# Evidence-Based Strategies for Preventing Opioid Overdose:

## *What's Working in the United States*

An introduction for public heath, law enforcement, local organizations, and others striving to serve their community

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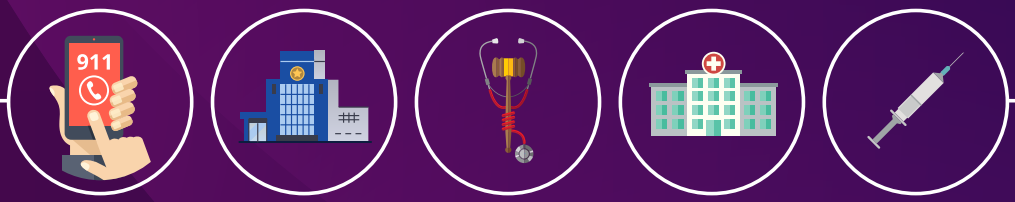


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# Introduction and Overview

## Who is this document for?

This document is to assist community leaders, local and regional organizers, non-profit groups, law enforcement, public health, and members of the public in understanding and navigating effective strategies to prevent opioid overdose in their communities.

## How can readers use this document?

Readers can use this document as a general reference for evidence-based practices that have been successfully implemented in the U.S. and are effective in reducing rates of opioid overdose. This document also provides readers with straightforward explanations of how and why these strategies work, summaries of major research on these topics, and examples of organizations from across the U.S. that have excelled at putting these strategies into practice.

## How was this document created?

The selection of evidence-based strategies included in this document began with a systematic search of scientific literature on the prevention of opioid overdose in the context of prescription opioid misuse or use of illicit opioids. To be considered for inclusion in this document, strategies must have been successfully implemented in at least one jurisdiction in the U.S. as evidence for this document was being reviewed (between April and August 2017) AND meet one of the following evidentiary criteria: (1) meta-analyses or systematic reviews have found the strategy to be effective at reducing overdose and/or factors that increase overdose risk; (2) evidence from a scientifically rigorous experimental study, such as a randomized controlled trial, demonstrates the strategy's effectiveness in reducing overdose and/or factors that increase overdose risk; or (3) multiple observational studies from U.S. settings indicate the strategy's ability to reduce overdose or mitigate and reduce factors that increase overdose risk. In order to provide the broadest possible scope of evidence for guiding the implementation of overdose prevention strategies in the U.S., research that has been conducted in international settings that examines strategies also well-studied and proven feasible in U.S. settings are included in this document as well.

Based on these criteria, strategies identified can be considered promising or effective in reducing opioid overdose.

Over the course of several months, researchers, public health professionals, and subject matter experts were consulted to refine the list of strategies considered into a collection of those interventions with the strongest evidence of efficacy AND with demonstrated feasibility in U.S. settings. These contributors, including physicians, epidemiologists, sociologists, medical anthropologists, harm reductionists, and more, offered individual input based on their own research and experiences working at the forefront of the opioid crisis.

This is not an exhaustive list of overdose prevention strategies. Many countries—such as Canada, Portugal, The Netherlands, Germany, Switzerland, Norway, Australia, and Uruguay, just to name a few—have implemented overdose-prevention policies and programs that have never been used in the U.S. Even within the U.S., many local organizers and advocates have developed unique, locally appropriate strategies too numerous to name here.

In sum, the strategies laid out in this document are well known, evidence-based actions that U.S. states and municipalities can take **today** to prevent new overdoses **tomorrow.**

## Why evidence-based?

Opioid use disorders and opioid overdose are complex phenomena shaped by numerous social, biological, and psychological factors. Due to this complexity—and the natural complexity of all human beings—fully understanding and accounting for all of these factors in an overdose prevention activity is a significant challenge. Often, ideas that once looked promising fail to pan out as expected.* There are also strategies that at first glance appeared counter-intuitive or wrong but were ultimately shown to be very effective in preventing fatal overdose. Subjecting overdose prevention interventions to scientific testing and evaluation is the only way to know for sure whether these intuitions are correct.

In acknowledgement of this pressing need, a practice is considered both "locally appropriate" and "evidence-based" if it has been designed in accordance with three key sources of information: (1) high quality scientific research; (2) the professional opinions and experiences of clinical

and public health experts; and (3) the preferences, priorities, and values of the individuals who will be targeted or affected by that practice.[1] By offering this summary of the current "best practices" for overdose prevention, based on a thorough review of existing research and expertise from a diverse array of medical and public health professionals, this document aims to fulfill areas 1 (scientific research) and 2 (expert opinions). Area 3, the preferences and priorities of those affected (in this case, individuals who use opioids or are otherwise at risk of opioid overdose), must be sought anew in each new community context. This combination of evidence, expertise, and community dialog will lay the groundwork for truly effective opioid overdose prevention strategies across the U.S.

* Research shows that some opioid use and overdose prevention interventions have harmful effects on individuals at risk. Some have even been shown to increase the risks of opioid overdose. The causes of these harms often include the sharp reduction of opioid tolerance during periods of high risk for relapse; the inadvertent promotion of riskier drug use practices through inattention to structural risk factors; and the exposure of at-risk individuals to additional trauma. Examples of strategies shown ineffective by research and data include: arrest and incarceration, compulsory treatment, rapid detox without opioid agonist/antagonist medication assistance, inappropriately implemented school-based education (e.g. short sessions focused on knowledge improvement and resistance only, mixing students from different risk groups), and inappropriately implemented drug court systems (e.g. low quality service provision, improper participant selection, lack of program evaluation).

# Guiding Principles

**Below are four overarching principles, lessons gleaned from previous public health emergencies, such as the HIV/AIDS crisis in the 1980s and 1990s. These principles serve as a guide for the design and implementation of effective overdose prevention strategies.**

## 1. Know your epidemic, know your response

First advanced by UNAIDS as a guiding principle for global HIV prevention and control, the mantra "know your epidemic, know your response" originally spoke to the mismatch between strategy and reality that hindered HIV control efforts in the first years of the epidemic. In a 2008 Lancet article, Drs. David Wilson and Daniel Halperin championed the "know your epidemic, know your response" principle with their observation that "there is no single HIV Epidemic, but a multitude of diverse epidemics" that differ according to "who gets infected and how."[2]

Similarly, opioid overdose is driven by a multitude of mechanisms and human experiences, and people may follow a variety of paths toward opioid misuse and overdose. The realities faced by people who use drugs may be common across regions or vary within tight social groups.

"Know your epidemic, know your response" reminds us that we must have a clear understanding of the causes and characteristics of local public health problems before we can know how to tackle them. It reminds us that our choices must be driven by evidence and data; that we must employ strategies we know to be effective; and that we must remain vigilant in maintaining a holistic and grounded understanding of who is at risk of fatal overdose, how that risk is constructed, and what can be done to reduce that risk as much as possible.

## 2. Make collaboration your strategy

Effective solutions to the opioid overdose crisis will only emerge from strong partnerships across governmental, legal, medical, and other community stakeholders. Collaboration between public health and public safety is especially important, as the impact of illicit opioid use and prescription opioid misuse is great on both of these fronts.

Overdose prevention strategies will only be successful if the role of each player is well designed, reasonable, and clear—and only if those players take on those roles in deliberate coordination with each other. Accomplishing this requires much more than sharing data and intelligence. The implementation of a proven public health approach such as a 911 Good Samaritan Law may be ineffective if law enforcement officers are not included in the planning and design of its implementation or if public safety protocols at the scene of an overdose are not discussed in tandem with the law. Similarly, the successful police take-down of a clinician or facility operating as an illegal "pill mill" may achieve long-term gains at the expense of creating short-term dangers if a public health strategy to support the patients suddenly cut off from this supply of opioids is not put into place ahead of time.

Effectively responding to the opioid overdose crisis requires that all partners be at the table and that we "make collaboration our strategy" by ensuring that all community entities are able to fulfill their necessary roles.

## 3. Nothing about us without us

The phrase "nothing about us without us"[3] reflects the idea that public policies should not be written or put into place (officially or unofficially) without the direction and input of the people who will be affected by that policy. This mantra has been used by persons living with disabilities as they fought for recognition as independent persons who know their needs better than anyone else.[4] It has been used by numerous at-risk groups in the U.S. to defend their place at the table in the planning of HIV prevention strategies.[5,6]

In the context of today's opioid overdose epidemic, "nothing about us without us" speaks to the fact that prevention strategies need to take into account the realities, experiences, and perspectives of those at risk of overdose. Those affected by opioid use and overdose risk should be involved in the design, implementation, and evaluation of interventions to assure those efforts are responsive to local realities and can achieve their desired goals.

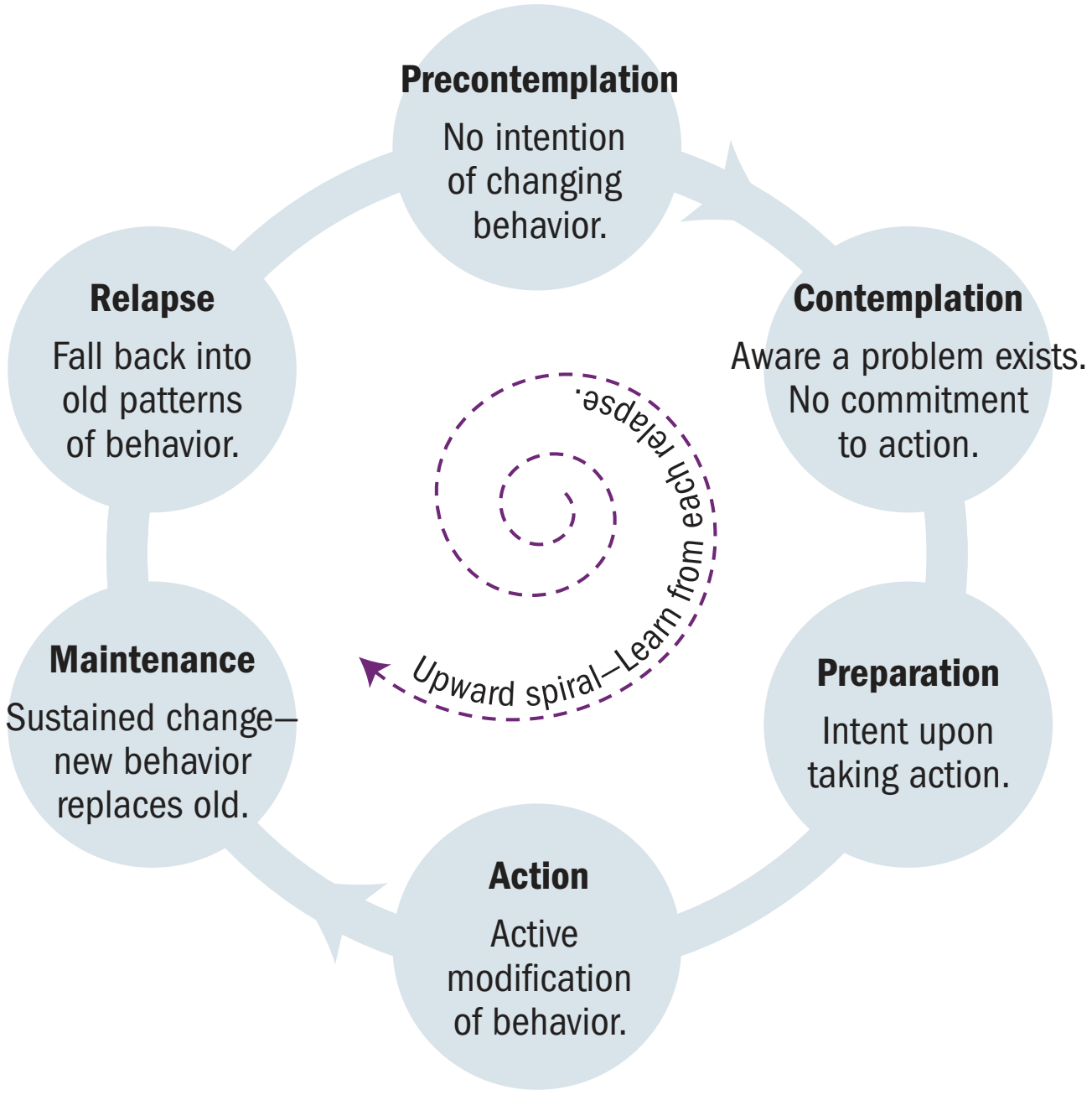
## 4. Meet people where they are

Meeting people where they are requires understanding their lives and circumstances, what objectives are important to them personally, and what changes they can realistically make to achieve those objectives. For example, abstinence may not be immediately achievable by all who use illicit substances; however, many smaller changes may be feasible and could bring substantial benefit, such as reducing the spread of infectious disease, lowering overdose risk, and improving overall physical or mental health.

The Transtheoretical Model, also called the Stages of Change model,[7] describes how such behavior change often occurs. The model emphasizes the need to understand the experience of the person we are trying to reach in order to help them. To promote change, interventions must be provided that are appropriate for the stage in the process that people are in.[8]

The guiding principle of "meeting people where they are" means more than showing compassion or tolerance to people in crisis. This principle also asks us to acknowledge that all people we meet are at different stages of behavior change. Furthermore, recognition of these stages helps us set reasonable expectations for that encounter. For example, a person who has experienced an overdose who is precontemplative and has not yet recognized that their drug use is a problem may be unlikely to accept treatment when they are revived, but may benefit from clear, objective information about problems caused by their drug use and steps they can take to mitigate them. Unrealistic expectations cause frustration and disappointment for patients, providers, family, caregivers, and others touched by the event. Someone who is already preparing for action, however, may be ready for treatment, support, or other positive change. A positive, judgement-free encounter with first responders may provide the impetus and encouragement needed to get started. When we "meet people where they are," we can better support them in their progress towards healthy behavior change. Recognizing the progress made as a person moves forward through the stages of change can help avoid the frustration that arises from the expectation that they will achieve everything at once.

## *The Transtheoretical Model of Behavior Change*




This image is adapted from Prochaska & DiClemente, 1983.


# Evidence-Based Strategies

# Targeted Naloxone Distribution

**Naloxone is an opioid antagonist that can quickly and safely reverse the potentially fatal effects of an opioid overdose. Targeted distribution programs seek to train and equip individuals who are most likely to encounter or witness an overdose—especially people who use drugs and first responders—with naloxone kits, which they can use in an emergency to save a life. There are many different approaches to distributing naloxone to people at high risk of experiencing or witnessing an overdose. Effective approaches include community distribution programs, co-prescription of naloxone, and equipping first responders.**

## *Why this strategy works*

Naloxone is a drug that carries no risk of abuse and has no effect on individuals who do not already have opioids in their system. It does not generate physical dependency. It produces no neurological or psychological effects or euphoria. It also poses negligible risk of harm if misused. The people who most often witness and respond to an overdose are other persons who use drugs. By equipping these individuals with naloxone and training them to identify and respond to an overdose, the potential delay between the onset of an opioid overdose and the delivery of life-saving care can be reduced from hours to seconds. This is especially true in rural areas, where residents may experience longer EMS response times.[9] With powerful opioids, like fentanyl and fentanyl analogs, appearing in the U.S. drug supply, higher doses of naloxone may be needed. Therefore, ready access to naloxone among members of the lay community and first responders is key for saving lives.

## *Targeted naloxone distribution programs work best when:*

- Naloxone is provided to people at high risk of experiencing or witnessing overdose.[10]
- Outreach workers, harm reduction staff, and trusted clinicians are properly educated and comfortable distributing naloxone to those using illicit opioids or receiving a high-risk opioid prescription.[11]
- People who use drugs and first responders are well informed as to the potential effects and actions of naloxone. Comfort with carrying and administering naloxone is crucial.[12]

## TRAILBLAZERS

Naloxone has been carried by hospitals and emergency medical services since it was approved by the FDA in 1971.

Large-scale naloxone distribution for people who use drugs was first pioneered by staff at the Chicago Recovery Alliance in 1996.

In 2003, the DOPE Project in San Francisco began distributing naloxone under a standing order from the Medical Director of the local Department of Health—one of the first such standing orders for naloxone in the U.S.

In 2013, Walgreens Pharmacy expanded a pilot naloxone access project in Rhode Island, making the overdose-reversing medication available at the pharmacy without having to first see a prescriber, thus beginning the first such statewide pharmacy-based naloxone program.

### *Targeted naloxone distribution—What the research says*

- A nation-wide study found that more than 80% of overdose reversals with naloxone in the U.S. were carried out by individuals who also use drugs.[13] A similar study carried out in Massachusetts found that nearly 90% of overdose reversals with naloxone were carried out by bystanders who also use drugs.[14]
- An observational study of a naloxone distribution program in British Columbia recorded the distribution of 836 naloxone kits to people who use drugs and 85 reported overdose reversals from among those trained and equipped with naloxone by the program, indicating that at least one in every ten kits distributed had saved a life.[15]
- An observational study in Ohio found that increases in the number of law enforcement officers trained and carrying naloxone was associated with a reduction in opioid overdose deaths and an increase rate of survival among opioid overdose victims in the surrounding area.[16]
- A retrospective review of all program enrollee information collected by the Massachusetts Department of Public Health Overdose Education and Naloxone Distribution Program found that family members of persons at risk of overdose comprised nearly 30% of the program's enrollees and were responsible for 20% of all recorded rescue attempts. Some of those rescues were performed on someone other than the relative these participants were originally concerned about. These findings indicate that naloxone distribution across families and social networks can have life-saving, synergistic effects.[17]
- An observational study of nearly two thousand individuals who had received an opioid prescription over a two-year period found that those individuals who were co-prescribed naloxone along with their opioid analgesic prescription had 47% fewer visits to the emergency department in the 6 months after receiving the prescription and 63% fewer emergency department visits after 1 year.[18]

# Medication-Assisted Treatment (MAT)

**MAT is a proven pharmacological treatment for opioid use disorder. The backbone of this treatment is FDA approved medications. Agonist drugs, methadone and buprenorphine, activate opioid receptors in the brain, preventing painful opioid withdrawal symptoms without causing euphoria; naltrexone blocks the effects of opioids. MAT is effective at reducing use and helping people to lead normal lives.**

## *Why this strategy works*

The World Health Organization has called MAT "one of the most effective types of pharmacological therapy of opioid dependence."[19] Numerous studies have shown that MAT contributes to significant reductions in opioid use, criminal activity, overdose, and other risky behaviors.[20,21] MAT quells cravings and allows patients receiving it to stabilize their physical dependency. This stability allows MAT patients to achieve healthy social, psychological, and lifestyle changes.

A note about the three FDA-approved medications for opioid use disorder:

While all three medications (methadone, buprenorphine, and naltrexone) can be effective in the treatment of opioid use disorder, decades of research support the efficacy of opioid agonist medications (methadone and buprenorphine) in preventing overdose. We are now learning about the overdose prevention capabilities of long-acting, injectable naltrexone. Early research indicates that long acting naltrexone may share methadone and buprenorphine's overdose prevention effects.[22] Though naltrexone has also proven effective, research has shown that this medication is harder to initiate in some patients[23] and that less effective attenuation of withdrawal symptoms during the first days of treatment may predict treatment drop out.[24] Differences in treatment response and outcomes with naltrexone are actively being researched. Medications, therefore, should be selected carefully and tailored to the needs of each individual patient.

## *MAT works best when:*

- It is combined with ancillary treatment strategies like counseling and social support with fixed, safe, and predictable doses of medications.[25,26]
- Public awareness of MAT as an effective medical intervention is promoted by local leadership. This helps to reduce stigma against MAT that discourages people from seeking this form of care.
- Entry into treatment is voluntary. Compulsory treatment programs through legal and social welfare systems are less effective than voluntary treatment.[27]
- Patients have access to a variety of medication options. All patients are different, and treatment is best when individualized. Some people fare significantly better on buprenorphine than on methadone, and vice versa. Some may need to try several treatment options before discovering what works best, and some may not have access to all MAT medications.[28]
- The challenges of receiving MAT are understood and mitigated. Many individuals face hurdles in receiving approval for MAT from their health insurance provider. Many methadone clinics require patients to attend daily to receive treatment. This can mean long, burdensome commutes at odd hours, which can conflict with professional, familial, or care-giving responsibilities.[29] Those who live in rural areas, for example, may have to drive hours to receive care. Treatment is more successful when these obstacles are not placed in the way.

## TRAILBLAZERS

Methadone, which originally was synthesized by German scientists in the 1930s, was first used as a medication for opioid dependency in the 1960s, when heroin-related mortality was the leading cause of death for adults between 15 and 35 years old in New York City.[30]

Methadone was approved by the FDA for use in MAT in 1972, followed by buprenorphine in 2002. The U.S. Substance Use and Mental Health Services Administration (SAMHSA) released guidelines for the clinical management of buprenorphine-based MAT in 2004.[31]

### *Medication-assisted treatment—What the research says*

- A meta-analysis that included eleven different studies of methadone as a medication for opioid use disorder found that methadone was more effective at treating opioid use disorder and reducing illicit opioid use than non-pharmacological treatments.[20]
- A 2014 review of all available evidence on buprenorphine as a treatment for opioid use disorder found it to be effective in retaining patients in care and just as effective as methadone in reducing illicit opioid use among those retained in care.[21]
- A longitudinal study that followed MAT patients for more than four years found both methadone and buprenorphine to be effective long-term treatments for opioid use disorder throughout that follow-up period.[32]
- Two studies, one conducted in Australia and one conducted in Washington state, have found higher death rates among patients receiving oral naltrexone compared to patients receiving long-acting injectable naltrexone[33] or methadone,[34] respectively.
- A meta-analysis concluded that participation in pharmacological treatment for opioid use disorder, such as MAT, improves HIV treatment across the entire continuum of care, increasing coverage of antiretroviral treatment by 54%, increasing enrollment into antiretroviral treatment by 87%, increasing antiretroviral treatment adherence by nearly 200%, increasing rates of viral suppression by 45%, and reducing antiretroviral treatment discontinuation by 23%.[35]
- A study that followed MAT patients for a year after initiating treatment found that MAT patients experienced a significantly improved quality of life during the course of their treatment.[36]
- In a clinical trial of more than 300 criminal justice-involved individuals with opioid use disorder, long-acting injectable naltrexone was compared to basic counseling with no medication. During the 24-week study period, there were no overdose events among the 153 individuals offered long-acting naltrexone and 7 overdose events among the 155 individuals offered no medication.[22]

# Academic Detailing

**"Detailing" is a structured educational strategy developed by commercial manufacturers of medical and pharmaceutical technologies to market these products to prescribers and pharmacists. "Academic detailing" consists of structured visits to healthcare providers by trained professionals who can provide tailored training and technical assistance, helping healthcare providers use best practices.**

## *Why this strategy works*

The purpose of commercial detailing, the sales strategy upon which academic detail is based, is the targeted marketing of pharmaceutical products to healthcare providers who are best positioned to prescribe them, which, depending on state law, includes physicians, physician assistants, nurse practitioners, and pharmacists. Academic detailing takes the most effective practices of this commercial marketing and applies them to the "marketing" of evidence-based practices to healthcare providers and other community stakeholders. In the context of overdose prevention efforts, academic detailing has been used to assist physicians in reducing potentially risky opioid prescribing practices, to prepare pharmacists to effectively distribute naloxone to the public, and many other innovative and community-based initiatives designed to deliver new skills to those individuals poised to make an impact on the rate of overdose in their communities.

## *Academic detailing works best when:*

- Dedicated and trained detailing teams are deployed for all academic detailing activities, as this strengthens the detailing approach and fosters consistency within the project.[37]
- The individuals who receive academic detailing possess the means and resources to put their newly gained knowledge to use. For instance, physicians who treat patients receiving opioid medications often benefit from additional staff support, as evidence based opioid prescribing requires additional patient follow-up activities and administrative tasks.[38]

## TRAILBLAZERS

Since 2013, the New York City Department of Health and Mental Hygiene, in collaboration with the U.S. Centers for Disease Control and Prevention (CDC), has actively undertaken two academic detailing campaigns: one to support providers of buprenorphine-based MAT with additional training and assistance, and the other to train and support clinic staff in adopting safe opioid prescribing practices.

The San Francisco Department of Public Health recently sponsored the CIAO (California Intervention for Academic Detailing on Opioids) study, which supported rural counties in developing and implementing academic detailing for primary care providers on safe opioid prescribing, overdose prevention, and buprenorphine-based MAT.

The Veterans Health Administration has made academic detailing a key component of its national Opioid Overdose Education and Naloxone Distribution program.

### *Academic detailing—What the research says*

- A recent review found that commercial detailing is so effective in prompting behavior change among healthcare providers that its effects are overpowering those of traditional academic information sources. One major factor behind this pattern is that researchers who produce and seek to disseminate scientific medical knowledge are rarely trained in effective communication strategies. Academic detailing corrects this disparity by "marketing" new science to healthcare providers in a compelling and efficacious manner.[39]
- Academic detailing has been used to improve physician practices across a variety of medical spheres, including opioid prescribing,[40] proper medication dosing for patients with limited renal function,[41] and the timely screening of pregnant women for high-risk infections.[42]
- In a recent study on the effects of academic detailing on general practitioners, those who received detailing significantly improved their clinical management of refractory labored breathing. Further, more than 80% of those physicians who did not receive detailing lacked confidence in their knowledge of and ability to manage this condition.[43]
- A 2013 overdose prevention intervention carried out on Staten Island used targeted educational sessions with medical providers to reduce rates of inappropriate opioid prescribing and overdose death. The intervention resulted in a 29% decrease in prescription opioid overdoses on Staten Island, even as overdose rates remained unchanged in New York City's other boroughs.[44]
- Recent efforts to increase the rate of naloxone prescription by general practitioners through academic detailing have shown remarkable results. A study in San Francisco found an eleven-fold increase in the rate of naloxone prescription among physicians who received a half-hour-long academic detailing session.[45] Further, a large scale academic detailing effort in the Veterans Health Administration was able to reach more than 7,000 physicians in less than a year.[46] This effort resulted in a three-fold increase in naloxone prescription one year after the intervention and a seven-fold increase two years later, indicating that physicians were enabled to improve their clinical practice independently even after the academic detailing had taken place.[47]


# Eliminating Prior-Authorization Requirements for Medications for Opioid Use Disorder

**In this scenario, health insurance providers cover the cost of MAT as a standard benefit and all requirements that a physician contact the insurance provider for approval prior to writing the prescription (a process called "prior authorization") are removed. Without these prior authorization requirements, prescriptions for MAT medications to treat opioid use disorder can be written and filled as soon as a physician deems this treatment necessary, free from artificial delays.**

## *Why this strategy works*

Prior authorizations may take up to several days to process with insurance providers. This processing time creates an immediate barrier to a patient's initiation onto treatment. This delay forces patients to leave their provider's office without receiving potentially life-saving medication, only to return again to receive it several days later. During that time, treatment can be derailed. A patient may lose interest, lose access to their doctor, lose transportation, suffer an injury, or even die from an overdose.

The removal of prior authorization requirements allows a patient to be initiated onto treatment the same day they see their doctor. This immediate initiation reduces the patient's risk of overdose in the subsequent days and increases the likelihood that they will successfully engage in and remain connected to treatment.

Due to regulations governing the provision of methadone, buprenorphine and naltrexone are the only FDA-approved medications for opioid use disorder potentially subject to prior authorization requirements.

## *Removing prior authorization requirements works best when:*

- Policy makers and healthcare providers work collaboratively with health insurance companies and state Medicaid programs to design and implement these policy changes.[48]

## TRAILBLAZERS

In 2016, an investigation of barriers to treatment for opioid use disorder in New York prompted Cigna to voluntarily remove all prior authorization requirements for policy holders seeking prescription buprenorphine. Anthem Inc. also removed these requirements a few months later.

In March 2017, Aetna removed all prior authorization requirements for its private insurance plans.

In Rhode Island, the Governor's Overdose Prevention Task Force brought insurance company representatives to the table to help coordinate statewide overdose reduction measures. Following these collaboration efforts, Neighborhood Health Plan of Rhode Island and United Healthcare, the state's two Medicaid managed care providers, along with Blue Cross Blue Shield and Tufts Health Plan, two private health insurance providers, removed prior authorization for prescription buprenorphine for all of their policyholders to better support the state's overdose prevention efforts.

### *Eliminating prior-authorization requirements for medications for opioid use disorder—What the research says*

- In 2014, prior authorization for prescription buprenorphine was still required for 35% of Health Maintenance Organizations (HMOs), 36% of Preferred Provider Organizations (PPOs), and more than half of Consumer Driven Products (CDPs).[49]
- Self-treatment with diverted (i.e. misused) opioid medications is common among individuals with opioid use disorder who have recently experienced barriers to or delays in starting buprenorphine-based MAT.[50,51,52]

# Screening for Fentanyl in Routine Clinical Toxicology Testing

**The standard panel of substances included in routine clinical drug screens (carried out in hospitals, clinics, treatment centers, etc.) should include screening for fentanyl exposure, particularly in jurisdictions where fentanyl is known to be prevalent in the local illicit drug market.**

## *Why this strategy works*

Because it is such a highly potent and fast acting opioid, and because it is often difficult—if not impossible—to identify prior to consumption, the presence of fentanyl in illicit drug supplies changes the landscape of opioid overdose dramatically. Harm reduction, risk reduction, and opioid overdose prevention efforts all need to be informed by an awareness of fentanyl exposure in the populations served in order to continue affording maximum safety and protection to community members who are navigating a fentanyl-contaminated drug supply.

The addition of fentanyl testing in routine clinical toxicology tests allows for early warnings of supply contamination and provides one of the best sources of routine surveillance for fentanyl in the local drug supply. The results of fentanyl screens may also have implications for the clinical management of substance use disorder for fentanyl-exposed individuals and for public health responses to opioid use and overdose.

## *Fentanyl testing in routine drug screens works best when:*

- Adjustments are made to funding streams, standard lab procedures, and electronic medical records systems to accommodate and standardize this change in practice.[53,54]
- Trends in the results of fentanyl screens are shared effectively across public institutions with the capacity to intervene amongst those who intentionally or unintentionally consume fentanyl and reduce the risk of overdose.[55]

## TRAILBLAZERS

In 2017, Lifespan, the parent company of the largest hospital network in Rhode Island, instituted a new policy mandating that fentanyl be added to the panel of drugs screened for among patients who are in the emergency department following an overdose. This practice ultimately became part of the state's Standard of Care for the Treatment of Opioid Addiction and Overdose in Emergency Departments and Hospitals.

Some outpatient methadone-based MAT programs have also begun testing for fentanyl in all urine screens, identifying individuals who were struggling in treatment and may not have known they were at risk of fentanyl-related overdose.[56]

### *Screening for fentanyl in routine clinical toxicology testing—What the research says*

- A study conducted in Vancouver, British Columbia, that tested urine samples from 242 people who inject drugs found that 29% of all participants (only 59% of whom reported using heroin) tested positive for fentanyl. Of those who tested positive for fentanyl, nearly 75% did not report using fentanyl in the past three days, indicating that they were not aware they had been exposed. The same study also found that people who reported using methamphetamine had 6-times the odds of testing positive for fentanyl, compared to those who did not report using methamphetamine. At the time, this was a counter-intuitive finding, which would have likely not been discovered without adding fentanyl screening to these drug testing procedures.[55]
- A recent study conducted in the Detroit area found that 38% of clients receiving methadone-based MAT tested positive for fentanyl in standard monthly drug screenings at least once between January 2015 and May 2016. Clients who tested positive for cocaine were more likely to test positive for fentanyl as well.[57]
- Data collected from more than 700 medical records at a methadone-based MAT clinic in Rhode Island revealed that approximately one in seven methadone patients tests positive for fentanyl each month, and nearly two-thirds of new patients initiating methadone-based MAT tested positive for fentanyl at intake.[56] Each of these factors may shape a patient's experience of treatment and individual needs while receiving care.


# 911 Good Samaritan Laws

**The term "911 Good Samaritan Law" refers to local or state legislation that may provide overdose victims and/or overdose bystanders with limited immunity from drug-related criminal charges and other criminal or judicial consequences that may otherwise result from calling first responders to the scene. The scope of 911 Good Samaritan Laws varies across U.S. states, but each is written with the goal of reducing barriers to calling 911 in the event of an overdose.**

## *Why this strategy works*

Frequently, individuals who witness an overdose have been using opioids themselves. Calling 911 for an overdose victim is an inherently risky thing for such bystanders to do. Emergency medical services are often accompanied by the police, and police have the discretion to execute warrants, search the premises, and arrest bystanders for drug-related charges that are coincidental to the overdose emergency at hand. When facing the risk of arrest, detention, prosecution, and potentially prison time, bystanders are forced to weigh their own wellbeing against the wellbeing of the person who is in crisis in front of them.

By providing limited immunity from drug charges arising from evidence found at the scene of an overdose, 911 Good Samaritan Laws defuse this conflict, allowing a bystander to seek emergency care for an overdose victim without putting themselves at risk of arrest.

## *Good Samaritan Laws are most effective when:*

- Immunity is extended to all bystanders on the scene, not only to the individual in crisis and the individual who called 911.[58]
- Bystanders are protected from parole violations and warrant searches in addition to receiving immunity from criminal charges. Any perceived risk to the freedom or safety of the bystander reduces the probability that 911 will be called.[58,59]
- Police officers and other first responders are well informed as to their liabilities and responsibilities when responding to an overdose as outlined in their state's 911 Good Samaritan Law and other state and local regulations.
- People who use drugs are well informed about the 911 Good Samaritan law and have reason to trust that those protections will be consistently afforded to them when they call 911.[60]
- The hospital experiences of people who use drugs are strengthened and improved. Individuals in crisis will not call for emergency care if they don't want to be transported to the hospital due to previous maltreatment.[61]

## TRAILBLAZERS

In 2007, New Mexico became the first state to pass a 911 Good Samaritan Law for overdose prevention—extending immunity from criminal liability for drug possession to victims of an overdose crisis and for those who seek help.

As of May 2018, all but five states have enacted similar legislation.

### *911 Good Samaritan Laws—What the research says*

- A large study of overdose scenarios in Baltimore found that 911 was called during only one in five overdoses witnessed, and that the presence of more than four bystanders statistically decreased the probability that 911 would be called.[58]
- An evaluation of 911 Good Samaritan Law education efforts in New York City found that awareness of this law statistically increased the likelihood that a bystander would call 911 in the event of an overdose. This finding was true for all participants across race, age, and gender.[60]
- Multiple studies in the U.S. and Canada have observed that bystanders of an overdose are concerned that they will be arrested or have negative police interactions if 911 is called, which effectively deters many bystanders from making the call.[62,63]
- A large study of opioid using parolees in Alabama found that a number of bystanders (about 30%) will try to find help through means other than calling 911, such as dropping off the overdose victim at a hospital. Though it may be done with good intentions, this response could mean a fatal delay in care for the overdose victim.[64]
- Many police officers, when first introduced to the idea of 911 Good Samaritan Laws, experience concern about jurisdictional issues and liability surrounding the carry and administration of naloxone.[65] However, simple trainings and informational tools have been shown to quickly increase police officer familiarity and comfort with overdose response.[61]
- Young adults who report using opioids in Rhode Island have poor awareness of the local Good Samaritan law, indicating that targeted awareness raising may be needed for these laws to be effective across the entire community.[66]

# Naloxone Distribution in Treatment Centers and Criminal Justice Settings

**Naloxone distribution programs in criminal justice and treatment facilities (both inpatient and outpatient) target individuals who are about to be released from supervision and/or cease treatment to receive overdose response training and naloxone kits prior to their exit from the program or facility.**

## *Why this strategy works*

Individuals with a history of incarceration are, in general, at higher risk of overdose. Periods immediately following release from supervision or treatment, when a person's opioid tolerance is low, are especially dangerous: an individual is more than twenty-five-times more likely to overdose in the first weeks following the cessation of treatment than during treatment,[67] and release from incarceration, also defined by abrupt reintegration in the context of lowered opioid tolerance, places individuals with opioid dependency at similar risk.[68] Naloxone distribution programs operated within treatment and correctional settings are an effective way to train and equip this extremely high-risk group—as well as their friends and family members—with life-saving naloxone.

## *Naloxone distribution in treatment centers and criminal justice settings works best when:*

- Coverage of these distribution programs is universal, providing all individuals leaving criminal justice settings or treatment with the opportunity to be trained and receive a naloxone kit. This is preferable to opt-in programs that require inmates to request special services to receive naloxone.[69]
- Training is provided in a way that refrains from making negative judgments about drug use and focuses instead on the importance of every person's safety and wellbeing even in the context of drug use.[70]
- Close contacts of the individual (family, partners, and children) are also trained in naloxone administration and overdose response.[10]
- Naloxone distribution in treatment centers and criminal justice settings works best when there is certainty in the supply chain and in funding. In treatment settings, an individual's insurance can cover the cost of naloxone.[71]

## TRAILBLAZERS

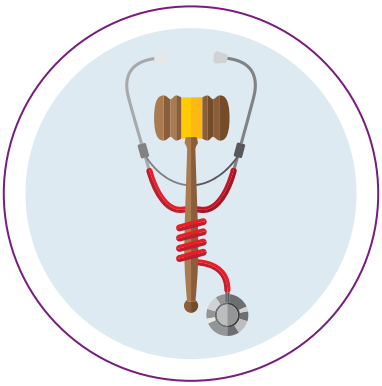
The first pilot programs for overdose prevention for incarcerated individuals took place in jails in Pittsburg and New York City, where naloxone was provided to incarcerated persons upon release or to caregivers visiting the detainees.

Since 2005, Rhode Island's adult prison system has trained inmates on overdose prevention. The prison then began providing naloxone to inmates at release in 2010, a model that other states have since adopted.

Baltimore area jails began distributing naloxone to at-risk individuals in 2016, following a recommendation from Maryland's Heroin and Opioid Emergency Task Force.

### *Naloxone distribution in treatment centers and criminal justice settings— What the research says*

- A nationwide study of more than 10,000 individuals exiting specialized drug treatment settings in the U.S. found that rates of overdose death were twenty-six times higher in the first month following the cessation of treatment compared to the rate of overdose death while individuals were in treatment.[67]
- A similar study of more than 5,000 individuals ceasing outpatient MAT for substance use disorder found that overdose death rates were nine times higher than baseline in the first two weeks following treatment cessation, eight times higher in weeks three and four following treatment cessation, and approximately 1.9 times higher in the second month.[72]
- A large meta-analysis of data from several different nations found that individuals released from incarceration experience a three to eight-fold increase in the rate of overdose death in the first two weeks after release compared to weeks three through twelve following release.[73]
- A study carried out by the Massachusetts Department of Public Health found that individuals recently released from incarceration in the Commonwealth are 56 times more likely to overdose than members of the general public, indicating urgent need to scale up overdose prevention services for this population both before and after release.[74]
- Scotland's National Naloxone Programme, which started providing naloxone at release to inmates in 2011, was associated with a 36% reduction in the proportion of opioid- related deaths that occurred within the first four weeks following an individual's release from prison.[75]



# MAT in Criminal Justice Settings and Upon Release

**In this intervention, MAT should be made available as a standard of care for incarcerated individuals with opioid use disorder. Those receiving MAT when they enter a criminal justice setting may continue receiving this treatment, and those who are not on treatment may initiate and continue this form of care while incarcerated and then be linked with appropriate care providers to continue MAT upon release.***

## *Why this strategy works*

MAT is one of the most effective forms of treatment available for opioid use disorders. MAT has been shown to lower rates of illicit drug use, lower risk of overdose, lower rates of drug-related crime, and increase engagement with many other essential forms of healthcare.

Providing MAT in jails and prisons not only brings healthcare in correctional facilities in line with current medical standards for the treatment of this medical disorder, it also improves the likelihood that incarcerated persons will engage in care in the future and lowers the likelihood of relapse, problem opioid use, and risky opioid use after release.

## *MAT in criminal justice settings works best when:*

- MAT is uninterrupted for those who were receiving care prior to incarceration.[76]
- MAT can be initiated in criminal justice settings.[69]
- Individuals have access to all available forms of MAT medication. This choice is essential, as some individuals fare much better (or worse) on one of these drugs than on the other.[28]
- An effective system for referral and linkage to care is in place so that individuals on MAT can receive a "warm handoff" to providers who are able to continue their care upon release.[77] Otherwise, recently released individuals are forced to choose between enduring painful opioid withdrawal and quickly finding another source of opioids. The quickest and easiest sources of opioids are illicit ones.

*Medicare and Medicaid generally do not pay for services rendered to individuals in custodial settings. Applicable statutory and/or regulatory exclusions will apply.

## TRAILBLAZERS

Rikers Island Correctional Facility, New York City's jail, has been offering MAT with opioid agonist medication to inmates since 1987. Today, the facility provides both methadone and buprenorphine.

Vermont began piloting MAT care with methadone and buprenorphine at two of its jails in 2014.

In 2016, Rhode Island became the first state to implement a program offering buprenorphine, methadone, or naltrexone to all incarcerated persons (in jail or in prison) with substance use disorder, both maintaining those who became incarcerated and initiating many into MAT care for the first time.

### *MAT in criminal justice settings and upon release—What the research says*

- Multiple studies have found that MAT in correctional facilities is associated with decreased heroin use, decreased levels of syringe sharing, decreased criminal activity, and a significantly higher probability of engaging with treatment upon release.[78–81]
- A study conducted among nearly 300 incarcerated persons in Rhode Island concluded that forced withdrawal from methadone upon incarceration (among those who were receiving methadone prior to incarceration) reduces the likelihood that an individual will engage in care after release.[82] Forced withdrawal is required in correctional facilities where MAT is not available.
- A study conducted at Rikers Island found that individuals given buprenorphine-based MAT during a 10–90-day incarceration were more likely than those given methadone-based MAT to continue treatment after release.[83]
- A Baltimore study found that incarcerated individuals who received methadone stayed in treatment for an average of 166 days in the year following their release, whereas those who received only counseling but no MAT engaged in treatment for an average of 23 days following release and were more likely to test positive for opioids at 12 months after release.[84]
- Within one year of initiating its new MAT program in all state adult correctional facilities, the state of Rhode Island observed a 60% decrease in the proportion of recently incarcerated individuals who suffered a fatal overdose. The state also observed a 12% overall decrease in overdose fatalities compared to the previous year, which can be attributed to the deaths prevented by the prison's MAT program.[85]

# Initiating Buprenorphine-based MAT in Emergency Departments

**Patients receiving care in emergency departments who have untreated opioid use disorder are referred to a provider for long-term buprenorphine-based MAT. This referral is accompanied by initial doses of buprenorphine or a short-term prescription that can be filled right away. The patient can begin treatment immediately, instead of waiting several days for their appointment with a new provider.**

## *Why this strategy works*

Even if a patient in the emergency department is very eager to begin MAT, receiving a referral and possibly waiting several days to begin care greatly decreases the likelihood that this patient will successfully engage in care. Providing an initial dose of buprenorphine in the emergency department eliminates these delays in care and allows the patient to begin experiencing the benefits of MAT immediately. Subsequent daily doses provided by the hospital (either by prescription or by supervised consumption at the hospital pharmacy) serve as a "bridge," providing the patient with care on a temporary basis, if necessary, while a referral and "warm hand off" to a physician who can continue to provide MAT is carried out.

## *Initiating buprenorphine-based MAT in emergency departments works best when:*

There is no broadly accepted "best practice" for initiating patients onto buprenorphine-based MAT in an emergency department. This intervention is very new, and researchers are still studying how best to serve patients' needs and assist them in engaging with care. Patients who are initiated in the emergency department are very likely there because they have experienced an overdose crisis. It can be expected that such an experience may change the meaning of treatment for these patients, and the value of treatment may change in an inconsistent or counter-intuitive way over time.

What we do know, however, is that each instance of engagement in MAT, even if the patient eventually drops out of care, predicts higher success the next time treatment is sought. Furthermore, providing "bridging" doses of MAT medications to individuals seeking treatment greatly improves patient engagement in MAT care during treatment initiation—a key moment for those with opioid use disorder, when maintaining trust and stability is of utmost importance.[86,87]

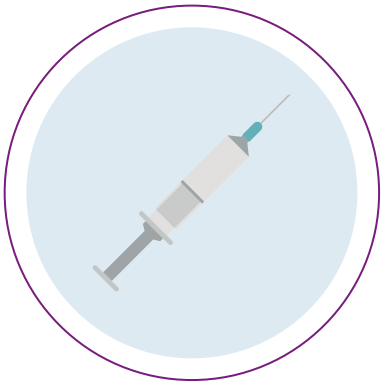
## TRAILBLAZERS

Yale University Hospital in New Haven, Connecticut, was the first institution to begin initiating MAT in their emergency department in 2015. They found that patients who started MAT in the emergency department were twice as likely to be in engaged in treatment 30 days after discharge.

Boston Medical Center operates the Faster Paths to Treatment program in a similar way. The program also initiates patients with opioid use disorder hospitalized for other conditions and people in residential treatment programs in the community who request or would benefit from MAT. Patients are immediately stabilized on buprenorphine or connected to a methadone program and then actively transitioned to a primary care provider or other provider of long-term care. Patient navigators assist patients in connecting with and continuing care.

### *Initiating buprenorphine-based MAT in emergency departments—What the research says*

- A 2010 study conducted in a location with very long wait lists (6 months or more) for MAT provided those who were seeking treatment through a personal physician or a licensed opioid treatment program with immediate access to buprenorphine via prescription while they waited for a slot in a formal treatment program. Compared to those who were not offered this medication immediately, these individuals reported significant reductions in illicit opioid use, opioid withdrawal symptoms, and opioid cravings, even before they began wrap-around treatment. The medication adherence rate was 99%, indicating almost no medication diversion.[86,87]
- Yale University Hospital conducted a randomized controlled trial to test the effect of initiating patients on buprenorphine in the emergency department and then continuing that MAT in primary care. Two months later, those patients who received buprenorphine prior to a referral for MAT were more likely to be engaged in care and had lower rates of illicit opioid use. Six months later, the study's findings were less encouraging, which indicates that patients initiated onto MAT in the emergency department may need additional supports to remain engaged in care.[88] The hospital now employs patient navigators and counselors to support patients who may be struggling to maintain their treatment.



# Syringe Services Programs

**Sometimes called "needle exchange" or "syringe exchange," syringe services programs provide access to clean and sterile equipment used for the preparation and consumption of drugs as well as tools for the prevention and reversal of opioid overdose, such as naloxone training and distribution, fentanyl testing strips, and more. Comprehensive syringe services programs also provide additional social and medical services such as: safe disposal of syringes and needles; testing for HIV and hepatitis C infection and linkage to treatment; education about overdose and safer injection practices; referral and access to drug treatment programs, including MAT; tools to prevent HIV and other infectious disease, such as condoms, counseling, or vaccinations; and linkage to medical, mental health, and social services.**

## *Why this strategy works*

Syringe services programs are a key component of overdose prevention strategies, because they can facilitate access to and uptake of services and interventions for reducing overdose, enhancing health and wellbeing, and improving public health and public safety.

First, some, but not all, people who use drugs experience homelessness, poverty, and other social or financial insecurities that make acquiring clean injection equipment challenging, even in locations where syringes can be purchased without a prescription. The free distribution of clean injection equipment lowers the frequency of syringe sharing and re-use,[89–91] with major protective impacts on the rates of infectious diseases like HIV and hepatitis C as well as other injection-related infections or soft tissue injury.[92,93] Individuals who participate in syringe services programs are also more likely to seek treatment for a substance use disorder.[94]

Second, syringe services programs provide people who use drugs a non-judgmental environment in which they are able to build supportive and trusting relationships, talk freely about their needs and concerns, and re-enforce feelings of self-worth, empowerment, and control. Relief from the shame and judgment carried by the stigma associated with drug use gives people the freedom to think objectively about the risks their drug use may pose to themselves and others and to strategize steps they can take to mitigate those risks. For people who are socially marginalized and have internalized stigma about their drug use, these services can substantially benefit their safety and chances of survival.

Third, if and when someone who uses drugs chooses to seek medical care, naloxone access, or substance abuse treatment, syringe services programs and their staff are able to help their participants connect with and navigate these services, making syringe services programs a key component of overdose prevention efforts on all fronts.

## *Syringe services programs work best when:*

- They provide an adequate supply of sterile syringes. Limiting the number of syringes an individual may receive reduces the effectiveness of the intervention. Programs with one-for-one exchange policies, for example, allow participants only as many syringes as the number of used syringes they return, thus undercutting the program's own effectiveness.[95] When no limits are set on the number of syringes distributed, participants are more likely to have clean syringes on hand when they need them, and they can provide syringes to many more people than can attend the program themselves, thus multiplying the program's effectiveness. This also increases participants' incentive to visit the program and interact with staff and counselors.[96]
- The needs and concerns specific to the local drug using community are addressed and accommodated by the program.[97]
- Program participants who are seeking treatment for opioid use disorder or for other physical or mental health concerns are offered assistance in accessing appropriate care.[98,99]

## *Syringe services programs—What the research says*

- Syringe services program participants are five times more likely to enter drug treatment and 3.5 times more likely to cease injecting compared to those who don't utilize these programs.[100]
- Syringe services programs are more effective at preventing disease and maximizing service coverage when distribution rules are less restrictive, such as when the program is distribution-based, not exchange-based, and when distribution limits are high.[95,101]
- A key element to the success of syringe service programs in reducing disease and overdose and in connecting more participants with care is the refocusing of public responses to drug use away from criminal justice approaches, which discourage safer drug use behaviors and requests for help, to public health approaches focused on the underlying drivers of these risks.[102] Law enforcement officials can play an important role as partners in this shift by directing people found using illicit drugs to treatment programs rather than arresting and detaining them.
- A recent study found that individuals who use drugs who were recently incarcerated are at significantly higher risk of overdose and are more willing than their non-incarcerated peers to receive training for and administer naloxone when this is offered by a syringe services program, making syringe service programs a particularly important intervention for assisting these high-risk individuals.[103]
- Some regions have begun implementing syringe access and disposal services at pharmacies and have achieved success in decreasing syringe sharing and reuse.[104] However, a study in San Francisco found that more than 65% of interviewees who used drugs regularly disposed of syringes at syringe service programs, and almost none disposed of syringes at pharmacies, indicating that pharmacies alone cannot fill the role played by these programs with respect to syringe disposal.[105]

# TRAILBLAZERS

The concept of syringe access was borne from local efforts to prevent hepatitis B in the 1980s in Rotterdam, Holland.

In the 1990s, the U.S. government funded several studies that demonstrated the effectiveness of syringe services programs, leading then-Secretary of HHS Donna Shalala and NIDA Director Nora Volkow to herald the efficacy of these programs.

By 2014, syringe services programs were operating in nearly 200 U.S. cities.

In 2015, Congress lifted a ban on federal funding for syringe services programs, allowing federal funds to be used to support syringe service programs and the wrap-around services that are a part of the program; however, federal funds cannot be used to purchase the actual syringes distributed.[106]

In 2015, Kentucky opened numerous syringe service programs across the state. These programs offer all participants referrals to drug treatment, case management, HIV and hepatitis C testing and referral to treatment, syringe access, and safe syringe disposal services. In the first six months of operation, these programs served more than 1400 unique individuals and distributed more than 128,000 clean syringes. A similar syringe service program run by the Cabell-Huntington Health Department in West Virginia helped reduce the proportion of their clients sharing syringes from above 25% to below 10% between September 2015 and March 2016.

The People's Harm Reduction Alliance, a community organization that provides syringe services to communities across western Washington and northern Oregon, employs a variety of methods for reaching individuals in need of services including stationary or "brick and mortar" locations and supply delivery on demand by car, by bike, or on foot. Since 2007, the organization has distributed more than 10,000 naloxone kits and has recorded more than 5,000 overdose reversals based on client reports.

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