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## **The Evidence for Opioid Overdose Prevention and Intervention Strategies**

### **New York State Office of Addiction Services and Supports (OASAS) Medical Advisory Panel (MAP)**

The opioid epidemic has resulted in alarmingly high rates of fatal overdose in the United States. Reversing overdose mortality rates has been, and remains, a priority for leaders at federal, state, and local levels of government and stakeholders alike. This document provides an overview of mortality trends and the evidence for opioid overdose prevention and intervention strategies, with a focus on medication for opioid use disorder (MOUD), community-based interventions, and overdose prevention centers (OPCs).

According to preliminary data published by the U.S. Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics (NCHS) an estimated 107,689 people died from a drug overdose in the 12-month period ending October 2022 (Ahmad, et al., 2023). This preliminary data demonstrates an increase in fatal overdoses of less than one percent from 2021, appearing to stabilize, relative to the 16% increase between 2020 and 2021 (Hedegaard, et al., 2021; Spencer, et al., 2022).<sup>1</sup> It is unclear if the change in overdose deaths from 2021 to 2022 is a result of increased access to MOUD provided by temporary flexibilities authorized by the federal government under the COVID-19 public health emergency (PHE) for the prescription of schedule II-V controlled substances (Smith, 2023).

Fatal overdoses have trended upward over the past decade and increased significantly during the COVID-19 pandemic. The uptick in fatal overdoses beginning in the latter half of 2019 and increasing again in 2020 was demonstrated across all substances, with notable increases attributable to cocaine, methamphetamine, and synthetic opioids (Ahmad, et al., 2023).<sup>2</sup> Overdose deaths involving cocaine and methamphetamine increased again in 2021 from 2020, while overdose deaths attributed to synthetic opioids remained relatively stable. Overdose deaths involving heroin decreased significantly in 2021 when compared with 2020 (Spencer, et al., 2022).<sup>3</sup> Approximately two thirds of overdose deaths between 2020 and 2021 involved synthetic opioids, primarily illicitly manufactured fentanyl, or its analogues (Ahmad, et al., 2023).<sup>4</sup>

Various data sources have identified disparities in overdose deaths by race, age, and gender – emphasizing a call to implement and enhance services in correspondence to assessed needs across populations. The NCHS

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<sup>1</sup> Hedegaard et al., 2021: Overdose deaths in 2020 in the United States: 91,799; Spencer et al., 2022: Overdose deaths in 2021 in the United States: 106,699

<sup>2</sup> Increase in overdose deaths between 2019-2020 involving cocaine, methamphetamine, and synthetic opioids are 30%, 46%, and 55%, respectively.

<sup>3</sup> Increase in overdose deaths between 2020-2021 involving cocaine and methamphetamine are 22% and 33%. A decrease of 32% was demonstrated in overdose deaths involving heroin.

<sup>4</sup> Overdose death approximations by drug class are based on provisional data collected and processed by the NCHS. 79% (84,817) of overdose deaths reported in 2021 involved fentanyl or its analogues; 76% (70,412) involved fentanyl or its analogues.

reports an increase in overdose deaths between 2014 and 2020 among the Non-Hispanic Black, Hispanic, and Non-Hispanic White populations, with the highest percentage change in the Non-Hispanic Black population.<sup>5</sup>

Opioid overdose deaths are most prevalent among Non-Hispanic Black males aged 55 or older and have increased among the adult and adolescent subpopulations of American Indian and Alaska Natives (CDC, 2022; Spencer, et al., 2022). A smaller proportion of people from racial and ethnic minoritized populations receive substance use disorder treatment compared to White people and most who died by overdose had not received substance use disorder treatment before death (Kariisa, et al., 2022).

### **Treatment Barriers**

Barriers to treatment for opioid use disorder include geographic location and limited transportation availability, restrictive prescribing practices, policies, and regulations, and the prevalence of misinformation regarding substance use and addiction treatment. Despite efforts to increase treatment accessibility and availability made at the state and federal levels of government, misconceptions about MOUD persist and the availability of MOUD and low threshold treatment options in medically underserved communities remain limited.

### **Evidence for MOUD**

There are three Food and Drug Administration (FDA) approved medications for the treatment of opioid use disorder (OUD): methadone, buprenorphine, and extended release (XR) injectable naltrexone. Methadone is a full opioid receptor agonist that can be accessed only through federally and state regulated opioid treatment programs (OTPs). Buprenorphine is a partial opioid receptor agonist that historically could be prescribed only by providers who possessed a DATA 2000 waiver, colloquially known as an 'X' waiver. As of December 29, 2022, Congress eliminated the X-waiver requirement as a means of improving treatment access so now any healthcare provider with a valid Drug Enforcement Agency (DEA) registration can prescribe buprenorphine. XR-naltrexone is an opioid receptor antagonist that can be prescribed by any healthcare provider licensed to prescribe medications.

Recipients of treatment for OUD have better outcomes when maintained on MOUD as opposed to being tapered off after acute management of opioid withdrawal. The use of MOUD in tapering doses to treat opioid withdrawal syndrome is associated with a return to use as soon as the day of discharge and increases in opioid-related (overdose) mortality rates (Chutuape, et al., 2001). Tapering also has proven less effective in preventing a return to use even if done for a longer duration than that of a typical period for acute management of opioid withdrawal (Kakko, et al., 2003).<sup>6</sup>

There is an inverse relationship between the use of methadone and buprenorphine and heroin overdose deaths (Schwartz, et al., 2013). Long term treatment with either methadone or buprenorphine decreases the risk of all-cause mortality and opioid related (overdose) mortality by approximately 50%. (LaRochelle, et al., 2018). XR-naltrexone, however, is not associated with decreased mortality (Watts, et al., 2022).

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<sup>5</sup> Overdose death increase by race/ethnicity: Non-Hispanic Black (243%); Hispanic (192%); Non-Hispanic White (65%)

<sup>6</sup> 26% resumed heroin use on the day of discharge, 61% resumed within a week of discharge, and 17% remained abstinent (by self-report) 30 days after discharge.

Patients treated with MOUD have a significantly lower risk of fatal drug overdose death than those patients who received no treatment for OUD or who only received community-based psychological support. (Pierce, et al., 2015). In a retrospective cohort study of Department of Veterans Affairs (VA) patients, researchers found that, when compared to no treatment, naltrexone, inpatient treatment, and intensive outpatient psychological intervention for OUD, methadone and buprenorphine were the most effective in reducing the risk of overdose and opioid-related morbidity (Watts, et al., 2022). The use of buprenorphine is associated with treatment retention beyond one year and a decrease in suicide mortality, especially for those who continue treatment (Fiellin, et al., 2014; Wakeman, et al., 2020). Conversely, cessation of MOUD was associated with an increased risk of suicide mortality among veterans in the VA study (Watts, et al., 2022).

Available data addressing the duration for which an individual should be treated with MOUD is limited; however, a study published in 2017 revealed that individuals engaged in treatment for substance use disorders (SUDs) were taking buprenorphine for an average of eight to nine years (Au, et al., 2021). It is vital for substance use disorder treatment providers to facilitate the delivery of care by making treatment options available and accessible. Long term MOUD accessibility supports treatment retention and can prevent opioid overdose in individuals engaged in treatment.

Best efforts to prevent opioid overdose are comprehensive and may require augmenting services and coordination between multiple service entities. Evidence from a modeling study suggests increased availability of MOUD, expanded naloxone distribution, and improved retention in treatment are necessary to reduce opioid-related mortality by a minimum of 40% (Linas, et al., 2021).

### **Community-based interventions**

In addition to the use of MOUD, the implementation of community-based interventions and harm reduction strategies that eliminate barriers to care are integral to preventing overdose and improving health outcomes in people who use drugs (PWUD) (Walley, et al., 2013). Harm reduction methods include, but are not limited to, using opioid overdose reversal medications (naloxone), drug checking, implementing low threshold models of care, and educating PWUD on safer use practices.

### ***Opioid overdose education and naloxone***

Opioid overdose death rates are reduced in communities where overdose education and naloxone distribution are implemented (McDonald & Strang, 2016). Naloxone, an opioid receptor antagonist, has no potential for misuse, is inexpensive, is non-scheduled, and effectively reverses the respiratory depression caused by opioids. Training bystanders and persons most likely to witness an overdose to recognize and respond to an opioid overdose increases the likelihood of averting more deaths (Siegler, et al., 2017).

There is no difference in overdose reversal success rates whether naloxone is administered by a trained professional like a first responder or a lay person in the community (Doe-Simkins, et al., 2017). Education about recognizing and responding to an opioid overdose and naloxone distribution are available to anyone, including minors, and do not require consent from a guardian.

Several factors may interfere with the effectiveness of naloxone. These include but are not limited to, poor administration technique, polysubstance use, or a person's preexisting medical conditions (Wiegand, 2022).

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Evidence does not suggest low-dose naloxone is insufficient when compared to high-dose naloxone in successfully reversing opioid overdose, regardless of the presence of fentanyl (Carpenter, et al., 2020).

Responding to an opioid overdose may require administering intranasal naloxone twice, amounting to a total dose of 8 mg. Higher doses of naloxone may be associated with acute, severe precipitated opioid withdrawal symptoms in individuals who use opioids regularly (Pursell, et al., 2021) and an aversion to carrying naloxone (Bennett, et al., 2020). If a second dose is necessary, it should be administered after at least two minutes have elapsed.

On January 1, 2023, New York State renewed a standing order, authorizing prescribers to dispense naloxone to anyone who requests it and authorizing participating pharmacies to dispense naloxone without a prescription (Stancliff, 2023). On March 29, 2023, the FDA approved Narcan, a brand of intranasal naloxone for over-the-counter sale. Persons using insurance coverage to fill a naloxone prescription in New York State can use the Naloxone Co-Payment Assistance Program (N-CAP) to cover up to \$40 in prescription co-payments to reduce or eliminate out-of-pocket expenses associated with obtaining naloxone.

As such, New York State law authorizes any licensed prescriber to prescribe, dispense, and distribute naloxone to anyone at risk of opioid overdose, including family, friends, and others in a position to assist an individual who is experiencing an overdose. If a person passes away after having been administered naloxone, New York state law protects the prescriber, dispenser, and the person administering naloxone if it is administered in good faith in the context of a perceived overdose. <sup>7</sup>

### ***Drug checking and fentanyl***

Drug checking can potentially provide people with information on the contents and quantitative amounts of each component of their drug supply. Evidence suggests most PWUD have concerns about the presence of fentanyl in their drug supply and are likely to modify their behaviors to include harm reduction strategies when using a substance if the presence of fentanyl is detected (Goldman, et al., 2019; Marshall, 2018). Changes in behavior include taking precautionary actions, such as using with someone instead of alone (Marshall, 2018). A person can call the Never Use Alone Hotline if they plan to use alone but want to have a person present with them by phone in case something happens. A trained volunteer stays on the line while the individual is using their substance and activates emergency medical services (EMS) if the individual stops responding.

Drug checking can be carried out through a variety of methods. Advantages and disadvantages differ across methods. For example, some drug checking technologies are suitable for mobile settings while others are designed to be stationary (Kerr & Tupper, 2017). Fentanyl test strips (FTS) are a convenient way of testing for the presence of fentanyl in drug supplies. FTS are effective, require minimum instruction, and can be used anywhere; however, FTS do not indicate the quantity of fentanyl present in a substance, only its qualitative presence (present or not present).

There are several misconceptions about fentanyl, including passive exposure risks and the presence of fentanyl in the non-regulated cannabis supply. An unprotected individual would need approximately 200 minutes of airborne exposure to reach a potentially harmful dose of 100 mcg of fentanyl, according to the

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<sup>7</sup> Article XXXIII, §3309 of New York State Public Health Law

American College of Medical Toxicology (ACMT). Additionally, peak fentanyl blood concentrations from transdermal patches that are applied directly to the skin for the treatment of pain are reached anywhere between 14 minutes to 35 hours after application, depending on the placement of the patch (ACMT). Cannabis testing positive for the presence of fentanyl consistently has been the result of cross contamination during the field-testing process (Roberts, 2021; Vergano, 2019).

FTS are useful engagement tools for fostering discussions between medical providers and PWUD around health education and harm reduction (Lockwood, et al., 2021). Providers should use these engagement opportunities to debunk myths about drug checking and facilitate connections to drug user health hubs, harm reduction programs, and other low threshold providers where individuals can receive drug checking services, FTS education and FTS distribution, and other harm reduction resources. For more information on FTS, please use the following link to access the OASAS FTS guidance and FAQ on FTS and fentanyl myths:

[fentanyl test strip guidance 0.pdf](#)

## **Low threshold models of care**

### ***Syringe services programs***

Syringe services programs (SSPs) operate from a harm reduction framework. They are very low threshold or low threshold community-based prevention programs that can provide a range of services. Services include overdose education and naloxone distribution; access to sterile syringes, injection equipment, safer smoking and sniffing supplies; and the collection and safe disposal of used syringes. Some programs have co-located medical clinics where participants can receive primary care, HIV, STI and hepatitis C (HCV) screenings, HIV and HCV treatment, wound care, and opioid use disorder (OUD) treatment with buprenorphine. SSPs offer referrals to social supportive services, mental health care, SUD treatment, and medical care, if these services are unavailable on site.

These programs are safe, effective, cost-saving and do not increase substance use or crime (CDC, 2023). SSPs protect the public and first responders by facilitating the safe disposal of used needles and syringes. They also play an important role in reducing the transmission of viral hepatitis, HIV, and other transmissible infections, as demonstrated by data in NYS, in the US, and internationally (AAC, 2005). Clients of SSPs are more likely to begin SUD treatment and stop using substances than those not engaged with an SSP (CDC, 2023).

First enacted in 1988, syringe exchange programs have acted as a harm reduction tool. New York State enacted its Expanded Syringe Access Program (ESAP) in 2009. This program enables licensed pharmacies, health care facilities, and health care practitioners to sell or furnish hypodermic needles or syringes to people aged 18 years or older without a prescription (NYS-ESAP, 2022). ESAP providers are required to register with the NYS Department of Health (NYSDOH) to accept household sharps (NYS-ESAP, 2022).

In 2019, the NYSDOH sanctioned second-tier syringe exchange programs (STSEPs) to complement traditional means of syringe access, i.e., syringe exchange programs (SEPs) and ESAPs. Eligible non-profit organizations and government entities may be authorized as STSEPs. In a STSEP model of syringe exchange services, syringes are obtained at an SSP and distributed to other people who inject drugs (PWID) at no cost to them (NYS-STSEP, 2020).

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In October 2021, Governor Hochul signed a new law that increased syringe access in New York by decriminalizing the possession of hypodermic needles, eliminating the ten-syringe distribution limit placed on pharmacies and medical providers, eliminating the requirement for pharmacies and providers to register with the NYSDOH as an ESAP provider, and allowing pharmacies to advertise the availability for retail sale or furnishing of syringes or needles contingent on regulations promulgated by the Commissioner of the NYSDOH.<sup>8</sup>

### ***Medically underserved areas***

Meeting the needs of PWUD in medically underserved areas has resulted in innovations such as the placement of naloxone dispensers (NaloxBoxes) and sharps containers, as well as harm reduction vending machines in public spaces, and repurposing mail order services to bridge gaps in healthcare. For example, the non-profit organization Next Distro provides harm reduction supplies, such as naloxone and sterile syringes, through confidential mail order services. Next Distro operates in several states and serves New Yorkers in places outside the catchment area of an SSP.

### ***Drug user health hubs***

Currently, the NYSDOH operates drug user health hubs, which are in essence an extension of SSPs with additional supportive services (NYS DOH, Office of Drug User Health, 2021). These facilities increase accessibility to health care, are culturally responsive, and operate within a harm reduction framework of prevention. Drug user health hubs draw on the low threshold element of harm reduction, meaning they do not attempt to control a person's substance use, making services and supports easily accessible to people not ready to decrease or cease substance use. New York has twelve organizations certified as drug user health hubs with locations in NYC and upstate, including western New York.

### ***Overdose prevention centers***

Resembling drug user health hubs are Overdose Prevention Centers (OPCs). OPCs offer many of the same services offered in an SSP, except they allow individuals to consume pre-obtained substances, under the supervision of trained staff in a clean and safe space (Overdose Prevention Centers, 2022). OPCs are endorsed by the American Society of Addiction Medicine (ASAM), the American Medical Association (AMA), and the American Public Health Association (APHA).

According to some studies, internationally these facilities increase entry into treatment for SUDs, reduce the amount and frequency of substance use by clients, reduce public disorder, public litter, and public injecting without increasing substance use or crime, and reduce risk behaviors associated with the transmission of HIV and HCV (Larson, et al., 2017). Staff members do not assist the clients with substance use but are present to provide sterile supplies, educate clients on safer injection and use practices, administer first aid if needed, and monitor for and respond to overdose (with oxygen and naloxone on hand) (Gostin, et al., 2019). There has never been a single overdose fatality in any OPC worldwide (Overdose Prevention Centers, 2022).

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<sup>8</sup> CHAPTER 433 of the Laws of New York of 2021

## Recommendations

Evidence suggests opioid overdoses can be averted through evidence-based practices, like increasing access to MOUD, expanding overdose education and naloxone distribution beyond just PWUD, and making drug checking opportunities readily available to anyone who might benefit from its use. Additionally, treatment and legal barriers have illustrated how collaboration between governments and community providers is imperative to bridging gaps in care.

Actions taken by community providers have informed government initiatives to improve care for those with SUD and PWUD. Currently, federal funding is available through OASAS to bridge treatment gaps in recovery-oriented systems of care. Harm reduction programs, whose low-threshold model of care has contributed to their success in street outreach and engagement, have been named as recipients of this funding.

As of March 2022, the DEA authorized healthcare providers working in hospitals, clinics, and emergency rooms to dispense a three-day take-home supply of MOUD, including buprenorphine and methadone, to individual experiencing acute opioid withdrawal symptoms. The State should review this change to determine the potential effects it may have on treatment accessibility for patients, healthcare delivery systems, and communities if modified as a regulation. (SAMHSA, 2018).

The Ryan Haight Act of 2008 requires practitioners to conduct at least one in-person evaluation of an individual for the prescription of controlled substances. Temporary rules authorized under the federal public health emergency (PHE) for COVID-19 waived the in-person requirement, by allowing telehealth to substitute for in-person evaluations.<sup>9</sup> In February 2023, the DEA announced proposed rules for permanent telehealth flexibilities in controlled substance prescribing. If adopted, these regulations would allow practitioners to prescribe a thirty-day supply of buprenorphine to individuals with an OUD after a telehealth visit; however, the individual is required to be examined by a practitioner in person, within 30 days, to receive a refill. This proposal is less flexible than the temporary rules currently in place. Allowing telehealth for all visits involving buprenorphine prescriptions could help increase access to MOUD and ensure individuals get the ongoing treatment they need.

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<sup>9</sup> [omh.ny.gov/omhweb/guidance/prescriptions-after-cv19-federal-emergency.pdf](https://omh.ny.gov/omhweb/guidance/prescriptions-after-cv19-federal-emergency.pdf)

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