For as long as there have been medicines, the danger of overuse, experimentation, and abuse has existed. In the 1800s, the rise of patent medicines based largely on morphine and cocaine resulted in one in 200 Americans becoming addicted and ultimately led to the passage of the first drug control laws.

Recreational drug use, particularly heroin, became more prevalent among the urban poor during the early 1960s. Because of the high cost of heroin and its uncertain purity, its use became associated with crime and frequent overdoses.

A drug subculture involving the use of marijuana and other hallucinogenic drugs that emerged in mainstream American society in the late 1960s was loosely associated with an overall atmosphere of political protest. In the 1970s, cocaine became a fashionable new drug among professionals. Methamphetamine, which can be produced cheaply, also became a growing concern. Today, marijuana remains by far the illicit drug most commonly used by Americans.

According to recent studies an alarming rise in the misuse of prescription medications is changing the faces of drug dependency and addiction.

The drugs of choice now, according to reports of the National Institute on Drug Abuse (NIDA), are opioids that are commonly prescribed to treat pain; central nervous system depressants used to treat anxiety and sleep disorders; and stimulants used to treat narcolepsy and attention-deficit hyperactivity disorder.\(^1\)

Although prescription drugs improve the lives of millions of Americans, some of these drugs also can be dangerous and addicting. Nationwide news reports about arrests and overdose deaths of people misusing painkillers and other prescription drugs highlight the increasing abuse of these drugs.

Evolving Patterns of Drug Use

Previous to the Prescription Drug Marketing Act of 1987, very little information was known about prescription drug misuse. Since the act was enabled, the abuse of prescription drugs has been widespread and has grown at a faster pace than any of the major illicit substances. The biggest increase in medication misuse is among adolescents, followed by seniors.

Among teenagers, illicit street drugs such as “ecstasy” (3,4-methylenedioxymethamphetamine) and cocaine are decreasing in popularity. Negative media attention is frequently cited as a factor in their decreasing use among teenagers, whereas the nonmedical use of certain prescription drugs is on the rise. These findings were reported in the Monitoring the Future survey, which is sponsored by the National Institute on Drug Abuse (NIDA) and designed and conducted by researchers at the University of Michigan.\(^2\)

Older adults represent another area for particular concern. Although this group currently comprises just 13 percent of the population, they receive approximately one-third of all medications prescribed in the United States. In a culture in which medications are considered a “quick fix” for whatever ails you, combined with the greater rates of lifetime drug abuse among the “baby boomer” generation, it is possible that the number of persons aged 50 or older abusing prescription drugs could increase 190 percent over the next two decades, to almost 2.7 million in 2020.\(^3\)

Unfortunately, opioid painkillers now cause more drug overdose deaths than cocaine and heroin combined. Twenty-five percent of drug-related emergency department visits are associated with abuse of prescription drugs.

Healthcare Professionals and Drug Misuse

Healthcare professionals have unique access to prescription-type substances in the workplace. Although several studies found that alcohol misuse among helping professionals is at least as common as it is in the general population, there is little agreement about the prevalence of drug misuse, particularly prescription drug misuse.

In general, rates of illicit drug use are lower among physicians than the general public, but rates of prescription misuse are five times higher among physicians, according to the analysis of Physician Health Programs and treatment of addicted professionals coauthored by Mark Gold, MD, of the University of Florida. Gold and others conclude that drug problems in doctors are related to medical specialties that put them in regular contact with drugs of addiction, ease of access to drugs, stress, and lack of early detection. Addiction also appears to be linked to physician suicide.\(^4\)

College Students and Drugs

Prescription drug abuse among college students is a growing trend on most campuses. According to one large study, the nonmedical use of prescription medications is second only to marijuana as the most common form of illicit drug use. In addition, the percentage of students reporting the abuse of prescription stimulants can be as high as 25 percent on some campuses.\(^5\)

Students are using these drugs inappropri-
ately not only to “get high,” but also to help with concentration when cramming for papers or tests, to self-medicate for anxiety or depression, and even to enhance their stamina when playing sports. According to the study, increasing numbers of students think of prescription stimulants as safe “brain steroids” that help maximize performance with minimal risk.

**Increased Availability**

Several factors have contributed to the severity of prescription drug abuse, including drastic increases in the number of prescriptions written, greater social acceptance of using medications, and aggressive marketing by pharmaceutical companies. These factors have helped create the broad “environmental availability” of prescription drugs. As more adults turn to prescription drugs to solve life’s problems, and more children are being treated with stimulants like Ritalin and Adderall, finding, stealing, trading, or purchasing prescription drugs has become relatively simple.

They can also get them all too easily from physicians. According to recent data from the National Center on Addiction and Substance Abuse at Columbia University, 43 percent of physicians did not ask about prescription-drug abuse when taking a patient’s history, and one-third did not regularly call or obtain records from the patient’s previous physician before prescribing potential addictive drugs.

The attitude that prescription drugs are largely safe, and that occasional use poses little risk or legal consequence, is cause for alarm.

**The Perception of Safety**

It is nearly impossible to open a newspaper, turn on the television, or search the Internet without encountering an advertisement for a prescription medication. Expenditures by the pharmaceutical industry for direct-to-consumer advertising increased from $1.8 billion in 1999 to $4.2 billion in 2004. The overall impact has been to promote an image of prescription drugs as an integral and routine aspect of everyday life.

However, prescription drugs act directly or indirectly on the same brain systems affected by illicit drugs; their abuse carries substantial addiction liabilities. They are most dangerous when taken to get high via methods that increase their addictive potential (e.g., crushing the pills, then snorting or injecting their contents, or combining them with alcohol or illicit drugs).

Some people take prescription drugs for their intended purpose, though not as prescribed, thus heightening the risk of dangerous adverse reactions; others may become addicted even when they take them as prescribed. More than 30 million people suffer from chronic pain in this country; if even a fraction of this group takes prescription drugs for their pain and becomes addicted, it could affect a large number of people.

Another major concern from the NIDA’s “Monitoring the Future” survey is the report that nearly one in 10 high school seniors admits to abusing powerful prescription painkillers. An alarming 40 percent of teens and an almost equal number of their parents think abusing prescription painkillers is safer than abusing “street” drugs. Misuse of painkillers represents three-fourths of the overall problem of prescription drug abuse, and hydrocodone is the most commonly diverted and abused controlled pharmaceutical in the U.S.

**Drugs and their Effects**

Opioids act on the brain and body by attaching to specific cell surface proteins called opioid receptors, which are found in the brain, spinal cord, and gastrointestinal tract. When these drugs attach to certain opioid receptors, they can block the perception of pain. These drugs also can induce euphoria by indirectly boosting dopamine levels in the brain regions that influence our perceptions of pleasure. This feeling is often intensified by abusers who snort or inject the drugs, amplifying their effects and increasing the risk for serious medical consequences, such as respiratory arrest, coma, and addiction.

Combining opioids with alcohol can exacerbate these consequences.

When taken orally, as prescribed, stimulants elicit a gradual and sustained increase in the neurotransmitter dopamine, which produces the expected therapeutic effects seen in many patients. However, because these medications also affect the reward pathways, they are similar to drugs of abuse. For example, Ritalin, or methylphenidate, has much in common with cocaine—the two drugs bind to similar sites in the brain, and both increase dopamine through the same molecular targets. When administered intravenously, both drugs cause a rapid and large increase in dopamine, which a person experiences as a rush or high. For those who abuse stimulants, the range of adverse health consequences includes risk of dangerously high body temperature, seizures, and cardiovascular complications.

Central Nervous System (CNS) depressants, such as Valium, Librium, and Xanax, are typically prescribed for the treatment of anxiety, panic, sleep disorders, acute stress reactions, and muscle spasms. Most CNS depressants act on the brain by affecting the neurotransmitter gammaaminobutyric acid (GABA). GABA works by decreasing brain activity. Although the different classes of CNS depressants work in unique ways, it is through their ability to increase GABA activity that they produce a drowsy or calming effect that is beneficial to those suffering from anxiety or sleep disorders.

These drugs are also particularly dangerous when mixed with other medications or alcohol. Overdose can cause breathing problems and lead to death. Although the newer sleep medications, such as Ambien, Lunesta, and Sonata, appear to have reduced dependence and abuse liabilities, they still react with some of the same receptors in the brain, so they may share some of the risks.

Certain cough suppressants containing dextromethorphan (DXM) are also abused for their psychoactive effects, producing hallucinations and dissociative sensations. However, overdose of DXM can also produce confusion, disorientation, motor impairment, blurred vision, nausea, rapid or irregular heartbeat, high blood pressure, and loss of consciousness.

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The abuse of certain prescription drugs—opiods, central nervous system (CNS) depressants, and stimulants—can alter the brain’s activity and lead to addiction. While we do not yet understand all of the reasons for the increasing abuse of prescription drugs, we do know that accessibility is likely a contributing factor. In healthcare professions, easy access to the drugs is a frequently cited factor among anesthesia provider abuse of controlled substances.

In addition to the increasing number of medicines being prescribed for a variety of health problems, some medications can be obtained easily from online pharmacies. Most of these are legitimate businesses that provide an important service. However, some online pharmacies dispense medications without a prescription and without appropriate identity verification, allowing minors to order the medications easily over the Internet. Websites detailing the recreational use of these drugs—some even post recipes on how to heighten the effect—are the latest twist in this trend.

Many of the same problems that contribute to high-risk alcohol use also contribute to the abuse of prescription medication. Some individuals who are unable to find healthy ways to deal with stress and other mental health issues believe that misusing prescription drugs is socially acceptable and safer than other illicit substances.

Friends share their medications, and students will share or sell pills for a few dollars to roommates and acquaintances, making the drugs readily available and inexpensive. Laws and policies are difficult to enforce when individuals have a prescription if caught with medication.

Drug use and abuse over the course of the 20th century have fluctuated significantly. As new drugs have been introduced to the public, popularity has shifted between a number of legal and illegal substances. With these popularity shifts have come changes in social acceptance, legal tolerance, and use rates among the public. Certainly, many more people try drugs than become serious drug abusers. Most people take prescription medications responsibly; however, an estimated 48 million people (ages 12 and older) have used prescription drugs for nonmedical reasons in their lifetimes. This represents approximately 20 percent of the U.S. population.

Clearly drug and alcohol misuse can be dangerous, costly, and even life threatening and needs to be taken seriously. Professionals and consumers must be aware of the components of this complex problem. Anesthesia providers need to conduct comprehensive preoperative reviews of a patient’s drug-taking history.

The Best Prevention Strategy
Informed patients, healthcare providers, and the public may be the most successful prevention strategy. To bring attention to this emerging health problem, NIDA and organizations representing the pharmaceutical industry, pharmacists, family physicians, and drugstores, as well as the American Association of Retired Persons and the National Council on Patient Information and Education, are launching a public education initiative on the misuse, abuse, and addiction of prescription drugs. Creative solutions are also needed to reduce the accumulation of unused medications in the home. Schools, hospitals, and other organizational workplaces should have a substance misuse policy in place to address education and awareness of the problem.

References: