

Addressing Opioid Overdose: Understanding Risk Factors and Prevention Strategies

Drug overdose deaths are at epidemic levels in the United States, with opioid misuse and abuse—including the use of prescription pain relievers and heroin—driving these increases.¹ Since 1999, the number of opioid overdose deaths has nearly quadrupled, with more than 165,000 individuals dying from prescription drug-related opioid overdoses during this period.² Data also show a recent spike in overdose deaths involving heroin, which have more than tripled between 2010 and 2014.¹

This tool is designed to help prevention practitioners better understand where and how to focus efforts to prevent overdose deaths. Specifically, it provides an overview of:

- Risk factors associated with opioid overdose;
- Evidence-based strategies for overdose prevention; and
- Challenges specific to implementing harm reduction strategies.

For reference, we have also included a glossary at the end of the tool of terms commonly used in overdose prevention.

WHAT RISK FACTORS ARE ASSOCIATED WITH OPIOID OVERDOSE?

Understanding the risk and protective factorsⁱ associated with prescription drug overdose and opioidⁱⁱ overdose can help practitioners assess, plan for, and select interventions designed to address them. To date, no factors have been identified that reduce the likelihood of overdose (i.e., protective factors); this section therefore focuses on risk factors that have been identified, which are associated with a higher likelihood of opioid overdose. Specifically, individuals who overdose are more likely than their counterparts to have the following:

- A history of substance use or misuse, such as having:
 - Misused prescription drugs in the past 90 days³
 - Misused potent opioids, such as fentanyl⁴
 - Concurrently used prescription opioids and other substances such as benzodiazepines or alcohol⁵
 - Injected substances including opioids⁶ and tranquilizers³
 - Shared syringes and other injection paraphernalia⁷
 - Used heroin in her/his lifetime⁸
 - Had history of opioid dependence⁹

ⁱ A risk factor is a characteristic that precedes and is associated with a higher likelihood of overdose, while a protective factor is a characteristic associated with a lower likelihood of overdose or that reduces the negative impact of a risk factor on overdose.

ⁱⁱ Heroin is an opiate. Information on risk and protective factors associated with heroin use and overdose, specifically, is provided in the CAPT tool [Preventing Heroin Use: Facts, Factors, and Strategies](#).

- Non-orally ingested a prescription drug³
 - Used alcohol heavily¹⁰
 - Tobacco use¹¹
 - Recently initiated drug use by injection¹⁰
 - Experienced prior opioid overdose¹²
- Had one or more of the following prescription drug-related experiences:
 - Had a maximum prescribed daily opioid dosage greater than 100 milligrams¹³
 - Obtained four or more filled prescriptions¹⁴
 - Had overlapping prescriptions for opioids and other controlled substances such as benzodiazepines and other psychiatric prescriptions¹⁵
 - Engaged in pharmacy hopping—using more than four pharmacies¹⁶
 - Engaged in doctor shopping—receiving prescriptions from four or more prescribers¹⁴
- Had one or more of the following mental health conditions:
 - Severe psychological distress¹⁷
 - Diagnosed with a mental health disorder¹⁸
 - Been admitted to a psychiatric hospital³
- Had one or more of the following conditions in their medical history:
 - Chronic pain¹⁹
 - Liver problems (e.g., Cirrhosis)¹¹
 - Impaired drug metabolism or excretion¹⁸
 - Pulmonary disorders¹⁸
 - Frequent and/or recent hospitalization¹⁸
 - Physical disability²⁰
- Experienced one or more of the following life events or conditions:
 - Witnessed a family member overdose³
 - Been incarcerated³ or had a change in tolerance related to incarceration history¹⁰
 - Post-discharge from detoxification or other in-patient residential settings²¹
 - Experienced homelessness in the past 90 days³
 - Unemployment²⁰
 - Financial struggles²⁰
- Had low perception of harm²²
- Lacked knowledge regarding opioid overdose risk factors²³

In addition, research has shown that experiencing a non-fatal overdose can also increase the likelihood of experiencing a fatal overdose among individuals who inject.²⁴ This risk factor becomes

increasingly important when implementing Overdose Education and Naloxone Distribution (OEND) programs (discussed later in this tool) because once naloxone (an antidote to overdose) is given and fatal overdose is reversed, the risk for fatal overdose for that individual may not be over.



LEARN MORE ABOUT RX DRUG MISUSE

Because the nonmedical use of prescription drugs (NMUPD) is associated with prescription drug overdose, prevention practitioners seeking to address overdoses may want to focus on risk and protective factors associated with overall NMUPD. Information on these factors is included in the CAPT tool [Preventing Prescription Drug Misuse: Understanding Who Is at Risk](#) located on the CAPT area of the SAMHSA website: samhsa.gov/capt.

WHAT STRATEGIES ARE EFFECTIVE AT PREVENTING OVERDOSE?

Research has identified a number of potentially promising strategies, some with demonstrated effectiveness, to prevent overdose directly. For the purposes of this tool, we have organized these strategies into the following categories: **Educational, Tracking and Monitoring, Supply Reduction, Harm Reduction, and Other Strategies** not associated with traditional prevention approaches.



EDUCATIONAL STRATEGIES

Educational overdose prevention strategies teach individuals, including prescribers, pharmacists, patients, first responders, or groups within the community that are vulnerable to overdose or likely to encounter someone experiencing an overdose, about the following:

- Dangers of prescription drug overdoses^{25; 26; 27}
- How to recognize when an individual is at risk for overdose²⁸
- How to recognize when an overdose is occurring²⁹
- How to appropriately respond to an overdose²⁹
- Laws relevant to overdoses (i.e., Good Samaritan Laws)³⁰

Prevention practitioners can be involved in delivering these educational messages directly, or in creating materials that can be used by others. Three types of educational programs were identified in the research and evaluation literature: **Prescriber Education, Patient Education, and Social Marketing Campaigns**. Each of these is described below.

PRESCRIBER EDUCATION. Prescriber education involves teaching prescribersⁱⁱⁱ about the benefits and risks of prescribing opioids, including strategies to prevent abuse, while maintaining legitimate and appropriate access to opioids for patients. Topics for prescriber education may include the following:^{26; 31}

- Best practices for when and how to prescribe opioids or other drugs with abuse potential
- How to recognize when an individual is at risk for NMUPD or an overdose
- When and how to refer individuals to substance abuse treatment services
- How to talk with patients about the dangers of prescription drug overdoses
- Information on other strategies to prevent overdoses

Prescriber education may be delivered through a variety of venues, including:

- Events sponsored by drug manufacturers
- Continuing medical education programs
- State-mandated training events

The Centers for Disease Control and Prevention has also provided [guidelines for prescribing opioids](#) for chronic pain that prevention practitioners can use to guide the creation of educational materials.³² Experience dictates, however, that prescriber education is best received when the individual delivering the educational message is another prescriber (i.e., a physician) or someone with medical credentials.³³

Few evaluations have examined the effectiveness of prescriber education programs, but those that have, show promise.

- One study found that Utah's broad-based prescriber education program, when delivered in conjunction with a social marketing campaign (see below), reduced statewide medication-related overdose deaths by 14 percent.³⁴
- Another study demonstrated that Washington's prescriber education program for physicians treating patients receiving disability compensation reduced overdose deaths among that population by 50 percent.²⁶

PATIENT EDUCATION. Patient education involves providing patients with information on the:

- Overdose potential of prescription drugs and their effects;³⁵ and
- Importance of safeguarding prescriptions.³⁶

While many prescribers have implemented some form of patient education, and a number of these initiatives have been evaluated, the quality of the evaluation designs used to gather evidence for the effectiveness related to preventing overdose is relatively low,²⁷ making continual evaluation and future research necessary.

ⁱⁱⁱ Prescribers include any person with the authority to prescribe controlled substances, such as physicians, dentists, nurse practitioners, or veterinarians.

SOCIAL MARKETING CAMPAIGNS. Social marketing campaigns³⁷ use techniques adapted from commercial marketing to encourage favorable and voluntary behavior change. Social marketing involves disseminating messages that reinforce the benefits of engaging in a specific behavior, while minimizing the perceived negative consequences typically associated with behavior change. Campaigns can take different forms:

- Some social marketing campaigns seek to address risk and protective factors directly. For example, Utah’s “[Use Only As Directed](#)” campaign, which targets the general public, promotes safe use of medications, safe storage, and safe disposal of prescription drugs.
- Other campaigns seek to improve responses to overdoses, for example, by providing information on relevant Good Samaritan Laws that protect individuals who report an overdose to emergency medical personnel from drug-related criminal charges.³⁰

Though most social marketing campaigns tend to focus on reducing rates of prescription drug misuse,³⁸ there is some evidence that they may also reduce rates of unintentional prescription opioid overdoses.²⁵ Campaigns can be implemented by state or local public health agencies, community prevention coalitions, or any other prevention-oriented organizations.³⁹



TRACKING AND MONITORING STRATEGIES

Tracking and monitoring is a key element of preventing overdose. Key resources for this task include Prescription Drug Monitoring Programs (PDMPs), which are electronic databases that track and house data on prescriptions and dispensations of controlled substances.⁴⁰ The purpose of a PDMP is to prevent individuals from receiving medically unnecessary prescriptions, knowingly or not, that may be abused or cause overdoses. PDMPs vary considerably across states:

- Some PDMPs proactively report data to law enforcement and other relevant agencies and contact prescribers and dispensers with concerns.⁴¹
- Others serve primarily as data clearinghouses, responding to requests from organizations who are approved for data release (e.g., law enforcement).⁴²

Prevention providers can work to **expand and improve PDMP usage** and/or work toward **mandatory use of PDMPs**, which can potentially reduce overdose. Each of these strategies is described below.

EXPANDING & IMPROVING PDMP USAGE. There are a number of ways prevention practitioners can work to expand and improve PDMP usage:

- Given the variability across PDMPs, they can work with prescribers and dispensers (i.e., pharmacists) to teach them about the PDMP in their state, tribe, or jurisdiction.
- They can educate prescribers and dispensers about the benefits of using the PDMP (e.g., to better understand patient needs and prescription histories) and share strategies for initiating conversations with patients that they suspect are misusing prescription drugs.

- They can also educate law enforcement on the benefits of using PDMP data to detect prescribers, who have unusual prescribing practices, as well as “doctor shoppers.”

MANDATORY USE OF PDMPs. Some states have legal mandates that require prescribers (and, less frequently, dispensers) to register with and/or use the PDMP when prescribing (or dispensing) a Schedule II or other controlled drug under certain conditions.⁴³

PDMP-use mandates have been associated with lower incidences of doctor shopping and reduction in the dispensing of opioids,⁴⁴ which are risk factors for NMUPD, but are not necessarily associated with reducing overdose, specifically. Prevention practitioners can play a central role in helping to:

- Educate prescribers, dispensers, and other stakeholders about PDMP requirements; and
- Encourage regular and appropriate use of PDMPs.

While there is a body of evidence that PDMPs can reduce NMUPD rates,^{45; 46} the number of studies specifically focusing on their overdose prevention impact is limited.^{46; 47}



SUPPLY REDUCTION STRATEGIES

Supply reduction strategies limit access to commonly abused prescription drugs. The intention behind these strategies is to limit the amount or type of prescription drugs that one person can obtain; this reduces doctor shopping, as well as the amount of controlled drugs in circulation. The target audiences for these strategies are primarily prescribers, pharmacists, and law enforcement agents.^{41; 48}

Supply reduction strategies include **statutory and regulatory sales-limitation policies** and **law enforcement actions**. Each of these strategies is described below.

STATUTORY & REGULATORY SALES-LIMITATION POLICIES. These policies are designed to reduce access to diverted or inappropriate prescriptions. There are a number of federal regulations which prohibit automatic refills for Schedule II prescriptions.⁴⁹ State laws may also:

- Limit the number, quantity, and duration of prescriptions;⁵⁰ or
- Restrict the circumstances under which prescriptions can be issued or refilled.

Health insurers may also have separate regulations from federal and state government that further limit prescriptions. While there is not a sufficient body of evidence to determine the effects of these policies on prescription drug overdose rates, they have been shown to be effective in limiting access to prescription drugs commonly associated with overdose. Also, these policies and regulations can be used as guidelines when law enforcement (or other entity) examines PDMP data to help identify:

- Physicians not staying within the prescribing limitations; or
- Patients who have access to prescriptions that violate the regulations.

LAW ENFORCEMENT ACTIONS. With support from PDMPs and other data sources, law enforcement agencies can pinpoint individuals and organizations violating the statutes and policies described above, including prescribers who may be unlawfully operating “pill mills”—that is, medical practices that offer large quantities of unnecessary prescriptions for controlled substances for monetary gain⁵¹—as well as doctor shoppers. Police have the authority to:

- Raid pill mills and then press criminal charges to have them shut down;
- Identify and take criminal action against individuals who are illegally selling prescription drugs,⁵² and
- Help identify people who may benefit from treatment for addiction.

Few law enforcement actions have been evaluated for their effects on overdose prevention when implemented individually. One study, however, found that increased law enforcement activities in Florida (specifically, police raids on pills mills), when combined with policy changes (in this case, legislation prohibiting physical dispensing of Schedule II or III drugs from doctor offices), were associated with a 23.5 percent decrease in the state’s prescription drug overdose death rate.⁵³



HARM REDUCTION STRATEGIES

Harm reduction strategies focus on reducing fatality rates by targeting individuals who are at high risk for overdose—in this case, current users of opioids or heroin. Harm reduction strategies often entail enactment of policies that **provide access to antidotes** (such as naloxone), implemented in conjunction with other efforts to reduce non-fatal overdose, such as **overdose education and naloxone distribution programs**. Many of these policies, such as **Good Samaritan Laws**, also protect against legal repercussion of use.

PROVIDING ACCESS TO ANTIDOTES.

Antidotes exist, which can reverse the effects of an opioid overdose. One common antidote is naloxone. Naloxone, commonly sold under the brand names Narcan and Evzio, and generically from Amphastar Pharmaceuticals, Hospira, and Mylan, are opioid antagonists—medications that block the body’s opioid receptors to prevent interactions with opioid drugs.^{54; 55} This blockage can halt an overdose before its potentially fatal symptoms, such as respiratory depression, take full effect.⁵⁶ Naloxone is:

- Designed to restart breathing, not necessarily make a person completely alert and awake;
- Available (for overdose reversal purposes) through injectors, auto-injectors, and nasal sprays;^{54; 57; 58} and
- Effective only at reversing opioid overdose and will not reverse overdoses on other substances (i.e., benzodiazepines, alcohol, or other sedatives).

State laws regarding naloxone possession and administration vary significantly regarding who among first responders and laypersons may receive or administer naloxone.³⁰ For example, some states:⁵⁹

- Require the individual experiencing the overdose to have a prescription for naloxone;
- Allow third-party prescriptions for naloxone (i.e., a friend or family member may be prescribed naloxone for use not on themselves, but on the opioid user, if necessary);
- Issue a standing order prescription for naloxone which allows pharmacists or other individuals (e.g., harm reduction workers) to legally distribute naloxone to individuals needing it without a prescription;
- Allow non-medical first responders or laypersons to be trained to administer naloxone.

Naloxone programs vary in approach: some focus on expanding naloxone access as broadly as possible, while others limit its distribution to certain groups.^{60; 61} Laypersons, including current active drug users, can be trained to administer naloxone as part of these programs.

While there is no comprehensive evaluation of naloxone programs, naloxone reversed at least 26,463 opioid overdoses between 1996 and 2014.⁶² Evaluations have also found naloxone programs achieving other changes that may result in future successful reversals, such as significant numbers of individuals completing training on recognizing an overdose and administering naloxone.^{27; 63}

OVERDOSE EDUCATION AND NALOXONE DISTRIBUTION (OEND) PROGRAMS. OEND programs provide a comprehensive approach to overdose prevention by addressing the context in which antidotes, such as naloxone, are distributed. Specifically, these programs use data to:

- Assess readiness of community members to address the problem of overdose;
- Monitor the impact that overdose is having on the community; and
- Help direct prevention programming to where it is needed most (e.g., areas of the community or populations most affected by overdose).

[Project Lazarus](#) is a successful example of a comprehensive OEND. Project Lazarus was first implemented in rural Wilkes County, North Carolina in response to one of the highest overdose death rates in the country—due almost exclusively to prescription opioid pain relievers. Drawing on the experiences of past successful health campaigns in injury prevention, the project's five core components include:²⁹

- (1) Community activation and coalition-building;
- (2) Required use of monitoring and surveillance data to make sure the project is focusing in on local issues and where help is needed the most;
- (3) Activities to prevent overdose, as dictated by availability of community resources, level of community sector engagement and local nature of the overdose problem;

- (4) Use of antidotes for reversing overdose by community members; and
- (5) Evaluation to refine program activities and assess effectiveness.

An evaluation of Project Lazarus found that it resulted in:^{29; 64}

- A 69% reduction in the county's overdose mortality rate;
- A 100% reduction in the number of prescription drug overdoses associated with a prescription issued by a Wilkes County prescriber; and
- A 15% reduction in the number of hospital emergency department visits for overdoses or substance abuse (this rate increased 6.9% statewide over the same time).

'GOOD SAMARITAN' LAWS. 'Good Samaritan' Laws often go hand-in-hand with programs like Project Lazarus. They provide criminal, civil, or professional liability protections for individuals responding to an overdose in good faith.^{30; 65} These laws may protect individuals reporting an overdose, but may also protect individuals involved in the overdose response, including:

- The individual who prescribed the naloxone (if applicable);
- The individual who dispensed the naloxone (if applicable); and
- The individual who administered the naloxone (i.e., a medical first responder, non-medical first responder, or layperson).

Good Samaritan Laws have been associated with greater use of 911 in the event of an overdose,⁶⁶ but as of yet, no evaluation studies were found associating them with reducing overdose directly.



OTHER STRATEGIES

Other evidence-based strategies exist that may be effective in preventing overdose, but that have not traditionally been associated with prevention, including: **Medication-Assisted Treatment**, **Connection to Follow-up Services**, and **NMUPD Prevention Strategies**. Each of these strategies is described below.

MEDICATION-ASSISTED TREATMENT. For people struggling with addiction, having access to medication-assisted treatment (MAT) can be one part of a comprehensive strategy to reduce overdose. MAT involves integrating medications (e.g., methadone, buprenorphine, or naltrexone) in conjunction with behavioral therapies and counseling to treat opioid addiction. Research demonstrates that MAT has been effective in helping people recover, as well as in reducing instances of overdose. In Baltimore, Maryland, researchers found that increased access to MAT was associated with reduction in fatal overdose.⁶⁷ To learn more about MAT, visit <http://www.samhsa.gov/medication-assisted-treatment>.

CONNECTION TO FOLLOW-UP SERVICES. In addition, people who have abstained from opioid use for a few days or longer and had a change in tolerance may be at greater risk for overdose (e.g., people released from incarceration³ or detox) and need extra attention; thus, strategies that involve

linking those populations (e.g., people released from incarceration) with treatment providers or other services for the continuation of their care may help reduce instances of overdose.

NMUPD PREVENTION STRATEGIES. Finally, it is important to remember that strategies designed to prevent NMUPD may also be effective in preventing overdose, by disrupting the link between prescription drug misuse and overdose. Information on these strategies can be found in the resource [Preventing Prescription Drug Misuse: Programs and Strategies](#),



OPIOID OVERDOSE PREVENTION TOOLKIT

For more information on practices and policies to prevent opioid-related overdoses and deaths, explore SAMHSA's revised Opioid Overdose Prevention Toolkit. [Download](#) your free copy from the SAMHSA Store today.

WHAT ARE SOME CHALLENGES WITH IMPLEMENTING HARM REDUCTION STRATEGIES?

Successful opioid overdose prevention programs are based on the premise that the responsibility for individual health and well-being is shared by community members.²⁹ However, actively engaging community members in the implementation of overdose prevention strategies—particularly those involving naloxone distribution—comes with a set of challenges that may not have been encountered with other substances, such as alcohol.

In this section, we discuss some of the challenges prevention practitioners may encounter in doing this work and potential lessons learned to guide practice, including:

- **The Need for a Comprehensive Approach**
- **Lack of Evidence**
- **Data Issues**
- **Controversy**
- **Unclear Legislation**
- **Stigma**
- **Mistrust**

NEED FOR A COMPREHENSIVE APPROACH. The actual distribution and use of naloxone is only one piece of a comprehensive approach to preventing overdose; naloxone distribution is often not sufficient by itself to overturn the increase in overdose in a community. Overdose prevention programs must be incorporated strategically into a broader prevention framework, such as SAMHSA's [Strategic Prevention Framework](#), that is informed by a thorough understanding of

community needs and resources. Best practices and guidance for implementing complementary, evidence-based strategies can be found in the Prevention Solutions@EDC website: <https://preventionsolutions.edc.org/>

LACK OF EVIDENCE. Strategies to prevent prescription drug overdose have been widely implemented in the past 15 years, yet evaluations of these efforts have not kept pace.⁶⁸ Most studies to date have focused on evaluating the effects of naloxone distribution on heroin overdose, specifically, rather than on prescription opioid overdose, generally.²⁷ The primary exceptions are studies of Project Lazarus, where investigators included other opioids (fentanyl, hydrocodone, methadone, and oxycodone).²⁹ Due to this lack of empirical effectiveness, continued research is needed.

DATA ISSUES. Documenting the opioid overdose problem with reliable data, and using these data to increase awareness of the problem, can help strengthen the argument for community action and increase stakeholder buy-in for selected programs. Prevention practitioners also rely on data to help tailor prevention strategies to meet community needs and context. For example, reliable and quality data on opioid overdoses can point practitioners to sub-populations at highest risk for overdose, making it possible to tailor interventions to that group.

Yet identifying and/or accessing fatal and nonfatal overdose data can be challenging. Because the sources of data on opioid overdose are different than sources used in other prevention work (such as alcohol prevention), it may be necessary to forge relationships with new data “gatekeepers.” For example, hospitals or law enforcement may already collect data on first responder naloxone administration, but identifying who has access to these data, and then accessing it, may require prevention practitioners to forge new and different partnerships.

In addition, tracking and monitoring naloxone distribution, as well as outcomes associated with its use, can be difficult—especially when laypeople are administering it. For example, if a mother administers a pre-prescribed dose of naloxone to her son or daughter, there is no formal way to document the event—especially if the son or daughter doesn’t need or decides not to obtain follow-up medical services from a hospital or other agency that categorically records these incidents. The only way for providers to know the naloxone was administered is if the mother refills the naloxone at a pharmacy and not through community-based programs. This potential lack of data makes information about program implementation and outcomes unreliable.

CONTROVERSY. Misconceptions about naloxone and other harm reduction strategies may impede implementation of distribution programs. These misconceptions include the beliefs that naloxone administration:^{69; 70}

- Encourages increased opioid use by creating a “safety net;”
- May reduce the number of recipients who receive follow-up treatment if administered outside a medical setting;
- Is a complex procedure that may not be appropriate for lay persons to oversee; and
- Prevents people from experiencing the negative consequences of their actions (that is, seeing their friends die).

It's important to note that no evidence supports these objections.⁷⁰ In fact, naloxone training programs improve participants' ability to recognize the signs of an opioid overdose and respond.⁷¹ Studies show that trained respondents are just as able to recognize overdose symptoms as medical professionals.⁶³ Therefore, efforts at the community level must address these misconceptions head on in order to increase readiness to accept and implement prevention strategies that include naloxone distribution.

UNCLEAR LEGISLATION. Legislation related to naloxone distribution can be nuanced and vary by state.⁶⁹ It's important to review state laws to ensure that proposed naloxone distribution programs are in compliance. For example, many state laws require specific legislative exemptions that allow individuals with a naloxone prescription to use the drug on someone without a prescription; without these exemptions, "sharing" a prescription is considered illegal.⁶⁹ State regulations may also limit who has authority to prescribe and distribute naloxone, and/or regulate the dosage that can be administered.

STIGMA. Prevention practitioners, as well as law enforcement officials and prescribers, may hold prejudices and make moral judgements about injection drug users that influence their behavior and attitudes toward them. For example, many individuals view people who are addicted to opioids as having strong personal failings, instead of viewing them as people with a chronic brain disorder. These beliefs manifest themselves in the terms used to describe people with addiction as "junkies," or other such terms that have negative connotations.

Research suggests that language matters, and that words can perpetuate stigmatizing attitudes.⁷² These attitudes may impede people with opioid misuse problems from coming forward to discuss overdose prevention with their doctors or other practitioners. Provider education and trainings regarding language and stigma may be useful in fostering an atmosphere where people, who are addicted or are misusing drugs, feel safe to engage in a prevention conversation. Health care providers can also counteract stigma by incorporating nonjudgmental language into their descriptions of the disorder—for example, by describing the results of urine analyses as "positive" or "negative," as opposed to "dirty" or "clean."⁷³

MISTRUST. Current drug users, as well as other populations targeted by overdose prevention efforts, may not be comfortable interfacing with formal institutions (like hospitals or police departments) due to past negative experiences—and, as a result, may be hesitant to attend prevention or treatment programs at those locations. Some suggestions for overcoming this potential challenge, and for building trust with these individuals, include:

- Meeting in a "neutral" location that is comfortable, convenient, and non-threatening;
- Convening trainings and meetings outside of traditional working hours; and
- Being flexible about the design and length of trainings.

Trainings for laypersons can be as short as 10 minutes and held under myriad conditions, including one-on-one sessions, group trainings, by appointment, during drop-in sessions, in treatment programs, and on street corners.^{69; 74}

Finally, fear of arrest may also prevent people with addiction problems from contacting 911 in overdose emergencies. While Good Samaritan Laws and similar statutes offer protection against arrest, individuals who misuse drugs may need reminders of their right to health services without legal repercussion, and assurance that they will not be arrested for seeking professional help. It may also be necessary to educate law enforcement about these laws and statutes, and to address any stigma (discussed above) or prejudices police officers may hold regarding active drug misusers.

CONCLUSION

Opioid overdose is of growing concern in the United States. Research has identified various factors, many associated with exposure, access, and prior use of prescription opioids, associated with the increased likelihood of overdose. Strategies described in this brief focus on reducing these risks by reducing access through monitoring and limiting prescribing behavior. They also focus on educating stakeholders, including prescribers, patients, individuals using opioids, and the general public, on the risk of overdose.

Yet education often is not enough—especially when it comes to reducing fatal overdoses. Naloxone distribution programs, paired with education and supportive policies such as Good Samaritan Laws, provide a comprehensive approach to prevention with demonstrated effectiveness. Prevention practitioners coordinating and implementing naloxone-based programs may encounter obstacles that they may not have experienced when working on preventing other substance, but there are lessons learned that provide opportunities for navigating these challenges.

GLOSSARY OF COMMONLY USED TERMS

Benzodiazepines: Class of drug used mainly as tranquilizers to control symptoms of anxiety

Buprenorphine: Medication (partial opioid agonist) used to treat opioid addiction⁷⁵

Doctor Shoppers: Term used to describe individuals who simultaneously visit multiple health care providers to obtain multiple prescriptions for medications during a single illness episode or for treating a continuous illness⁷⁶

Fentanyl: Powerful synthetic opioid pain reliever that is similar to morphine⁷⁷ and stronger than heroin. It is sometimes mixed with street heroin or cocaine to increase euphoric effects and has been noted as a possible cause for the increase in accidental overdose deaths.⁷⁸

First Responder: Person who is trained to respond to emergency situations, such as a firefighter, emergency medical technician, or police officer

Good Samaritan Laws: Laws that provide criminal, civil, or professional liability protections for individuals responding to an overdose

Heroin: Highly addictive illegal opiate that creates a surge of euphoria; processed from morphine, it can potentially cause slow respiratory distress, coma, or death^{79; 80}

Methadone: Long-acting synthetic opioid agonist medication used to treat opioid addiction by preventing withdrawal symptoms and reducing craving⁸¹

Morphine: Naturally occurring substance extracted from the seeds of poppy plants⁸⁰

Naloxone: Medication (opioid antagonist) administered to rapidly reverse opioid overdose. Naloxone is commonly sold under the brand names Narcan[®] and Evzio[®], and generically from Amphastar Pharmaceuticals, Hospira, and Mylan. It is available through injectors, auto-injectors, and nasal sprays.^{54; 57; 58}

Naltrexone: Synthetic opioid antagonist used to treat opioid addiction

Narcan: Brand name of the medication naloxone

Opiate: Naturally occurring substance that produces euphoria, derived from opium, a poppy plant

Opioid Antagonists: Medications that block the body's opioid receptors to prevent interactions with opioid drugs,⁵⁵ which can halt an overdose before its potentially fatal symptoms, such as respiratory depression, take full effect⁵⁶

Opioids: Class of drugs that includes heroin and prescription pain relievers often prescribed after surgery or injury, or for cancer pain. Common types are oxycodone (OxyContin®), hydrocodone (Vicodin®), morphine, fentanyl, and methadone.⁸²

Partial Opioid Agonist: Like opioids, it produces effects such as euphoria or respiratory depression, but effects are weaker. Its effects increase with each dose until at moderate doses they level off, even with further dose increases, which lowers the risk of misuse, dependency, and side effects.⁷⁵

Pharmacy Hopping: Also known as pharmacy shopping; patients visit multiple pharmacies to fill prescriptions, often using cash to avoid the insurance system

Prescription Drug Monitoring Programs (PDMP): Electronic databases that track and house data on prescriptions and dispensations of controlled substances with the purpose of preventing individuals from receiving medically unnecessary prescriptions that may be abused or cause overdoses

Schedule II category of drugs: Drugs that have a high potential for abuse; use can potentially lead to psychological or physical dependence; considered dangerous. Schedule II drugs include opioids such as hydrocodone (Vicodin), methadone, oxycodone (OxyContin), and fentanyl; also includes some stimulants, such as Adderall, and Ritalin.⁸³

Synthetic opioids: Opioids not found in nature, but are created chemically in a laboratory. Some common synthetic opioids include pharmaceutical fentanyl, methadone, and meperidine (demerol ®)

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