Prescription Drug Abuse: Etiology, Prevention and Treatment

By: Deborah Converse MA, NBCT with Kathryn Brohl MA, LMFT

Learning objectives

- Identify and describe the three most abused classes of prescription drugs;
- Discuss the prevalence of prescription drug abuse in terms of age, gender, ethnicity and socioeconomic status;
- List and explain five factors in the etiology of prescription drug abuse;
- Assess five symptoms of opioid, CNS depressant and stimulant drug abuse;
- Describe the effects of the three classes of drugs on the central nervous system;

- Identify four factors unique to adolescents that may lead to prescription drug abuse;
- Describe the components of four evidence-based treatment approaches for prescription drug addiction;
- Analyze the five parts of the federal drug abuse prevention policy;
- Identify and describe three current issues affecting attitudes toward prescription drug abuse; and
- Explain five strategies for the prevention of prescription drug abuse.

Introduction

The sale of prescription painkillers is increasing throughout the United States, according to the Drug Enforcement Administration (DEA). The sale of painkilling drugs has escalated in new parts of the country, indicating a spread of the prescription drug abuse epidemic identified by a federal government study (ONDCP, 2011). Across the country, DEA figures show a significant increase from 2000 to 2010 in the distribution of the painkilling drug oxycodone, the main ingredient in OxyContin. Similar increases were noted in the sale and distribution of hydrocodone, another key ingredient in powerful painkillers. Pharmacies across the country reported that in 2010 they had logged an equivalent of 69 tons of oxycodone and 43 tons of hydrocodone.

The DEA tracks data on the amount of drugs that are manufactured and delivered to pharmacies, hospitals and other prescribers. The data shows that in 2000, the abuse of painkillers escalated in two very different demographic regions. The highest levels of abuse began in the impoverished areas of Appalachia and suburbs in the mid-Atlantic and northeast, which show higher than average socioeconomic levels. By 2010, the illegal distribution of painkillers had spread throughout the Midwest and the South.

Prescription drug abuse is the nation’s fastest growing drug problem. While there has been a decrease in the use of some illegal drugs like cocaine, data from the National Survey on Drug Use and Health (NSDUH) showed that nearly one-third of people age 12 and over who used drugs for the first time in 2009 began by using a prescription drug non-medically (NSDUH, 2009). The same survey found that more than 70 percent who abused prescription drug pain relievers got them from friends or relatives, while approximately 5 percent got them from a drug dealer or the Internet.

The latest Monitoring the Future study (MTF), the nation’s largest survey of drug use among young people, noted that prescription drugs are the second-most abused category of drugs after marijuana (MTF, 2009). In our military, drug abuse increased from 5 percent to 12 percent among active-duty service members from 2005 to 2008, primarily attributed to prescription drug abuse (DOD, 2009).

The majority of prescription drug abuse occurs with three classes of drugs, but the prevention plan developed by the federal government only targets the deadly abuse of prescription opioids. The number of prescriptions dispensed for opioid pain medications, which include the most potent painkillers, has increased significantly since 2000. From 1997 to 2007, the milligram per person use of prescription opioids in the U.S. increased from 74 milligrams to 369 milligrams, an increase of 402 percent (Manchikanti et al., 2010). In 2000, retail pharmacies dispensed 174 million prescriptions for opioids, and by 2009, 257 million prescriptions were dispensed, an increase of 48 percent (FDA, 2010).

In the past, data tracked opiate overdose back to heroin, but today it is increasingly attributed to abuse of prescription opioid painkillers (CDC, 2010). This data offers a description of the extent that prescription drug abuse in America has grown over the last decade. The federal policy highlights the pivotal role that parents, health care providers, pharmacists and manufacturers share in preventing and treating prescription drug abuse.

The three classes of powerful prescription medications for relieving physical and emotional pain often lead to dependence and abuse. Acute and chronic pain treatment includes prescription opioids. Benzodiazepines are used to treat people with serious anxiety and sleep disorders. Stimulants are used in the treatment of ADHD and for cognitive enhancement. Federal and state drug policies work to eliminate abuse of prescription drugs while providing care for patients with legitimate medical needs. Providing effective drug abuse treatment is critical to end prescription drug abuse, because only a fraction of drug abusers have access to treatment programs today. The federal policy released in 2011, entitled “Epidemic: Responding to America’s Prescription Drug Abuse Crisis,” addresses these problems and will be discussed in later sections.

Although most people take prescription medications as directed by their physician, an estimated 52 million people, 20 percent of those age 12 and older, have used prescription drugs for nonmedical reasons at least once. Prescription drug abuse is the use of medication without a prescription, in a way other than prescribed, or for the experience or feelings elicited. The prevalence rates for prescription drug abuse continue to increase, shown by the rate of illegal prescription drug sales, arrests, convictions, addiction, treatment admissions, emergency room visits and overdose deaths.

Prescription medications – pain relievers, central nervous system (CNS) depressants (tranquilizers and sedatives) and stimulants – taken by someone other than the patient or other than prescribed can produce serious, harmful, health consequences, including dependence, addiction, overdose, withdrawal symptoms or death.
Dependency versus addiction

Physical dependence occurs because of normal adaptations to chronic exposure to a drug and is not the same as addiction. Addiction, which can include physical dependence, involves compulsive drug seeking and use despite devastating consequences. Someone who is physically dependent on the medication will experience withdrawal symptoms when use is abruptly reduced or stopped. These symptoms can be mild or severe, depending on the drug, and can usually be managed medically or avoided by using a slow drug taper (NIDA, 2011).

Dependence is often accompanied by tolerance, or the need to take higher doses of medication to get the same effect. When tolerance occurs, it can be difficult for a physician to evaluate whether a patient is developing a drug problem or has a real medical need for higher doses to control his or her symptoms.

Drug abuse and dependence may lead to a fatal drug overdose, often accidental. Some people relapse after they stop using drugs, and relapse can lead to continued dependence. Complications of drug abuse and dependence (NIDA, 2011) include:
- Depression.
- Drug overdose.
- Bacterial endocarditis, hepatitis, thrombophlebitis, pulmonary emboli, malnutrition, hepatitis or respiratory infections caused by intravenous delivery.
- HIV infection through shared needles.
- Unsafe sexual practices, which may result in unwanted pregnancy, unviable pregnancy, fetal drug complications, sexually transmitted diseases and HIV.
- Problems with the law.
- Increase in various cancer rates.
- Problems with memory and concentration.

The history of addiction

The term addiction was first used to describe a condition that was more complex and extensive than a simple episode of drug intoxication. Chronic use and the complexity of severe drug problems led to the development of special institutions in homes and private institutes hoping to cure addiction (White & McClellan, 2008). Several early pioneers suggested that the treatment of addiction should mirror the treatment of other chronic diseases.

With collapse of the asylum movement at the beginning of the 20th century, practitioners began to explore the chronic nature of addiction. Many concluded that for complete recovery, treatment must be continued for years after the patient has been drug-free. The effort to promote addiction as a disease continued from the 1940s to the 1960s and led to landmark legislation in 1970 and the development of community-based, time-limited addiction treatment in the United States (White & McClellan, 2008).

The next phase of addiction treatment was the acute care (AC) model of intervention. The AC model is characterized by the following central elements:
- A predetermined program delivered through a uniform series of related activities, screening, admission, a single assessment, treatment procedures, discharge and brief aftercare, followed by termination of treatment services.
- A professional expert directed the assessment, treatment planning, service delivery and decision-making throughout the process.
- Treatment took place over a short period of time following a predetermined, time-limited program to address addiction treatment as part of a general medical insurance plan.
- The treatment was completed at discharge, and the individual was considered addiction free and could maintain long-term recovery without continued treatment.
- Once treatment was complete, any relapse or readmission for treatment was viewed as a failure or noncompliance of the individual rather than flaws in the design or method of treatment (White & McClellan, 2008).

By the late 1990s, the effectiveness of the AC model began to be questioned, and a change in treatment followed that extended the AC model to a more comprehensive treatment that included aftercare for maintenance. One call to redesign addiction treatment was the publication of “Drug Dependence, a Chronic Medical Illness” in the Journal of the American Medical Association (JAMA, 2000). The major findings of this article are summarized below:
- Not all alcohol- and drug-related problems become chronic disorders.
- Clinical research has not been able to clearly predict which cases will become chronic.
- Many substance-use problems are developmental and are resolved when adolescents transition to adulthood.
- Other substance-use problems may occur as a result of major life transitions, such as death of a loved one, divorce, job loss, illness or injury and are resolved by time, natural support, brief professional intervention or peer-based intervention by others in recovery.
- Substance-use problems are influenced by heredity and personal, family and environmental risk factors.
- Abuse behaviors may begin as voluntary choices but evolve into deeply ingrained patterns of behavior that are influenced by neurobiological changes in the brain that weaken the individual’s control over abuse behaviors.
- Onset may be sudden or gradual.
- The course of the disease varies from person to person in type, frequency and intensity of the abuse.
- The disease of addiction may result in profound mental and physical disability and death.
- There is effective treatment, prevention, intervention, peer support and remission – but no cure.

Definitions

**Addiction**: A chronic, relapsing disease characterized by compulsive drug-seeking and use, despite serious adverse consequences, and by long-lasting changes in the brain.

**Agonist**: A chemical entity that binds to a receptor and activates it, mimicking the action of the natural, or abused, substance that binds there.

**Antagonist**: A chemical entity that binds to a receptor and blocks its activation. Antagonists prevent the natural, or abused, substance from activating its receptor.

**Barbiturate**: A type of CNS depressant prescribed to promote sleep, used in surgical procedures, or as an anticonvulsant.

**Benzodiazepine**: A type of CNS depressant prescribed to relieve anxiety and sleep problems. Valium and Xanax are among the most widely prescribed medications.

**Buprenorphine**: A mixed opiate agonist/antagonist medication approved by the FDA in October 2002 for the treatment of opiate addiction, such as heroin.
Central nervous system (CNS): The brain and spinal cord.

CNS depressant: A class of drugs that slow CNS function, also called sedatives and tranquilizers, some of which are used to treat anxiety and sleep disorders; includes barbiturates and benzodiazepines.

Co-morbidity: The occurrence of two disorders or illnesses in the same person; also referred to as co-occurring conditions or dual diagnosis. Patients with co-morbid illnesses may experience a more severe illness course and require treatment for each or all conditions.

Detoxification: A process in which the body rids itself of a drug or its metabolites. During this period, withdrawal symptoms can emerge that may require medical treatment. This is often the first step in drug abuse treatment.

Didactic: A teaching method that follows a consistent scientific approach or educational style.

Dopamine: A brain chemical, classified as a neurotransmitter, found in regions that regulate movement, emotion, motivation and pleasure.

Epidemiology: The study of the distribution and patterns of health events and their characteristics, causes and influences in well-designed populations.

Epidemiology: Abnormal pain sensitivity.

Hyperalgesia: A disorder characterized by uncontrollable episodes of deep sleep.

Naloxone: A neurotransmitter present in the brain and the peripheral sympathetic nervous system, and a hormone released by the adrenal glands. Norepinephrine is involved in attention and response to stress, and it regulates smooth muscle contraction, heart rate and blood pressure.

Opioid: A compound or drug that binds to receptors in the brain involved in the control of pain and other functions, such as morphine, heroin, hydrocodone and oxycodone.

Opioid-induced hyperalgesia: A phenomenon associated with long-term use of opioids that leads to the development of increasing pain sensitivity and escalating dependence. In trying to manage pain, the patient experiences more pain as a result of the opioid treatment.

Pathophysiology: The study of the changes of normal mechanical, physiological and biochemical functions caused by disease or resulting from an abnormal syndrome. It includes the biological and physical manifestations of the disease as they correlate to underlying abnormalities and physiological disturbances.

Physical dependence: An adaptive physiological state that occurs with regular drug use and results in a withdrawal syndrome when drug use is stopped; often occurs with tolerance. Physical dependence can happen with chronic, even appropriate, use of many medications, and by itself does not constitute addiction.

Polydrug abuse: The use of two or more drugs at the same time, such as a CNS depressant and alcohol.

Prescription drug abuse: The use of medication without a prescription, in a way other than prescribed, or for the experience or feeling elicited. This term is used interchangeably with “nonmedical use,” a term employed by many of the national surveys.

Psychotherapeutic drugs: Drugs that have an effect on the function of the brain and often are used to treat psychiatric/neurologic disorders; includes opioids, CNS depressants and stimulants.

Respiratory depression: Slowing of respiration that results in the reduced availability of oxygen to vital organs.

Sedatives: Drugs that suppress anxiety and promote sleep; the National Survey on Drug Use and Health (NSDUH) classification includes benzodiazepines, barbiturates and other types of CNS depressant.

Stimulant: A class of drugs that enhance the activity of monoamines, such as dopamine, in the brain, increasing arousal, heart rate, blood pressure and respiration, and decreasing appetite; include some medications used to treat attention-deficit hyperactivity disorder (ADHD), methylphenidates and amphetamines as well as cocaine and methamphetamine.

Tolerance: A condition in which higher doses of the drug are required to produce the same effect achieved during initial use and often associated with physical dependence.

Tranquilizers: Drugs prescribed to promote sleep or reduce anxiety; NSDUH classification includes benzodiazepines, barbiturates and other types of CNS depressants.

Withdrawal: Symptoms that occur after chronic use of the drug is reduced abruptly or stopped.


PREVALENCE

According to the national study released in 2009 by the Partnership for a Drug Free America, the Partnership Attitude Tracking Study (PATS), prescription drugs are more commonly abused than illegal drugs. The use of these drugs by teens at parties and social situations is increasing. The PATS data shows that 62 percent of teens got prescription drugs most recently from someone they knew and that they did not pay for them. Another 18.1 percent reported that they obtained the drug from one doctor. Only 4.1 percent purchased the prescription drugs from a stranger, and just 0.5 percent reported buying the drug on the Internet. Among those who reported getting a pain reliever from a friend or relative for free, 81 percent reported in a follow-up question that the friend or relative had obtained the drugs from one doctor only.

The Federal Drug Abuse Warning Network (DAWN), which monitors emergency department visits in selected areas across the nation, reported that approximately 1 million emergency department visits in 2009 were attributed to prescription drug abuse. Roughly 343,000 involved a prescription opioid pain reliever, a rate more than double that of the five years prior. Emergency department visits also doubled for CNS stimulants, involved in nearly 22,000 visits in 2009, as well as CNS depressants, anxiolytics, sedatives and hypnotics, involved in 363,000 visits. Of the latter, benzodiazepines and Xanax comprised the majority of the visits. Rates for a popular prescribed non-benzodiazepine sleep aids, Ambien, rose from 13,000 in 2004 to 29,000 in 2009. More than half of emergency room visits for prescription drug abuse involved multiple drugs (NIDA, 2010).

According to results from the 2010 NSDUH, an estimated 2.4 million Americans used prescription drugs non-medically for the first time within the past year, with averages of approximately 6,600 initiates per day. More than one half of the first-time users were females and about one-third were ages 12 to 17. Although prescription drug abuse affects many Americans, certain populations such as youth, older adults and women may be at particular risk.
Young people are among the increasing numbers of prescription drug abusers. The National Institute on Drug Abuse (NIDA) and Monitoring the Future (MTF) surveys found:

- One in 12 high school seniors reported past-year nonmedical use of the prescription pain reliever Vicodin in 2010.
- One in 20 reported abusing OxyContin, making these medications among the most commonly abused prescription drugs by adolescents. Abuse of prescription drugs is highest among young adults ages 18 to 25, with 5.9 percent reporting nonmedical use in the past month (NSDUH, 2010).
- Among youths ages 12 to 17, 3.0 percent reported past-month nonmedical use of prescription medications.
- According to the 2010 MTF, prescription and OTC drugs are among the most commonly abused drugs by 12th-grade students after alcohol, marijuana and tobacco.
- Past-year nonmedical use of sedatives and tranquilizers decreased among 12th graders over the past five years; this is not the case for nonmedical use of NSAIDs and opioid pain relievers.
- When asked how they obtained the abused prescription opioids, more than half of the 12th graders surveyed said they were given the drugs or bought them from a friend or relative. The number of students who purchased opioids over the Internet was negligible (MTF, 2010).

Youth who abuse prescription medications are also more likely to use other drugs. Multiple studies have revealed links between prescription drug abuse and higher rates of cigarette smoking, binge drinking, marijuana, cocaine and other illicit drug use among adolescents, young adults and college students in the United States (MTF, 2010). Monitoring the Future (MTF) is the annual youth survey conducted by researchers at the University of Michigan, which measures drug use attitudes and patterns among 50,000 eighth-, 10th- and 12th-graders. Prescription and over-the-counter medicines account for more than half of all substances abused by youth. The national study funded and released by the Partnership for a Drug-Free America and MetLife Foundation in 2009 measured the use of drugs that adolescents are likely to use at parties and other social situations. According to the Partnership Attitude Tracking Study (PATS) 2009 survey:

- Teen abuse of prescription and over-the-counter medication remained stable, with about one in five teens in grades nine through 12 – 20 percent, or 3.2 million – reporting abuse of prescription medication at least once in their lives.
- One in seven teens – 15 percent, or 24 million teens – reported abuse of a prescription pain reliever in the past year.
- More than half, or 56 percent, of teens in grades nine to 12 believe prescription drugs are easier to get than illegal drugs.
- Sixty-two percent believe most teens get prescription drugs from their family’s medicine cabinets.
- Sixty-three percent believe prescription drugs are easier to get from their parents’ medicine cabinets, up significantly from 56 percent last year.
- Adderall, a stimulant used to treat ADHD, showed in 2009 a prevalence rate at 2 percent in grade eight, 6 percent in grade 10, and 5 percent in grade 12.
- Vicodin use has risen and remained high, with 3 percent of eighth graders, 8 percent of 10th graders, and 10 percent of 12th-grade students indicating use in the prior 12 months.
- At all three grades, OxyContin use is higher today than when its use was first measured in 2002.
- Among teens ages 12 to 17, females exceed males in nonmedical use of all psychotherapeutic drugs, including pain relievers, tranquilizers and stimulants.
- Among nonmedical users of prescription drugs, females 12 to 17 years old are more likely to meet abuse or dependence criteria for psychotherapeutic drugs.

Pharming parties

Liz Doup was among the first reporters to bring the new trend of pharming parties to national attention. At a pharming party, teens gather to drink and exchange and sample pharmaceuticals that are stolen, or “pharmed,” from their parents’, grandparents’ or friends’ medicine cabinets. According to Doup’s report, teens gather in abandoned or secluded properties where strobe lights flash and liquor flows. Then, from pockets and purses they pull out the pills, most often Vicodin, OxyContin and Xanax, all legal drugs diverted from unsuspecting family members for illegal use. In 2006, an estimated 2.3 million students were “pharming,” according to Doup (2006). She provides the following case study of Shannon and Kyle:

Case study: Shannon and Kyle
Shannon, a 17-year-old middle school dropout, was part of the pharming scene. He popped four or five Xanax and washed them down with vodka at a party. Not so long ago, teens raided their parent’s liquor cabinets when they wanted a quick high. Today they turn to the medicine cabinet. They stock up for pharming parties where teens barter and share legal drugs to get high. “It’s better when you’re with other people,” says Shannon. “I don’t like doing this stuff by myself.”

Shannon entered the drug world at 10 years old with his first puff of marijuana. He tried many drugs through the years, including Xanax from a family medicine cabinet. Students who take drugs from their families’ medicine cabinets do not fit into one category. Shannon slumps in a chair at The Starting Place, a treatment facility in Hollywood, Florida, where he’s spending three months trying to end his drug habit. Beside him sits Kyle, a fast-talking, energetic 16-year-old who squirms in his chair. School dropouts at 14, both are pharming party veterans and addicts. Pharming parties are a new social twist that contributes to the growing problem of prescription drug abuse, which has spread through pop culture on social media message boards, song lyrics and even T-shirts (Doup, 2006).

Shannon and Kyle routinely mix prescription drugs with illegal drugs. “You feel like you’re on some kind of truth serum,” says Kyle, who started smoking marijuana at 10 before moving on to prescription drugs as a teenager. “You have no inhibitions or fears, you feel like you can fight the biggest guy,” he says. Getting the drugs is no problem. Shannon and Kyle buy from friends, OxyContin at $12-$15 a pill or Xanax for $3. Valium goes for $4-$5 a pill.

Sometimes teens trade with each other. For example, a couple of Valium could be swapped for a more powerful OxyContin. News about the pharming parties spreads rapidly through the school and the community. They might meet at someone’s house when the parents are gone, rent a hotel room, or find an abandoned warehouse or other location. Shannon was glad to be in the loop, and when he got wind of a party, he wanted to be there. “You’re much happier when you’re (expletive deleted) up,” he says. “It’s all good.” (Doup, 2006).

According to a report by Columbia University’s National Center on Addiction and Substance Abuse (2006), about 2.3 million students 12 to 17 took prescription drugs illegally in 2005, which is a 212 percent increase over 1992. “Kids think, it’s not heroin, it’s not crack, it’s not...
an illegal drug, so how bad can it be?” says Barbara Zoellner, former executive director of Miami-Dade DFYIT (Drug-Free Youth in Town), a school-based drug prevention program (Nelson, 2011, p. 43).

“There is no specific group you can pinpoint,” says Doris Carroll, community coordinator of the Palm Beach County Substance Abuse Coalition, (Nelson, 2011, p. 43). She explains, “It’s not just dropouts. It’s not just popular kids. It’s not just football players.” Much of the problem is linked to easy access, she says. Indeed, some teens come by drugs legally. Many are taking Ritalin for attention deficit disorder or painkillers after losing their wisdom teeth or breaking a bone. As well as stealing from medicine cabinets, some buy from other teens, and some are purchased on the Internet. At one high school, a student was paying other students to raid their parents’ medicine cabinets, and then he sold the drugs to other students at the school.

In addition, teens increase the danger factor by taking pills in unsafe ways. OxyContin, for instance, is supposed to be released into the bloodstream over several hours for long-term pain relief. Teens often crush the pills for a quicker, and potentially more harmful, high.

Youth see adults who would never touch an illegal drug fill prescriptions to treat everything from physical pain to anxiety and weight loss. Meanwhile, pharmaceutical companies use TV and magazines ads to promote drugs that promise a happier, thinner and more energetic body, all by taking a pill you can get from your doctor.

But taking powerful drugs without supervision or mixing them with other drugs including alcohol may have devastating results. They can make breathing difficult or cause a rapid drop or increase in heart rate and impair senses so that everyday activities such as driving a car are hazardous.

About 75 percent of prescription drug users also take other drugs or drink, according to the Columbia University report. Teens who abuse prescription drugs are:

- Twice as likely to use alcohol.
- Five times likelier to use marijuana.
- 12 times likelier to use heroin.
- 15 times likelier to use ecstasy.
- 21 times likelier to use cocaine (NSDUH, 2009).

Stimulants and depression, drug abuse and violence in teens

The 2006 National Survey on Drug Use and Health (NSDUH) examined past-year nonmedical use of stimulants among youth ages 12 to 17, their involvement with other drug and alcohol use, illegal or criminal activity, and major depressive episodes (MDE). All findings presented in the report are annual averages based on combined 2005 and 2006 NSDUH data.

The study found that adolescents who abuse stimulants are significantly more likely to use other drugs, experience MDEs and engage in six types of violent or dangerous behavior. In 2006, 2 percent of adolescents ages 12 to 17, an estimated 510,000 persons, used stimulants non-medically in the past year, a rate twice as high as observed among adults age 26 or older. Researchers found that stimulant misuse is associated with alcohol and drug-use disorders, criminal justice involvement and admission for mental health treatment.

The youths ages 12 to 17 engaged in the following delinquent activities during the past year:

- Getting into serious fights at school or work.
- Taking part in a fight where a group of friends fought against another group.
- Carrying a handgun.
- Selling illegal drugs.
- Stealing or trying to steal anything worth more than $50.
- Attacking someone with intent to seriously hurt them.

The NSDUH report also questioned youth ages 12 to 17 to assess past-year major depressive episodes. Findings of this section of the report suggests that signs of abuse in children include:

- A change in the child’s friends.
- Withdrawn behavior.
- Long unexplained periods away from home.

Gender differences

Women are more likely than men to be prescribed one of the three most abused classes of prescription drugs, in some cases, 55 percent more likely. Overall, men and women have similar rates of non-medical use of prescription drugs. An exception is found, as noted previously, among ages 12 to 17 with young women more likely than young men to use psychotherapeutic drugs non-medically. In addition, research has shown that women are at increased risk for non-medical use of narcotic analgesics and tranquilizers such as benzodiazepines (NIDA, 2010).
Older adults

Persons age 65 years and older comprise only 13 percent of the population, yet they account for more than one-third of outpatient spending on prescription medications in the United States. Older patients are more likely to be prescribed long-term and multiple prescriptions, and some experience cognitive difficulties, which could lead to improper use of medications.

The high rates of co-morbid illnesses in older populations, age-related changes in drug metabolism, and the potential for drug interactions may make abuse of prescription drugs more dangerous than in younger populations. A large percentage of older adults also use OTC medicines and dietary supplements, which, in addition to alcohol, could compound any adverse health consequences related to prescription drug abuse. Elderly persons who take benzodiazepines are at an increased risk for cognitive impairment leading to possible falls causing hip and thigh fractures as well as vehicle accidents. Cognitive impairments related to prescription drugs may be reversible once the drug is discontinued (NIDA, 2010).

According to a Government Accountability Office (GAO) 2011 report, prescription drug abuse by elderly and disabled beneficiaries on Medicare cost the U.S. program nearly $150 million in 2008, highlighting an area where the government can seek to save health care costs. Some of these patients went to at least five doctors to get multiple prescriptions for drugs that are often abused. In all, 170,000 people enrolled in the Medicare Part D prescription drug program went “doctor shopping” for drugs such as oxycodone and hydrocodone, heroin abuse, although newborns exposed to methadone during pregnancy typically require treatment for withdrawal symptoms. Another medication for opioid dependence, buprenorphine, has recently been shown to produce fewer neonatal abstinence symptoms in babies than methadone, resulting in shorter hospital stays.

NIDA-supported research has established that evidence-based treatments to change drug abuse and addiction behaviors in the general population also extend to pregnant women. One example is contingency management, in which participants are given incentives such as small cash amounts for maintaining abstinence. Compared to a standard treatment conditions, motivational incentive approaches increase treatment retention and prolonged abstinence in pregnant women with stimulant and opiate dependence. In general, it is important to closely monitor women who are trying to quit drug use during pregnancy and to adjust treatment as needed.

Prenatal exposure to drugs of abuse

The National Institute on Drug Abuse (NIDA, 2011) notes that exposure to substances of abuse can affect individuals across the lifespan and start before birth if prescription drugs are abused during pregnancy. The combined 2008 and 2009 data from the National Survey on Drug Use and Health found that among pregnant women ages 15 to 44, the youngest women generally reported the greatest substance abuse. Pregnant women ages 15 to 17 had similar rates of drug use as women who were not pregnant, with only a 2.8 percent lower rate among the pregnant women.

Drug use during pregnancy has been associated with a variety of adverse effects, some of them subtle. Effects generally range from low birth weight to developmental deficits and long-term delays affecting attention span, language acquisition, learning skills, behavior and cognition.

Methadone maintenance combined with prenatal care and a comprehensive drug treatment program can improve many of the detrimental maternal and neonatal outcomes associated with untreated pregnancy typically require treatment for withdrawal symptoms. Another medication for opioid dependence, buprenorphine, has recently been shown to produce fewer neonatal abstinence symptoms in babies than methadone, resulting in shorter hospital stays.

NIDA-supported research has established that evidence-based treatments to change drug abuse and addiction behaviors in the general population also extend to pregnant women. One example is contingency management, in which participants are given incentives such as small cash amounts for maintaining abstinence. Compared to a standard treatment conditions, motivational incentive approaches increase treatment retention and prolonged abstinence in pregnant women with stimulant and opiate dependence. In general, it is important to closely monitor women who are trying to quit drug use during pregnancy and to adjust treatment as needed.

Co-morbidity

Research suggests that pregnant women with food or anxiety disorders are more likely to have substance disorder as well and vice-versa. These studies call for more treatment research on co-occurring psychiatric and substance use problems of pregnant women.

Drug-endangered children


- A drug endangered child is a person under the age of 18 who lives in or is exposed to an environment where drugs, including pharmaceuticals, are illegally used, possessed, trafficked, diverted, and/or manufactured and, as a result of that environment:
  - The child experiences, or is at risk of experiencing, physical, sexual, or emotional abuse.

- The child experiences, or is at risk of experiencing, medical, educational, emotional, or physical harm, including harm resulting or possibly resulting from neglect.

- The child is forced to participate in illegal or sexual activity in exchange for drugs or in exchange for money likely to be used to purchase drugs.
As part of the president’s 2010 National Drug Control Strategy, the Department of Justice established the Federal Interagency Task Force on Drug Endangered Children to support the identification of model protocols, programming and best practices related to this issue. The website includes resources and practices to assist states, local and tribal governments in identifying and providing services to endangered children. Through this collaboration, the definition of drug-endangered children was expanded to include children that face exposure to any type of drug. The DEC movement has sought to assist parents and guardians with substance-use disorders and address family issues related to drug abuse. Across the country, the DEC movement has rescued thousands of children and led to the development of numerous programs that coordinated the efforts of law enforcement, medical services and child welfare services to ensure that drug-endangered children receive appropriate attention and care.

The DEC is focused on gathering and producing educational resources that can help law enforcement, child welfare workers, and health and educational professionals nationwide protect children and respond to their needs as well as their caregivers. By working together with its federal, state and local partners, the task force aims to end this vicious cycle of drug abuse.

**Research and statistics**

- Between 2002 and 2007, 2.1 million children in the U.S. lived with at least one parent who abused illicit drugs.
- Studies of children in foster care found that 40 percent to 80 percent of families involved with child welfare were having substance-abuse problems.
- A 2003 study analyzing administrative data on persons treated for substance abuse in California found that 60 percent of those treated in California’s publicly funded treatment system were parents of minor children. Of those treated, 295,000 parents had one or more children removed from their custody by child welfare services.

**Native Americans and Alaskan natives**

According to the Office of National Drug Control Policy (ONDCP), drug abuse is very prevalent among Native Americans and Alaska natives in the United States. The ONDCP is developing programs and policies tailored to the Indian country and designed to assist tribal authorities using a strategy of prevention, treatment, recovery support and law enforcement.

**Research and statistics**

Research data report high usage of illicit drugs by Native Americans and outlines the need for targeted resources and outreach:

- According to the 2009 NSDUH, Native American and Alaskan native populations show high percentages of lifetime use at 64.8 percent.
- Past-year illicit drug use was 27.1 percent.
- Current nonmedical use of prescription drugs is 6.2 percent.
- 18.3 percent of American Indian and Alaskan natives age 12 or older are current users of illicit drugs or within 30 days prior to the survey.

ONDCP has a number of programs and initiatives that provide support and resources that can help Native American communities be healthy and safe. The National Youth Anti-Drug Media Campaign researches, develops and delivers relevant and appropriate anti-drug messages. Since 2008, the campaign has emphasized Native American culture and pride through print, radio and television public service announcements. The campaign is partnered with the National Congress of American Indians, the Department of Interior, the Department of Health and Human Services, and the Partnership at Drug-Free.org to develop a public awareness campaign focusing on preventing drug abuse among Native American populations.

**Treatment, early intervention and recovery**

The president’s Access to Recovery (ATR) grant program individualizes substance use treatment, recovery, and support services, and addresses the unique cultural and geographic needs of American Indian and Alaskan Native communities. In 2010, ATR grants totaling $15.2 million over five years were awarded to five tribal organizations covering Indian country populations, including:

- The California Rural Indian Health Board.
- Montana Wyoming Tribal Leaders Council.
- Intertribal Council of Michigan.
- Oglala Sioux Tribal Council in South Dakota.
- Aberdeen Area Tribal Chairman Health Ward in South Dakota.

Tribal drug courts, which refer substance users in the criminal justice system to treatment and recovery services in lieu of jail, have proven effective in breaking the cycle of drug use and crime. As of December 31, 2009, there were 89 tribal drug courts, nearly twice the number in 2001. Indian tribal governments may apply for drug court funding through the Bureau of Justice Assistance Drug Court Discretionary Grant Program.

**Partnering with Indian country leadership and law enforcement**

The ONDCP has provided 1.7 million in high-intensity drug trafficking areas (HIDTA) discretionary funds to Indian country law enforcement organizations to detect, interdict and dismantle drug-trafficking organizations. These funds have been awarded to such areas in Arizona, New Mexico, Nevada, Oklahoma, Oregon, Texas and Washington state. Task forces within these HIDTAs partner with Indian country law enforcement and tribal officials, and work closely with federal, state and local law enforcement.

**Substance abuse among the military, veterans, and their families**

The operations in Iraq and Afghanistan have led to significant stress for military personnel, returning veterans and their families, according to the National Institute on Drug Abuse (NIDA, 2011). Some have experienced long and multiple deployments, combat exposure, physical injuries, post-traumatic stress disorder (PTSD) and traumatic brain injury.


Mental illness among military personnel is a major concern. In a study of returning soldiers, clinicians found that 20 percent of active and 42 percent of reserve soldiers required mental health treatment. Drug or alcohol use impacts mental health problems and was involved in 30 percent of the Army suicide deaths from 2003 to 2009 and in more than 45 percent of non-fatal suicide attempts from 2005 to 2009 (DOD, 2009).

To address the social problems caused by and contributing to drug use, NIDA-supported researchers are developing and testing new treatment approaches with veterans. In one project, researchers are using smart phones and wearable wireless sensors to record real-time responses to stress among veterans suffering from addiction and trauma. The data will be compiled and analyzed to detect patterns of response that predict relapse. Included on the research team are psychologists working to create interventions that can be delivered by smart phones to help deter drug use as a response to stress.

NIDA-supported research is also working to improve veterans’ access to drug treatment; including adapting currently available Internet-
based interventions and studying the use of drug courts. Drug courts have proven effective in addressing nonviolent crimes committed by drug abusers, getting them into needed treatment instead of prison. The criminal justice system is a frequent treatment referral source for veterans, and specialized drug courts for this population give them the opportunity to access services and supports they may not otherwise receive. While New York pioneered the concept of a drug court devoted exclusively to handling nonviolent crimes committed by veterans, this concept has spread quickly, with 65 courts now in 20 states.

Along with the studies mentioned above, NIDA in collaboration with the U.S. Department of Veterans Affairs and other entities within the National Institutes of Health, awarded $6 million in 2010 federal funding to 14 principal investigators to support research on substance abuse and associated problems among U.S. military personnel, veterans and their families. The purpose of the initiative was to enhance and encourage research on the epidemiology, etiology, identification, prevention and treatment of drug abuse, including illicit and prescription drugs. The initiative included associated mental health problems among active duty or recently separated military troops and their families. Most of the research funded under this initiative is focused on substance abuse and related conditions experienced by veterans turning from wars in Iraq and Afghanistan.

These 14 projects will explore a range of topics including:
- Therapies for co-occurring disorders such as depression and substance abuse.
- The effectiveness of early interventions for recently returning soldiers.
- The impact of a youth substance abuse intervention designed for parents returning from deployment.

By supporting research and initiatives like those mentioned above, the NIDA intends to contribute to the design and implementation of effective prevention and treatment interventions that can safeguard the health and well-being of those who protect and serve the nation (NIDA, 2011).

**SYMPTOMS OF PRESCRIPTION DRUG ABUSE**

The following sections list specific symptoms of the most commonly abused prescription drugs.

### Opiates and narcotics

Symptoms of opiate and narcotic use include:
- Needle marks on the skin, in some cases called tracks.
- Scars from skin abscesses.
- Rapid heart rate.
- Small, pinpoint-sized pupils.
- Relaxed or euphoric state (nodding).
- Confusion.
- Constipation.
- Coma or respiratory depression leading to death in high doses.

Symptoms of opiate and narcotic withdrawal:
- Anxiety and difficulty sleeping.
- Sweating.

### Central nervous system stimulants

Symptoms of stimulant use:
- Exaggerated feeling of well-being (euphoria).
- Dilated pupils.
- Fast or irregular heart rate.
- Restlessness and hyperactivity.
- Weight loss.
- Agitation/irritability.
- High blood pressure.
- Insomnia.

Symptoms of stimulant withdrawal:
- Fatigue and malaise.
- Depression.
- Very clear and unpleasant dreams.
- Anxiety.
- Intense cravings.
- Suicidal thoughts and attempts.
- Paranoia.
- Decreased contact with reality, leading to acute psychosis.

### Central nervous system depressants

Symptoms of depressant use:
- Slurred speech.
- Lack of coordination or unsteady gait.
- Decreased attention span.
- Impaired or poor judgment.
- Drowsiness.
- Confusion.
- Involuntary and rapid eye movements.

Symptoms of depressant withdrawal:
- Anxiety.
- Sweating.
- Hallucinations.
- Sleep problems.
- Shaking (tremors).
- Seizures.
- Increase blood pressure, pulse and temperature.
- Delirium.

(NIDA, 2011)
The exact cause of prescription drug abuse and dependence is not known. The person’s genetics, the action of the drug, individual metabolism, peer pressure, emotional distress, anxiety, depression and environmental stress are all possible factors. Peer pressure can lead to drug abuse, and at least half of those who become addicted have depression, attention deficit disorder, post-traumatic stress disorder or another psychological problem. Children who grow up in an environment of illegal or prescription drug abuse may first experience drugs secondhand from seeing their parents using drugs. This may put children at higher risks for developing an addiction later in life for both environmental and genetic reasons.

Teens and adults abuse prescription drugs for a number of reasons. Some of these reasons include a desire to:

- Feel better and get a feeling of euphoria.
- Relax or relieve tension (painkillers and tranquilizers).
- Reduce appetite (stimulants).
- Experiment.
- Be accepted by peers, avoid peer pressure, or be included in a social group.
- Be safe because of a false belief that prescription drugs are safer than street drugs.
- Be legal because of a mistaken belief that taking prescription drugs without a prescription is legal.
- Satisfy an addiction or dependence.

Most prescriptions are written for people who have a true medical need for these drugs. But many households have a drawer or cabinet filled with old prescription bottles containing leftover drugs. Because prescription drugs are obtained legitimately, teens often believe these drugs are safe alternatives to street drugs.

In some cases, a doctor’s prescription isn’t even needed. Some countries don’t require prescriptions for opioid painkillers or other commonly abused drugs, so they can be obtained from some websites without a prescription. Obtaining drugs online from pharmacies that don’t require prescriptions is dangerous for a number or reasons. There are no controls to monitor dosage, drug allergies and adverse reactions from other drugs, OTC medications, supplements or alcohol that may be used at the same time. Some websites sell counterfeit drugs that contain potentially dangerous, toxic and addictive substances and fillers.

Risk factors for prescription drug abuse include:

- Past or present addictions to other substances, including alcohol.
- Younger ages of use, specifically the teens or early 20s.
- Exposure to peer pressure or a social environment where drugs are used.
- Easy access to prescription drugs, such as working in a health care setting.
- Lack of knowledge about prescription drugs, or thinking that taking someone else’s drug is safe because it was prescribed by a doctor.
- Unknown genetic or metabolic factors leading to increased predisposition to dependence or addiction.

Many people fear that they may become addicted to medications prescribed for legitimate medical conditions, such as painkillers prescribed after surgery. However, people who take potentially addictive drugs as prescribed rarely abuse prescription medications or become addicted (NIDA, 2011).

Addiction as a brain disease

Michael Craig Miller, editor-in-chief of the Harvard Mental Health Letter, reports that more than 20 million Americans deal with addiction that is not a result of a person’s flawed character but instead of distorted brain function. Addictive substances such as cocaine weaken a person’s ability to make wise choices by taking control of the brain’s reward systems (Miller, 2005). According to him:

Scientists completed research on the action of various drugs, and addictive properties can alter brain function. They developed and tested new treatments for the brain disease of addiction. Addictive substances take over the brain’s reward system, weakening resolve to make wise choices even when painful consequences are known to result. These substances stimulate the release of the chemical messenger dopamine into a region of the brain called the nucleus accumbens. Stimulant drugs can cause this change directly, while other substances act indirectly. In each case, the sensation is self-reinforcing, meaning once it is felt, the person wants to feel it again. While pursuing better treatment, researchers also worked to answer the question of who gets addicted, and why. Heredity predisposes some people to be more vulnerable to addiction than others, possibly because they metabolize drugs at different rates or respond more strongly or rapidly to their effects. The research suggests that different genetics may also affect our response to treatment (Miller, 2005).

Genetic and environmental factors

Claudia Wallis writes that genetic variation, personal background and social factors can shape how one reacts to drug use, including becoming addicted. She cites large-scale studies that indicate addiction is one of the most inherited mental illnesses. Wallis also maintains that subsets of the population handle the ill effects of certain drugs differently, affecting the likelihood that dependency paired with genetic traits, childhood trauma and abuse can predispose a person to addictive behavior. “Why do some people get hooked on drugs while others can use drugs and walk away? Some tend to think it’s a matter of willpower or moral fiber, but it has more to do with the role of the genetic dice” (Espejo, 2011, pp. 94-95).

Large-scale studies of twins provide some evidence that addiction “ranks among the most inheritable of mental illnesses,” says Dr. David Goldman, who heads the laboratory of neurogenetics at the National Institute on Alcohol Abuse and Alcoholism. In addition to genetics, personal experience and social influences matter also. Addiction researchers like Goldman have begun to pinpoint how specific experiences combined with genetic factors lead to addiction (Goldman, Orozzi, & Ducci, 2005).

Many genes have been linked to addiction, though fewer than a dozen have been directly identified. Gene patterns may influence dual or multiple addictions and are known to alter brain pathways associated with pleasure or rewards. Other genes are linked to depression, anxiety, mood and personality disorders, which are often present in people who turn to drugs to escape problems, for stimulation or euphoria. “If you have a twin who uses cocaine, it makes you more likely to use heroin. If you have a twin who uses tobacco, you’re more likely to use alcohol,” Goldman explains. He continues, “Even the tendency to try dangerous, illegal drugs like crack or heroin is partially under genetic control. For instance, an area on chromosome 11, associated with taking risks or seeking novel experiences, lies near a region that has been linked to addiction” (Espejo, 2011, p. 95).
Addiction research reported by Michael Craig Miller in 2005 suggests that genetic differences may also affect our responses to treatment: Studies have found that patients with a family history of alcoholism or cocaine abuse are more responsive to naltrexone than people without a family history of addiction. In a recent study, patients who had a gene variant named Asp40 gained more benefit from naltrexone than those with a different version of the gene. Once genetic markers are better established, it will help doctors to determine which treatments are best for which patient. Miller states, “We’re still a long way from pills that will make treatment easy.” Long-term strategies are essential even when medication works because the affected brain circuits don’t return to normal right away, if ever” (Miller, 2005).

Researchers used animal studies to measure the addictive nature of particular drugs. Marijuana and hallucinogens are not very habit-forming, while cocaine and opiates are so compelling that lab rats prefer them to food (NIH, 2008).

What is interesting, according to Goldman, is that the more addictive the substance, the stronger the role of heredity in causing an addiction. He explains, “While genetics strongly influence your risk of becoming a crack addict, becoming a pothead has more to do with social factors, like whether you like rolling joints in the company of other marijuana users” (Golman, 2009). Responses to drugs also vary enormously, and some drugs provide a greater increase in endorphin levels and have been shown in variations of opiate receptor genes. Wallis says genes alone do not cause an addiction. “Researchers like to point out that, as with other ailments linked to lifestyle, heart disease, obesity and lung cancer, for example, genes merely load the gun, while the environment holds the trigger” (Espejo, 2011, p. 97).

New studies by the National Institute of Health show how this works: Many women who were abused as children are known to have high rates of alcoholism and drug abuse, yet some show remarkable resilience despite a history of abuse. The difference in vulnerability can be traced to variant versions of a gene that controls a key brain enzyme, monoamine oxidase (MAOA), which helps regulate the brain’s response to stress. Wallis cites the 2007 study led by Francesca Ducci and reported by the NIH that found that women who carry a gene for low MAOA activity are strongly prone to becoming substance abusers if they were abused as children, while those with high activity MAOA gene are much more resilient. It takes both the gene and the childhood trauma for the pattern to emerge. Among women who were not abused as children, there is no relationship between MAOA genes and addiction (NIH, 2007).

Drug addiction differs from strictly genetic diseases that are not influenced by external factors. Avram Goldstein notes that “Addiction to prescription drugs may be similar to diseases with strong hereditary influences, like the common kinds of heart disease, or cancers of the breast or colon, in which environmental factors play a major role.” Environmental factors can be modified to reduce addictive behaviors by prevention education and laws restricting the availability and use of prescription drugs. Goldstein uses the example of nicotine addiction, explaining that “Forty-five years ago, a large majority of young Americans began smoking as they entered adolescence, but today only a small minority, around one-fifth, become smokers; moreover of all the people who’ve ever smoked, two-thirds are able to quit.” He concludes that “Genes have not changed in 45 years; the change must be due to intensive education about the health consequences of smoking” (Goldstein, 2007).

**CURRENT CHALLENGES AND ISSUES IN DRUG ADDICTION**

The idea of addiction as a brain disease is relatively new, and historically, people once thought addiction was a personality flaw and a sign of weakness. This stigma persists in some parts of the country today and is a major challenge for addicts and the people who treat them. Dr. Glen Hanson (2012) states, “An addict can no more stop their behavior than a Parkinson’s patient can stop their shaking.”

Our attitudes about drug use in society are continuously evolving. Many drugs considered dangerous today, like cocaine, marijuana and methamphetamine, were prescribed for everything from obesity in adults and insomnia in children in the past. Until its prohibition in 1937, extract of cannabis was one of the most prescribed medicines in the United States.

One issue being debated today is treating drug addiction with alternative prescription drugs. When treating drug addiction with alternative drugs, are physicians just replacing one drug addiction with another? Does the addict simply become addicted to a new, legally prescribed drug? Some physicians and therapists support the use of prescribed alternative drugs as part of the structured treatment plan that would improve the patient’s quality of life. Pharmaceutical substance abuse treatment can assist the user to begin functioning normally again and stop the drug cravings.

But many of yesterday’s treatment options were far from perfect, and some are still in use today. Methadone for example, was used for treatment of heroin addiction but is now a drug of abuse, and overdose deaths are increasing. New treatments are being developed as the neurobiology of addiction continues to be revealed, but treating drug addiction remains a medical challenge.

**Cultural use of drugs**

Some drugs are used in cultural or religious practices. Marijuana has a long history of religious use in India, Africa and Jamaica. Peyote, a cactus containing mescaline, is considered sacred by the Native American Church and used in spiritual rituals by special permission from the U.S. government. There is an active debate today throughout the United States as to whether the use of illegal drugs should be permitted for cultural, religious or medicinal purposes.

**Prescribing drugs of abuse**

Controlled drugs like ketamine, morphine and codeine are prescribed by doctors for their pain-relieving and anesthetic properties. Researchers are conducting studies to determine whether controversial drugs such as marijuana and ecstasy may have some medical use. Ecstasy is currently in clinical trials for treating patients with post-traumatic stress disorder. Some researchers think it would lead to increased abuse of illegal drugs and prefer to look for alternatives to illegal drugs for medicinal purposes.

Another issue is whether clinical trials on illegal drugs like marijuana and ecstasy send the message that the recreational use of the drug is acceptable. Teens are quick to point out that some states have legalized marijuana for medicinal purposes, which they believe supports their use of the drug recreationally.
Mental illness and self-medication

It would be confusing and frightening to function in a world where one’s thoughts were a rapidly changing series of unorganized perceptions. The world would be a place where it was never clear what was reality or hallucination. Some individuals wake up and experience days where they have no feelings about anything at all, and they are unable to find any comfort from family or friends. These are just a few of the symptoms that accompany mental illnesses like schizophrenia, mood disorders and depression.

There is a direct relationship between people with mental illness and the abuse of drugs. Drug use may temporarily relieve the symptoms of mental illness, therefore increasing the likelihood of drug addiction. Dr. Glen Hanson notes that more than 70 percent of schizophrenics are addicted to nicotine, and there is a significant correlation between mental illness and alcoholism. Some individuals with mental illness who are not receiving prescribed medications for treatment may abuse drugs in an attempt to self-medicate and escape their symptoms of mental illness. Today there are ongoing debates on whether society should treat drug addicts with mental illness differently than other addicts.

Does Ritalin provide the first step to drug abuse?

The most commonly prescribed medications for attention deficit hyperactivity disorder (ADHD) is Ritalin. This treatment helps thousands of people control their symptoms. Ritalin is a stimulant chemically similar to cocaine and has the potential for abuse. In fact, they are so similar that Ritalin and cocaine even compete for the same binding sites on neurons. Ritalin is one of the most abused prescription drugs in the United States, and the majority of users are middle-school age youth (MTF, 2009).

Genetic profiles for addiction

What if it was possible to identify which individuals are predisposed to addiction by completing a genetic profile?

- If the results of the test showed a high predisposition for addictive potential, should a person be required to participate in drug abuse education or prevention programs?
- If medications or vaccinations were available, should the individual be encouraged to take the medications and be monitored by health care practitioners or counselors?
- How would the results of the genetic profile affect insurability?
- Would the courts rule more sympathetically or harshly on a drug charge for an individual with proven genetic susceptibility to addiction?
- What if the test showed an individual had a low level of predisposition to certain drugs? Would the person be more apt to try drugs because of the profile?

- Would information on the influence of genetics on addiction and the research that supports drug addiction as a chronic brain disease change how society views and treats addiction?
- If people knew they had a predisposition to addiction, would it prevent them from using drugs or would they use that knowledge as an excuse to avoid responsibility for their addiction?
- Does the fact that prescription drugs are legal influence how society views addiction to them?

Addiction to prescription medications is occurring at a higher rate than many illegal drugs bought on the street. All of the issues listed above indicate how our society’s attitudes, understanding and response toward prescription drug addiction and treatment continue to evolve.

Changing attitudes among youth

The increase in prescriptive drug abuse reflects a negative shift in adolescent attitudes and a growing belief that prescription drug use and drinking are safe and accepted, as noted in the 2009 The Partnership/ MetLife Foundation Attitude Tracking Study (PATS) results:

- The percentage of teens agreeing that “they don’t seem to do anything” increased significantly from 45 percent in 2008 to 51 percent in 2009.
- The number of teens who said “friends usually get high at parties” increased from 69 percent to 75 percent over the same time period.
- There was a significant drop in the number of teens agreeing strongly that “they don’t want to hang around drug users,” from 35 percent in 2008 to 30 percent in 2009.

Addressing the unique needs of teen abusers

Adolescent drug abusers have unique needs because of their immature neuro-cognitive and psychosocial stages of development. Researchers demonstrated that the brain undergoes a process of continuous maturation from birth to early adulthood, and a developmental shift occurs where actions go from impulsive to more reasoned and reflective (NIDA, 2009). In fact, the brain areas closely associated with aspects of behavior, such as decision-making, judgment, planning and self-control, undergo a period of rapid development during adolescence.

NIDA researchers note adolescent drug abuse is also often associated with other co-occurring mental illness. These include attention deficit hyperactive disorder (ADHD) oppositional defiant disorder and conduct disorder as well as depressive and anxiety disorders.

Adolescents are especially sensitive to social clues, with peer groups and families being highly influential during this time. Treatment programs that promote positive parental involvement, include other areas of the adolescent’s life (such as school and athletics), and recognize the importance of positive peer relationships are the most effective.

Access to comprehensive assessment, treatment, case management and family support services that are developmentally, culturally and gender appropriate is also crucial when addressing adolescent addiction. Medications for substance abuse among adolescents may also be helpful (NIDA, 2010).

Tests and diagnosis

The recently updated DSM-5 outlines diagnosis criteria that differs slightly from the previous DSM-IV. Substance use disorder in DSM-5 combines the DSM-IV categories of substance abuse and substance dependence into a single disorder measured on a continuum from mild...
to severe (APA, 2013). Each specific substance (other than caffeine, which cannot be diagnosed as a substance use disorder) is addressed as a separate use disorder (e.g., alcohol use disorder, stimulant use disorder, etc.), but nearly all substances are diagnosed based on the same overarching criteria. In this overarching disorder, the criteria have not only been combined, but strengthened. Whereas a diagnosis of substance abuse disorder previously required only one symptom, mild substance use disorder in DSM-5 requires two to three symptoms from a list of 11. Drug craving was added to the list, and “problems with law enforcement” has been eliminated because of cultural considerations that make the criteria difficult to apply internationally (APA, 2013).

In DSM-IV, the distinction between abuse and dependence was based on the concept of abuse as a mild or early phase and dependence as the more severe manifestation. In practice, the abuse criteria were sometimes quite severe. The revised substance use disorder, a single diagnosis, will better match the symptoms that patients experience.

Additionally, the diagnosis of dependence caused much confusion. Most people link dependence with “addiction” when in fact dependence can be a normal body response to a substance.

The DSM-5 revisions are intended to (1) strengthen the reliability of substance use diagnoses by increasing the number of required symptoms and (2) clarify the definition of “dependence,” which is often misinterpreted as implying addiction and has at its core compulsive drug-seeking behaviors. In contrast, features of physical dependence, such as tolerance and withdrawal, can be normal responses to prescribed medications that affect the central nervous system and that need to be differentiated from addiction. Moreover, although marijuana abuse can be functionally very impairing, physical dependence is not part of the clinical picture, even in severe cases.

In this sense, the new DSM-5 criteria recognize that mental and behavioral aspects of substance use disorders are more specific to substance use disorders than the physical domains of tolerance and withdrawal, which are not unique to addiction.

Although the new criteria require an increased number of symptoms to qualify for a substance-related diagnosis, critics of the revision argue that chances of meeting the new criteria are now much greater. They further worry that many individuals who qualify for a substance use disorder diagnosis per the new criteria have only minor symptoms, making it more difficult for those with more severe symptoms and distress to access already scarce care.

Doctors generally base a current diagnosis of prescription drug abuse on a medical history and answers to other questions. In some cases, there are signs and symptoms that may also provide clues. The use of many types of drugs can be detected by blood or urine tests. These tests can help track the progress of a person undergoing treatment.

Drug tests, toxicology screens on blood and urine samples, can show many chemicals and drugs in the body. How sensitive the test is depends upon the drug itself, when the drug was taken and the testing laboratory. Blood tests are more likely to detect a drug than urine tests; however, urine drug screens are done more often.

Opiates and narcotics are usually in the urine 12 to 36 hours after the last use, depending on the amount and frequency of the drug used. CNS stimulants such as cocaine can be found in urine for one to 12 days, depending on frequency of use. CNS depressants such as Valium and Xanax are found up to seven days after the last use, depending on the substance used and how quickly the body eliminates the drug (half-life). Most hallucinogens can be found in the urine up to seven days after the last use. Marijuana can be found up to 28 days in regular users (SAMHSA, 2006).

### Alcohol and other drugs (AODs) and psychiatric disorders

The U.S. Department of Health and Human Services (2006) notes that determining a diagnosis for patients in addiction and mental health settings is a multifaceted process. Clinicians must discriminate between acute primary psychiatric disorders and psychiatric symptoms caused by alcohol and other drugs (AODs). Clinicians must complete a thorough history of AOD use and psychiatric symptoms and disorders.

There are several possible relationships between AOD use and psychiatric symptoms and disorders. AODs may induce, worsen or diminish psychiatric symptoms, complicating the diagnostic process.

The symptoms of a coexisting psychiatric disorder may be misinterpreted as poor or incomplete recovery from AOD addiction. Psychiatric disorders may interfere with patients’ ability and motivation to participate in addiction treatment as well as compliance with treatment guidelines. For example, patients with anxiety and phobias may fear and resist attending group meetings. Depressed people may be too unmotivated or lethargic to participate in treatment. Patients with psychotic or manic episodes may exhibit bizarre behavior and poor interpersonal relations during treatment, especially during group-oriented activities. Such behaviors may be misinterpreted as signs of treatment resistance or symptoms of addiction relapse (HHS, 2006).

### AOD and psychiatric symptoms

- AOD use can cause psychiatric symptoms and mimic psychiatric syndromes.
- AOD use can initiate or exacerbate a psychiatric disorder.
- AOD use can mask psychiatric symptoms and syndromes.
- AOD withdrawal can cause psychiatric symptoms and mimic psychiatric syndromes.
- Psychiatric and AOD use disorders can independently coexist.
- Psychiatric behaviors can mimic AOD use problems. (U.S. Department of Health and Human Services, 2006)

### The terminology of dual disorders

The term dual diagnosis is a common term that indicates the simultaneous presence of two independent medical disorders. Recently within the fields of mental health, psychiatry and addiction medicine, the term has been used to describe the coexistence of a mental health disorder and AOD abuse. The equivalent phrase “dual disorders” also denotes the coexistence of two independent but interactive disorders and is the preferred term in treatment improvement protocols (HHS, 2006). Acronyms used to describe dual disorders include:

- **MICA**, which represents the phrase “mentally ill chemical abusers,” is sometimes used to designate people who have an AOD disorder and markedly severe and persistent mental disorders such as schizophrenia or bipolar disorder. A preferred definition is “mentally ill chemically affected.”
- **MISA** – Mentally ill substance abusers.
- **CAMI** – Chemical abuse and mental illness.
- **SAMI** – Substance abuse and mental illness.

Common examples of dual disorders include:

- Major depression with cocaine addiction.
- Alcohol addiction with panic disorder.
The National Institute of Health explains that some patients have more than two disorders, such as cocaine addiction, personality disorder and alcoholism. The principles that apply to dual disorders generally apply also to multiple disorders. The combinations of AOD problems and psychiatric disorders vary along dimensions, such as severity, chronicity, disability and the degree of impairment in functioning. For example, the two disorders each may be severe or mild, or one may be more severe than the other. Indeed, the severity of both disorders may change over time. Levels of disability and impairment in functioning may also vary (HHS, 2006).

Patients with similar combinations of dual disorders are often found in certain treatment settings and exhibit the following characteristics:

- Methadone treatment programs see a high percentage of opiate-addicted patients with personality disorders.
- Patients with schizophrenia and alcohol addiction are frequently seen in psychiatric units, mental health centers and programs that provide treatment to homeless patients.
- Patients with mental disorders have an increased risk for AOD disorders, and patients with AOD disorders have an increased risk for mental disorders. For example, about one-third of patients who have a psychiatric disorder also experienced AOD abuse at some point (Regier, 1990), which is about twice the rate among people without psychiatric disorders.

**COMMONLY ABUSED PRESCRIPTION MEDICATIONS**

Although many prescriptions can be abused, the following three classes are most commonly abused (NIDA, 2011):

- **Opioids** – usually prescribed to treat pain.
- **Central nervous system (CNS) depressants** – used to treat anxiety and sleep disorders.
- **Stimulants** – prescribed to treat ADHD and narcolepsy.

**Opioids**

Opioids are analgesic, or pain relieving, medications. NIDA studies have shown that with properly managed medical use and taken exactly as prescribed, the opioid analgesics are safe, can manage pain effectively and rarely cause addiction.

Among the compounds in this class are hydrocodone (Vicodin), oxycodone (OxyContin) and Percocet. OxyContin is an oral, controlled release form of the drug used to treat moderate to severe pain through a slow, steady release of the opioid. Morphine, fentanyl, codeine and related medications are also opioids. Morphine and fentanyl are used to alleviate severe pain before or after surgery, or with oncology patients experiencing severe pain, while codeine is used for milder pain. Other examples of opioids prescribed to relieve pain include propoxyphene (Darvon), hydromorphone (Dilaudid), and meperidine (Demerol), which is used less often because of its side effects.

In addition to their pain-relieving properties, some of these medications can be used to relieve severe diarrhea, such as Lomotil (also known as diphenoxylate), or to address severe coughs, such as codeine. Hydrocodone is prescribed for a variety of painful conditions, including dental and injury-related pain.

Abuse of opioids can occur when taken orally, or the pills may be crushed and the powder snorted or injected. A number of overdose death have resulted from snorting and injecting opioids, particularly with OxyContin, which was designed to be a slow release formulation. Snorting or injecting opioids results in the rapid release into the bloodstream, exposing the person to high doses and causing many of the reported overdose reactions, including death.

Opioids act by attaching to specific proteins called opioid receptors, which are found in the brain, spinal cord and gastrointestinal tract. When these compounds attach to certain opioid receptors in the brain and spinal cord, they can change the way a person experiences pain.

In addition, opioid medications can affect regions of the brain that interpret and communicate the perceptions of pleasure. This explains the initial feeling of euphoria or false sense of well-being that many opioids produce. The feeling of euphoria results from the drug’s affect on the region of the brain involved in reward.

Opioids can produce drowsiness, mental confusion and constipation, and large doses can depress respiration to the point of severe respiratory distress or death. Prescribed opioid medications are only safe to use with other substances under physician supervision. They should not be used with alcohol, antihistamines, barbiturates or benzodiazepines because these substances slow breathing, and their cumulative effects in combination with opioids could lead to life-threatening respiratory failure.

Regular use several times a day for several weeks or more, or long-term abuse of opioids can lead to physical dependence and in some cases, addiction and death.

Repeated exposure to opioids causes the body to adapt, sometimes resulting in tolerance where more of the drug is needed to achieve the desired effect compared to when it was first prescribed. Physical dependence is a normal adaptation to chronic exposure to a drug and is not the same as addiction. People taking prescribed opioid medication should be given these medications only under appropriate medical supervision and should be medically supervised when decreasing or stopping use to reduce or avoid withdrawal symptoms. Symptoms of withdrawal can include restlessness, muscle and bone pain, insomnia, diarrhea, vomiting, cold flashes with goose bumps, and involuntary leg movements (NIDA, 2011).

Street names for opioids include:

- China girl or China white. Vike, dance fever, friend, good fella, jackpot, murder 8, TNT, hillbilly heroin, percs, Watson-387, juice, smack, footballs, dillies, D, biscuits, blue heaven, blues, Mrs. O, octagon, stop signs, O bomb and demmies.

- More than half of the people who use or abuse AODs have experienced psychiatric symptoms significant enough to fulfill diagnostic criteria for a psychiatric disorder (Regier, 1990; Ross et al., 1988).
- Patients with dual disorders often experience more severe and chronic medical, social and emotional problems. Because they have two disorders, they are vulnerable to both AOD relapse and a worsening of the psychiatric disorder.
- Addiction relapse often leads to psychiatric decompensation, and worsening of psychiatric problems often leads to addiction relapse. Thus relapse prevention must be specially designed for patients with dual disorders.
- Patients with dual disorders often require longer treatment, have more crises and progress more gradually in treatment.
- Psychiatric disorders most prevalent among dually diagnosed patients include mood disorders, anxiety disorders, personality disorders and psychotic disorders.

Among patients with a psychiatric disorder, any AOD use can have dangerous consequences. This is especially true for patients with severe psychiatric disorders and patients who are taking prescribed medications for psychiatric disorders. For patients with psychiatric disorders, even occasional use of alcohol can lead to serious problems, such as adverse medication interactions, decreased medication compliance and AOD abuse. Screening questions can determine evidence of AOD use and the frequency, dose, and duration (HHS, 2006).
CNS depressants, tranquilizers and sedatives are medications that slow normal brain function. In higher doses, some CNS depressants can be used as general anesthetics or pre-anesthetics. CNS depressants can be divided into three groups, based on their chemistry and pharmacology:

- **Barbiturates**, such as mephobarbital (Meharal) and sodium pentobarbital (Nembutal), are used as pre-anesthetics and for promoting sleep. They are also used less frequently to reduce anxiety or sleep problems because of their higher risk of overdose compared to benzodiazepines. They are still used in surgical procedures and for seizure disorders.

- **Benzodiazepines**, such as diazepam (Valium), alprazolam (Xanax) and estazolam (Prosom), can be used to treat anxiety, acute stress reactions, panic attacks, convulsions and sleep disorders. Benzodiazepines, like Halcion and Prosom, are usually only prescribed for short-term relief of sleep problems because of the development of tolerance and risk of dependence or addiction.

- **Non-benzodiazepine sleep medications** such as zolpidem (Ambien), eszopiclone (Lunesta), and zaleplon (Sonata), have different chemical structures, but act on some of the same brain receptors as diazepam. These drugs are thought to have fewer side effects and less risk of dependence than benzodiazepines.

Most CNS depressants act on the brain by affecting the neurotransmitter gamma amino butyric acid (GABA). Neurotransmitters are brain chemicals that facilitate communication between brain cells. Although the different classes of CNS depressants work in unique ways, their ability to increase GABA and thereby inhibit brain activity classifies them as depressants. They produce a drowsy or calming effect beneficial to those suffering from anxiety or sleep disorders.

Despite their many beneficial effects, benzodiazepines and barbiturates have the potential for abuse and should be used only as prescribed. Research is limited on the use of non-benzodiazepine sleep medication, but certain indicators have raised concern about the likelihood of abuse or addiction.

During the first few days of taking prescribed CNS depressants, a person usually feels sleepy and uncoordinated. As the body becomes accustomed to the effects of the drugs and tolerance develops, the side effects begin to disappear. Continued use of these drugs long-term may indicate that larger doses may be needed to achieve the therapeutic effects. Prolonged use can also lead to physical dependence and withdrawal when the drug is abruptly reduced or stopped.

Because all CNS depressants work by slowing the brain’s activity, when an individual stops taking them, there can be a rebound effect, resulting in seizures or other harmful consequences. Although withdrawal from benzodiazepines can cause serious problems, it is rarely life-threatening, whereas withdrawal from prolonged use of barbiturates can have life-threatening complications.

It is safe to use CNS depressants with other medications only under a physician’s supervision. Typically, they should not be combined with any other medication or substance that causes CNS depression, including prescription pain medications, some over-the-counter cold and allergy medications and alcohol. Using CNS depressants with these substances, particularly alcohol, can affect heart rhythm, slow respiration and even lead to death (NIDA, 2011).

**Street names for depressants include:**
- Reds, red bird.
- Barbs phenies, toosie.
- Yellows, yellow jackets.
- Candy, tranks, forget-me pills, Mexican valium.
- R2, rope, and rophies.

**Cognitive enhancers**

The dramatic increase in stimulant prescriptions over the last two decades has led to their greater availability and increase risk for illegal distribution and abuse. For those who take these medications to improve diagnosed medical conditions, they can greatly improve a
person’s quality of life. However, because they are thought by many to be generally safe and effective, prescription stimulants, such as Concerta or Adderall, are increasingly abused to address nonmedical conditions.

Indeed, reports suggest that the practice is occurring among some academic professionals, athletes, performers, older people and middle, high school and college students. Such nonmedical cognitive enhancement poses potential health risks, including addiction, cardiovascular events, digestive problems and loss of appetite, weight loss and psychosis (NIDA, 2011).

Street names include: Jif, mph, R-ball, skippy, smart drug and vitamin R.

**TREATMENT**

Treatment for drug abuse or dependence begins with recognizing the problem. The denial of a substance abuse problem used to be considered a symptom of addiction. Current research has shown that people who are addicted have far less denial if they are treated with empathy and respect rather than told what to do or confronted.

Treatment of drug dependency involves tapering off the drug gradually (detoxification), support, and ending the drug use (abstinence). People with acute intoxication or drug overdose may need emergency treatment. Sometimes the person loses consciousness and might need to be on a breathing machine such as a mechanical respirator temporarily. The treatment depends on the drug being used and the severity of the abuse (NIDA, 2011).

Detoxification is the gradual withdrawal of an abused substance in a controlled environment. Treatment may include replacing the drug with one that has a similar action to reduce the side effects and risks of withdrawal. Detoxification can be done on an inpatient or outpatient basis.

If the person also has depression or another mood or psychiatric disorder, it must be treated as well as the addiction. Very often, people start abusing drugs in an effort to self-treat mental illness. For opioid dependence, some people are treated with methadone, a synthetic opioid, or LAAM to prevent withdrawal and relieve drug cravings. Methadone has been used for more than 40 years to successfully treat people addicted to heroin. The goal of methadone treatment is to enable the person to live as normal a life as possible. Methadone has serious potential for abuse, which will be discussed in a later section.

Research has shown that addiction to any drug, illicit or prescribed, is a brain disease that can be treated effectively (NIDA, 2011). Treatment must take into account the type of drug used and the needs of the individual. Successful treatments need to incorporate several components including counseling, detoxification and sometimes the use of addiction medications. Multiple courses of treatment may be needed for the patient to make a full recovery.

The two main categories of drug addiction treatment are behavioral and pharmacological. Behavioral treatments help patients stop using drugs by teaching them strategies to function without drugs, deal with cravings, avoid drugs, identify situations that could lead to drug use, and handle a relapse should it occur. When delivered effectively, behavioral treatments, such as individual counseling, group or family counseling, contingency management and cognitive behavioral therapies can help patients improve their personal relationships and their ability to function at home, work and in the community.

Some addictions can be treated with pharmacological treatments that counter the effects of the drug on the brain and can be used to relieve withdrawal symptoms, help overcome drug cravings or treat an overdose. Although a behavioral or pharmacological approach alone may be sufficient for treating some patients, research shows that a combined approach may be best (NIDA, 2010).

**Treating addiction to prescribed opioids**

Several options are available for effectively treating opioid addiction, which include medications such as methadone and buprenorphine, which are synthetic opioids.

Naltrexone is a long-acting opioid receptor blocker that can be used to help prevent relapse. It is not widely used because of non-compliance but is effective with highly motivated individuals such as physicians or other professionals at risk of losing their license or prisoners and those on parole or probation who are committed to abstinence to avoid further incarceration.

These medications can only be used after detoxification is completed because they can produce severe withdrawal symptoms if the person continues to use opioids. Naloxone is a short-acting opioid receptor blocker that counteracts the effects of opioids and can be used to treat overdoses. In addition to pharmacological approaches to treatment, psychotherapy as well as behavioral counseling approaches combined with medications has proven to be effective.

**Agonist maintenance treatment**

Agonist maintenance treatment for opioid addicts usually is conducted in outpatient settings, often called methadone treatment programs. These programs use a long-acting synthetic opiate medication, usually methadone or levomethadyl acetate, given orally for a sustained period at a dosage sufficient to prevent opioid withdrawal, block the effects of illicit opioid use and decrease cravings.

Patients stabilized on opioid agonists can engage in counseling and other behavioral interventions essential for recovery and rehabilitation. The best, most effective opioid agonist maintenance programs include individual or group counseling as well as other needed medical, psychological or social services.

With continued support and careful monitoring, using sustained dosages of methadone or LAAM, patients can function normally. They can hold jobs and rejoin their family and community, avoid the crime and violence of the drug culture, and reduce their exposure to HIV by stopping injection drug use and drug-related, high-risk sexual behavior (NIDA, 2011).

**Narcotic antagonist treatment**

Using naltrexone for opioid addiction usually is conducted in outpatient settings although it often begins after medical detoxification in a residential setting is completed. Naltrexone is a long-acting synthetic opioid antagonist with few side effects that is taken orally, either daily or three times a week, for a sustained period of time.

Individuals must be medically detoxified and opiate-free for several days before naltrexone can be taken to prevent precipitating an opioid abstinence syndrome (NIDA, 2011).
Naltrexone prevents opioids from activating their receptors, although its use for addiction has been limited due to poor adherence and tolerability by patients. When naltrexone is used correctly, all the effects of self-administered opioids, including euphoria, are totally blocked. The theory behind this treatment is that the repeated lack of desired effects will gradually result in breaking the habit of addiction. Naltrexone itself has no harmful effects or potential for abuse and is not addicting.

Patient non-compliance is a common problem, so effective treatment outcomes require a positive therapeutic relationship and careful monitoring of medication compliance. Recently, an injectable long-acting form of naltrexone (Vivitrol), has also received FDA approval to treat opioid addiction. Because its effects last for weeks, Vivitrol is ideal for patients who do not have ready access to health care or who struggle with taking their medications regularly.

Buprenorphine is a partial opioid agonist, containing agonist and antagonist properties, which can be prescribed by certified physicians in an office setting. Like methadone, it can reduce cravings and is well tolerated by patients. NIDA is supporting research to determine the effectiveness of these medications in treating addiction to opioid pain relievers.

**Treating addiction to CNS depressants**

Patients addicted to barbiturates and benzodiazepines should not attempt to stop taking them on their own. Withdrawal symptoms from these drugs cause serious physical symptoms, and can be life-threatening. Research on treating barbiturate and benzodiazepine addiction is limited but addicted patients undergo medically supervised detoxification because the dosage they take should be gradually tapered.

Inpatient and outpatient counseling can help individuals through this process. Cognitive behavioral therapy has been successfully used to help individuals learn new thought and behavior patterns to adapt to benzodiazepines abstinence. Often barbiturate and benzodiazepine abuse occurs in connection with the abuse of other drugs, such as alcohol or cocaine. In such cases of polydrug abuse, the treatment approach should address the multiple addictions.

**Treating addiction to prescription stimulants**

Treatment of addiction to prescription stimulants such as Adderall and Concerta is based on behavioral strategies used in treating cocaine and methamphetamine addiction. At this time, there are no medications that are FDA approved for treating stimulant addiction, but the NIDA is supporting research in this area.

Depending on the patient’s type and level of abuse, the first step in treating prescription stimulant addiction is to taper the drug dosage to ease withdrawal symptoms such as mood changes, sleep and appetite disturbances. The detoxification process could be followed by one of many behavioral therapies. Contingency management, for example, is a system that enables patients to earn vouchers for drug-free urine tests. These vouchers can be exchanged for items that promote healthy living. Cognitive behavioral therapy may be effective for treating stimulant addiction and recovery support groups may be helpful when combined with behavioral therapy.

**The matrix model**

The matrix model provides a comprehensive program for involving stimulant abusers in treatment and motivating them to complete the program and progress toward abstinence. Patients learn about issues critical to addiction and relapse, with direction and support from a trained therapist. They become familiar with self-help programs and are monitored for drug use by urine testing. The program includes education for family members affected by the addiction (NIDA, 2011).

The therapist functions as teacher and coach, developing a positive, supportive therapeutic relationship to foster behavior change. The interaction between the therapist and the patient is practical, rational and straightforward and never judgmental or imposing. Therapists are trained to facilitate treatment sessions that promote the patient’s self-esteem, dignity and self-worth. A positive relationship with the therapist is necessary for success in reaching abstinence.

Treatment materials draw heavily on other evidenced-based treatment approaches. This approach includes elements of relapse prevention, family and group therapies, drug education and self-help for participation. Detailed treatment manuals contain worksheets for individual sessions. Other components include family educational groups, early recovery skills groups, relapse prevention groups, urine testing, 12-step programs, relapse analysis and social support groups (U.S. Department of Health and Human Services, 2011).

A number of programs have demonstrated that addicts treated with the matrix model have statistically significant reductions in drug and alcohol use, improvements in psychological health, and reduced risk of sexual behaviors associated with HIV transmission. These reports show similar treatment outcomes for methamphetamine and cocaine users. The reports provided evidence of improved naltrexone treatment among opioid addicts, including peer review support for the dissemination of the matrix model (NIDA, 2011).

**Supportive-expressive psychotherapy**

Supportive-expressive psychotherapy is a time-limited, individual form of psychotherapy that has been adapted for heroin and related opiates, and cocaine-addicted individuals. The therapy components consist of:

- Supportive techniques to help patients feel comfortable in discussing their personal experiences.
- Expressive techniques to help patients identify and work through interpersonal relationship issues.
- Special attention is given to the influence of drugs on thoughts, emotions and behavior.
- Strategies are developed to cope with and solve problems without abusing drugs.

Results of supportive-expressive psychotherapy have been tested with patients in methadone maintenance treatment who had co-occurring psychiatric problems. In comparison studies with patients receiving only drug counseling, groups had similar response rates but the supportive-expressive psychotherapy group had more success in cocaine reduction and used less methadone. Patients who participated in supportive-expressive psychotherapy were able to maintain those successes.

Cognitive behavioral therapy may be effective for treating stimulant addiction and recovery support groups may be helpful when combined with behavioral therapy.

**Cognitive behavioral therapy**

Cognitive behavioral therapy has been successfully used to help individuals learn new thought and behavior patterns to adapt to benzodiazepines abstinence. Often barbiturate and benzodiazepine abuse occurs in connection with the abuse of other drugs, such as alcohol or cocaine. In such cases of polydrug abuse, the treatment approach should address the multiple addictions.
Individualized drug counseling

Individualized drug counseling focuses on the patient’s needs in order to stop the person’s illicit drug use. It also addresses related areas, such as illegal activity, family/social relations and skill development within the content and structure of the patient’s recovery program.

It works on short-term behavioral goals with individualized drug counseling and helps the patient develop coping strategies and tools for abstaining from drug use and maintaining abstinence. The addiction counselor encourages 12-step participation and makes referrals for needed supplemental medical, psychiatric, employment and other social services. Individuals are encouraged to attend sessions one or two times per week.

Behavioral therapy for adolescents

Behavioral therapy for adolescents follows the principle that by identifying behaviors to change, setting clear goals to accomplish behavior change and delivering consistent rewards at incremental steps toward progress, target behaviors can be changed.

Therapeutic activities include completing individualized assignments, developing strategies to handle drug-related conflicts, rehearsing desired behaviors, and recording and reviewing progress data, with reinforcement given for goal mastery. Reinforcers are identified for each individual, and reinforcement schedules are defined. Urine samples are collected regularly to monitor drug use.

This therapy aims to help the patient to gain three types of control:
- Stimulus control helps patients avoid situations associated with drug use and learn to engage and commit to substitute activities that are incompatible with drug use.
- Urge control helps patients recognize and change thoughts, feelings and plans that lead to drug abuse.
- Social control involves family members and other people important in helping patients avoid drugs. A parent or significant other attends treatment sessions and assists with therapy assignments and reinforcing appropriate behavior.

According to research studies, this therapy helps adolescents become drug-free and increases their ability to remain drug-free after treatment ends. Adolescents also show improvements in several other areas, family relationships, social skills, communication skills, school performance and employment, and lowers depression, institutionalization rates and alcohol use. Such favorable results are attributed largely to including family members in therapy and rewarding drug abstinence as verified by urinalysis (HHS, 2011).

Multidimensional family therapy (MDFT) for adolescents

Multidimensional family therapy (MDFT) is an outpatient family-based drug treatment for adolescents. This method treats drug abuse by addressing all components in adolescents’ life that impact their drug abuse. The youth, family, peers, school and community are included and work together to guide healthy behaviors for application in multiple settings.

Treatment includes individual and family sessions held in the home, treatment setting, at the family court, drug court, school or other locations. During sessions, the therapist and adolescent work on tasks, such as decision-making, communication skills, negotiation skills, effective social/behavioral patterns and problem-solving skills. Youths improve skills to communicate their thoughts and feelings to cope with life stressors, and learn employment and vocational skills. Counseling sessions are held with parents to review patterns of behavior and parenting styles. Parents develop positive parenting methods and distinguish effective methods from previous ineffective parenting based on control and confrontation (HHS, 2011).

Outpatient drug treatment

This type of treatment costs less than residential or inpatient treatment and is implemented for individuals who are employed or who have extensive social supports. Some programs offer little more than drug education, but others provide intensive day treatment and could be compared to residential programs in the services offered and rates of success. Factors in the choice of outpatient treatment should consider the type, duration and severity of the abuse; and patients’ medical and psychiatric history, individual needs and support systems in place. Many outpatient programs use group counseling and some are designed to treat patients with dual disorders (NIDA, 2011).

Long-term residential treatment

This type of treatment provides care 24 hours a day, generally in nonhospital settings. The best-known residential treatment model is the therapeutic community (TC). TCs are residential programs with a planned length of six to 12 months. They focus on the re-socialization of the individual and involve the program’s entire community, including other residents and staff in the treatment.

Addiction is viewed in the context of the individual’s social and psychological deficits, and treatment focuses on developing personal accountability and responsibility for a productive life. Treatment is highly structured and can at times be confrontational, with activities designed to help residents examine negative self-concepts, destructive thought patterns and behavior, and develop effective communication skills. The goal is to develop effective ways to face life’s issues and interact with others without substance abuse.

Many TCs are quite comprehensive and can include employment training and other support services on-site. Compared with patients in other forms of drug treatment, the typical TC resident has more severe problems, with more co-occurring mental health problems and more criminal involvement (NIDA, 2011).

Evidence-based drug treatment

Benedict Carey has written about the field of rehabilitation programs, which has no standardized set of guidelines and frequently does not track long-term outcomes or attempt to verify effectiveness. He notes that state legislators are mandating that publicly funded programs rely on scientific evidence to base treatment techniques. Evidence-based techniques are the result of recognized scientific research investigation, application and reported data. These programs have been replicated
and show established track records for positive, lasting results (Nelson, 2011, p. 194).

Carey writes that throughout the country, “Some users start early, fall fast and in their reckless prime can swallow, snort, inject or smoke anything available, from crystal meth to prescription pills, to heroin and ecstasy. And the treatment, if they get it at all, can seem like a joke” (Nelson, 2011, p.195).

Carey described the “revolving door” aspect of rehabilitation treatment programs with the following case study about Angella:

One young addict describes the following experience with rehabilitation:

“After the first couple of times I went through, they basically told me that there was nothing they could do,” said Angella, a 17-year-old from central Oregon, who by freshman year in high school was drinking hard liquor every day, smoking pot and sampling a variety of hard drugs.

She tried residential programs twice, living away from home for three months each time. There she learned how dangerous her habit was, and how much pain it was causing others in her life. She worked on strengthening the relationship with her grandparents, with whom she lived. For two months or so afterwards she stayed clean.

“Then I went right back,” Angella said in an interview. “After a while, you know, you just start missing your friends” (Nelson, 2011, p. 195).

**The motivational interview**

Another effective evidence-based treatment is called motivational interview, a method to strengthen the client’s commitment to enter and complete treatment. In MI, as it is known, the counselor, through skilled questioning techniques, has the ability to help the client realize why he or she has a drug problem, and why it is important to set goals and develop a plan to abstain from drug use.

Studies show that when clients take responsibility for their addiction, set goals and make a plan instead of listening to a lecture from a counselor as in many traditional programs, they stay in treatment longer.

Psychotherapy techniques help the user identify and cope with their inappropriate or drug-related thoughts and feelings. Cognitive behavior therapy helps users to anticipate stress, anxiety, depression or mood changes and develop techniques to accept and deal with those feelings without turning to drugs.

They learn to question and change thought patterns that reinforce their drug habits. An example could be an abuser who previously believed he could not be happy without his drug-abusing friends and would not be accepted by a social group that is drug-free. The program helps the addict to learn and participate in activities that do not involve drugs and to develop creative interests.

For Angella, this kind of counseling made a difference. She spent several months in a program run by Adapt, an addiction treatment center in Rosenberg, a small city about 175 miles south of Portland. In treatment, Angella said she learned to “just be with, and feel” bad moods without turning to drink or drugs and to throw herself into creative projects like collage and painting. The program has helped her reconnect with her father and to enroll in college beginning in January.

“I want to be a teacher, and someone at the program is advising me on that,” she said in an interview. “That’s the plan, to just move out and away from my old life.” A friend of hers in the program, Alex, a 16-year-old from Roseburg, said the therapy helped him monitor his own emotional ups and downs, without being swept away by them. The counselors are “always asking about our stress level, our anger; you become more aware and have a better idea what to do with it,” he said (Nelson, 2011, p.198).

**Adapt treatment services**

Adapt has been providing drug abuse treatment using evidence-based treatment practices in southern Oregon for more than 40 years. The program includes many treatment options and mental health services for adolescents and adults. Adapt is designed to deliver residential and outpatient treatment. Different treatment styles and methods are provided through a number of programs that implement evidenced-based practices that have been studied and verified to be effective with a number of diverse populations.

The community reinforcement approach to treatment is the focus of the Adapt program, and it employs a cognitive behavioral therapy process using positive reinforcement rather than negative sanctions.

The counselors are trained in a variety of treatment programs, such as Seeking Safety, motivational interviewing (MI), and motivational enhancement therapy (MET) and the matrix model to tailor the treatment program to meet the specific needs of the individual.

Adapt was developed to provide a full range of mental health services, including treatment for dual or multiple disorders. The program is equipped to identify and treat co-occurring mental health conditions that may have been a factor in the substance abuse or addiction. Treating all of the co-occurring mental health conditions is critical to achieving success in drug abuse treatment (Adapt, 2004).
Practice-based evidence

To provide the best treatment services and incorporate effective approaches used by veteran counselors, practice-based evidence has been incorporated into the evidence-based programs. Practice-based evidence documents the work and results based on counselors’ own work. In this way, the “tried and true” approaches that counselors want to continue to use can be incorporated into the mandated evidence-based practices.

In 2001, the Delaware Division of Substance Abuse and Mental Health began giving treatment program incentives, or bonuses, if they met certain benchmarks. A clinic could earn a bonus of up to 5 percent if it kept a high percentage of addicts returning at least weekly and ensure that those clients met their goals, as measured by both clean urine tests and how well they were functioning in school, work and at home.

“We basically gave them a list of evidence-based practices and told them to pick the one they wanted to use; it is up to them to decide what to use,” said Jack Kemp, former director of Substance Abuse Services for Delaware. He continued, “For those who were trying not to use drugs, it doesn’t matter how rehabilitation services are improved, only that it happens in time.” A former addict, a 25-year-old from Oregon, agreed, “Honestly, you just don’t care how or why something works for you, just that it does” (Nelson, 2011, p. 202).

A note about Oregon

As noted above, Oregon has been on the forefront of treatment because of a large number of addicted individuals. This is due in part to the high numbers of homeless adults and runaway teens living on the streets and under highways. In 2000, Portland had the highest rate of homeless teens living on the street, 1,500, and the highest number of heroin deaths attributed to the low cost of the drug. Since the 1980s, Portland has seen an increase in the number of runaways and loosely organized street families. Studies indicate that 57 percent of teens ran away from foster homes and 81 percent ran from abusive homes (DEC, 2010).

In an attempt to help these youths and ensure a safe city for everyone, local business owners and politicians rallied to obtain funds for programs, which addressed the varied needs of the homeless teens. One program, New Avenues for Youth, provides temporary housing and assists teens in locating agencies for help. This program goes beyond meeting basic needs and begins with the Day Service Center. This is the initial contact point where youths are provided food, clothing, showers and have access to various recreational activities. The purpose is to provide a safe place so these youths can leave the streets and their basic needs can be met. In this way, staff members build trusting relationships with the young people and are able to help connect them to services that will provide the resources they need to leave the streets (New Avenues for Youth, 2012).

The New Avenues For Youth case management program provides a case manager for each youth in the program. The case managers are Masters-level licensed clinical social workers, and they work with youths to identify and connect them to needed services. These services include mental health care, drug and alcohol counseling, as well as education, job training and housing. The youth and case manager work together to create a plan so that the person can move toward becoming healthy, drug-free and independent and not return to the streets.

The transitional housing program gives youths a safe home environment as they learn and work through their issues with the support of the staff. The 24-bed housing unit is a place where youths can work on living skills, social skills, employability and educational skills. The goal of the program is that when these young people are ready to leave New Avenues, they can move on to a self-sufficient, independent and productive life, including a permanent living situation off the streets.

Oregon took the prescription and illegal drug abuse problem in the state seriously and implemented evidenced-based programs proven to be effective, as follows:
- Almost 54 percent of Oregon’s $94 million budget for addiction treatment services now goes to programs that employ evidence-based techniques, according to a state report completed in 2008. The estimated rate of funding before the mandate was 25 percent to 30 percent.
- Oregon implements the evidenced-based programs mandated by the state with support from the Robert Wood Johnson Foundation and the National Institutes of Health.
- By 2006, the state’s rehabilitation programs were operating at 95 percent capacity, up from 50 percent in 2001.
- 70 percent of patients were attending regular treatment sessions, up from 53 percent, according to an analysis of the policy published in the journal Health Policy in 2009 (NIH, 2011).

Treating drug abuse in the criminal justice system

The National Research Advisory Committee (NRAC) has shown that criminal justice sanctions to incorporate drug treatment are effective in decreasing drug use and crime. Individuals under the legal control of the drug courts attend treatment to avoid a prison sentence. These programs have higher treatment retention rates and abstinence rates that are comparable or higher than non-judicial-based treatment programs (NRAC, 2006). Though not by choice, drug abusers enter the criminal justice system when they would not consider entering other treatment programs.

The drug court programs provide effective treatment to stop the individual’s cycle of drug abuse and crime. Drug court sanctions may include treatment that is delivered before, during or after confinement. Sanctions may allow individuals to avoid incarceration if they continue to meet the structured requirements of the drug court program (NRAC, 2006).

A number of criminal justice alternatives to incarceration have been tried with offenders who have abused drugs, including limited diversion programs, pretrial release conditional on entry into treatment, and conditional probation with sanctions.

Drug courts mandate and arrange treatment, monitor progress and assess program effectiveness using evidenced-based practices. The court will require and arrange for other services for the offender and their family that supports treatment success.

Federal support for planning, implementation and enforcement of drug courts is provided under the U.S. Department of Justice Drug Courts Program Office. As an example, the Treatment Accountability and Safer Communities (TASC) program provided an alternative to incarceration by addressing the multiple needs of drug-addicted offenders in a community-based setting. TASC programs typically include counseling, medical care, parenting instruction, family counseling, academic and job training, and legal and employment services.

The key features of TASC include:
- Coordination of criminal justice and drug treatment.
- Early identification, assessment and referral of drug-involved offenders.
- Monitoring of offenders through drug testing.
- Use of legal sanctions as inducements to remain in treatment.
Peggy Fulton Hora is a retired judge who served 21 years in the California Superior Court. She says that drug courts are effective in dealing with chemical dependency, but incarceration and probation are often not a deterrent to addiction. Hora claims the one-size-fits-all approach of mandatory sentencing is not appropriate, but the flexibility of a drug court assesses whether a defendant would benefit more from treatment and rehabilitation drug courts (Hora, 2009). The fact that most drug treatment courts are in urban areas has recently been credited with sharply reducing the number of African-Americans who are incarcerated. If this trend continues, the large numbers of Americans who are currently disenfranchised in the system they see as racist may be reduced. This will increase trust and confidence in the judiciary, and this situation alone could justify the expansion of such courts.

According to the National Association of Drug Court Professionals (NADCP, 2009):

- At $250 million, up from $15.2 million in 2008 and an average of $40 million since the first federal funding, annual federal investments would reap staggering savings, with an estimated annual return of $840 million in net benefits from avoided criminal justice and victimization costs alone.
- Treating the proper criminal justice target population would save $2.14 for every $1 spent, totaling $1.17 billion in savings annually.

Drug courts are one of the most effective strategies to lower the rate of recidivism. Roger Warren, president emeritus of the National Center for State Courts (2010), explains, “Rigorous scientific studies and meta-analysis have found that drug courts significantly reduce recidivism among drug court participants in comparison to offenders in similar treatment programs delivered outside of the drug court system, with effect sizes ranging from 10 percent to 70 percent” (Hora, 2009).

Drug courts were among the first to apply evidence-based practices on a large scale. In the field of substance abuse and mental health treatment, interventions that have been rated through the peer-review process are eligible for inclusion in the National Registry of Evidence-based Practices (NREPP) and the Substance Abuse and Mental Health Services Administration (SAMHSA). The goal of the registry is to “improve access to information on tested interventions and thereby reduce the lag time, currently 12 years, between the creation of scientific knowledge and its practical application in the field. (NREPP, 2009).

Along with the SAMHSA initiative, evidence-based sentencing implements problem-solving techniques to reduce recidivism and promote fairness in the courtroom. The chief justices of the 50 states were surveyed by the National Center for State Courts in 2006, and their major concerns were:

- High rates of recidivism.
- Ineffectiveness of traditional probation supervision in reducing recidivism.
- Absence of effective community corrections programs.
- Restrictions on the judicial discretion that limit the ability of judges to sentence more fairly and effectively.

Studies on recidivism rates show that jail or prison is ineffective as a deterrent for many crimes, and without treatment for the underlying causes of criminal behavior, recidivism rates are off the charts (Hora, 2009).

She continues, “Seventy percent of drug offenders are rearrested within three years of release from custody. One out of every 31 adults is under supervision by probation or parole in the United States, and caseloads exceed every standard that mass supervision is no longer an effective strategy.”

Evidence-based practices rely on scientifically proven risk assessment tools, so intervention is designed for the individual’s needs and reviews multiple factors, not just arrest history. Risk assessment instruments measure the likelihood that the defendant will re-offend so that resources can go to the highest-risk offender, and low-risk offenders can be managed with fines, volunteer work and other low-levels sanctions.

Substance abusers in the drug court system stay in the program through completion. This is in sharp contrast to the 80 percent to 90 percent of conventional drug treatment clients who drop out before 12 months, the period found to be the minimum effective duration. By providing a structure that links supervision and treatment, drug courts exert legal pressure on defendants to enter and remain in treatment long enough to realize benefits. More than two-thirds of participants who begin treatment through a drug court complete the program in a year or more, a six-fold increase in retention compared with programs outside the justice system (Gonzales et al., 2006).

### The STOP drug court treatment program

STOP stands for Sanction Treatment Opportunity Progress. Individuals have the choice of participating in intensive substance abuse treatment and frequent court appearances in which the drug court judge monitors compliance. The following clinical services are provided:

- **Assessment and evaluation** – Professional evaluation of treatment needs are provided for alcohol and drug dependence/abuse, and mental health issues.
- **Individual and group counseling** – Groups include educational and process groups in a supportive environment.
- **Naturopathic health evaluation and care** – Clients have access to a team of health care providers who use treatment modes to maintain good health and treat illness.
- **Medication management** – Psychiatric mental health nurse practitioners provide evaluation and management of medications for mental health treatment.

- **Case management and referrals** – Resources are available for housing, employment and other services that removed barriers to treatment.
- **Random urinalysis.**

Funding sources for the STOP program includes the U.S. Bureau of Justice Administration and state criminal justice funds as well as county-level funds.

Outcomes for the fiscal year 2009-2010 STOP program served:

- 995 children.
- 534 adults.

The program has served more than 8,000 children throughout the U.S. since it began in 2001 (STOP, 2012).

### Moral Reconciliation Therapy in drug courts

Originally developed in the early 1990s by Dr. Gregory Little and Dr. Kenneth Robinson, the program was initially designed to reform and assist prison inmates in developing higher levels of moral reasoning and productive behavior. Many drug courts adopted Moral Reconciliation Therapy (MRT) in the early 1990s. Today MRT is one of the most widely used cognitive behavioral treatment programs with over 100 drug courts adapting MRT as their primary treatment.

Many evidenced-based studies have been published over the past 20 years demonstrating positive outcomes with more than 100,000 individuals completing MRT programs. Rates of effectiveness with male and female MRT participants showed similar positive outcomes in diverse populations in a variety of settings. These included correctional facilities, probation and parole programs, community-based correction programs, and drug court programs for juveniles and...
Withdrawal therapy

The goal of withdrawal therapy (detoxification) is to end the use of addicting drugs as quickly and safely as possible. For some people, it may be safe to undergo withdrawal therapy on an outpatient basis but others may require admission to a hospital or residential treatment center. Withdrawal from different categories of drugs produces different side effects and requires different approaches.

Medical detoxification is a process in which individuals are systematically withdrawn from addicting drugs in an inpatient or outpatient setting under the care of a physician. Detoxification is considered a prerequisite or the first step of treatment. The detoxification process must be carefully implemented to treat the acute physiological effects that occur in the withdrawal process.

Medications are available for detoxification from opiates, nicotine, benzodiazepine, alcohol, barbiturates and other sedatives. In some cases, particularly for the last three types of drugs, detoxification may be a medical necessity, and untreated withdrawal may be dangerous or even fatal.

Detoxification is not designed to address the underlying psychological, social, behavioral or possible co-occurring mental health problems associated with addiction. Successful detoxification does not produce the lasting behavioral changes necessary to maintain abstinence. Detoxification is most effective when it is followed by immediate entry into a formal processes of assessment and referral for drug addiction and mental health treatment (NIDA, 2011).

Withdrawal symptoms

- **Depressants including barbiturates, benzodiazepines and others:**
  Minor side effects of withdrawal may include restlessness, anxiety, sleep problems and sweating. More serious signs and symptoms could include hallucinations, whole-body tremors, seizures and increased blood pressure, heart rate and body temperature. Withdrawal therapy may involve gradually tapering the amount of the drug or adding another medication to help stabilize the nerve cells during detoxification.

- **Stimulants including amphetamines, methamphetamine, cocaine, Ritalin and others:**
  Side effects of withdrawal include depression, fatigue, anxiety and intense cravings. In some cases, signs and symptoms may include suicidal thoughts and suicide attempts, paranoia, and decreased contact with reality, even acute psychosis. Treatment during withdrawal is usually limited to emotional support from the family, friends, doctors and therapists. The doctor may recommend medications to treat paranoid psychosis or depression.

- **Opioids including heroin, morphine, codeine, OxyContin and others:**
  Withdrawal effects of opioids can range from relatively minor to severe. Minor effects may include a runny nose, sweating, yawning, anxiety, and drug cravings. Severe reactions can include insomnia, depression, dilated pupils, rapid pulse, rapid breathing, high blood pressure, abdominal cramps, tremors, bone and muscle pain, vomiting and diarrhea. Doctors may substitute an artificial opiate, such as methadone, buprenorphine, subutex or LAAM, to reduce the craving for heroin during recovery (NIDA Research Report Series, 2011).

All treatment programs generally include sessions focused on preventing relapse. These may be accomplished in individual, group or family sessions. Relapse programs are available in a variety of settings, from outpatient to residential and inpatient programs.

Relapse sessions help patients to resist the temptation to resume using addicting drugs, develop ways to cope with drug cravings, suggest strategies to avoid drug relapse, and offer suggestions on how to deal with the relapse if it occurs. Counseling can also involve talking about the patient’s job, legal problems and relationships with family and friends. Counseling with the patient, family members and friends can help them develop better communication skills and be more supportive of each other.

Methadone warnings

Jonel Aleccia reports that methadone can be deadly and has resulted in more fatalities than heroin in recent years in Spokane, Wash. The long half-life of the substance, how long it remains in the human body, has led abusers, who do not understand how methadone works, to unintentionally overdose. Aleccia writes that the low street price and availability of prescription methadone places the drug abuse out of medical supervision where it was never supposed to be used (Espejo, 2011, p.132).

Of the 112 people who died from accidental or unintentional overdoses in Spokane in 2006, 51 percent were due to methadone either alone or in combination with other drugs. In contrast, records show the cocaine and methamphetamine killed 36 people and heroin killed only one. Actual incidents may not be quite as precise as they appear because of the way drugs and deaths are logged, said Dr. Sally Aiken, the medical examiner. But there’s no doubt that deaths from prescription medication overdoses are far outnumbering deaths from illegal drugs. “It’s not declining,” Aiken said. Although the average age of victims was 41, the drugs did not discriminate. Victims included boys as young as 16, women and men as old as 70, and people of all ages in between, including many who simply didn’t realize that a substance that came from a medicine cabinet could be so dangerous. “It’s one of those medications where the difference between what works and what kills you isn’t that different,” Aikens said. “Just taking a little too much in significant”(Espejo, 2011, p.132).
“We have seen a huge shift in prescription drug use in the past two years,” said Traci Varner, whose agency provides inpatient and outpatient services to 1,100 young people annually. Varner explains, “There is a huge market for opiates in Spokane, and unlike illicit drugs, methadone and other opiates are easily accessible and fairly inexpensive at $60-$70 for an 80 mg pill.” She continues, “They can chop up that bad boy and that will get them high for days” (Espejo, 2011, p.133).

Getting the drugs is no problem and children as young as 12 years old have been admitted to Varner’s program. This can happen as a result of doctor shopping where doctors unknowing prescribe to a person who is working the system, or sometimes intentionally overprescribe for their own profit. “The biggest problem in this community is the diversion,” said Aiken. “It’s not being used by the person it’s prescribed for, and it’s not being used by people who fit any expected profile for drug abuse,” she added. Users span occupations and geography, often showing up in rural areas rather than urban centers. Utah, for instant, is showing a growing prescription overdose problem, Aiken noted. “The people that are dying from methadone are not hardcore drug users,” she said. “In our society, people think prescription medicines are all okay” (Nelson, 2011, p.133).

The addiction vaccine

Vaccines that would strengthen the immune system against addictive drugs and prevent them from making the abuser high are potentially the best weapons against addiction. A cocaine vaccine is in the first large clinical trial, which began in 2008, and vaccines against nicotine, heroin, methamphetamines, and other opiates and stimulants are also in development.

In theory, these addiction vaccines work the same as traditional vaccines used to treat infectious diseases like measles and meningitis. Instead of targeting bacteria and viruses, the vaccine target addictive chemicals. Each of the proposed vaccines consists of drug molecules that have been attached to proteins from bacteria; these proteins set off the immune reaction. Once a person has been vaccinated, the next time the drug is ingested, the antibodies will attach to the abused drug and prevent it from crossing from the bloodstream into the brain (Interlandi, 2008). The booster shot creates antibodies that block the drug from entering the brain and other organs. This prevents the psychological effects such as euphoria, which can suppress the impulsive cravings that in turn may motivate addicts to abandon their abuse of the drug.

Researchers still face the challenge to produce a stronger antibody response, and complete recovery requires psychological treatment and time. Bridgette Martel of Yale University School of Medicine and Thomas Kosten at the Baylor College of Medicine are planning new trials of improved vaccines. These vaccines could reach the required, sustained antibody levels and prove effective across wider populations of addicts (Kosten & Martel, 2009).

MAINTENANCE AND SUPPORT

Overcoming prescription drug abuse can be challenging and stressful and often requires the support of family, friends and organizations. The following are resources for support:

- **Family members and friends that the patient can trust.** Often patients are embarrassed to ask for help or afraid that their family members will be angry or judgmental. They may worry that their friends will distance themselves, but patients need to know that in the long run, the people who truly care will respect their honesty and decision to ask help.

- **Support groups.** Many support groups are available in the community. A 12-step program, such as Narcotics Anonymous (NA), Ala-Teen and Al-anon, and church or religious organization support groups are available on the Internet or in person. Some support groups do not use the 12-step approach. Most support groups can be found in the phone book or though a local health organization or county health department.

- **Employee assistance programs in the workplace may offer counseling services for substance abuse problems.**

- **Organizations or groups that promote substance-free healthy activities will help to prevent relapse.** The patient may join a group or organization that focuses on healthy recreational activities built on special interests, community service, volunteer work, special talents, skills or hobbies.

Chronic pain treatment and addiction

Health care providers have struggled with how to effectively treat patients who suffer from chronic pain, roughly 116 million in this country (NIDA, 2011). The problem is the potential risk involved with long-term treatment using opioid medications. These risks include drug tolerance, which leads to the need for escalating doses, and hyperalgesia, which is increased pain sensitivity. Over time the use of opioids become ineffective and pain sensitivity increases. The cycle continues with increasing dosages leading to further dependence or addiction with hyperalgesia increasing in response to the higher dosage.

Some patients may be concerned about taking prescribed opioid medication because they fear becoming addicted. If they try to take less medication than prescribed to avoid addiction, their pain will not be managed. The estimates of addiction among patients taking medication for chronic pain vary from 3 percent to 40 percent. This variability is a result of differences in treatment duration, insufficient research on long-term outcomes, and the lack of guidelines and standards to assess, measure and record data from diverse populations of abusers.

To minimize addiction risk, physicians should screen patients for potential risk factors, including personal and family history of drug abuse or illness. Monitoring patients for signs of drug abuse during treatment is important in preventing addiction, and yet, some symptoms can be similar to a variety of medical and psychological conditions.
Complex cases of AOD abuse, dual or multiple disorders, make diagnosis and assessment of the effects of pain medication difficult to monitor and evaluate. A history of numerous requests for prescription pain medication refills from multiple doctors and pharmacies could indicate illness progression, the development of drug tolerance or the beginning of drug dependence or addiction (NIDA, 2011).

The development of effective, non-addicting pain medication is a public health priority (ONDCP, 2011). A growing elderly population and an increasing number of injured military personnel only add to the urgency of this issue. Researchers are exploring alternative medications that can alleviate pain but have less potential for abuse. More research is needed to understand effective chronic pain management, including factors that predispose some patients to addiction, and to develop measures to prevent abuse (NIDA Research Report Series, 2011).

William L. White and Thomas McClellan propose that drug addiction has the features of a chronic disease. White and McClellan (Espejo, 2011, pp.82, 85) note there are striking similarities between substance abuse and dependence as seen in other chronic illness such as type II diabetes, hypertension and asthma. White and McClellan note that severe substance addiction and chronic illnesses share the following characteristics:

- They are influenced by genetic factors and other personal, family and environmental risk factors.

- Both can be identified and diagnosed using medical testing, well validated screening questionnaires and diagnostic checklists.

- They are influenced by behaviors that begin as voluntary choices but evolve into deeply ingrained patterns of behavior that in cases of addiction are further compounded by neurobiological changes in the brain that weaken control over drug abuse behaviors.

- The pattern of onset may be sudden or gradual for chronic disease and drug abuse.

- Both have a prolonged course of the illness that varies from person to person in intensity and pattern.

- Both are accompanied by risk of profound pathophysiology, disability and premature death.

- Both have effective treatment, peer support frameworks and similar remission rates, but no known cure.

- Core strategies for achieving long-term recovery from chronic disorders include:
  - Stabilization of active episodes.
  - Global assessment.
  - Enhancement of global health.
  - Sustained professional monitoring.
  - Early intervention.
  - Continuity of contact in a primary recovery support relationship.
  - Development of a peer based support network.

**PREVENTION**

The risks for addiction to prescription drugs increases when the drugs are used in ways other than prescribed. Health care providers, primary care physicians and pharmacists as well as patients themselves play important roles in identifying and preventing prescription drug abuse (NIDA, 2011).

**Physicians**

More than 80 percent of Americans had contact with a health care professional in the past year, placing doctors in a unique position. Physicians not only prescribe medications, but also must include careful assessments to identify abuse and prevent the escalation to addiction. By asking about all drugs and the dosages the patient is taking, physicians can help their patients recognize that a problem exists, set recovery goals and seek appropriate treatment.

A screening for prescription drug abuse can be incorporated into routine medical visits, and doctors should take note of rapid increases in the amount of medication needed. More frequent, unscheduled refill requests should alert doctors to the fact that abusers of prescription drugs may engage in “doctor shopping,” moving from provider to provider in an effort to obtain multiple prescriptions for the drugs they abuse.

Preventing or stopping prescription drug abuse is an important part of patient care. However, health care providers should not avoid prescribing stimulants, CNS depressants or opioid pain relievers if needed. Doctors and other prescribers need to secure prescription pads against theft or fraudulent use.

**Patients**

Patients can take steps to ensure that they use prescription medications properly, always following the prescribed directions, be aware of potential interactions with other drugs, understand side effects, never stop or change the dosing regimen without discussing it with a health care provider, and never use another person’s prescription. In addition to describing their medical problem, patients should always inform their health care professionals about all the prescriptions, over-the-counter medications and dietary and herbal supplements they are taking.

Prescription drug abuse is rare in people who need pain killers, sedatives or stimulants to treat a medical condition. However, if patients are taking a commonly abused drug, there are a few things they can do to decrease their risk of prescription drug abuse:

- Make sure they are getting the right medications prescribed at the proper dosages.
- When they see their doctor, they should make sure the doctor clearly understands their condition and the signs and symptoms it is causing so they can be distinguished from a developing drug tolerance or dependence.
- They should ask the doctor whether there is an extended release version of a medication or an alternative medication with ingredients that have less potential for addiction.
Pharmacists not only dispense medications but also help patients understand instructions for taking them. By being vigilant for prescription falsifications or alterations, a pharmacist can serve as the first line of defense in recognizing prescription drug abuse. Some pharmacists have developed hotlines to alert other pharmacists in the region when a fraudulent prescription is detected.

Parents

The new PATS data, discussed previously, indicated students’ growing acceptance of drug use in common social situations, and should “put all parents on notice that they must pay closer attention to their children’s behavior, especially their social interactions, and parents must take action just as soon they think their children may be using drugs or drinking,” said Steve Pasierb, president and CEO of the Partnership For a Drug Free America.

Dennis White, president and CEO of MetLife foundation, added: “The earlier parents take steps to address the child’s drug use, the greater the chance of effectively preventing a serious problem. We need to be sure parents know it’s time to act, and how to act when confronted with a substance abuse situation” (PATS, 2010).

Among parents surveyed for the PATS study:
- Twenty percent said their children aged 10 to 19 have already used drugs beyond an experimental level.
- Among parents of teens 14 to 19, the percentage jumped to 31 percent, nearly one-third of parents surveyed in the study.
- Among those parents of teens who were interviewed, nearly half, 47 percent, either waited to take action or took no action at all.
- Studies show that those children are at greater risk of continued use and negative and sometimes fatal consequences.
- Research has shown that students in grades 7 to 12 who learn a lot about the dangers of drugs from their parents are up to 50 percent less likely to use drugs.

“We are very troubled by this upswing that has implications not just for parents, who are the main focus of the partnership’s effort, but the country as a whole,” said partnership Chairman Patricia Russo. She continued, “The United States simply can’t afford to let millions of kids struggle through their academic and professional lives hindered by drug abuse. Parents and caregivers need to play a more active role in protecting their families, trust their instincts, and take immediate action as soon as they sense a problem” (PATS, 2010).

Discovering that their teen child is using drugs is often a frightening experience for parents. Many feel alone, ashamed, guilty and confused about what to do next. The partnership encourages parents of children using drugs to take action as soon as they suspect or know their child is abusing drugs. The partnership provides parents with free, anonymous access to the most current, research-based information on how to help their children and family take the next steps.

Developed in collaboration with scientists from the Treatment Research Institute, “A Time To Act” offers step-by-step advice and sympathetic guidance from substance abuse experts, family therapists, scientists and fellow parents to help guide families through the process of understanding drug and alcohol use, confronting a child, setting boundaries and seeking outside help (PATS, 2010).

Parents are encouraged to have frequent ongoing conversations with their children about the dangers of drugs and alcohol and take early action if they think their child is using or might have a problem. Parents can visit the drugfree.org website to learn strategies to talk with their children about drugs and alcohol and take charge of the conversation. Parents can follow these steps to help prevent their teens from abusing prescription medication:
- Discuss the dangers with the teen. Emphasize that just because drugs are prescribed by a doctor does not mean they are safe, especially if they were prescribed for someone else or if the child is already taking other prescription medication.
- Set rules about the child’s prescription medication. Let the child know that it is not okay to share his or her medications with others or to take medications prescribed for others.
- Let teens know that they need to take the prescribed dose of medication and talk to the doctor before making changes.
- Keep all prescription drugs safe. Keep track of quantities, and keep them in a locked medicine cabinet.
- Properly dispose of medications. Flush opioid painkillers down the toilet. It is unsafe to flush other types of medications. Instead, take them out of their original containers and mix them with coffee grounds, used kitty litter or another undesirable substance, then place them in the trash. Before throwing away medicine bottles, remove the label or mark out any information such as your name, patient ID or prescription drug name or number. (NSDUH, 2009)

Relapse prevention

Cognitive behavioral therapy originated as a method to bring about a change in thought patterns that would inform positive behavior change. The method was applied to a number of behavioral disorders and found to be successful in for the treatment of drug addiction. Thought processes based on fallacy, unrealistic expectations and lack of decision-making skills lead to the development of damaging behavioral patterns. Through cognitive behavioral therapy, the individual learns to realistically view behavior, and resulting consequences, to identify and change problematic thoughts and behaviors. Many relapse prevention programs use some form of cognitive-behavioral strategies that will help the individual form a realistic, rational view of their drug abuse as they set goals to reach abstinence and avoid relapse.

The relapse prevention includes strategies to build self-control. These techniques include:
- Exploring the thought and behavior patterns, cause and effect, and positive and negative consequences of their drug abuse.
- Building a positive self-image, setting attainable goals, and a belief and commitment to abstinence.
- Self-monitoring to anticipate and recognize drug cravings and identify and avoid high-risk situations they may encounter in a variety of settings.
- Developing strategies for coping with the thoughts and feelings that accompany drug cravings. If they can anticipate the problem, patients are prepared with strategies and behavior patterns to avoid or cope with their urge to relapse.

Research indicates that the skills individuals learned through relapse prevention therapy remain after the completion of treatment. In one study, most people receiving this cognitive behavioral approach maintain the gains they made throughout the year following treatment (U.S. Health and Human Services, 2010).
In 2000, In Florida, prescription drug abuse, oxycodone in particular, was primarily concentrated around West Palm Beach, according to DEA data. However, by 2010, the oxycodone abuse was increasing in almost every county in the state. On March 14, 2012, it was reported that seven people die each day in Florida from prescription drug overdose. In one small rural county in central Florida there is one death a week attributed to prescription drug abuse.

Florida is recognized as the nation’s center for the illegal sales and distribution of prescription drugs. Doctors in Florida purchased 89 percent of all the oxycodone sold to practitioners nationwide in 2010. During 2010, Florida was known as the place for criminals to come and get their pills. Ninety percent of the nation’s top 100 oxycodone-purchasing doctors and 53 of the nation’s top 100 oxycodone purchasing pharmacies were located in Florida. According to the FDLE, in 2011 at its peak, out-of-state buyers entered Florida to buy drugs from 1,000 pain clinics that earned the state the nickname the nickname “Oxy Express.”

With the recent passage of tougher laws, officials moved aggressively in 2011 to shut down “pill mills” and distribution routes that supply drugs to the north. In the past year, more than 400 clinics were either shut down or closed their doors. Prosecutors have indicted dozens of pill mill clinics, and 80 doctors have had their licenses suspended for prescribing large quantities of pills without legitimate, medical documentation of illness.

New laws targeted illegal distribution, and in July 2011, Florida doctors were banned from distributing narcotics and addictive medicines from their offices or clinics. This resulted in diminished doctor’s purchases of oxycodone from 32.2 million doses in the first six months of 2010 to a 97 percent decrease in the same period in 2011. The law contained a strict limit on the number of pills a doctor could dispense. “We had no tough laws in place; now we do,” said Pam Bondi, Florida’s attorney general (FDLE, 2012).

Law-enforcement agencies are also keeping close surveillance on pharmacies. The number of applications to open new pharmacies in Florida has nearly doubled in the past two years, the result of doctors facing tough laws banning distribution. Requests to open new pharmacies in Florida now make up half of all the requests in the entire nation, according to the latest DEA data.

Background checks are required for pharmacy owners and employees. If violations occur, the pharmacists, doctors or clinic owners face severe penalties if they prescribe or distribute narcotics without medical documentation of need or without following the required protocol. One indication that Florida law-enforcement officials are cutting off the supply of prescription drugs sold illegally in Florida is that the price of oxycodone on the streets there has nearly doubled from last year, from $8 dollars a pill to $15 dollars, according to Capt. Eric Coleman, commander of the narcotics division of the Palm Beach County Sheriff’s Office. On Commercial Boulevard, a major street in Broward County, the number of pain clinics has dropped in the past year from 29 to one. Senior probation and corrections officers in Volusia County, Florida, have reported the same reductions in pain clinics, and note that pills can run from $15-$20 on the street.

The penalties for possession of illegally obtained narcotics also are tough, and one illegal pill can result in a felony charge. Treatment centers are also seeing more addicts seeking help. “We have patients walking in the door who could not afford prescription drugs anymore,” said Dr. Barbara Krantz, the chief executive and medical director of Hanley Center, a large treatment clinic in Palm Beach County (FDLE, 2011).

Federal, state and local enforcement officials have worked closely to increase the number of arrests and major indictments. They are dealing with pill mill operators as they would large criminal enterprises. Federal prosecutors recently used racketeering laws to indict 32 people, including 20 brothers who prosecutors say operated a widespread prescription drug operation. The brothers, who owned four pain clinics, were also charged with kidnapping, extortion and assault with a firearm under the indictment. Most of the prescriptions were written for patients who travel to Florida from out-of-state, with Kentucky making up the largest share.

In one case, a Florida doctor working for several pain clinics was charged with murder by Palm Beach County prosecutors after a patient died of an overdose in 2009, a few hours after the doctor prescribed 210 pain pills to him. One of the owners of the clinics pleaded guilty to second-degree murder. Prosecutors say the clinics were responsible for 56 overdose deaths. The clinics were shut down in 2010, but more than a year passed before the case was built, in part because oxycodone is a legal drug, and the new laws were not in place.

In another case in 2011, a south Florida pill mill operator pleaded guilty in a Florida federal court to distributing 660,000 oxycodone and other prescription drugs from eight pain clinics during 2009-2010. He could receive up to 20 years in prison. In addition to his arrest and conviction, 20 other individuals were arrested, and 50 vehicles were seized along with cash and other assets as part of a month-long pill mill crackdown. Officials in Florida acknowledge that the drug problem is still alarming, with drug overdose rates still at an 8 percent increase from 2009. This is far more than the number who died from illegal drugs.

Illegal sales of prescription drugs, and oxycodone in particular, increased in Florida because of the absence of a statewide prescription drug monitoring system. That changed last October, when the state started a prescription drug monitoring system (PDMP) that will give pharmacies seven days to record the sale of controlled substances in a database. Pharmacists will be able to pull up information on how often a patient is prescribed and sold these drugs. The tracking system will help prevent pharmacy shopping for drugs. A majority of states already use a monitoring system, which government officials say has been crucial to shutting down the oxycodone distribution in Kentucky, which had one of the highest abuse rates in 2010.

In Florida, efforts to establish the database were slowed by political challenges and lobbying over privacy rights. Though federal and state funds are available to fund the database, the state did not finance so, leaving private donations to run the program. The fallback from the tougher laws may include an increase in pharmacy robberies, a problem that has been worse in Florida than any of the states since 2007; there were 65 armed robberies of pharmacies last year in 2011. “We recognize what a horrible problem we have,” Bondi said. “We have, of course, many legitimate, good pain-management doctors. We are targeting the drug dealers wearing white coats” (FDLE, 2011).

Florida’s Drug Enforcement Strike Force teams have attacked and slowed the out-of-control distribution and abuse of prescription drugs in the state. Created by the Florida legislature in March 2012, the teams already have had the following impact:

- Almost half a million pills have been taken off of Florida’s streets.
- They have also made 2,150 arrests, including 34 doctors, and seized 59 vehicles, 391 weapons and $4.7 million dollars.
- In 2011, the number of purchasing doctors was reduced by 85 percent, down to 13.
- The number of purchasing pharmacies has declined by 84 percent, down to just 19.
- The number of pain clinics has declined from 800 to 508 clinics in the state.
- The 2011 Interim Drugs Identified in Deceased Persons report shows the number of prescription deaths fell nearly 8 percent compared to the same time period in 2010.
Bondi said: “We have made exceptional progress, and we will continue these efforts that save lives.” FDLE Commissioner Gerald Bailey pointed out, “In one year, we’ve gone from being known as the “Oxy Express” to being a role model for other states dealing with this problem. While we have made tremendous strides, were just getting started. Prescription drug trafficking remains a significant concern for Florida law enforcement.”

The statewide strike force, under the coordination of FDLE, works with seven regional teams, each led by a police chief and sheriff. “Law-enforcement has teamed with city and county government, state regulatory agencies and federal representatives to use all the tools in our toolbox to fight this battle,” said Winter Park Police Chief Brett Bailey. He continued, “Investigating doctors, pill mills and drug trafficking organizations can often be long and costly. One important tool has been the availability of strike force funding. Many of the cases would go unaddressed without these funds.”

The next step to curb Florida’s illegal prescription drug trafficking and abuse problems involved the drug court process. The Florida Supreme Court Task Force on Treatment-Based Drug Courts, following the lead of the National Center for State Courts (NCSC) developed a proposal for a statewide evaluation of Florida’s drug courts. During the development of the proposal, the NCSC suggested that Florida consider adopting each of the four National Research Advisory Committee’s (NRAC) core drug court performance measures. The four proposed indicators are:

1. Recidivism.
2. Retention.
4. Units of service.

Implementing performance indicators will give drug courts the ability to provide research-based indicators to supplement program evaluations. It is critical for drug courts to use performance indicators to demonstrate the effects of a drug court on the clients and the community it serves. The task force recognized the importance of Florida drug courts to not only document performance indicators but also compile data that can be compared statewide. The Florida Supreme Court Task Force recommended that all drug courts in Florida implement, at a minimum, these indicators:

1. **Recidivism.**
   - The performance indicators should be based on 6-month cohorts, that is, everyone exiting from drug court during a specified six-month time period. Recidivism is defined as any felony or misdemeanor drug or DUI re-arrest resulting in a charge for drug court participants during involvement in the drug court program and upon exiting from the program for the following time frames:
     - 0 to 12 months after program completion.
     - 1 to 2 years after program completion.
     - 2-plus years after program completion.

2. **Retention.**
   - The performance indicators should be based on six-month admission cohorts. Each admission will be tracked by type of exit until the person has permanently exited the drug court, including exits classified as:
     - Graduate.
     - Terminations.
     - Transfers.
     - Voluntary withdrawals.
     - Deceased.

3. **Sobriety.**
   - The performance indicator for sobriety should include both the percent of positive drug tests and the period of longest continuous sobriety for each participant while in the drug court. The performance indicators should be based on six-month exit cohorts. Along with the test results that indicate use of illegal or forbidden substance, the following test results will be considered positive:
     - Did not show up for drug testing.
     - Did not produce the sample in a reasonable period of time.
     - Tampered with the drug test.
     - Admitted the use of a forbidden or illegal substance.

4. **Units of service.**
   - The performance indicators should be based on six-month exit cohorts. The dates that those participants received outpatient or inpatient services should be recorded as well as the dates of referrals for ancillary services made by the drug court case manager. At the conclusion of the reporting period, the total number of units of service received by each participant who exited during that period will be accumulated by category. Addiction-related services would list the number of days of inpatient services and a number of sessions for outpatient services. Ancillary services will record the number of referrals. Ancillary services will address the participant’s needs, and any that are associated with an increased likelihood of reoffending should be targeted for intervention. Ancillary services include:
     - Housing.
     - Parenting.
     - Mental health.
     - Employment services.
     - Educational services.
     - Medical and dental services.
     - Any health-related services.
     - Anger management.
     - Case management.
     - Drug testing.
     - AA/NA.
     - Transportation.
     - HIV counseling and testing.
     - Day care.

### The federal government drug policy

The progress that states are making in the fight against prescription drug abuse is due in part to the federal policy enacted last year. Entitled “Epidemic: Responding to America’s Prescription Drug Abuse Crisis,” it was distributed in 2011 as the federal government’s Prescription Drug Abuse Prevention plan. This plan expands upon the administration’s National Drug Control Strategy and includes action plans in four major areas to reduce prescription drug abuse:

- Education.
- Tracking and monitoring.
- Proper disposal.
- Enforcement.

In the federal prevention policy, education is listed as a critical need for both the public and health care providers to increase their awareness about the dangers of prescription drug abuse and ways to dispense, store and dispose of controlled substance medications.

Monitoring refers to the use of programs that will help identify doctor shoppers and detect duplications among medications and possible drug interactions. To cut down on the problem of diversion, the development of a consumer friendly and environmentally sound prescription drug disposal program will be implemented. It is important to limit the diversion of drugs because most nonmedical use of prescription drugs occurs because users are getting the drugs from family and friends.

Finally, enforcement agencies must be given the support and the tools they need to expand their efforts to close down pill-mills and block doctor shoppers who contribute to prescription drug trafficking.
Education

The program identifies the crucial first step in addressing the problem of prescription drug abuse is to raise awareness through the education of parents, youth, patients and health care providers. The study found that many people are not aware that use or abuse of prescription drugs can be as dangerous as the use of illegal drugs and can lead to addiction and death.

One common misperception among parents and youth is that prescription drugs are less dangerous than illegal drugs because they are FDA approved. Many parents do not understand the risks associated with giving prescribed medication to a teenager or other family member for whom the medication has not been prescribed. The study notes that many parents have medicine cabinets full of leftover prescription drugs and are more concerned about securing alcohol from their teens.

Some misperceptions can be attributed to the increase in consumer advertising, which may contribute to increased demand for medication. These mass media representations of prescription drugs make effective educational programs even more vital, according to the federal studies.

Prescribers and dispensers, including physicians, physician assistants, nurse practitioners, pharmacists, nurses, psychologists, psychiatrists and dentists, have a major role in reducing drug abuse. The federal plan notes that these professionals receive little training on the importance of appropriate prescribing and dispensing of opioids to prevent adverse effects, diversion and addiction. Other than specialty addiction treatment programs, most health care providers receive minimal training on how to recognize abuse in their patients.

The ONDCP studies found that most medical, dental, pharmacy and other health professional schools did not provide in-depth training on substance abuse, and often this training is limited to classroom or clinical electives. The federal policy also notes that students in the medical and dental schools may only receive limited training on treating pain.

A national survey on medical residency programs in 2000 found that of the programs studied, only 56 percent required substance use disorder training, and the number of curricular hours in the required programs vary from three to 12 hours (Isaacson et al., 2000). A 2008 follow-up survey found that some progress has been made to improve medical school, residency and post-residency substance abuse education, but these efforts have not been uniformly applied in all residency programs or medical schools (Polydorou et al., 2008).

Educating prescribers on substance abuse is critically important, because even brief interventions by primary care providers have proven effective in reducing or eliminating substance abuse in people who abuse drugs but are not yet addicted to them. In addition, educating health care providers about prescription drug abuse will promote awareness of this growing problem among prescribers so they will not overprescribe medication necessary to treat minor conditions. In turn, this will reduce the amount of unused medicines in cabinets in homes across the country.

The following action will be taken to improve educational efforts and to increase research and development:

- **Health care provider education:**
  - Work with Congress to amend federal laws to require practitioners who request DEA registration to prescribe controlled substances to be trained on responsible opioid prescribing practices as a precondition of registration. This training would include assessing and addressing signs of abuse or dependence.
  - Require drug manufacturers, through the opioid risk evaluation and mitigation strategy (REMS), to develop effective educational materials and initiatives to train practitioners on the appropriate use of opioid pain relievers.
  - Federal agencies that support their own health care systems will increase continuing education for their practitioners and other health care providers on proper prescribing and disposal of prescription drugs.
  - Work with appropriate medical and health care boards to encourage them to require educational curricula in health professional schools – medical, nursing, pharmacy and dental – and continuing education programs to include instruction on the safe and appropriate use of opioids to treat pain while minimizing the risk of addiction and substance abuse. Work with relevant medical, nursing, dental and pharmacy student groups to help disseminate educational materials and establish student programs that can give community educational presentations on prescription drug abuse and substance abuse.
  - In consultation with medical specialty organizations, develop methods of assessing the effectiveness and adequacy of pain treatment in patient populations to better inform them on appropriate use of opioid pain medication.
  - Work with the American College of Emergency Physicians to develop evidence-based clinical guidelines and establish best practices for opioid prescribing in the emergency department.
  - Work with stakeholders to develop tools to facilitate appropriate opioid prescribing, including development of patient-provider agreements and guidelines.

- **Parent, youth, and patient education:**
  - Support and promote an evidence-based public education campaign on the appropriate use, secure storage and disposal of prescription drugs, especially controlled substances. Engage local anti-drug coalitions and other organizations such as chain pharmacies, community pharmacies, boards of pharmacies and medical boards to promote and disseminate public education materials and to increase awareness of prescription drug misuse and abuse.
  - Require manufacturers, through the opioid risk evaluation and mitigation strategy (REMS), to develop effective educational materials for patients on the appropriate use and disposal of opioid pain relievers.
  - Work with private sector groups to develop an evidenced-based campaign on prescription drugs targeted to parents in an effort to educate them about the risks associated with prescription drug abuse and the importance of secure storage and proper disposal.

- **Research and development:**
  - Expedite research, through grants, partnerships with academic institutions and the New Drug Application Review by FDA on the development of treatments for pain with no abuse potential as well as the development of abuse deterrent formulations of opioid medication and other drugs with abuse potential.
  - Continue advancing the design and evaluation of epidemiological studies to address changing patterns of abuse.
  - Provide guidance to the pharmaceutical industry on the development of abuse deterrent drug formulations and on post-market assessment of their performance.

Tracking and monitoring

Forty-three states have authorized prescription drug monitoring programs known as PDMPs. These programs aim to detect and prevent the diversion and abuse of prescription drugs at the retail level and to allow for the collection and analysis of prescription data more efficiently than states without such a program. Only 35 states have operational PDMPs. These programs are established by state legislation and are paid for by a combination of federal and state funds. They track controlled substances prescribed by authorized practitioners and dispensed by pharmacies.
PDMPs should serve a multitude of functions, including:
- Assisting in patient care.
- Providing early warning of drug abuse epidemics.
- Evaluating interventions.
- Investigating drug diversion and insurance fraud.

*Note:* PDMPs cannot be used as evidence in court.

An analysis in 2006 found PDMPs were associated with lower rates of substance abuse treatment admissions (Simeon et al., 2006). Another study examined the effect of a trial of PDMPs use in emergency departments. It found that PDMP data changed clinical management in 41 percent of the cases. Sixty-one percent of the patients received fewer or no opioid pain medication than had originally been planned by the physician before reviewing the PDMP data. Thirty-nine percent received more opioid medication than previously planned because the physician was able to confirm the patient did not have a recent history of opioid use (Baehren et al., 2010). PDMPs were associated with lower rates of increase in abuse or misuse over time (Reifler et al., 2010).

**Proper medication disposal**

SAMHSA's 2009 National Survey on Drug Use and Health found that more than 70 percent of people who used prescription pain relievers non-medically got them from friends and relatives, while approximately 5 percent got them from a drug dealer or from the Internet. The same survey showed the scale of the problem includes more than 7 million Americans reporting use of prescription medication for nonmedical purposes in the past 30 days. A comprehensive plan to address prescription drug use must include proper disposal of unused or expired medications. Individuals must be provided with secure and convenient ways to dispose of medications to help prevent diversion of drugs into the community or environment. Prescription drugs collected from individuals are to be disposed of in accordance with federal, state and local laws and regulations.

**Enforcement:**

- Legitimate use of prescription opioid medications in health care settings includes a small group of practitioners who abuse their prescribing privileges by prescribing these medications outside the usual course of professional practice or for illegitimate purposes. This has resulted in practitioners’ illegally prescribing or dispensing prescription controlled substances under the guise of medical care. These providers not only endanger the individuals receiving medications but pose a serious threat to the communities where they are located as well. The following actions will be taken to assist states to address doctor shopping and pill mills:
  - Continue aggressive enforcement action against pain clinics and prescribers outside the usual course of practice and not for legitimate medical reasons.
  - Work with appropriate groups to write and disseminate a model pain clinic regulation law, including:
    - Registration of these facilities with a state entity.
    - Guidance for rules regarding number of employees, location and hours of operation.
    - Penalties for operating, owning or managing a nonregistered pain clinic.
    - Requirements for counterfeit-resistant prescription pads.
    - Disciplinary procedures to enforce the regulations.
    - A procedure must be developed to allow patient records to be reviewed during state inspections.

**Prescription drug abuse plan goals:**

National drug control strategy five-year goal for prescription drug abuse:

- 15 percent reduction in nonmedical use of prescription-type psychotherapeutic drugs in the past year among people 12 years and older.

**Prescription drug abuse prevention goals:**

- Have an approved and implemented risk evaluation and mitigation strategy for certain long-acting and extended release opioids within 12 months.
- Write and disseminate a model pain clinic regulation law within 12 months.
- Increase the number of collaborative practice agreements that involve pharmacists’ prescribing privileges and monitoring of pain medication within 18 months.
- Complete rule making and implementation for medication disposal within 24 months.
- Have legislation passed that requires prescribers applying for DEA registration to complete training on the appropriate and safe use and the proper storage and disposal of schedule II and III opioids. Legislation to be passed within 24 months.
- FDA intends to issue guidance on developing abuse deterrent drug formulations and post market assessment of their performance within 24 months.
- Have DOD, VA and IHS provide controlled substance prescription information electronically to PDMPs in states that operate health care facilities and pharmacies within 24 months.
- Increase by 25 percent the number of states reimbursing for screening, brief intervention and referral to treatment (SBIRT) within 24 months.
- Increase by 25 percent the number of high intensity drug trafficking areas (HIDTA) involved in intelligence gathering and investigation of prescription drug trafficking and participation on statewide and regional prescription drug task forces within 24 months.
- Have legislation in all 50 states establishing prescription drug monitoring programs (PDMPs) within 36 months.
- Expand by 10 percent, within 36 months, the available funding for treatment to increase access because only a small fraction of drug users currently undergo treatment.
- Decrease by 15 percent the number of unintentional overdose deaths related to opioid use.
Summary and call to action

Research and medicine have provided a vast array of medications to cure disease, ease suffering and pain, improve the quality of life and save lives. This is no more evident than in the field of pain management. However, as with many new scientific discoveries and new uses for existing compounds, the potential for diversion, abuse, morbidity and mortality are significant.

Prescription drug misuse and abuse is a major public health and safety crisis. The nation must take urgent action to ensure the appropriate balance between the benefits these medications offer in improving lives and the risks they pose.

Resources and organizations


References

- National Drug Control Policy (ONDCP) will convene a federal Council on Prescription Drug Abuse, comprised of federal agencies, to coordinate implementation of this prescription drug abuse prevention plan and will engage private parties as necessary to reach the goals established by the plan. (Office of National Drug Control Policy, 2011)
- National Drug Control Policy, 2011


• Substance Abuse and Mental Health Services Administration (2010). Results from the 2010 National Survey on Drug Use and Health: Summary of National Findings, NSDUH Series H-41, and HHS Publication. (SAMHSA) 11-4658.


---

### PRESCRIPTION DRUG ABUSE: ETIOLOGY, PREVENTION AND TREATMENT Final Examination Questions

Select the best answer for each question and then proceed to SocialWork.EliteCME.com to complete your final examination.

1. A chemical entity that binds to a receptor and activates it, mimicking the action of the natural, or abused, substance that binds there:
   a. Antagonist.
   b. Agonist.
   c. Neuro-blocker.
   d. Serotonin.

2. A type of CNS depressant prescribed to promote sleep, used in surgical procedures, or as an anticonvulsant:
   a. Barbitalate.
   b. Benzodiazepine.
   c. Buprenorphine.
   d. Barbadiazepine.

3. The use of two or more drugs at the same time, such as a CNS depressant and alcohol is known as:
   a. Dual drug use.
   b. Comorbid abuse.
   c. Polydrug abuse.
   d. Polyaddiction.

4. The National Institute on Drug Abuse (NIDA) and Monitoring the Future (MTF) surveys found that one in 12 school seniors reported past-year nonmedical use of the prescription pain reliever in 2010.
   a. Demerol.
   b. Vicodin.
   c. Ultram.
   d. Percocet.

5. A social trend where teens gather to drink and exchange and sample pharmaceuticals that are stolen from their parents’, grandparents’ or friends’ medicine cabinets is known as:
   a. Drug club.
   b. Pharming parties.
   c. Benzo block parties.
   d. Pharm club.

6. Patients who are 65 and older are more likely to be prescribed long-term and multiple prescriptions, and some experience cognitive difficulties, which could lead to ________.
   a. Higher levels of depression.
   b. Improper use of medications.
   c. Higher health insurance rates.
   d. Limited health insurance plans.

7. __________ combined with prenatal care and a comprehensive drug treatment program can improve many of the detrimental maternal and neonatal outcomes associated with untreated heroin abuse, although newborns exposed to methadone during pregnancy typically require treatment for withdrawal symptoms.
   b. Strict diet.
   c. Methadone maintenance.
   d. Individual therapy.

8. In 2010, the president’s grant program which individualizes substance use treatment, recovery, and support services, provided grants totaling $15.2 million over five years to five tribal organizations covering Native American populations.
   b. Access to Treatment.
   c. Road to Recovery.

9. Gene patterns may influence dual or multiple addictions and are known to alter brain pathways associated with ________.
   a. Emotions.
   b. Pleasure or rewards.
   c. Obsession.
   d. Mania.

10. __________ is a stimulant chemically similar to cocaine and has the potential for abuse.
    a. Vicodin.
    b. Xanax.
    c. Ritalin.
    d. Codeine.
11. Whereas a diagnosis of ___________ previously required only one symptom, mild substance use disorder in DSM-5 requires two to three symptoms from a list of 11.
   a. Substance abuse disorder.
   b. Addiction.
   c. Substance dependence.
   d. Tolerance.

12. ___________ is the gradual withdrawal of an abused substance in a controlled environment.
   a. Detoxification.
   b. Regression.
   c. Repression.
   d. Controlled elimination.

13. ___________ is a long-acting opioid receptor blocker that can be used to help prevent relapse.
   a. Neotrine.
   b. Naltrexone.
   c. Nultram.
   d. Naproxen.

14. ___________ psychotherapy is a time-limited, individual form of psychotherapy that has been adapted for heroin and related opiates, and cocaine-addicted individuals.
   b. Supportive-expressive.
   c. Supportive-cognitive.
   d. Behavior-regressive.

15. The best-known residential treatment model is the ___________ which focuses on the re-socialization of the individual and involve the program’s entire community, including other residents and staff in the treatment.
   a. Elder care model.
   b. Therapeutic community.
   c. Cognitive behavioral model.
   d. Comprehensive community.

16. ___________ helps abusers to anticipate stress, anxiety, depression or mood changes and develop techniques to accept and deal with those feelings without turning to drugs.
   a. Psychoanalysis.
   b. Cognitive behavior therapy.
   c. Mood therapy.
   d. Hypnosis.

17. ___________ documents the work and results based on counselors’ own work. In this way, the “tried and true” approaches that counselors want to continue to use can be incorporated into the mandated evidence-based practices.
   a. Theoretical evidence.
   b. Clinical evidence.
   c. Practice-based evidence.
   d. Industrial evidence.

18. The goal of _____ is to end the use of addicting drugs as quickly and safely as possible.
   a. Community support.
   b. Withdrawal therapy.
   c. Criminal justice sanctions.
   d. Theoretical evidence.

19. Prescription drug monitoring programs (PDMPs) require physicians and pharmacists to ___________.
   a. Search for patient aliases.
   b. Disclose personal health information.
   c. Log each filled subscription into a state database.
   d. Calculate state and federal trends.

20. One common misperception among parents and youth is that prescription drugs are less dangerous than illegal drugs because they are ___________.
   a. Socially acceptable.
   b. FDA approved.
   c. Supported by health insurance agencies.
   d. Proven effective.