone and overdose prevention education for persons who use stimulants
- Increased access to other harm reduction services and supplies for people who use drugs through non-injectable means (e.g., smoking kits - which can include glass stems, rubber mouthpieces, brass screens, lip balm/petroleum jelly and disinfectant wipes - and pipes)
- Safe spaces including harm reduction housing, quiet rooms, chill out spaces, etc.
- Support for other basic needs including access to showers, water for hydration, tooth paste and toothbrushes, lip balm, sugar free gum and hard candy, water-based lubricant, condoms
- Education on safe/safer sex practices and resources including condoms, pre and post exposure prophylaxis (PrEP and PEP)
- Testing and on site treatment for HIV and HCV
- Off label use of medications for stimulant use disorders, including exploring the benefits of prescription psychostimulants as a harm reduction and treatment intervention for methamphetamine use disorder.

Safe Spaces

- Many states have begun to explore options for creating safe spaces for people who use substances in general, both as a supervised location to consume substances (OnPoint NYC) and as a quiet location to rest and receive supportive services.
- Many of these spaces have incorporated dedicated spaces for people who use stimulants.

Massachusetts Department of Public Health
HRI/coAct

OnPoint NYC
Leidl, Don, et al. International Journal of Mental Health Nursing, 2023
The ASAM/AAAP Clinical Practice Guideline on the Management of Stimulant Use Disorder, 2024

SAFETY TIPS FOR PREVENTING OVERDOSE IN PERSONS USING STIMULANTS

- **Overdose:** persons will overdose if exposed to enough opioids, whether the opioid exposure is intentional co-use (speed balling: mixing heroin or fentanyl with stimulants) or unintentional exposure (fentanyl and its analogues or other highly potent synthetic opioids added to the stimulant supply)
- ***Tips to avoid overdose:***
  - test your substances with fentanyl test strips
  - try to avoid mixing substances
  - use smaller amounts/do a test dose/start low and go slow
  - carry naloxone: providers should dispense or prescribe naloxone to all persons who are actively using, regardless of the substance used (rare exceptions: if solely using alcohol and/or cannabis)
  - don't use alone (Never Use Alone overdose prevention call line: 1-877-696-1996 https://neverusealone.com/)
  - advise regarding mail-order naloxone and other harm reduction supplies directly to the homes of PWUD (www.nextdistro.org)
  - consider prescribing buprenorphine off label for those at high risk for overdose (or who have experienced overdose) due to stimulants adulterated with HPSO or due to intentional co-use

NYC DOHMH pamphlet "Safety Tips for People Who Use Stimulants"

SUBSTANCES/ADULTERANTS MIXED WITH COCAINE THAT COULD MAKE IT POTENTIALLY MORE HARMFUL

⑩ It's impossible to reliably identify the presence of substances or adulterants present in cocaine by appearance, taste, nor smell.

- **FENTANYL and its analogues** (or other highly potent synthetic opioids) are found mixed into cocaine to make the substance more powerful and more likely to cause substance use disorder. Fentanyl is linked to the sharp increase in overdose deaths connected to cocaine.
- **LEVAMISOLE** (an anti-parasitic medication used in animals and humans historically) may be mixed into cocaine to add weight to the sample. Exposure to levamisole can cause severe skin blisters and ulcers as well as serious damage throughout the body.
- Many other substances and adulterants such as talcum powder or corn starch also are mixed into cocaine to add weight.

Cocaine | Office of Addiction Services and Supports (ny.gov)

SHOULD 911 BE ACTIVATED FOR OVERAMPING?

SIGNS THAT A PERSON MAY NEED IMMEDIATE MEDICAL ATTENTION INCLUDE (BUT ARE NOT LIMITED TO) THE ITEMS LISTED BELOW. ALWAYS CALL 911 IF SOMEONE:

- Loses consciousness
- Stops breathing or can't breathe effectively
- Has a high body temperature
- Has a seizure that lasts longer than 5 minutes
- Has difficulty breathing after experiencing a seizure
- Has multiple seizures in a row (see below for more information about seizures)
- Is known to experience a seizure for the very first time
- Has injuries that require medical attention
- Shows any sign of a stroke, including
  - Numbness in the face, arms, or legs,
  - Sudden and severe headaches,
  - Blurred vision, or
  - Sudden loss of coordination.
- Shows any sign of a heart attack or cardiac arrest, including
  - Pain, pressure, or squeezing sensations in the center of the chest
  - Discomfort in the neck, arms, jaw, back, or stomach, and
  - Shortness of breath, lightheadedness, nausea, fatigue, or cold sweats.
- Asks you to call [911,4-7,26,27]

CDC, A Stimulant Guide, 2022

SIGNS OF METHAMPHETAMINE OVERDOSE AND RESPONSE

SIGNS OF OVERDOSE & WHAT TO DO

Danger	Signs	What to do
Overheating or heat-related illness	• Sweating • Nausea or vomiting • Severe headache • Dark urine • Dizziness • High body temperature • Red/hot/dry OR pale/clammy skin	• **Lie down**, **elevate legs**, and **drink fluids**. • **Cool down** with cold, wet towels, fans, or ice pack. • **Call 911** if signs last more than an hour, worsen, or person passes out
Heart attack, stroke, or seizure	• Racing heart rate • Not able to walk/move • Numb/spasming limbs • Slurring/jumbled speech • Severe headache • Confusion • Shaking • Chest pain	• **Call 911 right away** if you or someone else experiences these signs
Breathing slows down or stops	• Difficulty breathing • Slowed/no breathing • Snoring or gurgling sounds • Vomiting • Can't wake up • Blue or gray skin/lips	• **Call 911 right away** if you or someone else experiences these signs • **Give naloxone** if you think they may have also used opioids • No pulse → **chest compressions** • Not breathing → **rescue breaths** • CPR Instructions here

Oregon Health Authority

Adapted from University of Washington Sources; Oregon Health Authority, Oregon State Police State Medical Examiner, Drug Policy Alliance, Penington Institute, Al-Tayyibet al., 2017, NICHM, Ciccarone, 2021

HARM REDUCTION STRATEGIES FOR METHAMPHETMINE-INDUCED OVERAMPING

HARM REDUCTION STRATEGIES TO SHARE WITH COMMUNITY

Overdosing or "overamping" during methamphetamine use is more likely when someone has not slept, eaten enough food, or is dehydrated. It's important for people who use methamphetamine to:

- Drink water and eat food before and during periods when they are using methamphetamine even if they do not feel thirsty or hungry. Coffee and energy drinks are not food.
- Create a safety plan that includes having water, food, a safe place to crash, and people around who are safe and can be trusted to recognize signs of danger and act, including calling 911 if needed.
- Avoid mixing methamphetamine with other drugs or reduce the number of drugs that a person takes at the same time. The effects from combining drugs may be stronger and more unpredictable than one drug alone. Continue to take prescription medications for conditions like high blood pressure.
- Buy drugs from trusted sources, use fentanyl test strips and have naloxone sitting out ready to use.

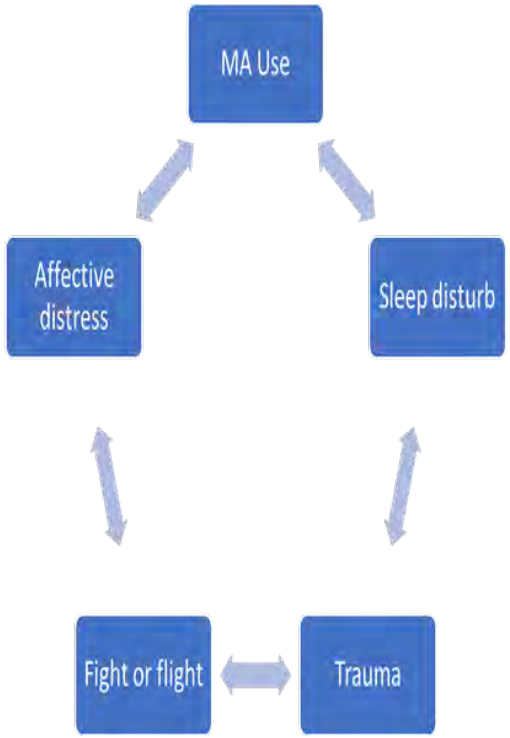
TAKE AWAYS

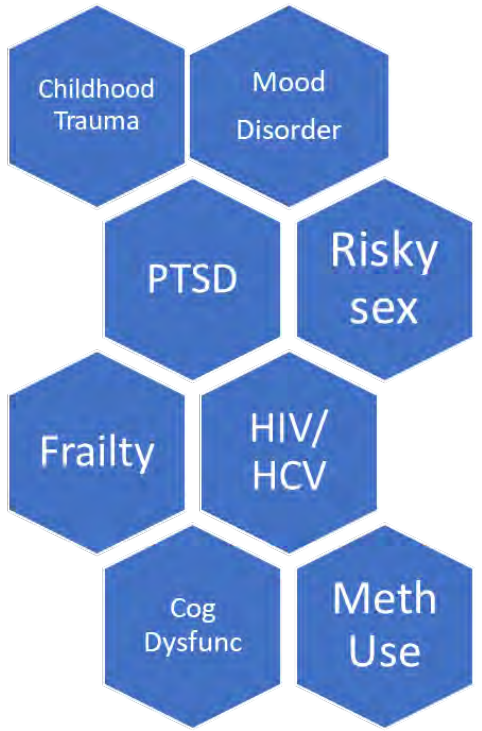
- Accidental deaths due to methamphetamine have significantly increased in Oregon.
- The main dangers are overheating, heart attack, stroke, seizure, and not breathing.
- Prevent overdose or "overamping" by drinking plenty of water, getting adequate sleep, and staying well-fed.
- Avoid using methamphetamine alone or mixing it with other drugs.

Oregon Health Authority

Adapted from University of Washington Sources; Oregon Health Authority, Oregon State Police State Medical Examiner, Drug Policy Alliance, Penington Institute, Al-Tayyibet al., 2017, NICHM, Ciccarone, 2021

METHAMPHETAMINE USE IS ASSOCIATED WITH AFFECTIVE DISTRESS AND COGNITIVE FUNCTION





Thanks to Joshua Blum MD for use of his slide
Paolillo EW. *AIDS Research Human Retrovirus*, 2019

TREATMENT OF METHAMPHETAMINE-INDUCED PSYCHOSIS

- Anti-psychotic medications likely effective:
  - Olanzapine, haloperidol, quetiapine
  - Helpful for treating anxiety, insomnia
- Abstinence:
  - Psychotic symptoms generally resolve within 1 week (but may persist even without use)
- Cognitive Behavioral Therapy (CBT)
  - Contingency Management (CM)
  - Matrix model

STIMULANT POLYSUBSTANCE USE

- other stimulants: amphetamines (rx), cocaine (powder and crack), mephedrone, synthetic stimulants
- cannabis
- cocaine (powder and crack)
- ecstasy (MDMA, Molly)
- GHB
- heroin/fentanyl/other HPSO
- synthetic cannabinoids (Spice, K2)
- ketamine
- amyl nitrate (poppers)
- alcohol
- nicotine
- opioids (rx)
- benzodiazepines (rx), synthetic benzodiazepines, and other sedatives
- erectile dysfunction medications

expert opinion

STIMULANT POLYSUBSTANCE USE

Substances used in chemsex either to decrease side effects of other substances or to facilitate certain sexual activities

- Phosphodiesterase (PD-5) inhibitors (ED medications)
- herbal supplements (often adulterated with PD-5 inhibitors)
- horny goat weed (Epimedium, also known as barrenwort, bishop's hat, fairy wings, horny goat weed, or yin yang huo, is a genus of flowering plants in the family Berberidaceae. Used for ED and low libido) Epimedium - Wikipedia
- nitrates/nitrites
  - ↘amyl nitrate (poppers)
  - ↘butyl nitrite
  - ↘isobutyl nitrite

thanks to Tim Wiegand, MD
Epimedium - Wikipedia

CHEMSEX HARM REDUCTION

- Synergism between illicit substance use and unprotected sex
  - Facilitated by environmental factors and norms: sexual (the role of sex in subgroups' lives) and social venues, sex networking apps->encourage serosorting by HIV and HCV status
  - Fueled by psychosocial burdens: racism, homophobia, trauma, stigma, discrimination, transphobia, minority stress effect, misogyny, IPV, comorbid mental health (MDD, PTSD, GAD, ADHD), psychological vulnerability, unstable or unsafe housing, homelessness, and victimization->provide supports and positive connections
  - Heightens the likelihood of unprotected sex: anal, oral, and "extreme" sex, sexual compulsivity, increased number of partnering (group sex, sex marathons/fisting/S&M->rectal trauma/bleeding), decreases sexual inhibitions and affects judgment about sexual partners and practices and risks, reduced condom use, development of ED or sexual performance anxiety in response to methamphetamine use->receptive anal SIC, decreased desire for "sober" sex, increased incidence of sexual assault, overrepresentation of HIV among MSM; ->encourage condom and lubricant use, encourage use of PrEP/PEP
  - Enables the transmission of bacterial and viral pathogens: HIV, HCV, HBV, STIs (HPV, HSV, gonorrhea, syphilis, chlamydia, NGU, LGV)->encourage use of doxy-PEP
  - Risk of seroconversion to HIV heightened by use of drug combinations: stimulants only (OR 2.99) to stimulants/amyl nitrate/erectile dysfunction drugs (OR 8.45)->encourage decreased polysubstance use, encourage PrEP
  - Risk for seroconversion to HIV is similar between those who use IDU and those who use psychostimulants non-IDU; increases with the number of drugs used: OR 3 with use of 1 drug, OR 9 with use of 3 drugs (regardless of the drugs used); is highly associated with psychostimulant use *before* sex->encourage decreased polysubstance use, encourage PrEP/PEP
  - **SUMMARY: try to use fewer substances, have plenty of lubricant and condoms, low threshold PEP/PrEP/doxy-PEP access, try not to use poppers (increases blood flow to the rectum which makes tissue more susceptible to STIs)**

Ostrow, DG, et al. JAIDS, 2009 Koblin, BA, et al. AIDS, 2006 Strathdee, SA, et al. Curr HIV/AIDS Rep, 2010
thanks to Perry Halkitis (NYU), Dr. Arty (Housing Works) and Dr. Poitevien (Housing Works)
International Drug Policy Consortium, Speed Limits: Harm Reduction For People Who Use Stimulants, 9/2018

SELF-REGULATION HARM REDUCTION

- The theory of self-control was developed by Gottfredson and Hirschi in 1990 and has since become an important theory in explaining criminal behavior, but also other behaviors such as gambling and substance use. **Self-control or self-regulation is defined as the psychological process through which people control their response to thoughts, feelings, impulses, and needs** (Baumeister, Vohs, and Tice 2007).
- Supporting self-regulation and users' strategies to gain or maintain control over their substance use ties in with a harm reduction approach that aims to decrease potential harms due to substance use and empower users (Forum Droghe and Transnational Institute 2014). It also ties in with harm reduction's bottom up approach, which emphasizes users' ability to control their use and reduce their risks (Zuffa and Ronconi 2015).
- **The self-regulation approach should focus on empowering users' skills and competencies, supporting communicative structures among PWUD, and promoting cultures of safer use. Some of the methods that PWUD use to apply control to their use include: setting rules for their use (e.g. amount or frequency of use); the set (e.g. only using when feeling well); the setting (e.g. using only with friends, not when at work)** (Forum Droghe and Transnational Institute 2014).
- **Various strategies are being employed by PWUD themselves even if they are not necessarily convinced of the risks, such as: always carrying their own materials; refusing to share; assessing risks visually (e.g. does someone have visible wounds); or asking people if they have HIV or HCV** (Boyd, Johnson, & Moffat, 2008; Poliquin et al., 2017; Ti et al., 2012).

COCAINE AND STIMULANTS, THE CHALLENGE OF SELF-REGULATION IN A HARM REDUCTION PERSPECTIVE

- **The environmental factors - such as life events, changes in relationships, life commitments, life styles- give account for the variability of drug use, together with a large range of controls (self imposed rules) drug users apply to accommodate drug use within a much wider field of life engagements. Most drug users apply control over drug use by setting rules regarding the drug (for example, on the amount they consume, and/or the frequency); the set (for example, using when feeling well); the setting (for example, using with friends, using in the weekends only: not using at work etc.).** The process of learning from one's own experience is evident in the very words of some interviewed cocaine users:
  - I now know what it is. How it's like with that high and so, what it is good for, what it isn't good for, in what circumstances I prefer to use it (cocaine user, Antwerp)
  - I am able to take the appropriate steps, I have a more conscious use, which simply comes from experience as for all things..it works like that…you learn the tools for control (cocaine user, Tuscany)

- **Discrepancies between PWUD and professionals' perspectives:**
  - The irrelevance of setting factors (life structure and life problems other than drugs), in planning interventions. Life problems are often neglected by drug professionals because all problems are assumed to stem from drug use.
  - *The (lack of) appreciation of users' "step down" strategies and the consequent reluctance to establish "controlled use" as a valid and viable goal in treatments. In many professionals' opinion, "controlled use" is a temporary step leading to chronic use unless users go back to abstinence. Step down may only be tolerated for "chronic" users, who have "failed" several treatments. In this perspective, controlled use is a "last resort", while abstinence remains the mission of services.*
  - *The assumed users' powerlessness over their drug use leading to one of the tenets of the disease model: admit that professional help is necessary to recovery. Not only is this assumption in contrast with the perception of most drug users; it is also in opposition to widely agreed and evidence based therapeutic principles aimed at increasing clients' self esteem and their sense of their own effectiveness, rather than emphasizing their helplessness.* The presumed users' powerlessness has an impact on the professionals/users relationship: while the opinion of patients in setting the goals of treatment is increasingly accepted in medical care for many health problems, drug services clients have usually no role in choosing the therapeutic programs and in establishing the goals of interventions.

Zuffa, G and Ronconi, S. Epidemiology, Biostatistics, and Public Health, 2015

CHARACTERIZING STIMULANT OVERDOSE: A QUALITATIVE STUDY ON PERCEPTIONS AND EXPERIENCES OF "OVERAMPING"

- Participants identified three key contexts in which overamps were experienced:
  - overuse (relative to one's tolerance),
  - polysubstance use,
  - and a potent supply.
- Stimulant use, and especially cocaine use is often characterized by binge use, which is associated with social and health problems (e.g., stimulant-induced psychosis, increased exposure to police, overdose risk), including increased risk of overamping.
- Overuse can also be understood in the context of long-term exposure heightening risk of overamping.
  - Studies have found that, while cocaine use does not necessarily need to be chronic to precipitate a cardiac event, long-term use is associated with increased cardiovascular damage that lead to stroke, aortic dissection, cardiomyopathy, and endocarditis.
  - This pattern of use, combined with the general lack of awareness of overamping risks among PWUS, highlights the need for widespread knowledge translation of overamping presentation and management strategies aimed at both frontline workers and PWUS.

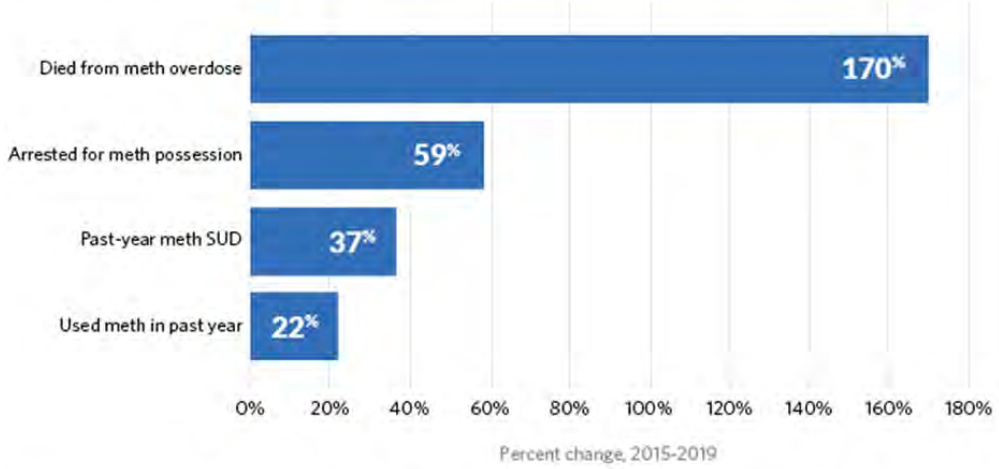
Mansoor, M, et al. Int J Drug Policy, 2022

STATISTICS ON METHAMPHETAMINE

Figure 1

Surge in Methamphetamine Public Health Harms From 2015-2019 Despite Heightened Law Enforcement Response

Change in number of annual overdose deaths, possession arrests, meth-related substance use disorders, and meth use

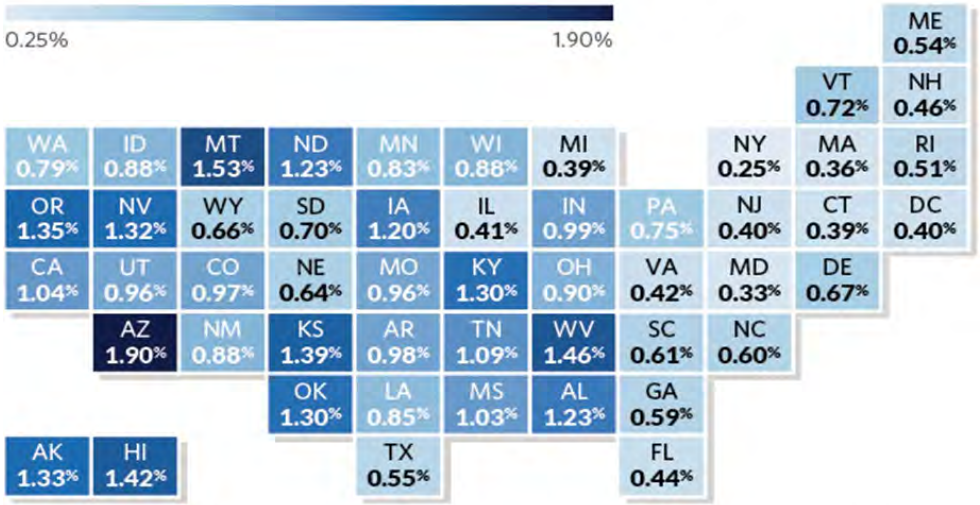


Sources: Centers for Disease Control and Prevention and National Center for Health Statistics, "CDC WONDER Database, Multiple Cause of Death" (1999-2019), (March 4, 2021), https://wonder.cdc.gov/mcd-icd10.html; Federal Bureau of Investigation, "Crime Data Explorer," https://crime-data-explorer.app.cloud.gov/pages/home; Substance Abuse and Mental Health Data Archive, "National Survey on Drug Use and Health Crosstab Creator" (2015-2019), https://pdas.samhsa.gov/#/

Figure 2

In 16 States, at Least 1 in 100 Adults Reported Meth Use in the Past Year in 2018-2019

Percent of adult population that used meth in the past year by state



Note: Figure reports annual average for adults age 18+ in the U.S. based on the 2018 and 2019 National Survey on Drug Use and Health.

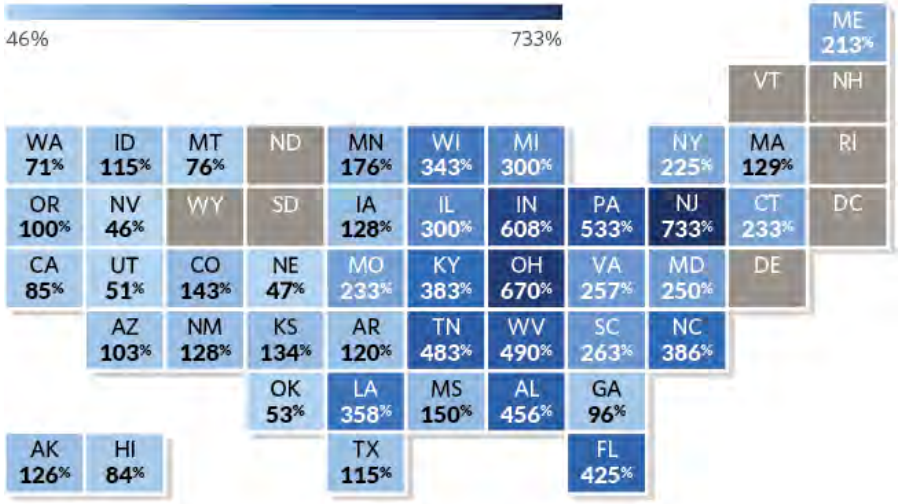
Source: Substance Abuse and Mental Health Services Administration, "2018-2019 National Survey on Drug Use and Health: Model-Based Prevalence Estimates—50 States and the District of Columbia" (2018-19), https://www.samhsa.gov/data/sites/default/files/reports/rpt32805/2019NSDUHsaeExcelPercents/2019NSDUHsaeExcelPercents/2019NSDUHsaePercents.pdf

STATISTICS ON METHAMPHETAMINE

Figure 3

Methamphetamine Death Rate Doubled Over 5 Years in More Than 60% of States

Percent change in states with available data, 2015-2019



Note: Figures include the 43 states that reported data for 2015 and 2019.

Source: Centers for Disease Control and Prevention and National Center for Health Statistics, "CDC WONDER Database, Multiple Cause of Death" (1999-2019), (March 4, 2021), https://wonder.cdc.gov/mcd-icd10.html

Figure 4

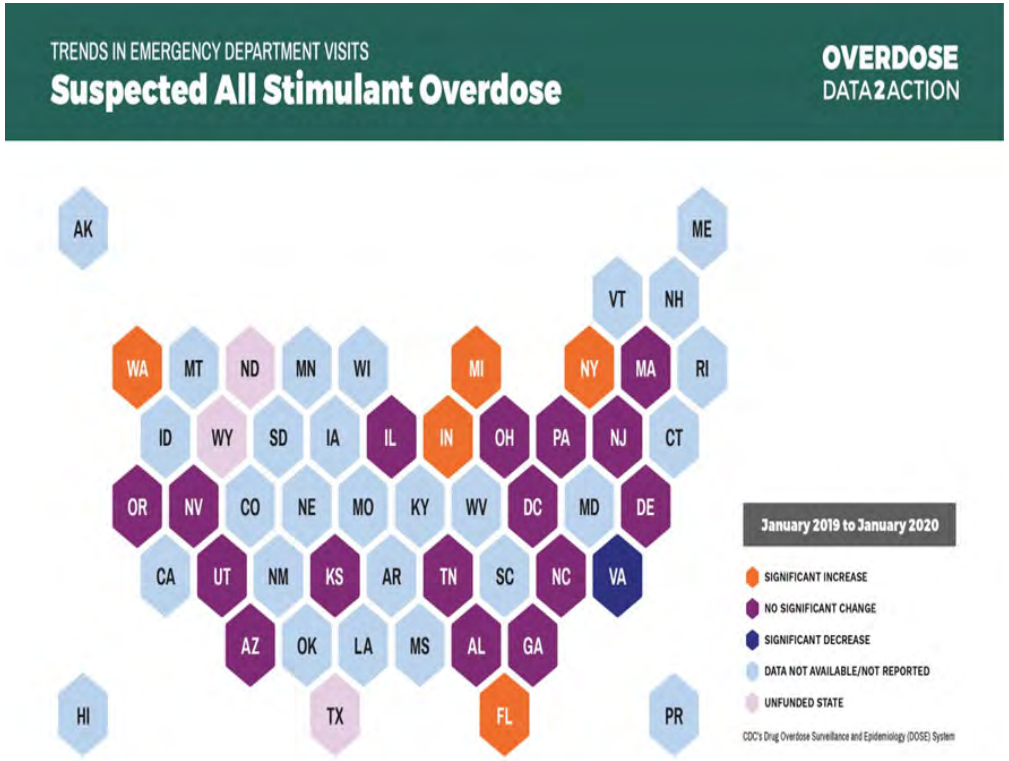
Meth Possession Arrests Rose 79% on Average Over 5 Years in States With Available Data

Increase in number of arrests, 2015-2019

Notes: Figure includes 34 states that reported data from 60% or more of law enforcement agencies for 2015 and 2019 and nine states that individually reported. Methamphetamine is classified by the FBI as "other dangerous nonnarcotic drug."

Sources: Federal Bureau of Investigation, "Crime Data Explorer," https://crime-data-explorer.app.cloud.gov/pages/home; communications with state agencies

TRENDS: METHAMPHETAMINE V. FENTANYL

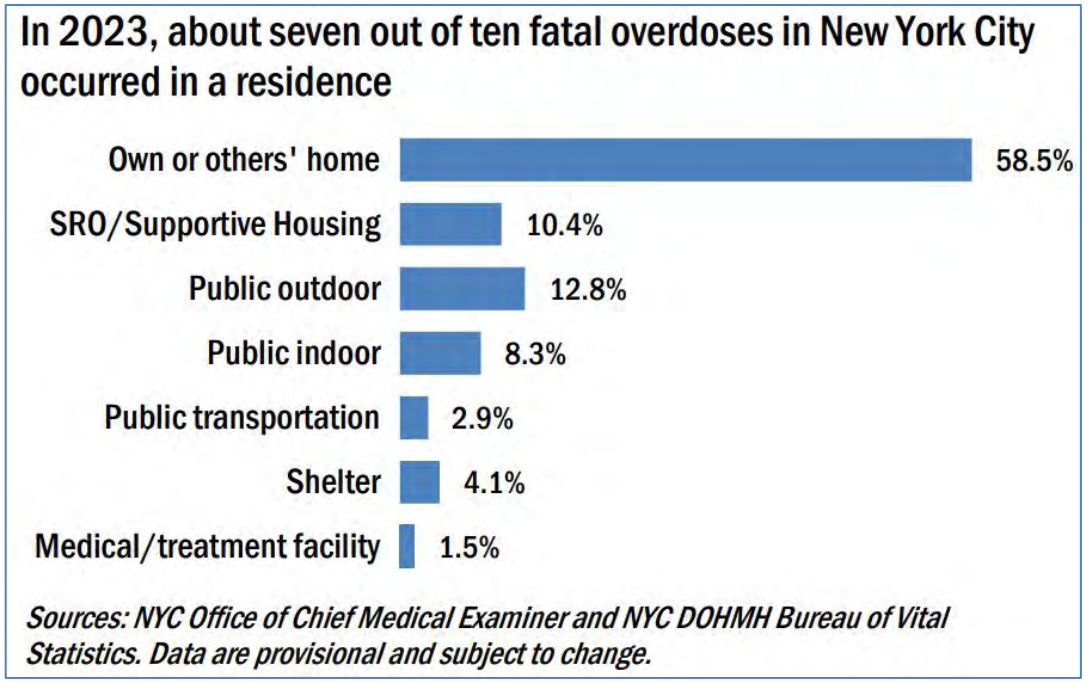


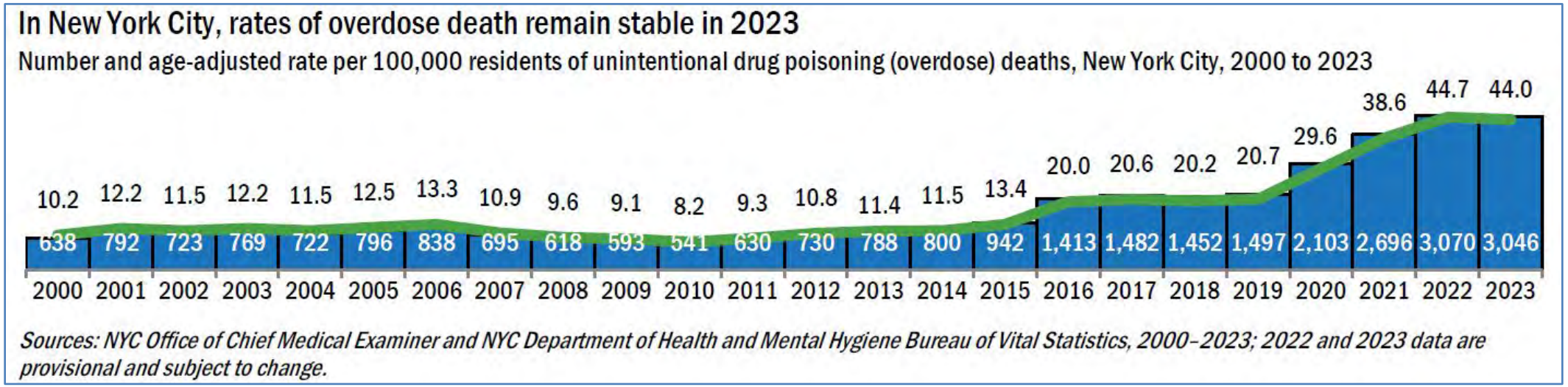
OVERDOSE DEATHS IN NYS

- Overdose deaths in New York state declined 32% in 2024
- 77% of those deaths involved an opioid like fentanyl
- The reduction in deaths reflects a combination of forces, including wider availability of the opioid overdose reversal medication naloxone, expanded access to medication for opioid use disorder (MOUD), and deeper investments in harm reduction services.
- However, **racial disparities in mortality have widened** and cuts to harm reduction funding threaten any progress made

Healthbeat, 5/22/25
CDC

OVERDOSE DEATHS IN NYC



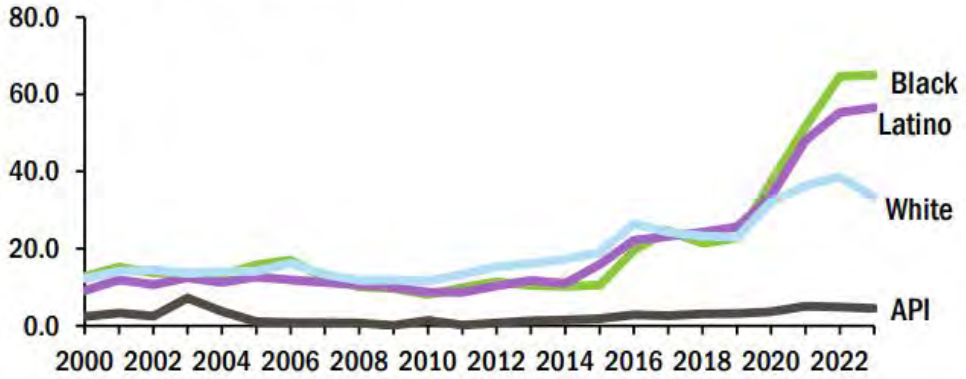


NYC DOHMH, Epi Data Brief, October 2024, No. 142

DISPARITIES IN OVERDOSE DEATHS IN NYC, BY RACE-ETHNICITY AND BOROUGH

In New York City, disparities in overdose death continue to widen among race-ethnicity groups^

Age-adjusted rate per 100,000 residents of unintentional drug poisoning (overdose) deaths, New York City, 2000-2023

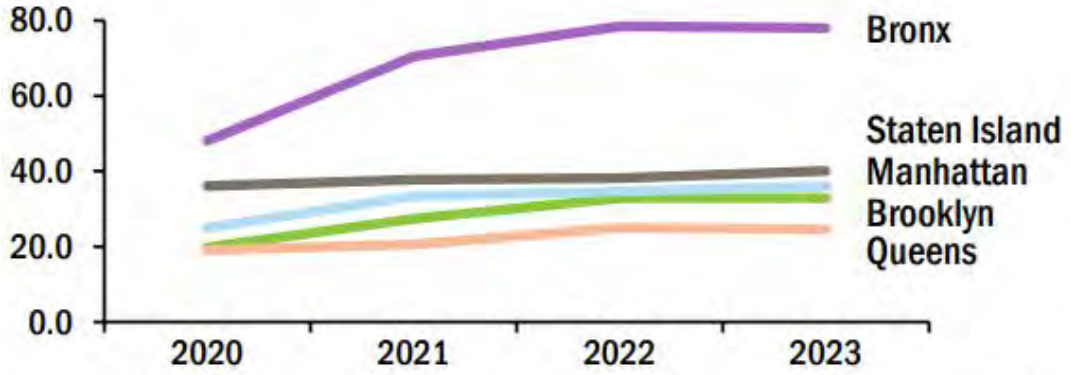


^Asian/Pacific Islander (API), Black, and white race categories exclude Latino ethnicity. Latino includes Hispanic or Latino of any race.

Sources: NYC Office of Chief Medical Examiner and NYC Department of Health and Mental Hygiene Bureau of Vital Statistics, 2000-2023. 2022 and 2023 data are provisional and subject to change.

Bronx and Staten Island residents continue to have the highest rates of overdose

Age-adjusted rate per 100,000 residents of unintentional drug poisoning (overdose) deaths, New York City, 2020 to 2023



Sources: NYC Office of Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics, 2020-2023. 2022 and 2023 data are provisional and subject to change.

WHEN IS OVERAMPING AN EMERGENCY?

Medical emergencies associated with overamping include:

- **Stroke** Strokes are caused by blood vessels in the brain being blocked or breaking. They can be deadly. If you think someone is having a stroke, call 911 right away. Signs include: Trouble communicating, like extremely slurred words or loss of speech, Droopy and numb face, Sudden numbness on one side of the body, A painful headache that seems to come out of nowhere, Not being able to see out of one eye
- **Heart Attack** A heart attack caused by overamping will look the same as a heart attack that doesn't involve drugs. If you think someone is having a heart attack, call 911 or get them medical attention immediately. If they lose consciousness and you know CPR, you can perform CPR or rescue breathing on them until first responders arrive. Signs include: Difficulty breathing, Breaking out in a cold sweat, Squeezing, pressure, or crushing pain in the chest, which may last for several minutes o might come and go Lightheadedness/dizziness, Pain, pressure, & tightness in the neck, shoulders, jaw, or back
- **Overheating** If someone is sweating a lot, has chills, or feels hot to the touch, it's likely that they have a fever. Drinking water or Gatorade, opening a window, and using cold compresses can help break a fever, but if it gets to over 104°F the body can over heat. It can be hard to tell how hot someone is without a thermometer. Some signs include: Headaches, body aches, chills, and dizziness that won't go away after attempts to cool down, Hot, dry skin, as opposed to sweaty skin, Passing out, Pale, bluish, or gray skin, Extreme confusion, Rapid heart rate and breathing
- **Seizure** If a seizure happens, stay calm and make sure you move anything that can hurt the person out of their way. Keep an eye on them in case they start choking or vomiting. Do not yell at the person, try to restrain them, or force anything into their mouth. Signs of seizures include: Muscle spasm and loss of control of limbs, Foaming at the mouth, Grunting Sounds, Inability to control bladder or bowel movements, Losing consciousness, Stiffening body
- **Seizures are an emergency and you should call 911 if:** The seizure lasts over five minutes, More than one seizure happens in a row, The person loses consciousness and doesn't regain it. The person stops breathing and doesn't start again, The person got hurt during the seizure, Skin turns red, blue, or pale and doesn't go back to normal after the seizure, It is the first time a person has had a seizure
- **If you choose not to call 911 after a seizure, stay with the person until they are fully awake. Make sure there is no vomit or saliva in their throat and place them in the recovery position.**