FACING ADDICTION IN AMERICA

The Surgeon General's Report on Alcohol, Drugs, and Health

EXECUTIVE SUMMARY

U.S. Department of Health & Human Services

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MESSAGE FROM THE SECRETARY, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

All across the United States, individuals, families, communities, and health care systems are struggling to cope with substance use, misuse, and substance use disorders. Substance misuse and substance use disorders have devastating effects, disrupt the future plans of too many young people, and all too often, end lives prematurely and tragically. Substance misuse is a major public health challenge and a priority for our nation to address.

Fortunately, we have made considerable progress in recent years. First, decades of scientiæc research and technological advances have given us a better understanding of the functioning and neurobiology of the brain and how substance use affects brain chemistry and our capacity for self-control. One of the important ændings of this research is that addiction is a chronic neurological disorder and needs to be treated as other chronic conditions are. Second, this Administration and others before it, as well as the private sector, have invested in research, development, and evaluation of programs to prevent and treat substance misuse, as well as support recovery. We now have many of the tools we need to protect children, young people, and adults from the negative health consequences of substance misuse; provide individuals with substance use disorders the treatment they need to lead healthy and productive lives; and help people stay substance-free. Finally, the enactment of the Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act of 2008 and the Affordable Care Act in 2010 are helping increase access to prevention and treatment services.

The effects of substance use are cumulative and costly for our society, placing burdens on workplaces, the health care system, families, states, and communities. *The Surgeon General's Report on Alcohol, Drugs, and Health* is another important step in our efforts to address the issue. This historic *Report* explains, in clear and understandable language, the effects on the brain of alcohol and drugs and how misuse can become a disorder. It describes the considerable evidence showing that prevention, treatment, and recovery policies and programs really do work. For example, minimum legal drinking age laws, funding for multi-sector community-based coalitions to plan and implement effective prevention interventions with ædelity, screening and brief intervention for alcohol use, needle/syringe exchange programs, behavioral counseling, pharmacologic interventions such as buprenorphine for opioid misuse, and mutual aid groups have all been shown effective in preventing, reducing, treating, and sustaining recovery from substance misuse and substance use disorders.

The *Report* discusses opportunities to bring substance use disorder treatment and mainstream health care systems into alignment so that they can address a person's overall health, rather than a substance misuse or a physical health condition alone or in isolation. It also provides suggestions and recommendations for action that everyone—individuals, families, community leaders, law enforcement, health care professionals, policymakers, and researchers—can take to prevent substance misuse and reduce its consequences.

Throughout, the Report provides examples of how individuals, organizations, and communities can partner to lessen and eliminate substance misuse. These efforts have to start now. Change takes time and long-term commitment, as well as collaboration among key stakeholders. As the Secretary of the Department of Health and Human Services, I encourage you to use the information and findings in this Report to take action so that we can improve the health of those we love and make our communities healthier and stronger.

Sylvia Mathews Burwell
Secretary
U.S. Department of Health and Human Services

FOREWORD FROM THE PRINCIPAL DEPUTY ADMINISTRATOR, SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES ADMINISTRATION

Substance misuse is one of the critical public health problems of our time. The most recent data on substance use, misuse, and substance use disorders reveal that the problem is deepening and the consequences are becoming more deadly than ever. There is an urgent need to raise awareness about the issue. At the same time, we need to spread the word that substance misuse and addiction are solvable problems. We can, and must, inspire and catalyze action on this crisis.

That's why I am so proud to support the Office of the Surgeon General in releasing this first report of its kind – *The Surgeon General's Report on Alcohol, Drugs, and Health*.

This *Report* takes a comprehensive look at the problem; covering topics including misuse of alcohol, prescription drugs, and other substances, and bringing together the best available science on the adverse health consequences of substance misuse. It also summarizes what we know about what works in prevention, treatment, and recovery. Our goal: to equip health care providers, communities, policymakers, law enforcement, and others with the evidence, the tools, and the information they need to take action to address this growing epidemic.

Now is the time for this *Report*. The substance misuse problem in America won't wait. Almost 22.5 million people reported use of an illegal drug in the prior year. Over 20 million people have substance use disorders, and 12.5 million Americans reported misusing prescription pain relievers in the past year. Seventy-eight people die every day in the United States from an opioid overdose, and those numbers have nearly quadrupled since 1999. Despite the fact that we have treatments we know are effective, only one in five people who currently need treatment for opioid use disorders is actually receiving it.

The addiction problem touches us all. We all need to play a part in solving it. *The Surgeon General's Report on Alcohol, Drugs, and Health* provides a roadmap for working together to move our efforts forward. I hope all who read it will be inspired to take action to stem the rising tide of this public health crisis and reduce the impact of substance misuse and addiction on individuals, communities, and our nation.

Kana Enomoto
Principal Deputy Administrator
Substance Abuse and Mental Health Services Administration
U.S. Department of Health and Human Services

PREFACE FROM THE SURGEON GENERAL, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Before I assumed my position as U.S. Surgeon General, I stopped by the hospital where I had worked since my residency training to say goodbye to my colleagues. I wanted to thank them, especially the nurses, whose kindness and guidance had helped me on countless occasions. The nurses had one parting request for me. If you can only do one thing as Surgeon General, they said, please do something about the addiction crisis in America.

I have not forgotten their words. As I have traveled across our extraordinary nation, meeting people struggling with substance use disorders and their families, I have come to appreciate even more deeply something I recognized through my own experience in patient care: that substance use disorders represent one of the most pressing public health crises of our time.

Whether it is the rapid rise of prescription opioid addiction or the longstanding challenge of alcohol dependence, substance misuse and substance use disorders can—and do— prevent people from living healthy and productive lives. And, just as importantly, they have profound effects on families, friends, and entire communities.

I recognize there is no single solution. We need more policies and programs that increase access to proven treatment modalities. We need to invest more in expanding the scientiæc evidence base for prevention, treatment, and recovery. We also need a cultural shift in how we think about addiction. For far too long, too many in our country have viewed addiction as a moral failing. This unfortunate stigma has created an added burden of shame that has made people with substance use disorders less likely to come forward and seek help. It has also made it more challenging to marshal the necessary investments in prevention and treatment. We must help everyone see that addiction is not a character ☐aw – it is a chronic illness that we must approach with the same skill and compassion with which we approach heart disease, diabetes, and cancer.

I am proud to release *The Surgeon General's Report on Alcohol, Drugs, and Health*. As the ærst ever Surgeon General's Report on this important topic, this *Report* aims to shift the way our society thinks about substance misuse and substance use disorders while deæning actions we can take to prevent and treat these conditions.

Over the past few decades, we have built a robust evidence base on this subject. We now know that there is a neurobiological basis for substance use disorders with potential for both recovery and recurrence. We have evidence-based interventions that prevent harmful substance use and related problems, particularly when started early. We also have proven interventions for treating substance use disorders, often involving a combination of medication, counseling, and social support. Additionally, we have

learned that recovery has many pathways that should be tailored to fit the unique cultural values and psychological and behavioral health needs of each individual.

As Surgeon General, I care deeply about the health and well-being of all who are affected by substance misuse and substance use disorders. This *Report* offers a way forward through a public health approach that is firmly grounded in the best available science. Recognizing that we all have a role to play, the *Report* contains suggested actions that are intended for parents, families, educators, health care professionals, public policy makers, researchers, and all community members.

Above all, we can never forget that the faces of substance use disorders are real people. They are a beloved family member, a friend, a colleague, and ourselves. Despite the significant work that remains ahead of us, there are reasons to be hopeful. I find hope in the people I have met in recovery all across America who are now helping others with substance use disorders find their way. I draw strength from the communities I have visited that are coming together to work on prevention initiatives and to connect more people to treatment. And I am inspired by the countless family members who have lost loved ones to addiction and who have transformed their pain into a passion for helping others. These individuals and communities are rays of hope. It is now our collective duty to bring such light to all corners of our country.

How we respond to this crisis is a moral test for America. Are we a nation willing to take on an epidemic that is causing great human suffering and economic loss? Are we able to live up to that most fundamental obligation we have as human beings: to care for one another?

Fifty years ago, the landmark Surgeon General's report on the dangers of smoking began a half century of work to end the tobacco epidemic and saved millions of lives. With *The Surgeon General's Report on Alcohol, Drugs, and Health*, I am issuing a new call to action to end the public health crisis of addiction. Please join me in taking the actions outlined in this *Report* and in helping ensure that all Americans can lead healthy and fulfilling lives.

Vivek H. Murthy, M.D., M.B.A.
Vice Admiral, U.S. Public Health Service
Surgeon General

EXECUTIVE SUMMARY

In 2015, over 27 million people in the United States reported current use of illicit drugs or misuse of prescription drugs, and over 66 million people (nearly a quarter of the adult and adolescent population) reported binge[i] drinking in the past month.[1] Alcohol and drug misuse and related disorders are major public health challenges that are taking an enormous toll on individuals, families, and society. Neighborhoods and communities as a whole are also suffering as a result of alcohol- and drug-related crime and violence, abuse and neglect of children, and the increased costs of health care associated with substance misuse. It is estimated that the yearly economic impact of substance misuse and substance use disorders is $249 billion for alcohol misuse and alcohol use disorders and $193 billion for illicit drug use and drug use disorders.[2,3]

Despite the social and economic costs, this is a time of great opportunity. Ongoing health care and criminal justice reform efforts, as well as advances in clinical, research, and information technologies are creating new opportunities for increased access to effective prevention and treatment services. This Report reflects our commitment to leverage these opportunities to drive improvements in individual and public health related to substance misuse, use disorders, and related health consequences.

i Binge drinking for men is drinking 5 or more standard alcoholic drinks, and for women, 4 or more standard alcoholic drinks on the same occasion on at least 1 day in the past 30 days.

The Many Consequences of Alcohol and Drug Misuse

Alcohol and drug misuse can have a wide range of effects; a single instance of alcohol or drug misuse can have profound negative consequences. The specific effects associated with substance misuse depend on the substances used, how much and how often they are used, how they are taken (e.g., orally vs. injected), and other factors. Some of these effects include:

- Immediate, direct consequences: Substance misuse can have immediate, direct consequences for health ranging from effects on heart rate and regulation of body temperature to psychotic episodes, overdose, and death. Many more people now die from alcohol and drug overdoses each year than are killed in automobile accidents.[4] The opioid crisis is fueling this trend with nearly 30,000 people dying due to an overdose on heroin or prescription opioids in 2014.[5] An additional roughly 20,000 people died as a result of an unintentional overdose of alcohol, cocaine, or non-opioid prescription drugs.[6-8]
- Indirect consequences related to risky behaviors that often accompany alcohol and drug misuse: Alcohol and drug misuse can impair judgment, leading to risky behaviors including driving under the influence (DUI), unprotected sex, and needle/syringe sharing. Driving under the influence of alcohol or drugs contributes to thousands of deaths annually, and 10.6 percent of drivers report engaging in this hazardous behavior each year.[1] As misuse of some drugs such as prescription opioids progresses, many people seek to intensify the high by injecting them, and sharing of needles among users can result in outbreaks of HIV and hepatitis.
- Longer-term health effects on a person's physical and mental health: For example, heavy drinking[ii] can lead to hypertension, liver disease, and cancer; regular marijuana use is associated with chronic bronchitis; and use of stimulants such as cocaine can lead to heart disease.[9-11] In addition, substance misuse during pregnancy can result in long lasting health effects for the baby including fetal alcohol spectrum disorders (FASDs), which are estimated to affect as many as 2 to 5 percent of the population,[12,13] and neonatal abstinence syndrome (NAS); the ongoing opioid crisis has resulted in a five-fold increase in the number of babies who are dependent on opioids at birth.[14]
- Longer-term societal consequences: These can include reduced productivity, higher health care costs, unintended pregnancies, spread of infectious disease, drug-related crime, interpersonal violence, stress within families, and many other direct and indirect effects on communities, the economy, and society as a whole.

Some of these consequences result from substance use disorders, which occur when a person uses alcohol or drugs to such an extent that it causes clinically significant impairments in health, social functioning, and voluntary control over substance use.[iii] The majority of individuals who misuse substances do not develop a substance use disorder. However, roughly one in seven people in the United States (14.6 percent of the population) are expected to develop a substance use disorder at some point in their lives.[15] A substance use disorder can be diagnosed as mild, moderate, or severe depending on the extent of a person's symptoms. In this Report, addiction is used to refer to substance use disorders that can be categorized as severe and are associated with compulsive or uncontrolled use of one or more substances. Addiction is a chronic brain disease that, like milder substance use disorders, has the potential for both recurrence and recovery.

In 2015, substance use disorders affected 20.8 million Americans—almost 8 percent of the adolescent and adult population. That number is similar to the number of people who suffer from diabetes,[16] and more than 1.5 times the annual prevalence of all cancers combined (14 million).[17] Of the 20.8 million people with a substance use disorder in 2015, 15.7 million were in need of treatment for an alcohol problem in 2015 and nearly 7.7 million needed treatment for an illicit drug problem.[1]

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ii Deæned by the Centers for Disease Control and Prevention (CDC) as consuming 8 or more drinks per week for women, and 15 or more drinks per week for men, and by the Substance Abuse and Mental Health Services Administration (SAMHSA), for research purposes, as binge drinking on 5 or more days in the past 30 days.

iii This Report follows the Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders, which deænes substance use disorders as "clinically and functionally signiæcant impairments caused by substance use, including health problems, disability, and failure to meet major responsibilities at work, school, or home."

Most Americans know someone with a substance use disorder, and many know someone who has lost or nearly lost a family member as a consequence of substance misuse. Yet, at the same time, few other medical conditions are surrounded by as much shame and misunderstanding as substance use disorders. Historically, our society has treated addiction and misuse of alcohol and drugs as symptoms of moral weakness or as a willful rejection of societal norms, and these problems have been addressed primarily through the criminal justice system. Our health care system has not given the same level of attention to substance use disorders as it has to other health concerns that affect similar numbers of people. Substance use disorder treatment in the United States remains largely segregated from the rest of health care and serves only a fraction of those in need of treatment. Only about 10 percent of people with a substance use disorder receive any type of specialty treatment.[1] Further, over 40 percent of people with a substance use disorder also have a mental health condition, yet fewer than half (48.0 percent) receive treatment for either disorder.[1]

Many factors contribute to this "treatment gap," including the inability to access or afford care, fear of shame and discrimination, and lack of screening for substance misuse and substance use disorders in general health care settings. Further, about 40 percent of individuals who know they have an alcohol or drug problem are not ready to stop using, and many others simply feel they do not have a problem or a need for treatment[1]—which may partly be a consequence of the neurobiological changes that profoundly affect the judgment, motivation, and priorities of a person with a substance use disorder.

Reasons for Hope and Optimism

The problem of alcohol and drug misuse in the United States is serious and pervasive. However, despite the challenges described above, this is also 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.
- Policies and programs have been developed that are effective in preventing alcohol and drug misuse and reducing its negative effects.
- Effective treatments for substance use disorders are available. 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 disease and lessen other consequences.
- Support services such as mutual aid groups (e.g., Alcoholics Anonymous), recovery housing, and recovery coaches are increasingly available to help people in the long and often difficult task of maintaining recovery after treatment.
- Health care reform efforts are creating new opportunities to increase access to prevention and treatment services to improve public health. Health insurers that participate in the new Health Care Marketplace must now cover costs related to mental health and substance use disorder services, including behavioral health treatment, and may not apply limitations on those benefits that are more restrictive than limitations applied on the benefits for medical and surgical

services. Other incentives are encouraging general health systems to control costs, improve outcomes, and reduce readmissions by addressing patients' substance use. 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 suffering from these disorders.

- The criminal justice system is engaged in efforts to place non-violent drug offenders in treatment instead of jail, to improve the delivery of evidence-based treatment for incarcerated persons, and to coordinate care in the community when inmates are released.

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 who suffer from them.

The Time is Right for a Surgeon General's Report

While prior Surgeon General's reports have discussed substance use disorders in certain contexts, *The Surgeon General's Report on Alcohol, Drugs, and Health* is the first Surgeon General's Report to address substance use disorders and the wider range of health problems and consequences related to alcohol and drug misuse in the United States.[iv] Its aim is to galvanize the public, policymakers, and health care systems to make the most of these new opportunities so that the individual and public health consequences associated with alcohol and drug misuse can be addressed effectively. Only by doing so can individuals, their loved ones, and their communities be restored to full health and well-being.

The Surgeon General's Report

This Report reviews what we know about substance use and health and how we can use that knowledge to address substance misuse and related health consequences. First, a general Introduction and Overview of the Report describes the extent of the substance use problem in the United States. Then it lays a foundation for readers by explaining what happens in the brain of a person with an addiction to these substances. Chapter 2 - The Neurobiology of Substance Use, Misuse, and Addiction describes the three main circuits in the brain involved in addiction, and how substance use can "hijack" the normal function of these circuits. Understanding this transformation in the brain is critical to understanding why addiction is a health condition, not a moral failing or character flaw.

Few would disagree with the notion that preventing substance use disorders from developing in the first place is ideal. Prevention programs and policies are available that have been proven to do just that. Chapter 3 - Prevention Programs and Policies describes a range of programs focused on preventing substance misuse including universal prevention programs that target the whole community as well as programs that are tailored to high-risk populations. It also describes population-level policies that are

iv Tobacco and nicotine addiction are discussed only minimally in this Report because tobacco use and its health consequences have been the subject of many previous Surgeon General's Reports.

effective for reducing underage drinking, drinking and driving, spread of infectious disease, and other consequences of alcohol and drug misuse.

If a person does develop a substance use disorder, treatment is critical. Substance use disorders share some important characteristics with other chronic illnesses, like diabetes. Both are chronic conditions that can be effectively managed with medications and other treatments that focus on behavior and lifestyle. Chapter 4 - Early Intervention, Treatment, and Management of Substance Use Disorders describes the clinical activities that are used to identify people who have a substance use disorder and engage them in treatment. It also describes the range of medications and behavioral treatments that can help people successfully address their substance use disorder.

As with other chronic conditions, people with substance use disorders need support through the long and often difficult process of returning to a healthy and productive life. Chapter 5 - Recovery: The Many Paths to Wellness describes the growing array of services and systems that provide this essential function and the many pathways that make recovery possible.

Responsive and coordinated systems are needed to provide prevention, treatment, and recovery services. Traditionally, general health care and substance use disorder treatment have been provided through distinct and separate systems, but that is now changing. Chapter 6 - Health Care Systems and Substance Use Disorders explains why integrating general health care and substance use services can result in better outcomes and describes policies and activities underway to achieve that goal. The final chapter, Chapter 7 - Vision for the Future: A Public Health Approach, provides concrete recommendations on how to reduce substance misuse and related harms in communities across the United States.

The following sections provide more detailed summaries of each of the chapters in the Report.

The Neurobiology of Substance Use, Misuse, and Addiction

Substance use disorders result from changes in the brain that can occur with repeated use of alcohol or drugs. The most severe expression of the disorder, addiction, is associated with changes in the function of brain circuits involved in pleasure (the reward system), learning, stress, decision making, and self-control.

Every substance has slightly different effects on the brain, but all addictive drugs, including alcohol, opioids, and cocaine, produce a pleasurable surge of the neurotransmitter *dopamine* in a region of the brain called the *basal ganglia*; neurotransmitters are chemicals that transmit messages between nerve cells. This area is responsible for controlling reward and our ability to learn based on rewards. As substance use increases, these circuits adapt. They scale back their sensitivity to dopamine, leading to a reduction in a substance's ability to produce euphoria or the "high" that comes from using it. This is known as *tolerance*, and it reflects the way that the brain maintains balance and adjusts to a "new normal"—the frequent presence of the substance. However, as a result, users often increase the amount of the substance they take so that they can reach the level of high they are used to. These same circuits control our ability to take pleasure from ordinary rewards like food, sex, and social interaction, and when they are disrupted by substance use, the rest of life can feel less and less enjoyable to the user when they are not using the substance.

Repeated use of a substance "trains" the brain to associate the rewarding high with other cues in the person's life, such as friends they drink or do drugs with, places where they use substances, and

paraphernalia that accompany substance-taking. As these cues become increasingly associated with the substance, the person may find it more and more difficult not to think about using, because so many things in life are reminders of the substance.

Changes to two other brain areas, the *extended amygdala* and the *prefrontal cortex*, help explain why stopping use can be so difficult for someone with a severe substance use disorder. The extended amygdala controls our responses to stress. If dopamine bursts in the reward circuitry in the basal ganglia are like a carrot that lures the brain toward rewards, bursts of stress neurotransmitters in the extended amygdala are like a painful stick that pushes the brain to escape unpleasant situations. Together, they control the spontaneous drives to seek pleasure and avoid pain and compel a person to action. In substance use disorders, however, the balance between these drives shifts over time. Increasingly, people feel emotional or physical distress whenever they are not taking the substance. This distress, known as *withdrawal*, can become hard to bear, motivating users to escape it at all costs. As a substance use disorder deepens in intensity, substance use is the only thing that produces relief from the bad feelings associated with withdrawal. And like a vicious cycle, relief is purchased at the cost of a deepening disorder and increased distress when not using. The person no longer takes the substance to "get high" but instead to avoid feeling low. Other priorities, including job, family, and hobbies that once produced pleasure have trouble competing with this cycle.

Healthy adults are usually able to control their impulses when necessary, because these impulses are balanced by the judgment and decision-making circuits of the prefrontal cortex. Unfortunately, these prefrontal circuits are also disrupted in substance use disorders. The result is a reduced ability to control the powerful impulses toward alcohol or drug use despite awareness that stopping is in the person's best long-term interest.

This explains why substance use disorders are said to involve compromised self-control. It is not a complete loss of autonomy—addicted individuals are still accountable for their actions—but they are much less able to override the powerful drive to seek relief from withdrawal provided by alcohol or drugs. At every turn, people with addictions who try to quit find their resolve challenged. Even if they can resist drug or alcohol use for a while, at some point the constant craving triggered by the many cues in their life may erode their resolve, resulting in a return to substance use, or *relapse*.

Prevention Programs and Policies

One of the major questions about addiction is why it takes hold only in some people. The changes in the brain associated with addiction do not progress in the same way in everyone who uses alcohol or drugs. For a wide range of reasons that remain only partially understood, some individuals are able to use alcohol or drugs in moderation and not develop addiction or even milder substance use disorders, whereas others—between 4 and 23 percent depending on the substance—proceed readily from trying a substance to developing a substance use disorder.[18]

Understanding the factors that raise people's risk for substance misuse (*risk factors*) and those that may offer some degree of protection from these risks (*protective factors*) and then using this knowledge to design interventions aimed at steering people away from substance misuse are the goals of *prevention science*. Between 40 and 70 percent of a person's risk for developing a substance use disorder is genetic,[19] but many

What is an Intervention?

Intervention here and throughout this Report means a professionally delivered program, service, or policy designed to prevent substance misuse or treat an individual's substance use disorder. It does not refer to an arranged meeting or confrontation intended to persuade a friend or loved one to quit their substance misuse or enter treatment—the type of "intervention" sometimes depicted on television. Planned surprise confrontations of the latter variety—a model developed in the 1960s, sometimes called the "Johnson Intervention"—have not been demonstrated to be an effective way to engage people in treatment.[24] Confrontational approaches in general, though once the norm even in many behavioral treatment settings, have not been found effective and may backfire by heightening resistance and diminishing self-esteem on the part of the targeted individual.[25]

environmental factors interact with a person's genes to modify their risk. Being raised in a home in which the parents or other relatives use alcohol or drugs, for example, raises a child's chances of trying these substances and of developing a substance use disorder.[20,21] Living in neighborhoods and going to schools where alcohol and drug use are common, and associating with peers who use substances, are also risk factors.[20,22,23]

Another important risk factor is age at first use. The earlier people try alcohol or drugs, the more likely they are to develop a substance use disorder. For instance, people who first use alcohol before age 15 are four times more likely to become addicted to alcohol at some time in their lives than are those who have their first drink at age 20 or older.[26] Nearly 70 percent of those who try an illicit drug before the age of 13 develop a substance use disorder in the next 7 years, compared with 27 percent of those who first try an illicit drug after the age of 17.[27] Although substance misuse problems can develop later in life, preventing or even just delaying young people from trying substances is important for reducing the likelihood of more serious problems later on.

Prevention interventions also aim to support or bolster protective factors, which give people the resources and strengths they need to avoid substance use. Having strong and positive family ties and social connections, being emotionally healthy, and having a feeling that one has control over one's successes and failures are all protective factors. Being satisfied with one's life, having a sense of a positive future ahead, and emotional resilience are other examples of protective factors.[28]

Given the overwhelming tendency for substance use to begin in adolescence (ages 12 to 17) and peak during young adulthood, most prevention interventions have focused on teens and young adults. However, effective prevention policies and programs have been developed across the lifespan, from infancy to adulthood. It is never too early and never too late to prevent substance misuse and substance-related problems. A growing number of interventions designed to reduce risk and enhance protective factors have been scientifically tested and shown to improve substance use and other outcomes. These include interventions for all age groups (including early childhood), for specific ethnic and racial groups, and for groups at high risk for substance misuse, such as youth involved in the criminal justice system. These interventions may focus all individuals in a group (*universal* interventions) or specifically on at-risk individuals (*selective* interventions).

Importantly, interventions at the environmental or policy level can also be effective at reducing substance use. This has been shown clearly with alcohol use (especially by minors) and related problems such as drunk driving. Raising alcohol prices; limiting where, when, and to whom alcohol can be sold; raising the

legal purchase age; and increasing enforcement of existing alcohol-related laws, such as the minimum legal drinking age (MLDA) of 21 and laws to prevent driving under the influence of alcohol, have successfully reduced negative alcohol-related outcomes where they have been implemented. Higher alcohol taxes have also been shown to reduce alcohol consumption.[29] As a growing number of states allow marijuana use recreationally[30] or therapeutically, research is ongoing to learn about the effects of these changes and policy levers that may mitigate potential harms, such as increased use by adolescents or impaired driving.

Evidence-based prevention interventions can also address a wider range of potential problems beyond just substance misuse. Alcohol and drug use among adolescents are typically part of a larger spectrum of behavioral problems, including mental disorders, risky and criminal behaviors, and difficulties in school. Many interventions address the common underlying risk factors for these issues and show benefits across these domains, making them powerful and, in many cases, highly cost-effective investments that pay off in reduced health care, law enforcement, and other societal costs.

In summary: *Prevention works.* However, it must be evidence-based, and there is a need for an ongoing investment in resources and infrastructure to ensure that prevention policies and programs can be implemented faithfully, sustainably, and at sufficient scale to reap the rewards of reduced substance misuse and its consequences in communities.

Early Intervention, Treatment, and Management of Substance Use Disorders

Treatment for substance use disorders can take many different forms and may be delivered in a range of settings varying in intensity. In all cases, though, the goals of treatment for substance use disorders are similar to treatment for any medical condition: to reduce the major symptoms of the illness and return the patient to a state of full functioning. Ideally, services are not "one size fits all" but are tailored to the unique needs of the individual. Treatment must be provided for an adequate length of time and should address the patient's substance use as well as related health and social consequences that could contribute to the risk of relapse, including connecting the patient to social support, housing, employment, and other wrap-around services.

Screening for substance misuse in health care settings including primary, psychiatric, urgent, and emergency care, is the first step in identifying behaviors that put individuals at risk for harms, including for developing a substance use disorder, and to identify patients with existing substance use disorders. Screening and brief intervention for alcohol in adults has been shown to be effective;[31] and screening for substance use and mental health problems is recommended by major health organizations for both adults and adolescents.[32-35] Brief advice or therapy would follow a positive screen and be tailored to an individual's specific needs; referral can be made to specialty treatment depending on severity.

Treatment for all substance use disorders—including alcohol, marijuana, cocaine, heroin or other opioid use disorders, among others—should include one or more types of *behavioral interventions* delivered in individual, group, and sometimes family settings. Evidence-based behavioral interventions may seek to increase patients' motivation to change, increase their self-efficacy (their belief in their ability to carry out actions that can achieve their goals), or help them identify and change disrupted behavior patterns and abnormal thinking.

The intensity of substance use disorder treatment services falls along a continuum. For people with mild substance use disorders, counseling services provided through primary care or other outpatient settings with an intensity of one or two counseling sessions per week may be sufficient while residential treatment may be necessary for people with a severe substance use disorder. Residential treatment was designed to provide a highly controlled environment with a high density of daily services. Ideally, people who receive treatment in residential settings participate in step-down services following the residential stay. Step-down services may include intensive outpatient or other outpatient counseling and recovery support services (RSS) to promote and encourage patients to independently manage their condition.[36,37]

Medications are also available to help treat people addicted to alcohol or opioids. Research is underway to develop new medications to treat other substance use disorders, such as addiction to marijuana or cocaine, but none have yet been approved by the U.S. Food and Drug Administration (FDA). The available medications do not by themselves restore the addicted brain to health, but they can support an individual's treatment process and recovery by preventing the substance from having pleasurable effects in the brain, by causing an unpleasant reaction when the substance is used, or by controlling symptoms of withdrawal and craving. Widening access to highly effective medications for treating opioid addiction—methadone, buprenorphine, and naltrexone—has been identified by United States public health authorities as an essential part of tackling America's current prescription opioid and heroin crisis.

FOR MORE ON THIS TOPIC

See "The Opioid Crisis" box in Chapter 1 - Introduction and Overview.

Medication Misconceptions

Use of medications to treat addiction has been controversial at times because of a longstanding misconception that methadone and, more recently, buprenorphine, which control opioid craving and withdrawal, merely "substitute one addiction for another." This belief has reinforced scientifically unsound "abstinence-only" philosophies (meaning abstinence from opioid-based medications as well as from illicit and misused drugs) in many treatment centers and has severely limited the use of these medications. Restrictions on how these drugs may be prescribed or dispensed have also reduced their availability for many people who could benefit from them.

Abundant scientific data show that long-term use of maintenance medications successfully reduces substance use, risk of relapse and overdose, associated criminal behavior, and transmission of infectious disease, as well as helps patients return to a healthy, functional life.[38-40]

In summary: **Treatment is effective.** As with other chronic, relapsing medical conditions, treatment can manage the symptoms of substance use disorders and prevent relapse. Rates of relapse following treatment for substance use disorders are comparable to those of other chronic illnesses such as diabetes, asthma, and hypertension.[41] More than 25 million individuals with a previous substance use disorder are in remission and living healthy, productive lives.[42]

However, many people seek or are referred to substance use treatment only after a crisis, such as an overdose, or through involvement with the criminal justice system. With any other health condition like heart disease, detecting problems and offering treatment only after a crisis is not considered good medicine. Integrating screening into general medical settings will make it easier to identify those in

need of treatment and engage them in the appropriate level of care before a crisis occurs. Overall, the need is for a stepped care model, in which mild to moderate substance use disorders are detected and addressed in general health care settings and severe disorders are treated by specialists using a chronic care model coordinated with primary care. The good news is that the existing health care system is well poised to help address the health consequences of alcohol and drug misuse and substance use disorders.

Recovery: The Many Paths to Wellness

Because the brain can take a long time to return to health following a long period of heavy substance use, risk of relapse is high at first. It can take a year of abstinence before an individual can be said to be in remission;[43] for people recovering from an alcohol use disorder it can take 4 to 5 years of abstinence for the risk of relapse to drop below 15 percent[42]—the level of risk of individuals in the general population developing a substance use disorder during their lifetime. In addition, 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. This 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.

Recovery has become an increasingly important concept for researchers and practitioners in the substance use disorder field, as well as in the community. It is central to a movement to bring greater awareness to the struggles and the successes of people fighting addiction and increase solidarity in overcoming the discrimination, shame, and misconceptions historically associated with substance use disorders. In general, the term sends a positive, hopeful message that recovery is possible, that there is life after even the most devastating struggles with addiction, and that people suffering with or recovering from an alcohol or drug use disorder have essential worth and dignity. It also provides a positive focus and construct for scientific, program, and policy-level thinking about substance use disorders.

RSS are not the same as treatment and have only recently been included as part of the health care system. Many of these services began long before the modern era of evidence-supported interventions; some have been studied and found to be effective at maintaining abstinence and promoting other positive long-term outcomes in those who take advantage of them. 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.

The best-known mutual aid groups are 12-step programs like Alcoholics Anonymous (AA) and Narcotics Anonymous (NA). NA has not been extensively studied, but AA has been shown in many studies to have a positive effect in reducing a person's likelihood of relapse to drinking.[44-48] 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.[49] *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.[50-54] Several other common RSS, *recovery community centers*, and *recovery high schools*, have not yet been rigorously evaluated.

In summary: *People can and do recover*. The recovery movement offers a valuable opportunity for people with substance use disorders and their loved ones to get the support they need to gradually return to a healthy and productive life away from the destructive impact of substance use. The movement also provides an opportunity for people to advocate for improvements in prevention and treatment services. Equally, this movement can contribute to efforts to reduce negative public attitudes as well as discrimination embedded in public policies and the health care system.

Health Care Systems and Substance Use Disorders

While 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, effective integration of prevention, treatment, and recovery services across health care systems is key to addressing substance misuse and its consequences; it represents the most promising way to improve access to and quality of treatment.

There are many kinds of health care systems across the United States with varying levels of integration across health care settings including primary care, specialty substance use disorder treatment (including residential and outpatient settings), mental health care, infectious disease clinics, school clinics, community health centers, hospitals, emergency departments, and others. These systems utilize wide-ranging workforces that include doctors, nurses, nurse practitioners, psychologists, licensed counselors, care managers, social workers, health educators, peer workers, and others. They incorporate diverse structural and financing models and leverage different levels of technology. These diverse health care systems have many roles to play in providing integrated care to address our nation's substance misuse and substance use disorder problems, including delivering prevention interventions; identifying patients with substance use related problems and engaging them in the appropriate level of care; treating substance use disorders of all levels of severity; coordinating care both across health care systems and with social services systems including criminal justice, housing and employment support, and child welfare; linking patients to RSS; and providing long-term monitoring and follow-up.

One of the recurring themes in this *Surgeon General's Report* is that sound scientific knowledge about how to address substance use disorders effectively has outpaced society's ability and, in some cases, willingness to implement that knowledge. Recent health care reform laws, as well as a wide range of other trends in the health care landscape, are working to address this gap. The Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act of 2008 (MHPAEA) requires that the financial requirements and treatment limitations imposed by most health plans and insurers for mental and substance use disorders be no more restrictive than the financial requirements and treatment limitations they impose for medical and surgical conditions (commonly referred to as "parity"). At the same time, the Affordable Care Act is greatly expanding the number of people covered by health insurance, and requires the majority of United States health plans and insurers to offer prevention, screening, and treatment for substance use disorders. Additional policy measures are increasing the scope of substance use disorder treatment services covered under Medicaid, widening access to care for those who are most economically disadvantaged and disproportionately at risk for substance use

disorders. At the same time, health care organizations are recognizing that substance use disorders must be detected and treated like other health conditions and that it is in their best economic interests to do so. This is leading to growing integration of behavioral health and general health care and increased efforts to screen patients for substance use disorders and address them through early intervention or referral to appropriate levels of treatment.

Substance use disorders are strongly intertwined with other medical conditions, making an integrated approach to care essential. Challenges to such integration include insufficient training of health care professionals on how to identify and treat substance use disorders, an underdeveloped infrastructure, and some ingrained attitudes. For example, methadone and buprenorphine treatment remain surrounded by misconceptions and prejudices that have hindered their delivery. Similar attitudinal barriers hinder the adoption of harm reduction strategies like needle/syringe exchange programs, which evidence shows can reduce the spread of infectious diseases among individuals who inject drugs.[55]

Increasing the number of insured Americans and integrating substance use disorder services with mainstream health care has the power to improve outcomes for individuals, reduce overall health care costs for them and their families, reduce health disparities among high-risk groups, and reduce costs for health care systems and communities. Studies show that greater investment in treatment will also reduce costs associated with criminal justice; child welfare, educational, and social services; and lost productivity.[2,3] The benefits may also be felt more broadly, as the evidence suggests that improving substance use treatment can help to improve treatment success for other conditions, reduce hospital readmissions, reduce the spread of infectious diseases like HIV and hepatitis, and reduce drug-related accidents and overdoses.

Vision and Recommendations

The final chapter of this Report spells out concrete recommendations for how to achieve an equitable and effective, science-based public health approach to substance use and substance use disorders. A public health–based approach seeks to understand the broad individual, environmental, and societal factors that influence substance misuse and substance use disorders and applies that knowledge to improve the health, safety, and well-being of the entire population. It recognizes that substance misuse and its consequences are the result of multiple interacting factors and coordinates the efforts of diverse stakeholders to address substance misuse across the community. Current health reform efforts and technological advances can facilitate this—for example, advances in health information technology and data analytics enable researchers and practitioners to target the populations of greatest need, link different components of health care and the broader public health systems together (e.g., affordable housing, job training, recovery support), and address the risk and protective factors that are most actionable at the local level.

But the health care system alone cannot address all of the major determinants of health related to substance misuse. Community leaders should work together to mobilize the capacities of health care organizations, local governmental public health, social service organizations, educational systems, community-based organizations, religious institutions, law enforcement, local businesses, researchers, and other public, private, and voluntary entities that are part of the broader public health system.

Everyone has a role to play in addressing substance misuse and substance use disorders as a public health issue.

The concluding chapter highlights æve general messages and their implications for policy and practice:

- Both substance misuse and substance use disorders harm the health and well-being of individuals and communities. Addressing them requires implementation of effective strategies.
- Highly effective community-based prevention programs and policies exist and should be widely implemented.
- Full integration of the continuum of services for substance use disorders with the rest of health care could signiæcantly improve the quality, effectiveness, and safety of all health care.
- Coordination and implementation of recent health reform and parity laws will help ensure increased access to services for people with substance use disorders.
- A large body of research has clariæed the biological, psychological, and social underpinnings of substance misuse and related disorders and described effective prevention, treatment, and recovery support services. Future research is needed to guide the new public health approach to substance misuse and substance use disorders.

Conclusion

By adopting an evidence-based public health approach, America has the opportunity to take genuinely effective steps to prevent and treat substance-related issues. Such an approach can prevent substance initiation or escalation from use to a disorder, and thus reduce the number of people suffering with addiction; it can shorten the duration of illness for sufferers; and it can reduce the number of substance-related deaths. A public health approach will also reduce collateral damage created by substance misuse, such as infectious disease transmission and motor vehicle crashes. Thus, promoting much wider adoption of appropriate evidence-based prevention, treatment, and recovery strategies needs to be a top public health priority.

Making this change will require a major cultural shift in the way we think about, talk about, look at, and act toward people with substance use disorders. Negative attitudes and ways of talking about substance misuse and substance use disorders can be entrenched, but it is possible to change social attitudes. This has been done many times in the past: Cancer and HIV used to be surrounded by fear and judgment, now they are regarded by many as simply medical conditions. This has helped people become comfortable talking about their concerns with their doctors, widening access to prevention and treatment. By coming together as a society with the resolve to do so, it is similarly possible to change attitudes toward substance misuse and substance use disorders. There is a strong scientiæc as well as moral case for addressing substance use disorders with a public health model that focuses on reducing both health and social justice disparities, and it aligns strongly with an economic case. Now is the time to make this change, for the health and well-being of all Americans.

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