



FACING ADDICTION IN AMERICA

*The Surgeon General's
Spotlight on Opioids*



U.S. Department of Health & Human Services

Facing Addiction in America The Surgeon General's Spotlight on Opioids



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Message from the Secretary, U.S. Department of Health and Human Services



The opioid misuse and overdose crisis touches everyone in the United States. In 2016, we lost more than 115 Americans to opioid overdose deaths each day, devastating families and communities across the country. Preliminary numbers in 2017 show that this number continues to increase with more than 131 opioid overdose deaths each day. The effects of the opioid crisis are cumulative and costly for our society—an estimated \$504 billion a year in 2015—placing burdens on families, workplaces, the health care system, states, and communities.

Addressing the opioid crisis is a priority for this Administration, and the U.S. Department of Health and Human Services (HHS) is leading the public health-based approach to understanding the problem and taking action to fight it. HHS is tackling this crisis through our comprehensive five-point strategy focused on improving access to prevention, treatment, and recovery services; promoting use of overdose reversing drugs; strengthening our understanding of the epidemic through better public health surveillance; providing support for cutting-edge research on pain and addiction; and advancing better practices for pain management. Our efforts are collaborative—with all federal agencies and state and local partners working together to equip health care providers, communities, policymakers, law enforcement, and others with the information and tools they need to stem this growing epidemic.

HHS also brought a new level of awareness and commitment to the cause by declaring the opioid crisis a nationwide Public Health Emergency on October 26, 2017. Since 2017, HHS has disbursed more than \$2 billion in grants to fight the opioid crisis, more than any previous year.

The *Spotlight on Opioids* document is another important step in our efforts to address the issue. This document assembles opioid-related information from *Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health* in one document and provides updated data on the prevalence of substance use, opioid misuse, opioid use disorders, opioid overdoses, and related harms. As the Secretary of the Department of Health and Human Services, I encourage you to use the information and findings in this document and join us in taking action on this vital issue and making our communities healthier and stronger.

ALEX M. AZAR II

Secretary
U.S. Department of Health and Human Services

Foreword from the Assistant Secretary for Mental Health and Substance Use



After many years combating the opioid epidemic on the front lines of addiction psychiatry, I returned to the Substance Abuse and Mental Health Services Administration (SAMHSA) to do everything possible to ensure that American families and communities do not continue to lose their loved ones to opioids.

Now is the time to work together and apply what we know to end this epidemic once and for all. Medication-assisted treatment (MAT) combined with psychosocial therapies and community-based recovery supports is the gold standard for treating opioid addiction.

There is strong scientific evidence that this combination of therapeutic interventions is life-saving and can enable people to recover to healthy lives. SAMHSA is joining forces with agencies across HHS and the federal government to increase access to these evidence-based interventions—especially in communities hardest hit by the opioid crisis. We are (1) working with states and their communities to increase access to prevention, treatment and recovery support services for opioid use disorder; (2) supporting providers' efforts to offer specialized treatment to pregnant and postpartum women with opioid use disorder and their opioid-exposed infants; (3) promoting early intervention and treatment as healthier alternatives to detaining people with opioid addiction in our criminal justice systems; (4) and facilitating the expansion of telemedicine to deliver MAT to people in need in rural communities and to enhance rural providers' skills.

To help remove the societal stigma for those seeking addiction treatment, we have implemented new changes to the federal rules governing confidentiality and disclosures of substance use disorder patient records. Our workforce efforts include support for a variety of trainings and resources to prevent over prescribing and diversion of prescription medications and initiatives to increase the number of qualified health care providers who can offer treatment for opioid use disorder. In the crucial area of overdose prevention, we are increasing the distribution of naloxone and expanding training to first responders, prescribers, patients, employers, and family members on how to administer this live-saving antidote.

With the Office of the Surgeon General, SAMHSA has produced the *Spotlight on Opioids*—a document that offers practical information and guidance that individuals and systems can use to take action. I urge you to use it as a resource as you consider what you can do to help end this crisis and save lives. Inside and outside of government, at the national, state and local level, and in every community across this nation, we must join forces to turn the tide against the opioid crisis.

ELINORE F. McCANCE-KATZ, M.D., Ph.D.

Assistant Secretary for Mental Health and Substance Use
Substance Abuse and Mental Health Services Administration

Preface from the Surgeon General, U.S. Department of Health and Human Services



My family and I are among the millions of Americans affected by substance use disorder. My younger brother has struggled with this disease, which started with untreated depression leading to opioid pain reliever misuse. Like many with co-occurring mental health and substance use disorder conditions, my brother has cycled in and out of incarceration. I tell my family's story because far too many are facing the same worries for their loved ones. We all ask the same question: How can I contribute to ending the opioid crisis and helping those suffering with addiction?

The first step is understanding that opioid use disorder is a chronic but treatable brain disease, and not a moral failing or character flaw. Like many other chronic medical conditions, opioid use disorder is both treatable, and in many cases, preventable. It is also a disease that must be addressed with compassion. Unfortunately, stigma has prevented many sufferers and their families from speaking about their struggles and from seeking help. The way we as a society view and address opioid use disorder must change—individual lives and the health of our nation depend on it.

I believe that the best way to address the opioid crisis is to work towards achieving better health through better partnerships. Health advocates must involve businesses and law enforcement organizations—they have witnessed the negative effects of opioids and have a strong interest in helping end the epidemic. Educators and the faith-based community have unique touchpoints and resources that can be brought to bare for prevention and treatment efforts. We must listen to all communities affected by the opioid crisis—speaking with them versus at them, leveraging their strengths, and addressing their priorities. Through partnerships, we can address the overall health inequities and determinants of health that exist where we live, learn, work, and play. Together we can reduce the risks of opioid misuse, opioid use disorder, and related health consequences such as overdose and infectious disease transmission.

As Surgeon General, I care about the health and well-being of all Americans. My office worked with SAMHSA to create the *Spotlight on Opioids* so that people with a broad range of backgrounds can reference opioid-related information from *Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health* in one document. I hope that all readers use this document to determine specific actions they can take to mitigate the opioid crisis.

JEROME M. ADAMS, M.D., M.P.H.

Vice Admiral, U.S. Public Health Service
Surgeon General

Introduction and Overview

All across the United States, individuals, families, communities, and health care providers are struggling to cope with the impacts of the opioid crisis. Opioid misuse and opioid use disorders have devastating effects. As we see all too often in cases of overdose deaths, lives end prematurely and tragically. Other serious consequences include neonatal abstinence syndrome and transmission of infectious diseases such as HIV and viral hepatitis, as well as compromised physical and mental health. Social consequences include loss of productivity, increased crime and violence, neglect of children, and expanded health care costs. However, it must be noted that there are certain populations who rely on prescription opioids and are taking them responsibly under the care of a trusted provider. These include, but are not limited to: individuals in hospice care; individuals who are undergoing cancer treatment; people who recently experienced a traumatic injury; or those with long-term disability and chronic pain.

In November 2016, the Office of the Surgeon General released *Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health* (the Surgeon General's Report).¹ This landmark publication provided the latest research-based information on substance misuse, substance use disorders, and their health impacts for the general public. It provided suggestions and recommendations for action that everyone can take to prevent substance misuse and reduce its consequences. The Surgeon General's Report described a public health-based approach to substance misuse and substance use disorders. A public health approach recognizes that substance misuse and its consequences are the result of multiple interacting factors (individual, environmental, and societal) and requires that diverse stakeholders work in a coordinated way to

address substance misuse across the community.

The Office of the Surgeon General and the Substance Abuse and Mental Health Services Administration (SAMHSA) developed this *Spotlight on Opioids* from the Surgeon General's Report, in order to provide opioid-related information in one, easy-to-read document. Although *Spotlight on Opioids* does not include new scientific information, it provides the latest data on prevalence of substance use, opioid misuse, opioid use disorders, opioid overdoses, and related harms. This document sometimes discusses substance use disorders rather than opioid use disorder specifically. As indicated in the section "The Neurobiology of Substance Use, Misuse, and Addiction," opioids and other substances have similar effects on the brain's reward pathways. Additionally, it is common for people who misuse opioids to misuse other substances or to have multiple substance use disorders or co-occurring mental disorders. Therefore, the general principles related to substance use disorders often apply to opioid use disorder.

KEY TERMS

Opioid: Natural or synthetic chemicals that interact with opioid receptors on nerve cells in the body and brain, and reduce the intensity of pain signals and feelings of pain. This class of drugs that include the illegal drug heroin, synthetic opioids such as fentanyl, and pain medications available legally by prescription, such as oxycodone, hydrocodone, codeine, morphine, and many others. Opioid pain medications are generally safe when taken for a short time and as prescribed by a health care professional, but because they produce euphoria in addition to pain relief, they can be misused.

Substance Misuse: The use of any substance in a manner, situation, amount, or frequency that can cause harm to users or to those around them.

Prescription opioid (or opioid pain reliever) misuse: Use of an opioid pain reliever in any way not directed by a health care professional.

Substance Use Disorder: Occurs when the recurrent use of alcohol and/or drugs causes clinically and functionally significant impairment, such as health problems, disability, and failure to meet major responsibilities at work, school, or home. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM)-5, a diagnosis of substance use disorder is based on evidence of impaired control, social impairment, risky use, and pharmacological criteria.

Opioid Use Disorder: A disorder characterized by loss of control of opioid use, risky opioid use, impaired social functioning, tolerance, and withdrawal.

Opioids: The Current Landscape

To obtain a copy of *Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health*, please visit <https://addiction.surgeongeneral.gov>. Please refer to that Report for more in-depth discussion of the topics presented here.

Historically, opioids have been used as pain relievers. However, opioid misuse presents serious risks, including overdose and opioid use disorder. The use of illegal opioids such as heroin—a highly addictive drug that has no accepted medical use in the United States—and the misuse of prescription opioid pain relievers can have serious negative health effects. Fentanyl is a synthetic opioid medication that is used for severe pain management and is considerably more potent than heroin. Sometimes, prescription fentanyl is diverted for illicit purposes. But fentanyl and pharmacologically similar synthetic opioids are also illicitly manufactured and smuggled into the United States.²

These illicitly made synthetic opioids are driving the rapid increase in opioid overdose deaths in recent years.³⁻⁵ Illicitly made fentanyl and other pharmacologically similar opioids are often mixed with illicit substances such as heroin. They can also be made into counterfeit prescription opioids or sedatives and sold on the street.

PREVALENCE OF OPIOID MISUSE AND OPIOID USE DISORDER

Based on data from SAMHSA's National Survey on Drug Use and Health, in 2017, 11.1 million people aged 12 and older had misused prescription pain relievers in the past year.⁶ Repeated use of opioids greatly increases the risk of developing an opioid use disorder.

In 2017, about 1.7 million people aged 12 and older had a prescription pain reliever use disorder in the past year. In 2017, 953,000 people received treatment for the misuse of opioid pain relievers.⁶

Heroin use is also a concern. In 2017, about 886,000 people aged 12 or older reported having used heroin in the past year.⁶ During that same time period, about 652,000 people aged 12 or

older were estimated to have a heroin use disorder.

Specialty treatment is defined as receiving treatment at a substance use rehabilitation facility (inpatient or outpatient), hospital (inpatient services only), and/or mental health center. Only 54.9 percent of those aged 12 and older with heroin use disorder received treatment for illicit drug use at a specialty treatment facility.⁶ Only 28.6 percent of those aged 12 and older with an opioid use disorder in the past year received treatment for illicit drug use at a specialty treatment facility.⁶

OPIOID OVERDOSE DEATHS

Opioids can depress critical areas in the brain that control breathing, heart rate, and body temperature and cause them to stop functioning. Opioids were involved in 42,249 deaths in 2016—more than 115 deaths every day, on average. According to preliminary estimates from the Centers for Disease Control and Prevention (CDC), 47,872 people died from an opioid overdose in 2017.⁷ Opioid overdose deaths were five times higher in 2016 than in 1999. The majority of these opioid overdose deaths were unintentional.^{3,4}

The opioid crisis is being driven by three trends: (1) an increase of prescription opioid overdose deaths since 1999; (2) the four-fold increase in heroin overdoses since 2010; and (3) the tripling death rate for synthetic opioids like fentanyl since 2013. As a result, the number of people dying from opioid overdoses has increased dramatically.⁸ In fact, the average life expectancy in the United States decreased for the second year in a row in 2016, falling by about 1.2 months, in part due to opioid overdose deaths.⁹

NEONATAL ABSTINENCE SYNDROME (NAS)

Newborns may experience NAS, a withdrawal syndrome following exposure to drugs while in the mother's womb.¹⁰ NAS, also known as neonatal opioid withdrawal syndrome, is an expected and treatable condition following repeated substance exposure in utero, which may have long-term health consequences for the infant.¹¹ NAS signs include neurological excitability, gastrointestinal dysfunction, and autonomic dysfunction.¹² Newborns with NAS are more likely than other babies to have low birthweight and respiratory complications. The incidence of NAS has increased dramatically in the last decade along with increased opioid misuse.¹³ These data suggest the need to develop and test measures to reduce the impacts of prenatal exposure to opioids (e.g., skin to skin care, and rooming in). Healthcare providers should discuss possible risks associated with opioid use during pregnancy to both the mother and fetus.¹⁴ Given that prescription opioid pain relievers are at times deemed clinically appropriate during pregnancy and there may be medical consequences when an individual with an opioid use disorder discontinues opioids abruptly, the [*CDC Guideline for Prescribing Opioids for Chronic Pain*](#) includes information specific to implications for pregnant women in particular.¹⁵ SAMHSA's [*Clinical Guidance for Treating Pregnant and Parenting Women With Opioid Use Disorder and Their Infants*](#) also provides guidance for the management of pregnant and parenting women with opioid use disorder and their infants.

INFECTIOUS DISEASE TRANSMISSION

Injection drug use (including injection of prescription opioid medications and illicit opioids such as heroin) is integrally linked

with transmission of HIV, viral hepatitis, other blood-borne diseases (e.g., endocarditis, a life threatening heart valve infection), and bacterial infections, including [antibiotic resistant organisms](#) (e.g., Methicillin-resistant Staphylococcus aureus or MRSA).¹⁶ Approximately, one in 10 new HIV diagnoses occur among people who inject drugs. The CDC has observed a steady decline in HIV diagnoses attributable to injection drug use since the mid-1990s, but progress may be slowing.¹⁷ Reported rates of acute hepatitis C virus (HCV) infection have also increased significantly.¹⁸ The opioid crisis is helping to fuel these increases as well as rising health care costs associated with treating these conditions.

IMPORTANCE OF PREVENTION, SCREENING, EARLY INTERVENTION, AND TREATMENT

The risk of death and other significant consequences of opioid misuse highlight the importance of prevention, screening, and treatment for substance use disorders. Evidence-based interventions to prevent substance use, misuse and addiction target risk factors and enhance protective factors. Such interventions need to begin early in life to delay or prevent initiation of substance use and continue throughout the lifespan. For example, childhood trauma like adverse childhood experiences (ACEs) have been repeatedly linked to substance misuse.^{19, 20} Primary prevention can also begin in the healthcare setting with prescribers using effective strategies to reduce overdoses involving prescription opioids such as safe prescribing practices. Currently, few primary care providers screen for or treat substance use disorders. Additionally, it is common for people who misuse opioids to misuse other substances or to have multiple substance use disorders, childhood trauma, or co-occurring physical and mental disorders. This highlights the need

for full clinical assessment and comprehensive treatment services that are matched to an individual's needs. Prevention, screening, early intervention, and treatment—including medication-assisted treatment, which combines medication with behavioral therapies and psychosocial supports—are discussed in this report.

ACCESS TO TREATMENT

Despite the fact that effective treatments for opioid use disorder do exist, only about one in four people (28.6 percent) with this disorder received specialty treatment for illicit drug use in the past year.⁶ This “treatment gap” is not unique to opioid use disorder. Only about 12.2 percent of adults who need treatment for a substance use disorder receive any type of specialty treatment.^{6, 21} Additionally, 45.5 percent of people with a substance use disorder also have a mental disorder, yet only about half (51.0 percent) receive treatment for either disorder and only a small minority receive treatment for both.²¹

Many factors contribute to this “treatment gap.” For far too long, too many in our country have viewed addiction as a moral failing rather than a disease. This stigma has made people with substance use disorders less likely to seek help. Other contributing factors include the inability to access or afford care and a lack of screening for substance misuse and substance use disorders in general health care settings. Furthermore, 39.7 percent of individuals who know they have an alcohol or drug problem are not ready to stop using. Others simply feel they do not have a problem, do not have a need for treatment, or believe they can handle the problem without treatment.⁶

Integrating substance use disorder services, as well as screening for early risk factors for

substance use disorders, into mainstream health care and ensuring all Americans have access to those services has the power to substantially improve outcomes for individuals and reverse the opioid crisis. These actions may reduce overall health care costs for individuals and their families, reduce health disparities among high-risk groups, and reduce costs for health care systems and communities.

Despite the promise that integration offers for the prevention and treatment of substance use disorders, challenges remain. Specifically:

- The substance use disorder treatment system is underprepared to support care coordination;
- The primary care system has been slow to implement medication-assisted treatment (MAT) as well as prevention, early identification, and other evidence-based recommendations;
- The existing health care workforce is already understaffed and often lacks the necessary training and education to address substance use disorders; and
- The need to protect patient confidentiality creates hurdles for sharing of information.

Additionally, some ingrained attitudes must change. For example, as is discussed later in this report, the use of some medications for opioid use disorder (methadone and buprenorphine) remains surrounded by misconceptions and prejudices that have hindered their delivery.

However, the federal government is currently collaborating with key stakeholders to address the challenges discussed above. HHS has invested \$2 billion in opioid-specific funding for states, which encompasses the State Targeted Response (STR) to the Opioid Crisis and the State Opioid Response (SOR) grant programs administered by SAMHSA to support a comprehensive array of

prevention, treatment, and recovery services. This includes funding to expand provider capacity and increase patient access to evidence-based treatment for opioid use disorder.

The Health Resources and Services Administration (HRSA) has invested funds to support community health centers in implementing and advancing evidence-based strategies, including expanded MAT services, expansion of mental health and substance use disorder services focusing on treatment, prevention and awareness of opioid misuse, and the integration of substance use disorder services into primary care. Since January 2017, over 200 health centers have been engaged in a HRSA-funded technical assistance opportunity through the Opioid Addiction Treatment Extension for Community Healthcare Outcomes project, a virtual, national technical assistance effort to enhance health center capacity to treat substance misuse. HRSA is also providing funds to train the primary care and behavioral health workforce in opioid addiction.

The National Institutes of Health (NIH), in collaboration with other federal agencies, is developing a study as part of the Helping to End Addiction Long-term (HEAL) Initiative called the HEALing Communities Study. This comprehensive study will test the implementation of an integrated set of addiction prevention and treatment approaches across healthcare, behavioral health, justice systems, state and local governments, and community organizations to prevent and treat opioid misuse and opioid use disorder.

The Agency for Healthcare Research and Quality (AHRQ) is investing in research grants to discover how to best support primary care practices and rural communities in delivering MAT for opioid use disorders. AHRQ has released a [report](#) that

includes links and descriptions to nearly 250 tools and resources available for health care professionals, patients, and communities to help implement MAT in primary care settings.²²

The Centers for Medicare and Medicaid Services (CMS) is now offering a more flexible, streamlined approach to accelerate states' ability to respond to the national opioid crisis through section 1115 demonstrations announced in November 2017. The Medicare program is focused on prescription opioid safety, access to MAT, and non-opioid alternatives for pain management.

The HHS Center for Faith-Based and Neighborhood Partnerships created the [*Opioid Epidemic Practical Toolkit*](#) to equip local communities—lay persons, faith groups, non-profits, and health care providers—with practical steps to bring hope and healing to the millions suffering the consequences of opioid misuse.

REASONS FOR OPTIMISM

Despite the challenges, this is a time of great hope and opportunity. Research on alcohol and drug use and addiction has led to an increase of knowledge and to one clear conclusion: Addiction to alcohol or drugs is a chronic but treatable brain disease that requires medical intervention, not moral judgment. Additionally, policies and programs have been developed that are effective in preventing alcohol and drug misuse, and reducing its negative effects. Addressing risk and protective factors for individuals and communities can help prevent opioid misuse. Evidence-based treatments—both medications and behavioral therapies—can save lives and restore people's health, well-being, and functioning, as well as reduce the spread of infectious diseases and lessen other consequences. Support services such as mutual aid groups, recovery housing, and recovery coaches are increasingly available to help people

in the long and often difficult task of maintaining recovery after treatment. Transformations in the health care landscape are supporting integration of substance use disorder treatment with general health care in ways that will better address the needs of the millions of people with substance use disorders. Technology-based interventions offer many potential advantages and can increase access to care in underserved areas and settings. Use of health information technology is expanding to support greater communication and collaboration among providers, fostering better-integrated and collaborative care, while at the same time protecting patient privacy. Together, these changes are leading to a new landscape of care for alcohol and drug misuse problems in America, and to new hope for millions of people.

The over-prescription of powerful opioid pain relievers was associated with a rapid escalation of use and misuse of these substances. The good news is that a decrease in the amount of opioid pain relievers prescribed has been reported.²⁰ However, the amount of opioids prescribed in 2015 remained approximately three times higher than in 1999 and varied substantially across the country.²³

Progress has been made regarding the prescribing of buprenorphine and naltrexone-extended release (XR)—medications that, with psychosocial supports, are part of evidence-based medication-assisted treatment for opioid use disorder. Individuals receiving buprenorphine with counseling have significantly lower total health care costs than individuals receiving little or no treatment for their opioid use disorder (\$13,578 compared to \$31,055).²⁴ Buprenorphine may be prescribed by qualifying health care professionals who have met the statutory requirements for a waiver in accordance with the Controlled Substances Act

(21 U.S.C. 823(g)(2)(D)(iii)).²⁵ Naltrexone-XR can be prescribed by any licensed clinician who has prescribing authority. Although there is no limit to the number of patients a prescriber can treat with naltrexone-XR, qualifying physicians can request to treat up to 275 patients with buprenorphine, subject to renewal and reporting requirements. Raising the number of patients that qualifying physicians can treat with buprenorphine (“the cap”) may increase access to this medication, though this may not be the primary barrier to accessing treatment. Broader efforts to ensure appropriate training for more health care professionals continue. Nurse practitioners and physician assistants can prescribe naltrexone-XR without limitations and, if they qualify, can also prescribe buprenorphine. Currently, 44,968 physicians and 8,825 nurse practitioners and physician assistants, are approved to prescribe buprenorphine (as of September 8, 2018).

Neurobiology of Substance Use, Misuse, and Addiction

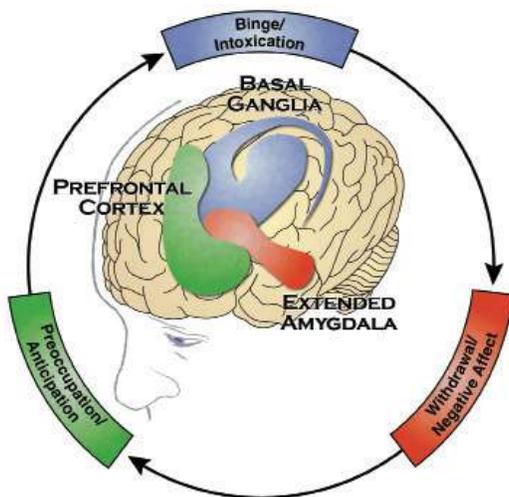


Figure 1: The Three Stages of the Addiction Cycle and the Brain Regions Associated With Them

KEY TERMS

Relapse: The return to drug use after a significant period of abstinence.

Severe substance use disorders (commonly called addictions) were once viewed largely as a moral failing or character flaw, but are now understood to be chronic diseases that are subject to relapse, and characterized by clinically significant impairments in health, social function, and voluntary control over substance use.²⁶ All addictive substances—including opioids—have powerful effects on the brain. They “hijack” the brain’s reward system by inducing feelings that motivate people to use those substances again and again, despite the risks for significant harms. With repeated exposure, progressive changes occur in the structure and function of the brain, compromising brain function and driving chronic misuse. These brain changes endure long after an individual stops using substances and may produce continued, periodic cravings for the substance that can lead to relapse for many years.^{27,28}

Well-supported evidence suggests that the addiction process involves a three-stage cycle: (1) Binge/Intoxication, the stage at which an individual consumes an intoxicating substance and experiences its rewarding or pleasurable effects; (2) Withdrawal/Negative Affect, the stage at which an individual experiences a negative physical and emotional state in the absence of the substance; and (3) Preoccupation/Anticipation, the stage at which one seeks substances again after a period of abstinence. This cycle becomes more severe as a person continues substance use and as it produces dramatic changes in brain function that reduce a person’s ability to control his or her substance use. The three stages are linked to and feed on each other, but they also involve different brain regions: (1) the basal ganglia (binge/intoxication), (2) the extended amygdala (withdrawal/negative affect), and (3) the prefrontal cortex (preoccupation/anticipation).²⁹

Like other drugs, opioids affect the brain's reward system. Opioids attach to opioid receptors in the brain, causing euphoria (the high), drowsiness, and slowed breathing, as well as reduced pain signaling (which is why they are frequently prescribed as pain relievers).

Opioid addiction typically involves a pattern of: (1) intense intoxication, (2) the development of tolerance, (3) escalation in use, and (4) withdrawal signs that include profound negative emotions and physical symptoms, such as bodily discomfort, pain, sweating, and intestinal distress. As use progresses, the opioid must be taken to avoid the severe negative effects that occur during withdrawal. With repeated exposure to opioids, stimuli associated with the pleasant effects of the substances (e.g., places, persons, moods, and paraphernalia) and with the negative mental and physical effects of withdrawal can trigger intense craving or preoccupation with use.

KEY TERMS

Dependence: A state in which an individual only functions normally in the presence of a substance, experiencing physical disturbance when the substance is removed. A person can be dependent on a substance without being addicted, but dependence sometimes leads to addiction.

Addiction: Common name for a severe substance use disorder, associated with compulsive or uncontrolled use of one or more substances. Addiction is a chronic brain disease that has the potential for both recurrence (relapse) and recovery.

Tolerance: Alteration of the body's responsiveness to alcohol or a drug such that higher doses are required to produce the same effect achieved during initial use.

Withdrawal: A set of symptoms and signs that are experienced when discontinuing use of a substance to which a person has become dependent or addicted, which can include negative emotions such as stress, anxiety, or depression, as well as physical effects such as nausea, vomiting, muscle aches, and cramping, among others. Withdrawal symptoms often lead a person to use the substance again.

The Continuum of Care for Substance Misuse and Substance Use Disorders

Effective identification, intervention, and integration of prevention, treatment, and recovery services across health care systems is key to addressing substance misuse and its consequences, and it represents the most promising way to improve access to and quality of treatment. The continuum of care approach is a strategy to promote this integration by providing individuals an array of service options—including prevention, early intervention, treatment, and recovery support—based on need.

PREVENTION

Substance misuse can put individual users and others around them at risk of harm, whether or not they have a disorder. Also, early initiation of substance use, substance misuse, and substance use disorders are associated with a variety of negative consequences, including deteriorating relationships, poor school performance, loss of employment, diminished mental health, and increases in sickness and death (e.g., motor vehicle crashes, poisoning, violence, or accidents).³⁰⁻³² It is therefore critical to prevent the full spectrum of substance misuse problems in addition to treating those with substance use disorders. Although there are exceptions, most risk and protective factors associated with substance use also predict other problems affecting youth, including delinquency, psychiatric conditions, violence, and school dropout. Therefore, programs and policies addressing those common or overlapping predictors of problems have the potential to simultaneously prevent substance misuse as well as other undesired outcomes.³³⁻³⁵

Evidence-based interventions to prevent substance use, misuse, and addiction, target risk factors and enhance protective factors. For example, effective school-based strategies that combine substance use prevention and health

education curricula, link students to youth friendly mental and behavioral health providers in the community, and increase protective factors such as parent engagement and school connectedness can prevent the initiation of drug use.

The Institute of Medicine (IOM), now known as the National Academy of Medicine, has described three categories of prevention interventions: universal, selective, and indicated.³⁶ With respect to substance use interventions, universal interventions are aimed at all members of a given population (for instance, population-level strategies); selective interventions are aimed at a subgroup determined to be at high-risk for substance use (for instance, justice-involved youth); and indicated interventions are targeted to individuals who are already using substances but have not developed a substance use disorder. Schools and communities are encouraged to use a combination of these three types of preventive interventions based on their needs. Further research is needed to determine the best mix of prevention interventions.

Evidence-based prevention interventions, carried out before the need for treatment, are critical because they can prevent initiation of substance use, delay early use, and stop the progression from use to problematic use or to a substance use disorder. The good news is that there is strong scientific evidence supporting the effectiveness of prevention programs and policies. The *Surgeon General's Report* identified 42 prevention programs that met criteria for inclusion based on an extensive review of published research studies. These are described in the [Surgeon General's Report Appendix B](#) ("Evidence-Based Prevention Programs and Policies"). In addition, education campaigns target the overall public to improve general

understanding about addiction, community health and safety risks, and how to access available treatment services.³⁷⁻³⁹ An example is [CDC's Rx Awareness Campaign](#), which aims to increase awareness that prescription opioids can be addictive and dangerous.⁴⁰

The *Surgeon General's Report* also discusses the economics of prevention. Evidence-based prevention interventions can decrease costs related to substance use-related crime, lost work productivity, and health care. Research has found that for every dollar spent on prevention programs, the program returns between \$0.62 and \$64.18 in reduced costs.⁴¹ Most of the rigorous research on the effectiveness and population impact of prevention policies and programs has addressed alcohol rather than opioids. Nevertheless, prevention is critical to addressing the opioid crisis.

KEY TERMS

Risk factors: Factors that increase the likelihood of beginning substance use, of regular and harmful use, and of other behavioral health problems associated with use.

Protective factors: Factors that directly decrease the likelihood of substance use and behavioral health problems or reduce the impact of risk factors on behavioral health problems.

Evidence-based interventions: Refers to programs and policies that are supported by research and proven to be effective.

SCREENING AND EARLY INTERVENTION

Given the impact of opioid misuse on public health and the increased risk for long-term medical consequences, including opioid use disorders and overdose, it is critical to prevent misuse from starting and to identify those who have already begun to misuse these substances and intervene early. Health care professionals

can offer prevention advice, screen patients for substance misuse and substance use disorders, as well as risk factors for substance use such as childhood trauma and ACEs, and provide early interventions in the form of motivational approaches.^{42, 43}

Primary care has a central role in this process, because it is the site for most preventive and ongoing clinical care for patients and the hub for specialty care. The U.S. Preventive Services Task Force (USPSTF) recommends that clinicians screen adults aged 18 years or older for alcohol misuse and provide persons engaged in risk or hazardous drinking with brief behavioral counseling interventions to reduce alcohol misuse.⁴² This approach is called Screening, Brief Intervention and Referral to Treatment or SBIRT for adult alcohol use. While the evidence rating from USPSTF for screening and intervention for illicit substance use remains “I” for insufficient evidence, asking about alcohol use may present a natural opportunity to ask about other substance use—including opioids.

To curb the rise in opioid overdose deaths, CDC recommends screening for substance use and substance use disorders before and during the course of opioid prescribing for chronic pain, combined with patient education.¹⁵ The National Institute on Drug Abuse’s (NIDA) [Opioid Risk Tool](#) and the [NIDA Quick Screen](#) are available to help practitioners screen for substance use in general medical settings.

Prevention strategies specifically targeting prescriber behavior have also been developed. In March 2016, the [CDC Guideline for Prescribing Opioids for Chronic Pain](#) was released.¹⁵ The guideline informs health care professionals about the consequences and risks of using opioids to treat chronic pain and provides research-based recommendations

regarding when to start opioids for chronic pain, how to select the appropriate dosage, and how to assess risks and address harms from opioid use. This guideline can help providers reduce opioid misuse and related harms among those with chronic pain and is intended for use by primary care providers in caring for patients aged 18 and older outside of cancer, palliative, or end-of-life care. To help encourage uptake and use of the guideline, CDC has developed a [suite of translational materials](#) (e.g., fact sheets, training modules, videos, mobile apps, etc.) for clinicians and patients. Additionally, it is crucial to improve access to non-opioid pain management options, and more research is needed in this important area.

As part of prevention, it is important to develop better pain management strategies. In March 2016, the [National Pain Strategy: A Comprehensive Population Health-Level Strategy for Pain](#) was released. The report addresses the current pain management environment and describes strategies and objectives to improve pain management, including improving access to non-pharmacologic and non-opioid pain management options. More research is needed in this important area.

Research has documented the effects of prescription drug monitoring programs (PDMPs) on misuse of prescription medications.⁴⁴ PDMPs are state-controlled electronic databases that track controlled substance prescriptions within a state and provide prescribing and patient behavior information to prescribers and other authorities who are granted access to the information. Findings have been mixed.⁴⁵ However, studies have shown that certain characteristics of PDMPs enhance their impact. For example, specific PDMP policies, such as mandated use and timely reporting, are

associated with reductions in opioid overdose mortality.⁴⁶ PDMPs serve many purposes beyond preventing inappropriate prescribing—they can be leveraged as a clinical decision support, a public health surveillance tool, and have utility to the public safety sector, especially as interstate and intrastate interoperability improve.

TREATMENT AND MANAGEMENT OF OPIOID USE DISORDERS

Substance use disorder treatment is designed to help individuals stop or reduce harmful substance misuse, improve their health and social function, and manage their risk for relapse. In this regard, substance use disorder treatment is effective and has a positive economic impact. Research shows that treatment improves individuals' productivity,⁴⁷ health,^{47,48} and overall quality of life.⁴⁹⁻⁵¹ Incorporating treatment for multiple substance use disorders could also be beneficial. For example, integrating tobacco cessation programs into substance use disorder treatment does not jeopardize treatment outcomes, and is associated with a 25 percent increase in the likelihood of maintaining long-term abstinence from alcohol and drug misuse.^{52,53} Consequently, substance use disorders can be identified quickly and reliably in many medical and social settings, including primary care. In contrast, severe, complex, and chronic substance use disorders often require specialty substance use disorder treatment and continued post-treatment support to achieve full remission and recovery.

KEY TERM

Substance use disorder treatment: A service or set of services that may include medication, counseling, and other supportive services designed to enable an individual to reduce or eliminate alcohol and/or other drug use, address associated physical or mental health problems, and restore the patient to maximum functional ability.⁵⁴

TREATMENT PLANNING.

Among the first steps involved in substance use disorder treatment are assessment and diagnosis. The diagnosis of substance use disorders is based primarily on the results of a clinical interview, and several assessment instruments are available. The diagnosis of a substance use disorder is made by a trained professional based on 11 symptoms defined in the Fifth Edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5). Conducting a clinical assessment is essential to understanding the nature and severity of the patient's health and social problems that may have led to or resulted from their substance use. This assessment is important in determining the intensity of care that will be recommended and the composition of the treatment plan.⁵⁵ After a formal assessment, the information is discussed with the patient to jointly develop a personalized treatment plan designed to address the patient's needs.^{55,56} The treatment plan and goals should be person-centered and include strength-based approaches, or ones that draw upon an individual's strengths, resources, potential, and ability to recover, to keep the patient engaged in care. As mentioned previously, co-occurring mental health conditions are common among individuals with substance use disorder. Therefore, individualized treatment plans should consider these conditions and ensure that co-occurring mental health conditions are addressed. Tailoring treatment to the patient's specific needs increases the likelihood of successful treatment engagement and retention, and research shows that those who participate more fully in treatment typically have better outcomes.⁵⁷ Throughout treatment, individuals should be periodically reassessed to determine response to treatment and to make any needed adjustments to the treatment plan.

HARM REDUCTION STRATEGIES.

Strategies to reduce the harms associated with opioid misuse and opioid use disorder have been developed as a way to engage people in treatment and to help preserve the life and health of those who are not ready to participate in treatment. Strategies include outreach and education programs, syringe services programs (sometimes called needle/syringe exchange programs), overdose prevention education, and access to naloxone to reverse potentially lethal opioid overdose.^{58, 59} The goal of syringe services programs is to prevent transmission of infectious agents and other harms by giving individuals who inject drugs sterile equipment and other support services at little or no cost and linking them to medical and mental health services, including substance use disorder treatment programs, as well as social services such as housing assistance and case management.⁶⁰ Evaluation studies have clearly shown that syringe services programs are effective in reducing HIV and HCV transmission and do not increase rates of community drug use.⁶¹ They help individuals engage in treatment to reduce, manage, and stop their substance use when appropriate. Harm reduction programs provide public health-oriented, cost-effective, and often cost-saving services to prevent and reduce substance use-related risks among those actively using substances, and substantial evidence supports their effectiveness.^{59, 62, 63}

NALOXONE.

[Naloxone](#) is an opioid antagonist medication approved by the U.S. Food and Drug Administration (FDA) to reverse opioid overdose. Naloxone is available in injectable and nasal spray forms. It works by displacing opioids from receptors in the brain, thereby interrupting and blocking their effects on breathing and heart rate. Typically, there is a 1- to 3-hour window of opportunity after an individual has taken the

drug in which bystanders can take action to reverse the overdose and prevent death.⁵⁹ However, the introduction of illicitly manufactured fentanyl and other highly potent synthetic opioids to the drug supply makes immediate access to naloxone (and perhaps multiple administrations) crucial to effective overdose death prevention.

KEY TERM

Antagonist: A chemical substance that binds to and blocks the activation of certain receptors on cells, preventing a biological response. Naloxone and naltrexone are examples of opioid receptor antagonists.

The rising number of deaths from opioid overdose has led to increasing public health efforts to make naloxone available to at-risk individuals and their families, as well as to emergency medical technicians, police officers, other first responders, or community members through community-based opioid overdose prevention programs. Although regulations vary by state, most states have passed laws [expanding access to naloxone](#) without a patient-specific prescription.⁶⁴ The distribution of take-home doses of naloxone, along with education and training, for those actively using opioids and their peers and family members have the potential to help decrease opioid overdose-related deaths.^{65, 66} Research demonstrates that naloxone does not increase the prevalence or frequency of opioid use.⁶⁷ SAMHSA has developed an [Opioid Overdose Prevention Toolkit](#) for community members, first responders, prescribers, patients and families, and those recovering from opioid overdose.⁶⁸ Good Samaritan Laws exist in most states. In the event of an overdose, these types of laws may protect the victim and/or the person seeking medical help for the victim from drug possession charges.⁶⁹ Given that most people overdose

at home or outside of a medical setting, the Surgeon General released a [public health advisory](#) on community use of naloxone to reduce deaths from opioid overdose.

WITHDRAWAL MANAGEMENT.

Withdrawal management, often called “detoxification” or medically supervised withdrawal, includes interventions aimed at managing the significant physical and emotional distress that occurs after a person stops using opioids.⁷⁰ When clinicians follow evidence-based standards of care,⁷¹ withdrawal management is highly effective in preventing immediate and serious medical consequences associated with discontinuing substance use.⁷² However, it is not an effective therapy for any substance use disorder by itself and should always be followed by evidence-based treatment, such as injectable naltrexone for opioid use disorder.⁷³

Because withdrawal management reduces much of an individual’s acquired tolerance to opioids, any return to use increases the risk of overdose and even death. Therefore, a person with opioid use disorder who undergoes medical withdrawal should be offered injectable naltrexone to protect him or her in case of relapse to opioid use.⁷³ It is critically important for health care providers to facilitate engagement into the appropriate intensity of treatment.⁷² Medically supervised withdrawal is *not* indicated for pregnant women who use or misuse opioids. Medically supervised withdrawal is associated with a high rate of return to substance use, which puts both the pregnant woman and the fetus at risk.¹¹ Medication-assisted treatment with buprenorphine or methadone for pregnant women with opioid use disorder has been shown to improve outcomes and should be offered.¹⁵

EVIDENCE-BASED TREATMENT: COMPONENTS OF CARE

As discussed in the *Surgeon General’s Report* Chapter 4 (“Early Intervention, Treatment, and Management of Substance Use Disorders”), evidence-based treatment involves particular components of care. Table 1 (page 20) summarizes what people should look for in a treatment program.

All substance use disorder treatment programs are expected to individualize treatment using evidence-based clinical components. These components are clinical practices that research has shown to be effective in reducing substance use and improving health and functioning. These include behavioral therapies, medications, and recovery support services (RSS). Treatment programs that offer more of these evidence-based components have the greatest likelihood of producing better outcomes.

Table 1: What People Should Look for in a Treatment Program

COMPONENTS OF CARE
Personalized diagnosis, assessment, and treatment planning—one size does not fit all, and treatments should be tailored to you and your family.
Long-term disease management—addiction is a chronic disease of the brain with the potential for both recovery and recurrence. Long-term outpatient care is the key to recovery.
Access to FDA-approved medications.
Effective behavioral interventions delivered by trained professionals.
Coordinated care for other/co-occurring diseases and disorders.
Recovery support services—such as mutual aid groups, peer support specialists, and community services that can provide continuing emotional and practical support for recovery.

MEDICATIONS AND MEDICATION-ASSISTED TREATMENT (MAT) FOR OPIOID USE DISORDERS.

Comprehensive MAT programs include behavioral therapies and psychosocial supports as well as medication. The FDA has approved medications for use in the management of opioid use disorder (see table below).

Methadone use in treatment of opioid use disorders can only be dispensed in a federally-regulated opioid treatment program (OTP). Buprenorphine and naltrexone can be dispensed in an OTP and also can be prescribed in medical care settings, such as primary care, and do not require an OTP. Use of these drugs is an individual decision for prescribers and their patients.

Table 2: Medications/Pharmacotherapies for Opioid Use Disorder (OUD)

Medication	Frequency of Administration	Route of Administration	Who May Prescribe or Dispense
Methadone	Daily	Orally as liquid concentrate, tablet, or oral solution of diskette or powder	SAMHSA-certified outpatient OTPs dispense methadone for daily administration either onsite or, for stable patients, at home.
Buprenorphine	Daily for tablet or film (also alternative dosing regimens)	Oral tablet or film dissolved under the tongue	Physicians, nurse practitioners, and physician assistants with a federal waiver . Prescribers must complete special training to qualify for the federal waiver to prescribe buprenorphine, but any pharmacy can fill the prescription. OTPs can prescribe buprenorphine within the rules that regulate these facilities.
	Every 6 months	Subdermal implant	
	Monthly	Injection (for moderate to severe OUD)	
Naltrexone	Monthly	Intramuscular injection into the gluteal muscle by a physician or other health care professional	Any individual who is licensed to prescribe medicines (e.g., physician, physician assistant, or nurse practitioner) may prescribe and/or order administration by qualified staff.

NOTE: Adapted from *Clinical Use of Extended-Release Injectable Naltrexone in the Treatment of Opioid Use Disorder: A Brief Guide* (SMA14-4892R).⁷³

KEY TERM

Opioid Treatment Program (OTP): SAMHSA-certified program, usually comprising a facility, staff, administration, patients, and services, that engages in supervised assessment and treatment, using methadone, buprenorphine, or naltrexone, of individuals who have opioid use disorders. An OTP can exist in a number of settings, including but not limited to intensive outpatient, residential, and hospital settings. Services may include medically supervised withdrawal and/or maintenance treatment, along with various levels of medical, psychiatric, psychosocial, and other types of supportive care.

Those FDA-approved medications listed in Table 2 demonstrate “well-supported” evidence of safety and effectiveness for improving outcomes for individuals with opioid use disorders.^{74,}
⁷⁵ Only appropriately trained health care professionals should decide, in conjunction with the person in need of treatment, whether and which medication is needed as part of treatment, how the medication is provided in the context of other clinical services, and under what conditions the medication should be discontinued. MAT for patients with an opioid use disorder must be delivered for an adequate duration in order to be effective. Patients who receive MAT for fewer than 90 days have not shown improved outcomes.⁷⁶ One study suggested that individuals who receive MAT for fewer than 3 years are more likely to relapse than those who are in treatment for 3 or more years.⁷⁷



In 2018, SAMHSA released *Clinical Guidance for Treating Pregnant and Parenting Women With Opioid Use Disorder and Their Infants*. This Clinical Guide provides comprehensive, national guidance for optimal management of pregnant and parenting women with opioid use disorder and their infants.

It helps health care professionals and patients determine the most clinically appropriate action for a particular situation and informs individualized treatment decisions.

MAT FOR PREGNANT WOMEN

Long-term methadone maintenance treatment has demonstrated improved outcomes for individuals (including pregnant women) with opioid use disorders. Buprenorphine is associated with improved outcomes compared to placebo for individuals (including pregnant women) with opioid use disorders. The safety of naltrexone for pregnant women has not been established.

KEY TERM

Agonist: A chemical substance that binds to and activates certain receptors on cells, causing a biological response. Fentanyl and methadone are examples of opioid receptor agonists.

State agencies that oversee substance use disorder treatment programs use a variety of strategies to promote implementation of MAT, including education and training, financial incentives (e.g., linking funding to the provision of MAT), policy mandates, and support for infrastructure development.⁷⁸ Nevertheless, multiple factors create barriers to widespread use of MAT. These include provider, public, and client attitudes and beliefs about MAT; lack of an appropriate infrastructure for providing medications; payment policies; need for staff training and development; and legislation, policies, and regulations that limit MAT implementation.⁷⁸

The use of opioid agonist medications to treat opioid use disorders has always had its critics. Many people, including some policymakers, authorities in the criminal justice system, and treatment providers, have viewed maintenance treatments as “substituting one substance for another”⁷⁹ and have adhered instead to an abstinence-only philosophy that avoids the use of medications, especially those that activate opioid receptors. Such views are not scientifically supported; the research clearly demonstrates that opioid agonist therapy leads to better treatment outcomes compared to behavioral treatments alone. Moreover, withholding medications greatly increases the risk of relapse to illicit opioid use and overdose death. Decades of research have shown that the benefits of opioid agonist therapy greatly outweigh the risks associated with diversion.⁸⁰⁻⁸²

MAT FOR CRIMINAL JUSTICE POPULATIONS

Upon release, incarcerated individuals will have lower tolerance to opioids. They are at high risk for overdose and death if they return to opioid use in the community. There is typically insufficient pre-release counseling and post-release follow-up provided to this population to reduce these risks. Research findings from randomized controlled trials indicate that people involved in the criminal justice system benefit from methadone maintenance (pre- and post-release) and extended-release naltrexone treatment.

BEHAVIORAL THERAPIES.

These structured therapies help patients recognize the impact of their behaviors—such as dealing with stress or interacting in interpersonal relationships—on their substance use and ability to function in a healthy, safe, and productive manner. They can be provided in individual, group, and/or family sessions in virtually all treatment settings.^{72, 83} Behavioral therapies also teach and motivate patients to change their behaviors as a way to control their substance use disorders.⁷² Most studies support the use of individual counseling as an effective intervention for individuals with substance use disorders as part of MAT.^{75, 84} Group counseling should primarily be used only in conjunction with individual counseling or other forms of individual therapy.^{77, 79} Despite decades of research, it cannot be concluded that general group counseling is reliably effective in reducing substance use or related problems.^{84, 85}

RECOVERY SUPPORT SERVICES (RSS).

RSS, provided by both substance use disorder treatment programs and community organizations, help to engage and support individuals in treatment and provide ongoing support after treatment. These supportive services are typically delivered by trained case managers, recovery coaches, and/or peers. Specific supports include help with navigating systems of care, removing barriers to recovery, staying engaged in the recovery process, and providing a social context for individuals to engage in community living without substance use.⁸⁶ Individuals who participate in substance use disorder treatment and RSS typically have better long-term recovery outcomes than individuals who receive either alone.⁸⁶ Furthermore, active recovery and social supports, both during and following treatment, are important to maintaining recovery.⁸⁶

Recovery: The Many Paths to Wellness

People can and do recover. Recovery from substance use disorders has had several definitions. Although specific elements of these definitions differ, all agree that recovery goes beyond the remission of symptoms to include a positive change in the whole person. In this regard, “abstinence,” though often necessary, is not always sufficient to define recovery. There are many paths to recovery. People will choose their pathway based on their cultural values, their psychological and behavioral needs, and the nature of their substance use disorder.

Successful recovery often involves making significant changes to one’s life to create a supportive environment that avoids substance use or misuse cues or triggers. Recovery can involve changing jobs or housing, finding new friends who are supportive of one’s recovery, and engaging in activities that do not involve substance use. This is why ongoing RSS in the community after completing treatment can be invaluable for helping individuals resist relapse and rebuild lives that may have been devastated by years of substance misuse.

RSS are not the same as treatment and have only recently been included as part of the health care system. The most well-known approach, mutual aid groups, link people in recovery and encourage mutual support while providing a new social setting in which former alcohol or drug users can engage with others in the absence of substance-related cues from their former life. Mutual aid groups are facilitated by peers, who share their lived experience in recovery. However, health care professionals have a key role in linking patients to these groups, and encouraging participation can have great benefit.⁸⁷

Recovery coaches, who offer individualized guidance, support, and sometimes case management, and recovery housing—substance-free living situations in which residents informally support each other as they navigate the challenges of drug- and alcohol-free living—have led to improved outcomes for participants.⁸⁸⁻⁹² Several other common RSS, including recovery community centers and recovery high schools, have not yet been rigorously evaluated.

Health Care Systems and Opioid Use Disorder

Services for the prevention and treatment of substance misuse and substance use disorders have traditionally been delivered separately from other mental health and general health care services. Because substance misuse has traditionally been seen as a social or criminal problem, prevention services were not typically considered a responsibility of health care systems; and people needing care for substance use disorders have had access to only a limited range of treatment options that were generally not covered by insurance.

Effective integration of prevention, treatment, and recovery services across health care systems is key to addressing opioid misuse and its consequences, and it represents the most promising way to improve access to and quality of treatment. When health care is not well integrated and coordinated across systems, too many patients fall through the cracks, leading to missed opportunities for prevention and early intervention, ineffective referrals, incomplete treatment, high rates of hospital and emergency department readmissions, and individual tragedies (e.g., opioid overdoses) that could have been prevented.

The good news, however, is that a range of promising health care structures, technologies, and innovations are emerging, or are being refined and strengthened. These developments are helping to address challenges and facilitate integration. In so doing, they are broadening the focus of interventions beyond just the treatment of severe substance use disorders to encompass the entire spectrum of prevention, treatment, and recovery.

Conclusion

The opioid overdose epidemic brings into sharp focus how myths and misconceptions about addiction have led to devastating consequences for individuals and communities. The evidence-based public health approach described in the *Surgeon General's Report* offers a positive way forward to reducing the opioid crisis by addressing factors that contribute to the misuse and its consequences. By adopting this approach—which seeks to improve the health, safety, and well-being of the entire population—we have the opportunity as a nation to take effective steps to prevent and treat opioid misuse and opioid use disorder and reduce opioid overdose. A public health approach to the opioid crisis will also reduce other harmful consequences, such as infectious disease transmission and NAS. States that have had success in implementing the public health approach and slowing their overdose rates have emphasized the importance of partnerships. Given that too many individuals are dying every day from opioid overdose, shifting our attitudes and working together to widen access to prevention, treatment, and recovery services for opioid misuse and opioid use disorders are essential for saving lives.

The responsibility of addressing opioid misuse and opioid use disorders does not fall on one sector alone, and the health care system cannot address all of the major determinants of health related to substance misuse without the help of the wider community. Everyone has a role to play in changing the conversation around addiction, to improve the health, safety, and well-being of individuals and communities across our nation.

Below are suggestions for various key stakeholders.

Individuals and Families:

- Reach out, if you think you have a problem with opioid misuse or a substance use disorder.
- Be supportive (not judgmental) if a loved one has a problem.
- Carry naloxone and be trained on how to use it.
- Show support toward people in recovery.
- Parents, talk to your children about substance use.
- Understand pain. Many scientifically proven pain management options do not involve opioids. Talk to your health care provider about an individualized plan that is right for your pain.
- Be safe. Only take opioid medications as prescribed to you. Always store in a secure place. Dispose of unused medication properly.

Educators and Academic Institutions:

- Implement evidence-based prevention interventions.
- Provide treatment and recovery supports.
- Teach accurate, up-to-date scientific information about substance use disorders as medical conditions.
- Enhance training of health care professionals.

Health Care Professionals and Professional Associations:

- Address substance use-related health issues with the same sensitivity and care as any other chronic health condition.
- Support high-quality care for substance use disorders.
- Follow the gold standard for opioid addiction treatment.
- Follow the [*CDC Guideline for Prescribing Opioids for Chronic Pain*](#).
- When opioids are prescribed, providers can assess for behavioral health risk factors to help inform treatment decisions, and collaborate with mental health providers.
- Check the PDMP before prescribing opioids.
- Refer to patients to opioid treatment providers when necessary.
- Become qualified to prescribe buprenorphine for the treatment of opioid use disorder.

Health Care Systems:

- Promote universal, selective, and indicated prevention.
- Promote use of evidence-based treatments.
- Promote effective integration of prevention, treatment, and recovery support services.
- Work with payers to develop and implement comprehensive billing models.
- Implement health information technologies to promote efficiency, actionable information, and high-quality care.
- Create stronger connections across behavioral health providers and mainstream medical systems.
- Engage primary care providers as part of a comprehensive treatment solution.

Communities:

- Build awareness of substance use as a public health problem.
- Invest in evidence-based prevention interventions and recovery supports.
- Implement interventions to reduce harms associated with opioid misuse.

Private Sector—Industry and Commerce:

- Support youth substance use prevention.
- Continue to collaborate with the federal initiative to reduce prescription opioid- and heroin-related overdose, death, and dependence.
- Reduce work-related injury risks and other working conditions that may increase the risk for substance misuse.
- Offer education, support and treatment benefits for workers affected by the opioid crisis.

Federal, State, Local, and Tribal Governments:

- Provide leadership, guidance, and vision in supporting a science-based approach to addressing substance use-related health issues.
- Collect and use data to guide local response to people and places at highest risk.
- Improve coordination between social service systems and the health care system to address the social and environmental factors that contribute to the risk for substance use disorders.
- Implement criminal justice reforms to transition to a less punitive and more health-focused approach.

Researchers:

- Conduct research that focuses on implementable, sustainable solutions to address high-priority substance use issues.
- Identify research gaps in understanding the complexity of opioids addiction and pain.
- Promote rigorous evaluation of programs and policies.

Key Federal Resources

The Surgeon General's Report

<https://addiction.surgeongeneral.gov/>

CDC Guideline for Prescribing Opioids for Chronic Pain

<https://www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm>

MMWR Opioid Reports

https://www.cdc.gov/mmwr/opioid_reports.html

SGR Appendix B: Review Process for Prevention Programs

<https://addiction.surgeongeneral.gov/sites/default/files/appendices.pdf>

NIDA Opioid Risk Tool

<https://www.drugabuse.gov/sites/default/files/files/OpioidRiskTool.pdf>

NIDA Quick Screen

<https://www.drugabuse.gov/publications/resource-guide-screening-drug-use-in-general-medical-settings/nida-quick-screen>

CDC general resources

<https://www.cdc.gov/drugoverdose/prescribing/resources.html>

CDC resources related to People Who Inject Drugs (PWID)

<https://www.cdc.gov/pwid/index.html>

CDC's Rx Awareness Campaign

<https://www.cdc.gov/rxawareness/index.html>

CDC Adverse Childhood Experiences page

<https://www.cdc.gov/violenceprevention/acestudy/index.html>

Preventing the Consequences of Opioid Overdose: Understanding the Naloxone Access Laws

<https://www.samhsa.gov/capt/sites/default/files/resources/naloxone-access-laws-tool.pdf>

The Surgeon General's Advisory on Naloxone and Opioid Overdose

<https://www.surgeongeneral.gov/priorities/opioid-overdose-prevention/naloxone-advisory.html>

SAMHSA Opioid Overdose Prevention Toolkit

<https://store.samhsa.gov/product/Opioid-Overdose-Prevention-Toolkit/SMA16-4742>

SAMHSA Clinical Guidance for Treating Pregnant and Parenting Women with Opioid Use Disorder and Their Infants

<https://store.samhsa.gov/product/Clinical-Guidance-for-Treating-Pregnant-and-Parenting-Women-With-Opioid-Use-Disorder-and-Their-Infants/SMA18-5054>

References

1. Office of the U.S. Surgeon General. Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health. Washington D.C.: U.S. Department of Health and Human Services;2016.
2. United States Drug Enforcement Administration. FAQ's- Fentanyl and Fentanyl-Related Substances. 2018; <https://www.dea.gov/druginfo/fentanyl-faq.shtml>. Accessed June 28, 2018
3. Wide-ranging online data for epidemiologic research (WONDER). Centers for Disease Control and Prevention, National Center for Health Statistics; <http://wonder.cdc.gov>; 2016.
4. Hedegaard H, Warner M, Minino AM. Drug Overdose Deaths in the United States, 1999-2016. NCHS Data Brief. 2017(294):1-8.
5. Jones CM, Einstein EB, Compton WM. Changes in Synthetic Opioid Involvement in Drug Overdose Deaths in the United States, 2010-2016. JAMA. 2018;319(17):1819-1821.
6. Center for Behavioral Health Statistics and Quality. 2017 National Survey on Drug Use and Health: Detailed tables. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2018.
7. Ahmad F, Rossen L, Spencer M, Warner M, Sutton PJNCfHS. Provisional drug overdose death counts. 2017.
8. Rudd RA, Seth P, David F, Scholl L. Increases in Drug and Opioid-Involved Overdose Deaths - United States, 2010-2015. MMWR Morb Mortal Wkly Rep. 2016;65(5051):1445-1452.
9. Kochanek KD, Murphy S, Xu J, Arias E. Mortality in the United States, 2016. NCHS Data Brief. 2017(293):1-8.
10. U.S. National Library of Medicine. Neonatal abstinence syndrome. 2015; <https://www.nlm.nih.gov/medlineplus/ency/article/007313.htm>.
11. Substance Abuse and Mental Health Services Administration. Clinical guidance for treating pregnant and parenting women with opioid use disorder and their infants. HHS Publication No. (SMA) 18-5054. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2018.
12. Hudak ML, Tan RC. Neonatal drug withdrawal. Pediatrics. 2012;129(2):e540-560.
13. Winkelman TNA, Villapiano N, Kozhimannil KB, Davis MM, Patrick SW. Incidence and Costs of Neonatal Abstinence Syndrome Among Infants With Medicaid: 2004-2014. Pediatrics. 2018;141(4).
14. Floyd RL, Jack BW, Cefalo R, et al. The clinical content of preconception care: alcohol, tobacco, and illicit drug exposures. Am J Obstet Gynecol. 2008;199(6 Suppl 2):S333-339.
15. Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain - United States, 2016. MMWR Recomm Rep. 2016;65(1):1-49.
16. Jackson KA, Bohm MK, Brooks JT, et al. Invasive Methicillin-Resistant Staphylococcus aureus Infections Among Persons Who Inject Drugs—Six Sites, 2005–2016. 2018;67(22):625.
17. Centers for Disease Control and Prevention. HIV in the United States: At a glance. 2017; <https://www.cdc.gov/hiv/statistics/overview/ataglance.html>.
18. Increase in Hepatitis C infections linked to worsening opioid crisis; <https://www.cdc.gov/nchhstp/newsroom/2017/hepatitis-c-and-opioid-injection.html> [press release]. Centers for Disease Control and Prevention, 2017
19. Forster M, Gower AL, Borowsky IW, McMorris BJ. Associations between adverse childhood experiences, student-teacher relationships, and non-medical use of prescription medications among adolescents. Addictive behaviors. 2017;68:30-34.
20. Stein MD, Conti MT, Kenney S, et al. Adverse childhood experience effects on opioid use initiation, injection drug use, and overdose among persons with opioid use disorder. Drug and alcohol dependence. 2017;179:325-329.
21. Substance Abuse and Mental Health Services Administration. Key substance use and mental health indicators in the United States: Results from the 2017 National Survey on Drug Use and Health (HHS Publication No. SMA 18-5068, NSDUH Series H-53). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration; 2018; Retrieved from <https://www.samhsa.gov/data/>.
22. Moran GE, Snyder CM, Noftinger RF, et al. Implementing medication-assisted treatment for opioid use disorder in rural primary care: environmental scan, volume 2. tools and resources. Rockville, MD: Agency for Healthcare Research and Quality; October 2017.

23. Guy GP, Jr., Zhang K, Bohm MK, et al. Vital Signs: Changes in Opioid Prescribing in the United States, 2006-2015. *MMWR Morb Mortal Wkly Rep.* 2017;66(26):697-704.
24. Lynch FL, McCarty D, Mertens J, et al. Costs of care for persons with opioid dependence in commercial integrated health systems. *Addict Sci Clin Pract.* 2014;9:16.
25. Substance Abuse and Mental Health Services Administration. Clinical Guidelines for the Use of Buprenorphine in the Treatment of Opioid Addiction. Treatment Improvement Protocol (TIP) Series 40. DHHS Publication No. (SMA) 04-3939. Rockville, MD: Center for Substance Abuse Treatment, Substance Abuse and Mental Health Services Administration; 2004.
26. American Psychiatric Association. Diagnostic and statistical manual of mental disorders (DSM-5) (5th ed.). Arlington, VA: American Psychiatric Publishing; 2013.
27. Hser YI, Hoffman V, Grella CE, Anglin MD. A 33-year follow-up of narcotics addicts. *Arch Gen Psychiatry.* 2001;58(5):503-508.
28. Vaillant GE. The natural history of alcoholism revisited. Cambridge, MA: Harvard University Press; 1995.
29. Koob GF, Le Moal M. Drug abuse: hedonic homeostatic dysregulation. *Science.* 1997;278(5335):52-58.
30. Dahl RE. Adolescent brain development: a period of vulnerabilities and opportunities. Keynote address. *Ann N Y Acad Sci.* 2004;1021:1-22.
31. Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry.* 2005;62(6):593-602.
32. Thornberry TP, & Krohn, M. D. Taking stock of delinquency: An overview of findings from contemporary longitudinal studies. New York, NY: Springer Science & Business Media; 2006.
33. Botvin GJ, Griffin KW. Life skills training as a primary prevention approach for adolescent drug abuse and other problem behaviors. *Int J Emerg Ment Health.* 2002;4(1):41-47.
34. Flay BR, Graumlich S, Segawa E, Burns JL, Holliday MY. Effects of 2 prevention programs on high-risk behaviors among African American youth: a randomized trial. *Arch Pediatr Adolesc Med.* 2004;158(4):377-384.
35. Schweinhart LJ, Montie, J., Xiang, Z., Barnett, W. S., Belfield, C. R., & Nores, M. . Lifetime effects: The High/Scope Perry Preschool study through age 40. (Monographs of the High/Scope Educational Research Foundation, 14). Ypsilanti, MI: High/Scope Press; 2005.
36. National Research Council (US) and Institute of Medicine (US). The National Academies Collection: Reports funded by National Institutes of Health. In: O'Connell ME, Boat T, Warner KE, eds. Preventing Mental, Emotional, and Behavioral Disorders Among Young People: Progress and Possibilities. Washington (DC): National Academies Press (US), National Academy of Sciences; 2009.
37. Bowman S, Engelman A, Koziol J, Mahoney L, Maxwell C, McKenzie M. The Rhode Island community responds to opioid overdose deaths. *RI Med J* (2013). 2014;97(10):34-37.
38. National Safety Council. Prescription drug community action kit: Public education and media. Washington, DC: National Safety Council; 2015.
39. Substance Abuse and Mental Health Services Administration. National Recovery Month. n.d.; <http://www.recoverymonth.gov/>. Accessed September, 2017.
40. Centers for Disease Control and Prevention. Rx Awareness. 2017; <https://www.cdc.gov/rxawareness/index.html>. Accessed January 2, 2018.
41. Washington State Institute for Public Policy. Benefit-cost results. 2016; <http://www.wsipp.wa.gov/BenefitCost?topicId=>.
42. Centers for Medicare & Medicaid Services. Decision memo for screening and behavioral counseling interventions in primary care to reduce alcohol misuse (CAG-00427N). Washington DC: US Department of Health and Human Services; 2011.
43. Centers for Medicare & Medicaid Services. Screening, brief intervention, and referral to treatment (SBIRT) services. (ICN 904084). Washington, DC: U.S. Department of Health and Human Services; 2015.
44. Paulozzi LJ, Kilbourne EM, Desai HA. Prescription drug monitoring programs and death rates from drug overdose. *Pain Med.* 2011;12(5):747-754.
45. Haffajee RL, Jena AB, Weiner SG. Mandatory use of prescription drug monitoring programs. *JAMA.* 2015;313(9):891-892.
46. Patrick SW, Fry CE, Jones TF, Buntin MB. Implementation Of Prescription Drug Monitoring Programs Associated With Reductions In Opioid-Related Death Rates. *Health Affairs (Millwood).* 2016;35(7):1324-1332.
47. Ettner SL, Huang D, Evans E, et al. Benefit-cost in the California treatment outcome project: does substance abuse treatment "pay for itself"? *Health Serv Res.* 2006;41(1):192-213.

48. McLellan AT, Lewis DC, O'Brien CP, Kleber HD. Drug dependence, a chronic medical illness: implications for treatment, insurance, and outcomes evaluation. *JAMA*. 2000;284(13):1689-1695.
49. Garner BR, Scott CK, Dennis ML, Funk RR. The relationship between recovery and health-related quality of life. *J Subst Abuse Treat*. 2014;47(4):293-298.
50. Pasareanu AR, Opsal A, Vederhus JK, Kristensen O, Clausen T. Quality of life improved following in-patient substance use disorder treatment. *Health Qual Life Outcomes*. 2015;13:35.
51. Tracy EM, Laudet AB, Min MO, et al. Prospective patterns and correlates of quality of life among women in substance abuse treatment. *Drug Alcohol Depend*. 2012;124(3):242-249.
52. Baca CT, Yahne CE. Smoking cessation during substance abuse treatment: what you need to know. *Journal of substance abuse treatment*. 2009;36(2):205-219.
53. Prochaska JJ, Delucchi K, Hall SM. A meta-analysis of smoking cessation interventions with individuals in substance abuse treatment or recovery. *Journal of consulting and clinical psychology*. 2004;72(6):1144-1156.
54. Substance Abuse and Mental Health Services Administration. Behavioral health treatments and services. 2015; <http://www.samhsa.gov/treatment>.
55. Millette S, & Cort, B. . Treatment for substance use disorders – The continuum of care. In: National Partnership on Alcohol Misuse and Crime; 2013.
56. Kelly TM, Daley DC, Douaihy AB. Treatment of substance abusing patients with comorbid psychiatric disorders. *Addict Behav*. 2012;37(1):11-24.
57. Substance Abuse and Mental Health Services Administration. Chapter 10. Addressing diverse populations in intensive outpatient treatment. Clinical issues in intensive outpatient treatment. Treatment improvement protocol (TIP) series, No. 47. Rockville, MD: Center for Substance Abuse Treatment, Substance Abuse and Mental Health Services Administration; 2006.
58. Community-based opioid overdose prevention programs providing naloxone - United States, 2010. *MMWR Morb Mortal Wkly Rep*. 2012;61(6):101-105.
59. Hawk KF, Vaca FE, D'Onofrio G. Reducing Fatal Opioid Overdose: Prevention, Treatment and Harm Reduction Strategies. *Yale J Biol Med*. 2015;88(3):235-245.
60. Ingram M. The impact of syringe and needle exchange programs on drug use rates in the United States. (Master's thesis). Vol 2018. Washington, DC: Georgetown University; 2014.
61. Aspinall EJ, Nambiar D, Goldberg DJ, et al. Are needle and syringe programmes associated with a reduction in HIV transmission among people who inject drugs: a systematic review and meta-analysis. *International Journal of Epidemiology*. 2014;43(1):235-248.
62. Hunt N, Ashton, M., Lenton, S., Mitcheson, L., Nelles, B., & Stimson, G. A review of the evidence-base for harm reduction approaches to drug use. 2003; <https://www.hri.global/files/2010/05/31/HIVTop50Documents11.pdf>. Accessed October, 2017.
63. Ritter A, Cameron J. A review of the efficacy and effectiveness of harm reduction strategies for alcohol, tobacco and illicit drugs. *Drug Alcohol Review*. 2006;25(6):611-624.
64. Prescription Drug Abuse Policy System. Naloxone Overdose Prevention Laws. <http://pdaps.org/datasets/laws-regulating-administration-of-naloxone-1501695139>. Accessed August, 2018.
65. European Monitoring Centre for Drugs and Drug Addiction. Preventing fatal overdoses: A systematic review of the effectiveness of take-home naloxone. Luxembourg: EMCDDA Papers, Publications Office of the European Union; 2015.
66. Walley AY, Xuan Z, Hackman HH, et al. Opioid overdose rates and implementation of overdose education and nasal naloxone distribution in Massachusetts: interrupted time series analysis. *BMJ*. 2013;346:f174.
67. Kim D, Irwin KS, Khoshnood K. Expanded access to naloxone: options for critical response to the epidemic of opioid overdose mortality. *Am J Public Health*. 2009;99(3):402-407.
68. Substance Abuse and Mental Health Services Administration. SAMHSA Opioid overdose prevention toolkit. (HHS Publication No. (SMA) 13-4742). Rockville, MD: Substance Abuse and Mental Health Services Administration; 2013.
69. The Network for Public Health Law. Legal interventions to reduce overdose mortality: Naloxone access and overdose Good Samaritan Laws. 2017; https://www.networkforphl.org/resources_collection/2017/06/08/396/resource_legal_interventions_to_reduce_overdose_mortality. Accessed March 12, 2018.

70. World Health Organization. Clinical guidelines for withdrawal management and treatment of drug dependence in closed settings. 4, Withdrawal management. 2009; <https://www.ncbi.nlm.nih.gov/books/NBK310652/>.
71. American Society of Addiction Medicine. The ASAM standards of care for the addiction specialist physician. Chevy Chase, MD: American Society of Addiction Medicine; 2014.
72. Center for Health Information and Analysis. Access to substance use disorder treatment in Massachusetts. (15-112- CHIA-01). Boston, MA: Center for Health Information and Analysis, Commonwealth of Massachusetts; 2015.
73. Substance Abuse and Mental Health Services Administration. Clinical Use of Extended-Release Injectable Naltrexone in the Treatment of Opioid Use Disorder: A Brief Guide. HHS Publication No. (SMA) 14-4892R. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2015.
74. Lee J, Kresina TF, Campopiano M, Lubran R, Clark HW. Use of pharmacotherapies in the treatment of alcohol use disorders and opioid dependence in primary care. *Biomed Res Int*. 2015;2015:137020.
75. Kleber HD, McIntyre JS. Practice Guideline for Treatment of Patients with Substance Use Disorders. Vol 122. Arlington, VA: American Psychiatric Association; 2006.
76. National Consensus Development Panel on Effective Medical Treatment of Opiate Addiction. Effective medical treatment of opiate addiction. *JAMA*. 1998;280(22):1936-1943.
77. Joseph H, Stancliff S, Langrod J. Methadone maintenance treatment (MMT): a review of historical and clinical issues. *Mt Sinai J Med*. 2000;67(5-6):347-364.
78. Rieckmann T, Kovas AE, Rutkowski BA. Adoption of medications in substance abuse treatment: priorities and strategies of single state authorities. *J Psychoactive Drugs*. 2010;Suppl 6:227-238.
79. National Institute on Drug Abuse. Principles of drug addiction treatment: A research-based guide. (NIH Publication No. 12-4180). Rockville, MD: National Institutes of Health, U.S. Department of Health and Human Services; 2012.
80. Krinsky CS, Lathrop SL, Brown P, Nolte KB. Drugs, detention, and death: a study of the mortality of recently released prisoners. *The American journal of forensic medicine and pathology*. 2009;30(1):6-9.
81. Gordon MS, Kinlock TW, Schwartz RP, O'Grady KE. A randomized clinical trial of methadone maintenance for prisoners: findings at 6 months post-release. *Addiction*. 2008;103(8):1333-1342.
82. Lee JD, Friedmann PD, Kinlock TW, et al. Extended-Release Naltrexone to Prevent Opioid Relapse in Criminal Justice Offenders. *N Engl J Med*. 2016;374(13):1232-1242.
83. National Quality Forum. Evidence-based treatment practices for substance use disorders: Workshop proceedings. (NQFWP-06-05). Washington, DC: National Quality Forum; 2005.
84. McGovern MP, Carroll KM. Evidence-based practices for substance use disorders. *The Psychiatric Clinics of North America*. 2003;26(4):991-1010.
85. Substance Abuse and Mental Health Services Administration. Substance abuse treatment: Group therapy. Treatment improvement protocol (TIP) series, No. 41. Rockville, MD: Center for Substance Abuse Treatment, Substance Abuse and Mental Health Services Administration; 2005.
86. Substance Abuse and Mental Health Services Administration. Recovery and recovery support. 2015; <http://www.samhsa.gov/recovery>. Accessed September 13, 2017.
87. Walitzer KS, Dermen KH, Barrick C. Facilitating involvement in Alcoholics Anonymous during out-patient treatment: a randomized clinical trial. *Addiction*. 2009;104(3):391-401.
88. Douglas-Siegel JA, Ryan JP. The effect of recovery coaches for substance-involved mothers in child welfare: impact on juvenile delinquency. *Journal of Substance Abuse Treatment*. 2013;45(4):381-387.
89. Groh DR, Jason LA, Ferrari JR, Davis MI. Oxford House and Alcoholics Anonymous: The Impact of Two Mutual-help Models on Abstinence. *Journal of Groups in Addiction & Recovery*. 2009;4(1-2):23-31.
90. LePage JP, Garcia-Rea EA. Lifestyle coaching's effect on 6-month follow-up in recently homeless substance dependent veterans: a randomized study. *Psychiatric Rehabilitation Journal*. 2012;35(5):396-402.
91. Polcin DL, Henderson DM. A clean and sober place to live: philosophy, structure, and purported therapeutic factors in sober living houses. *Journal of Psychoactive Drugs*. 2008;40(2):153-159.
92. Polcin DL, Korcha R, Bond J, Galloway G. Eighteen Month Outcomes for Clients Receiving Combined Outpatient Treatment and Sober Living Houses. *Journal of Substance Use*. 2010;15(5):352-366.



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