READING MATERIAL FOR THE FREE STATE SOCIAL WORK, LLC COURSE
PRINCIPLES OF DRUG ADDICTION TREATMENT AND FREQUENTLY ASKED QUESTIONS

AN EXCERPT (PAGES 1 – 29) FROM THE NATIONAL INSTITUTE ON DRUG ABUSE PRINCIPLES OF DRUG ADDICTION AND TREATMENT: A RESEARCH BASED GUIDE

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PRINCIPLES OF DRUG ADDICTION TREATMENT

A RESEARCH-BASED GUIDE

THIRD EDITION

National Institute on Drug Abuse
National Institutes of Health
U.S. Department of Health and Human Services

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Preface

Drug addiction is a complex illness. It is characterized by intense and, at times, uncontrollable drug craving, along with compulsive drug seeking and use that persist even in the face of devastating consequences. This update of the National Institute on Drug Abuse's *Principles of Drug Addiction Treatment* is intended to address addiction to a wide variety of drugs, including nicotine, alcohol, and illicit and prescription drugs. It is designed to serve as a resource for healthcare providers, family members, and other stakeholders trying to address the myriad problems faced by patients in need of treatment for drug abuse or addiction.

Addiction affects multiple brain circuits, including those involved in reward and motivation, learning and memory, and inhibitory control over behavior. That is why addiction is a brain disease. Some individuals are more vulnerable than others to becoming addicted, depending on the interplay between genetic makeup, age of exposure to drugs, and other environmental influences. While a person initially chooses to take drugs, over time the effects of prolonged exposure on brain functioning compromise that ability to choose, and seeking and consuming the drug become compulsive, often eluding a person's self-control or willpower.

But addiction is more than just compulsive drug taking—it can also produce far-reaching health and social consequences. For example, drug abuse and addiction increase a person's risk for a variety of other mental and physical illnesses related to a drug-abusing lifestyle or the toxic effects of the drugs themselves. Additionally, the dysfunctional behaviors that result from drug abuse can interfere with a person's normal functioning in the family, the workplace, and the broader community.

Because drug abuse and addiction have so many dimensions and disrupt so many aspects of an individual's life, treatment is not simple. Effective treatment programs

typically incorporate many components, each directed to a particular aspect of the illness and its consequences. Addiction treatment must help the individual stop using drugs, maintain a drug-free lifestyle, and achieve productive functioning in the family, at work, and in society. Because addiction is a disease, most people cannot simply stop using drugs for a few days and be cured. Patients typically require long-term or repeated episodes of care to achieve the ultimate goal of sustained abstinence and recovery of their lives. Indeed, scientific research and clinical practice demonstrate the value of continuing care in treating addiction, with a variety of approaches having been tested and integrated in residential and community settings.

As we look toward the future, we will harness new research results on the influence of genetics and environment on gene function and expression (i.e., epigenetics), which are heralding the development of personalized treatment interventions. These findings will be integrated with current evidence supporting the most effective drug abuse and addiction treatments and their implementation, which are reflected in this guide.

Nora D. Volkow, M.D.
Director
National Institute on Drug Abuse

Nearly four decades of scientific research and clinical practice have yielded a variety of effective approaches to drug addiction treatment.

Principles of Effective Treatment

1. **Addiction is a complex but treatable disease that affects brain function and behavior.** Drugs of abuse alter the brain's structure and function, resulting in changes that persist long after drug use has ceased. This may explain why drug abusers are at risk for relapse even after long periods of abstinence and despite the potentially devastating consequences.

2. **No single treatment is appropriate for everyone.** Treatment varies depending on the type of drug and the characteristics of the patients. Matching treatment settings, interventions, and services to an individual's particular problems and needs is critical to his or her ultimate success in returning to productive functioning in the family, workplace, and society.

3. **Treatment needs to be readily available.** Because drug-addicted individuals may be uncertain about entering treatment, taking advantage of available services the moment people are ready for treatment is critical. Potential patients can be lost if treatment is not immediately available or readily accessible. As with other chronic diseases, the earlier treatment is offered in the disease process, the greater the likelihood of positive outcomes.

4. **Effective treatment attends to multiple needs of the individual, not just his or her drug abuse.** To be effective, treatment must address the individual's drug abuse and any associated medical, psychological, social, vocational, and legal problems. It is also important that treatment be appropriate to the individual's age, gender, ethnicity, and culture.

5. **Remaining in treatment for an adequate period of time is critical.** The appropriate duration for an individual depends on the type and degree of the patient's problems and needs. Research indicates that most addicted individuals need at least 3 months in treatment to significantly reduce or stop their drug use and that the best outcomes occur with longer durations of treatment. Recovery from drug addiction is a long-term process and frequently requires multiple episodes of treatment. As with other chronic illnesses, relapses to drug abuse can occur and should signal a need for treatment to be reinstated or adjusted. Because individuals often leave treatment prematurely, programs should include strategies to engage and keep patients in treatment.

6. **Behavioral therapies—including individual, family, or group counseling—are the most commonly used forms of drug abuse treatment.** Behavioral therapies vary in their focus and may involve addressing a patient's motivation to change, providing incentives for abstinence, building skills to resist drug use, replacing drug-using activities with constructive and rewarding activities, improving problem-solving skills, and facilitating better interpersonal relationships. Also, participation in group therapy and other peer support programs during and following treatment can help maintain abstinence.

7. **Medications are an important element of treatment for many patients, especially when combined with counseling and other behavioral therapies.** For example, methadone, buprenorphine, and naltrexone (including a new long-acting formulation) are effective in helping individuals addicted to heroin or other opioids stabilize their lives and reduce their illicit drug use. Acamprosate, disulfiram, and naltrexone are medications approved for treating alcohol dependence. For persons addicted to nicotine, a nicotine replacement product (available as patches, gum, lozenges, or nasal spray) or an oral medication (such as bupropion or varenicline) can be an effective component of treatment when part of a comprehensive behavioral treatment program.

8. **An individual's treatment and services plan must be assessed continually and modified as necessary to ensure that it meets his or her changing needs.** A patient may require varying combinations of services and treatment components during the course of treatment and recovery. In addition to counseling or psychotherapy, a patient may require medication, medical services, family therapy, parenting instruction, vocational rehabilitation, and/or social and legal services. For many patients, a continuing care approach provides the best results, with the treatment intensity varying according to a person's changing needs.

9. **Many drug-addicted individuals also have other mental disorders.** Because drug abuse and addiction—both of which are mental disorders—often co-occur with other mental illnesses, patients presenting with one condition should be assessed for the other(s). And when these problems co-occur, treatment should address both (or all), including the use of medications as appropriate.

10. **Medically assisted detoxification is only the first stage of addiction treatment and by itself does little to change long-term drug abuse.** Although medically assisted detoxification can safely manage the acute physical symptoms of withdrawal and can, for some, pave the way for effective long-term addiction treatment, detoxification alone is rarely sufficient to help addicted individuals achieve long-term abstinence. Thus, patients should be encouraged to continue drug treatment following detoxification. Motivational enhancement and incentive strategies, begun at initial patient intake, can improve treatment engagement.

11. **Treatment does not need to be voluntary to be effective.** Sanctions or enticements from family, employment settings, and/or the criminal justice system can significantly increase treatment entry, retention rates, and the ultimate success of drug treatment interventions.

12. **Drug use during treatment must be monitored continuously, as lapses during treatment do occur.** Knowing their drug use is being monitored can be a powerful incentive for patients and can help them withstand urges to use drugs. Monitoring also provides an early indication of a return to drug use, signaling a possible need to adjust an individual's treatment plan to better meet his or her needs.

13. **Treatment programs should test patients for the presence of HIV/AIDS, hepatitis B and C, tuberculosis, and other infectious diseases, as well as provide targeted risk-reduction counseling, linking patients to treatment if necessary.** Typically, drug abuse treatment addresses some of the drug-related behaviors that put people at risk of infectious diseases. Targeted counseling focused on reducing infectious disease risk can help patients further reduce or avoid substance-related and other high-risk behaviors. Counseling can also help those who are already infected to manage their illness. Moreover, engaging in substance abuse treatment can facilitate adherence to other medical treatments. Substance abuse treatment facilities should provide onsite, rapid HIV testing rather than referrals to offsite testing—research shows that doing so increases the likelihood that patients will be tested and receive their test results. Treatment providers should also inform patients that highly active antiretroviral therapy (HAART) has proven effective in combating HIV, including among drug-abusing populations, and help link them to HIV treatment if they test positive.

Treatment varies depending on the type of drug and the characteristics of the patient. The best programs provide a combination of therapies and other services.

Frequently Asked Questions

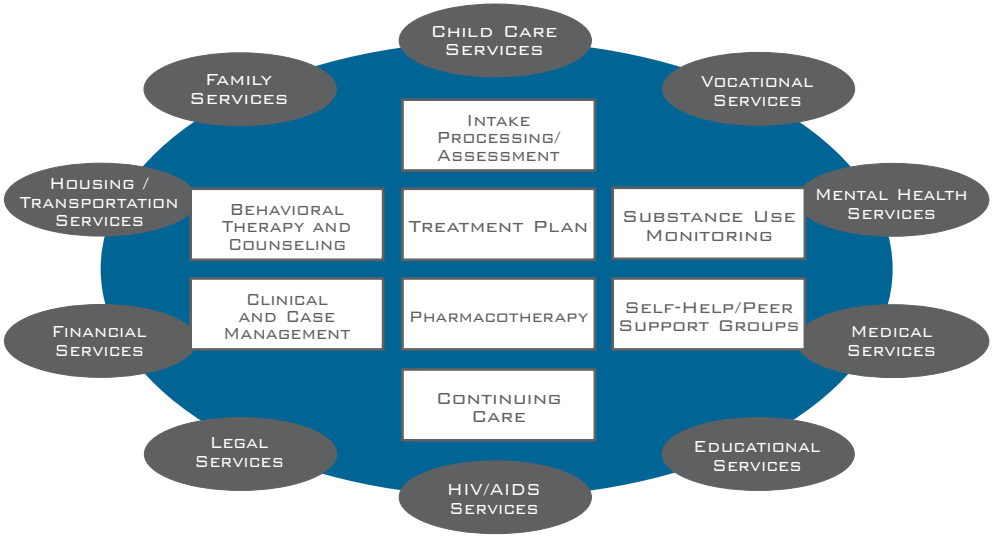
1. Why do drug-addicted persons keep using drugs?

Nearly all addicted individuals believe at the outset that they can stop using drugs on their own, and most try to stop without treatment. Although some people are successful, many attempts result in failure to achieve long-term abstinence. Research has shown that long-term drug abuse results in changes in the brain that persist long after a person stops using drugs. These drug-induced changes in brain function can have many behavioral consequences, including an inability to exert control over the impulse to use drugs despite adverse consequences—the defining characteristic of addiction.

Long-term drug use results in significant changes in brain function that can persist long after the individual stops using drugs.

Understanding that addiction has such a fundamental biological component may help explain the difficulty of achieving and maintaining abstinence without treatment. Psychological stress from work, family problems, psychiatric illness, pain associated with medical problems, social cues (such as meeting individuals from one's drug-using past), or environmental cues (such as encountering streets, objects, or even smells associated with drug abuse) can trigger intense cravings without the individual even being consciously aware of the triggering event. Any one of these factors can hinder attainment of sustained abstinence and make relapse more likely. Nevertheless, research indicates that active participation in treatment is an essential component for good outcomes and can benefit even the most severely addicted individuals.

Components of Comprehensive Drug Abuse Treatment



The best treatment programs provide a combination of therapies and other services to meet the needs of the individual patient.

2. What is drug addiction treatment?

Drug treatment is intended to help addicted individuals stop compulsive drug seeking and use. Treatment can occur in a variety of settings, take many different forms, and last for different lengths of time. Because drug addiction is typically a chronic disorder characterized by occasional relapses, a short-term, one-time treatment is usually not sufficient. For many, treatment is a long-term process that involves multiple interventions and regular monitoring.

There are a variety of evidence-based approaches to treating addiction. Drug treatment can include behavioral therapy (such as cognitive-behavioral therapy or contingency management), medications, or their combination. The specific type of treatment or combination of treatments will vary depending on the patient's individual needs and, often, on the types of drugs they use.

Drug addiction treatment can include medications, behavioral therapies, or their combination.

Treatment medications, such as methadone, buprenorphine, and naltrexone (including a new long-acting formulation), are available for individuals addicted to opioids, while nicotine preparations (patches, gum, lozenges, and nasal spray) and the medications varenicline and bupropion are available for individuals addicted to tobacco. Disulfiram, acamprosate, and naltrexone are medications available for treating alcohol dependence,[1] which commonly co-occurs with other drug addictions, including addiction to prescription medications.

Treatments for prescription drug abuse tend to be similar to those for illicit drugs that affect the same brain systems. For example, buprenorphine, used to treat heroin addiction, can also be used to treat addiction to opioid pain medications. Addiction to prescription stimulants, which affect the same brain systems as illicit stimulants like cocaine, can be treated with behavioral therapies, as there are not yet medications for treating addiction to these types of drugs.

Behavioral therapies can help motivate people to participate in drug treatment, offer strategies for coping with drug cravings, teach ways to avoid drugs and prevent relapse, and help individuals deal with relapse if it occurs. Behavioral therapies can also help people improve communication, relationship, and parenting skills, as well as family dynamics.

[1] Another drug, topiramate, has also shown promise in studies and is sometimes prescribed (off-label) for this purpose although it has not received FDA approval as a treatment for alcohol dependence.

Many treatment programs employ both individual and group therapies. Group therapy can provide social reinforcement and help enforce behavioral contingencies that promote abstinence and a non-drug-using lifestyle. Some of the more established behavioral treatments, such as contingency management and cognitive-behavioral therapy, are also being adapted for group settings to improve efficiency and cost-effectiveness. However, particularly in adolescents, there can also be a danger of unintended harmful (or iatrogenic) effects of group treatment—sometimes group members (especially groups of highly delinquent youth) can reinforce drug use and thereby derail the purpose of the therapy. Thus, trained counselors should be aware of and monitor for such effects.

Because they work on different aspects of addiction, combinations of behavioral therapies and medications (when available) generally appear to be more effective than either approach used alone.

Finally, people who are addicted to drugs often suffer from other health (e.g., depression, HIV), occupational, legal, familial, and social problems that should be addressed concurrently. The best programs provide a combination of therapies and other services to meet an individual patient's needs. Psychoactive medications, such as antidepressants, anti-anxiety agents, mood stabilizers, and antipsychotic medications, may be critical for treatment success when patients have co-occurring mental disorders such as depression, anxiety disorders (including post-traumatic stress disorder), bipolar disorder, or schizophrenia. In addition, most people with severe addiction abuse multiple drugs and require treatment for all substances abused.

Treatment for drug abuse and addiction is delivered in many different settings using a variety of behavioral and pharmacological approaches.

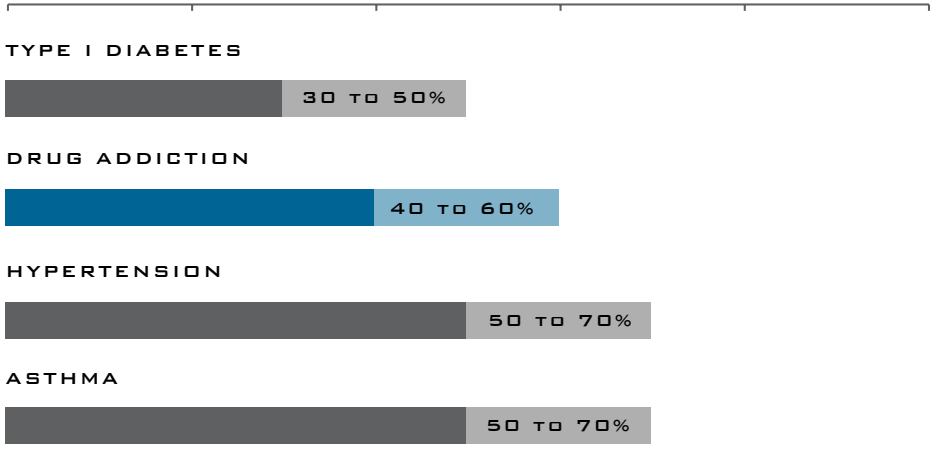
3. How effective is drug addiction treatment?

In addition to stopping drug abuse, the goal of treatment is to return people to productive functioning in the family, workplace, and community. According to research that tracks individuals in treatment over extended periods, most people who get into and remain in treatment stop using drugs, decrease their criminal activity, and improve their occupational, social, and psychological functioning. For example, methadone treatment has been shown to increase participation in behavioral therapy and decrease both drug use and criminal behavior. However, individual treatment outcomes depend on the extent and nature of the patient's problems, the appropriateness of treatment and related services used to address those problems, and the quality of interaction between the patient and his or her treatment providers.

Relapse rates for addiction resemble those of other chronic diseases such as diabetes, hypertension, and asthma.

Like other chronic diseases, addiction can be managed successfully. Treatment enables people to counteract addiction's powerful disruptive effects on the brain and behavior and to regain control of their lives. The chronic nature of the disease means that relapsing to drug abuse is not only possible but also likely, with symptom recurrence rates similar to those for other well-characterized chronic medical illnesses—such as diabetes, hypertension, and asthma (see figure, "Comparison of Relapse Rates Between Drug Addiction and Other Chronic Illnesses")—that also have both physiological and behavioral components.

Comparison of Relapse Rates Between Drug Addiction and Other Chronic Illnesses

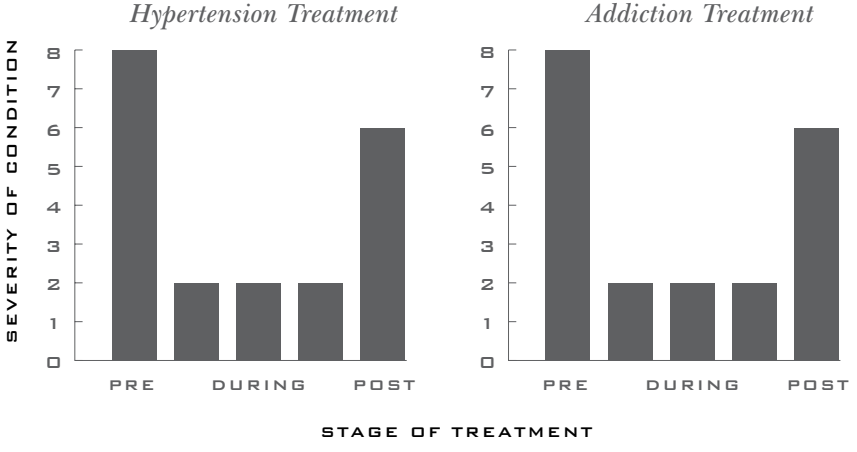


Unfortunately, when relapse occurs many deem treatment a failure. This is not the case: Successful treatment for addiction typically requires continual evaluation and modification as appropriate, similar to the approach taken for other chronic diseases. For example, when a patient is receiving active treatment for hypertension and symptoms decrease, treatment is deemed successful, even though symptoms may recur when treatment is discontinued. For the addicted individual, lapses to drug abuse do not indicate failure—rather, they signify that treatment needs to be reinstated or adjusted, or that alternate treatment is needed (see figure, "Why is Addiction Treatment Evaluated Differently?").

4. Is drug addiction treatment worth its cost?

Substance abuse costs our Nation over $600 billion annually and treatment can help reduce these costs. Drug addiction treatment has been shown to reduce associated

Why is addiction treatment evaluated differently? Both require ongoing care



health and social costs by far more than the cost of the treatment itself. Treatment is also much less expensive than its alternatives, such as incarcerating addicted persons. For example, the average cost for 1 full year of methadone maintenance treatment is approximately $4,700 per patient, whereas 1 full year of imprisonment costs approximately $24,000 per person.

Drug addiction treatment reduces drug use and its associated health and social costs.

According to several conservative estimates, every dollar invested in addiction treatment programs yields a return of between $4 and $7 in reduced drug-related crime, criminal justice costs, and theft. When savings related to healthcare are included, total savings can exceed costs by a ratio of 12 to 1. Major savings to the individual and to society also stem from fewer interpersonal conflicts; greater workplace productivity; and fewer drug-related accidents, including overdoses and deaths.

5. How long does drug addiction treatment usually last?

Individuals progress through drug addiction treatment at various rates, so there is no predetermined length of treatment. However, research has shown unequivocally that good outcomes are contingent on adequate treatment length. Generally, for residential or outpatient treatment, participation for less than 90 days is of limited effectiveness, and treatment lasting significantly longer is recommended for maintaining positive outcomes. For methadone maintenance, 12 months is considered the minimum, and some opioid-addicted individuals continue to benefit from methadone maintenance for many years.

Good outcomes are contingent on adequate treatment length.

Treatment dropout is one of the major problems encountered by treatment programs; therefore, motivational techniques that can keep patients engaged will also improve outcomes. By viewing addiction as a chronic disease and offering continuing care and monitoring, programs can succeed, but this will often require multiple episodes of treatment and readily readmitting patients that have relapsed.

6. What helps people stay in treatment?

Because successful outcomes often depend on a person's staying in treatment long enough to reap its full benefits, strategies for keeping people in treatment are critical. Whether a patient stays in treatment depends on factors associated with both the individual and the program. Individual factors related to engagement and retention typically include motivation to change drug-using behavior; degree of support from family and friends; and, frequently,

pressure from the criminal justice system, child protection services, employers, or family. Within a treatment program, successful clinicians can establish a positive, therapeutic relationship with their patients. The clinician should ensure that a treatment plan is developed cooperatively with the person seeking treatment, that the plan is followed, and that treatment expectations are clearly understood. Medical, psychiatric, and social services should also be available.

Whether a patient stays in treatment depends on factors associated with both the individual and the program.

Because some problems (such as serious medical or mental illness or criminal involvement) increase the likelihood of patients dropping out of treatment, intensive interventions may be required to retain them. After a course of intensive treatment, the provider should ensure a transition to less intensive continuing care to support and monitor individuals in their ongoing recovery.

7. How do we get more substance-abusing people into treatment?

It has been known for many years that the "treatment gap" is massive—that is, among those who need treatment for a substance use disorder, few receive it. In 2011, 21.6 million persons aged 12 or older needed treatment for an illicit drug or alcohol use problem, but only 2.3 million received treatment at a specialty substance abuse facility.

Reducing this gap requires a multipronged approach. Strategies include increasing access to effective treatment, achieving insurance parity (now in its earliest phase of implementation), reducing stigma, and raising awareness

among both patients and healthcare professionals of the value of addiction treatment. To assist physicians in identifying treatment need in their patients and making appropriate referrals, NIDA is encouraging widespread use of screening, brief intervention, and referral to treatment (SBIRT) tools for use in primary care settings through its NIDAMED initiative. SBIRT, which evidence shows to be effective against tobacco and alcohol use—and, increasingly, against abuse of illicit and prescription drugs—has the potential not only to catch people before serious drug problems develop but also to identify people in need of treatment and connect them with appropriate treatment providers.

8. How can family and friends make a difference in the life of someone needing treatment?

Family and friends can play critical roles in motivating individuals with drug problems to enter and stay in treatment. Family therapy can also be important, especially for adolescents. Involvement of a family member or significant other in an individual's treatment program can strengthen and extend treatment benefits.

9. Where can family members go for information on treatment options?

Trying to locate appropriate treatment for a loved one, especially finding a program tailored to an individual's particular needs, can be a difficult process. However, there are some resources to help with this process. For example, NIDA's handbook *Seeking Drug Abuse Treatment: Know What to Ask* offers guidance in finding the right treatment program. Numerous online resources can help locate a local program or provide other information, including:

- The Substance Abuse and Mental Health Services Administration (SAMHSA) maintains a Web site (*findtreatment.samhsa.gov*) that shows the location of residential, outpatient, and hospital inpatient treatment programs for drug addiction and alcoholism throughout the country. This information is also accessible by calling 1-800-662-HELP.
- The National Suicide Prevention Lifeline (1-800-273-TALK) offers more than just suicide prevention—it can also help with a host of issues, including drug and alcohol abuse, and can connect individuals with a nearby professional.
- The National Alliance on Mental Illness (*nami.org*) and Mental Health America (*mentalhealthamerica.net*) are alliances of nonprofit, self-help support organizations for patients and families dealing with a variety of mental disorders. Both have State and local affiliates throughout the United States and may be especially helpful for patients with comorbid conditions.
- The American Academy of Addiction Psychiatry and the American Academy of Child and Adolescent Psychiatry each have physician locator tools posted on their Web sites at *aaap.org* and *aacap.org*, respectively.
- Faces & Voices of Recovery (*facesandvoicesofrecovery.org*), founded in 2001, is an advocacy organization for individuals in long-term recovery that strategizes on ways to reach out to the medical, public health, criminal justice, and other communities to promote and celebrate recovery from addiction to alcohol and other drugs.
- The Partnership at Drugfree.org (*drugfree.org*) is an organization that provides information and resources on teen drug use and addiction for parents, to help them prevent and intervene in their children's drug use or find treatment for a child who needs it. They offer a toll-free helpline for parents (1-855-378-4373).

- The American Society of Addiction Medicine (*asam.org*) is a society of physicians aimed at increasing access to addiction treatment. Their Web site has a nationwide directory of addiction medicine professionals.
- NIDA's National Drug Abuse Treatment Clinical Trials Network (*drugabuse.gov/about-nida/organization/cctn/ctn*) provides information for those interested in participating in a clinical trial testing a promising substance abuse intervention; or visit *clinicaltrials.gov*.
- NIDA's DrugPubs Research Dissemination Center (*drugpubs.drugabuse.gov*) provides booklets, pamphlets, fact sheets, and other informational resources on drugs, drug abuse, and treatment.
- The National Institute on Alcohol Abuse and Alcoholism (*niaaa.nih.gov*) provides information on alcohol, alcohol use, and treatment of alcohol-related problems (*niaaa.nih.gov/search/node/treatment*).

10. How can the workplace play a role in substance abuse treatment?

Many workplaces sponsor Employee Assistance Programs (EAPs) that offer short-term counseling and/or assistance in linking employees with drug or alcohol problems to local treatment resources, including peer support/recovery groups. In addition, therapeutic work environments that provide employment for drug-abusing individuals who can demonstrate abstinence have been shown not only to promote a continued drug-free lifestyle but also to improve job skills, punctuality, and other behaviors necessary for active employment throughout life. Urine testing facilities, trained personnel, and workplace monitors are needed to implement this type of treatment.

11. What role can the criminal justice system play in addressing drug addiction?

It is estimated that about one-half of State and Federal prisoners abuse or are addicted to drugs, but relatively few receive treatment while incarcerated. Initiating drug abuse treatment in prison and continuing it upon release is vital to both individual recovery and to public health and safety. Various studies have shown that combining prison- and community-based treatment for addicted offenders reduces the risk of both recidivism to drug-related criminal behavior and relapse to drug use—which, in turn, nets huge savings in societal costs. A 2009 study in Baltimore, Maryland, for example, found that opioid-addicted prisoners who started methadone treatment (along with counseling) in prison and then continued it after release had better outcomes (reduced drug use and criminal activity) than those who only received counseling while in prison or those who only started methadone treatment after their release.

Individuals who enter treatment under legal pressure have outcomes as favorable as those who enter treatment voluntarily.

The majority of offenders involved with the criminal justice system are not in prison but are under community supervision. For those with known drug problems, drug addiction treatment may be recommended or mandated as a condition of probation. Research has demonstrated that individuals who enter treatment under legal pressure have outcomes as favorable as those who enter treatment voluntarily.

The criminal justice system refers drug offenders into treatment through a variety of mechanisms, such as

diverting nonviolent offenders to treatment; stipulating treatment as a condition of incarceration, probation, or pretrial release; and convening specialized courts, or drug courts, that handle drug offense cases. These courts mandate and arrange for treatment as an alternative to incarceration, actively monitor progress in treatment, and arrange for other services for drug-involved offenders.

The most effective models integrate criminal justice and drug treatment systems and services. Treatment and criminal justice personnel work together on treatment planning—including implementation of screening, placement, testing, monitoring, and supervision—as well as on the systematic use of sanctions and rewards. Treatment for incarcerated drug abusers should include continuing care, monitoring, and supervision after incarceration and during parole. Methods to achieve better coordination between parole/probation officers and health providers are being studied to improve offender outcomes. (For more information, please see NIDA's *Principles of Drug Abuse Treatment for Criminal Justice Populations: A Research-Based Guide* [revised 2012].)

12. What are the unique needs of women with substance use disorders?

Gender-related drug abuse treatment should attend not only to biological differences but also to social and environmental factors, all of which can influence the motivations for drug use, the reasons for seeking treatment, the types of environments where treatment is obtained, the treatments that are most effective, and the consequences of not receiving treatment. Many life circumstances predominate in women as a group, which may require a specialized treatment approach. For example, research has shown that physical and sexual trauma followed by post-traumatic stress disorder (PTSD) is more common

in drug-abusing women than in men seeking treatment. Other factors unique to women that can influence the treatment process include issues around how they come into treatment (as women are more likely than men to seek the assistance of a general or mental health practitioner), financial independence, and pregnancy and child care.

13. What are the unique needs of pregnant women with substance use disorders?

Using drugs, alcohol, or tobacco during pregnancy exposes not just the woman but also her developing fetus to the substance and can have potentially deleterious and even long-term effects on exposed children. Smoking during pregnancy can increase risk of stillbirth, infant mortality, sudden infant death syndrome, preterm birth, respiratory problems, slowed fetal growth, and low birth weight. Drinking during pregnancy can lead to the child developing fetal alcohol spectrum disorders, characterized by low birth weight and enduring cognitive and behavioral problems.

Prenatal use of some drugs, including opioids, may cause a withdrawal syndrome in newborns called neonatal abstinence syndrome (NAS). Babies with NAS are at greater risk of seizures, respiratory problems, feeding difficulties, low birth weight, and even death.

Research has established the value of evidence-based treatments for pregnant women (and their babies), including medications. For example, although no medications have been FDA-approved to treat opioid dependence in pregnant women, methadone maintenance combined with prenatal care and a comprehensive drug treatment program can improve many of the detrimental outcomes associated with untreated heroin abuse. However, newborns exposed to methadone

during pregnancy still require treatment for withdrawal symptoms. Recently, another medication option for opioid dependence, buprenorphine, has been shown to produce fewer NAS symptoms in babies than methadone, resulting in shorter infant hospital stays. In general, it is important to closely monitor women who are trying to quit drug use during pregnancy and to provide treatment as needed.

14. What are the unique needs of adolescents with substance use disorders?

Adolescent drug abusers have unique needs stemming from their immature neurocognitive and psychosocial stage of development. Research has demonstrated that the brain undergoes a prolonged process of development and refinement from birth through early adulthood. Over the course of this developmental period, a young person's actions go from being more impulsive to being more reasoned and reflective. In fact, the brain areas most closely associated with aspects of behavior such as decision-making, judgment, planning, and self-control undergo a period of rapid development during adolescence and young adulthood.

Adolescent drug abuse is also often associated with other co-occurring mental health problems. These include attention-deficit hyperactivity disorder (ADHD), oppositional defiant disorder, and conduct problems, as well as depressive and anxiety disorders.

Adolescents are also especially sensitive to social cues, with peer groups and families being highly influential during this time. Therefore, treatments that facilitate positive parental involvement, integrate other systems in which the adolescent participates (such as school and athletics), and recognize the importance of prosocial peer relationships are among the most effective. Access to comprehensive

assessment, treatment, case management, and family-support services that are developmentally, culturally, and gender-appropriate is also integral when addressing adolescent addiction.

Medications for substance abuse among adolescents may in certain cases be helpful. Currently, the only addiction medications approved by FDA for people under 18 are over-the-counter transdermal nicotine skin patches, chewing gum, and lozenges (physician advice should be sought first). Buprenorphine, a medication for treating opioid addiction that must be prescribed by specially trained physicians, has not been approved for adolescents, but recent research suggests it could be effective for those as young as 16. Studies are under way to determine the safety and efficacy of this and other medications for opioid-, nicotine-, and alcohol-dependent adolescents and for adolescents with co-occurring disorders.

15. Are there specific drug addiction treatments for older adults?

With the aging of the baby boomer generation, the composition of the general population is changing dramatically with respect to the number of older adults. Such a change, coupled with a greater history of lifetime drug use (than previous older generations), different cultural norms and general attitudes about drug use, and increases in the availability of psychotherapeutic medications, is already leading to greater drug use by older adults and may increase substance use problems in this population. While substance abuse in older adults often goes unrecognized and therefore untreated, research indicates that currently available addiction treatment programs can be as effective for them as for younger adults.

16. Can a person become addicted to medications prescribed by a doctor?

Yes. People who abuse prescription drugs—that is, taking them in a manner or a dose other than prescribed, or taking medications prescribed for another person—risk addiction and other serious health consequences. Such drugs include opioid pain relievers, stimulants used to treat ADHD, and benzodiazepines to treat anxiety or sleep disorders. Indeed, in 2010, an estimated 2.4 million people 12 or older met criteria for abuse of or dependence on prescription drugs, the second most common illicit drug use after marijuana. To minimize these risks, a physician (or other prescribing health provider) should screen patients for prior or current substance abuse problems and assess their family history of substance abuse or addiction before prescribing a psychoactive medication and monitor patients who are prescribed such drugs. Physicians also need to educate patients about the potential risks so that they will follow their physician's instructions faithfully, safeguard their medications, and dispose of them appropriately.

17. Is there a difference between physical dependence and addiction?

Yes. Addiction—or compulsive drug use despite harmful consequences—is characterized by an inability to stop using a drug; failure to meet work, social, or family obligations; and, sometimes (depending on the drug), tolerance and withdrawal. The latter reflect physical dependence in which the body adapts to the drug, requiring more of it to achieve a certain effect (tolerance) and eliciting drug-specific physical or mental symptoms if drug use is abruptly ceased (withdrawal). Physical dependence can happen with the chronic use of many drugs—including many prescription drugs, even if taken as instructed. Thus, physical dependence in and of itself does not constitute addiction, but it often accompanies addiction. This distinction can be difficult to discern, particularly with prescribed pain medications, for which the need for increasing dosages can represent tolerance or a worsening underlying problem, as opposed to the beginning of abuse or addiction.

18. How do other mental disorders coexisting with drug addiction affect drug addiction treatment?

Drug addiction is a disease of the brain that frequently occurs with other mental disorders. In fact, as many as 6 in 10 people with an illicit substance use disorder also suffer from another mental illness; and rates are similar for users of licit drugs—i.e., tobacco and alcohol. For these individuals, one condition becomes more difficult to treat successfully as an additional condition is intertwined. Thus, people entering treatment either for a substance use disorder or for another mental disorder should be assessed for the co-occurrence of the other condition. Research indicates that treating both (or multiple) illnesses simultaneously in an integrated fashion is generally the best treatment approach for these patients.

19. Is the use of medications like methadone and buprenorphine simply replacing one addiction with another?

No. Buprenorphine and methadone are prescribed or administered under monitored, controlled conditions and are safe and effective for treating opioid addiction when used as directed. They are administered orally or sublingually (i.e., under the tongue) in specified doses, and their effects differ from those of heroin and other abused opioids.

Heroin, for example, is often injected, snorted, or smoked, causing an almost immediate "rush," or brief period of intense euphoria, that wears off quickly and ends in a "crash." The individual then experiences an intense craving to use the drug again to stop the crash and reinstate the euphoria.

The cycle of euphoria, crash, and craving—sometimes repeated several times a day—is a hallmark of addiction and results in severe behavioral disruption. These characteristics result from heroin's rapid onset and short duration of action in the brain.

As used in maintenance treatment, methadone and buprenorphine are not heroin/opioid substitutes.

In contrast, methadone and buprenorphine have gradual onsets of action and produce stable levels of the drug in the brain. As a result, patients maintained on these medications do not experience a rush, while they also markedly reduce their desire to use opioids.

If an individual treated with these medications tries to take an opioid such as heroin, the euphoric effects are usually dampened or suppressed. Patients undergoing maintenance treatment do not experience the physiological or behavioral abnormalities from rapid fluctuations in drug levels associated with heroin use. Maintenance treatments save lives—they help to stabilize individuals, allowing treatment of their medical, psychological, and other problems so they can contribute effectively as members of families and of society.

20. Where do 12-step or self-help programs fit into drug addiction treatment?

Self-help groups can complement and extend the effects of professional treatment. The most prominent self-help groups are those affiliated with Alcoholics Anonymous (AA), Narcotics Anonymous (NA), and Cocaine Anonymous (CA); all of which are based on the 12-step model. Most drug addiction treatment programs encourage patients to participate in self-help group therapy during and after formal treatment. These groups can be particularly helpful during recovery, offering an added layer of community-level social support to help people achieve and maintain abstinence and other healthy lifestyle behaviors over the course of a lifetime.

21. Can exercise play a role in the treatment process?

Yes. Exercise is increasingly becoming a component of many treatment programs and has proven effective, when combined with cognitive-behavioral therapy, at helping people quit smoking. Exercise may exert beneficial effects by addressing psychosocial and physiological needs that nicotine replacement alone does not, by reducing negative feelings and stress, and by helping prevent weight gain following cessation. Research to determine if and how exercise programs can play a similar role in the treatment of other forms of drug abuse is under way.

22. How does drug addiction treatment help reduce the spread of HIV/AIDS, hepatitis C (HCV), and other infectious diseases?

Drug-abusing individuals, including injecting and non-injecting drug users, are at increased risk of human immunodeficiency virus (HIV), hepatitis C virus (HCV), and other infectious diseases. These diseases are transmitted by sharing contaminated drug injection equipment and by engaging in risky sexual behavior sometimes associated with drug use. Effective drug abuse treatment is HIV/HCV prevention because it reduces activities that can spread disease, such as sharing injection equipment and engaging in unprotected sexual activity. Counseling that targets a range of HIV/HCV risk behaviors provides an added level of disease prevention.

Drug abuse treatment is HIV and HCV prevention.

Injection drug users who do not enter treatment are up to six times more likely to become infected with HIV than those who enter and remain in treatment. Participation in treatment also presents opportunities for HIV screening and referral to early HIV treatment. In fact, recent research from NIDA's National Drug Abuse Treatment Clinical Trials Network showed that providing rapid onsite HIV testing in substance abuse treatment facilities increased patients' likelihood of being tested and of receiving their test results. HIV counseling and testing are key aspects of superior drug abuse treatment programs and should be offered to all individuals entering treatment. Greater availability of inexpensive and unobtrusive rapid HIV tests should increase access to these important aspects of HIV prevention and treatment.