

## Chapter 1: The Nature and Extent of Substance Abuse in the United States

*“The prevention of adolescent drug and alcohol abuse is most likely to occur when parents, teachers, faith leaders and other individuals ... are well informed of the harmful effects of drugs, recognize behavioral changes that accompany drug use, and understand how drug use is encouraged and accepted in the social world of the child” (Parents Resource Institute for Drug Education [PRIDE], 2003b).*

After reading this chapter, the reader will be able to:

- ▶ Describe the drug abuse problem in the United States.
- ▶ State the toll that drug abuse takes on all members of society.
- ▶ State the current trends in substance abuse among school-aged children and adolescents.

### Overview

First, Chapter 1 discusses the overall nature and extent of substance abuse in the United States. Second, it discusses the negative impact of substance abuse on individuals, families, and society. Finally, it reviews youth substance abuse prevalence, the impact such abuse has on children and adolescents, and the continuing need for prevention.

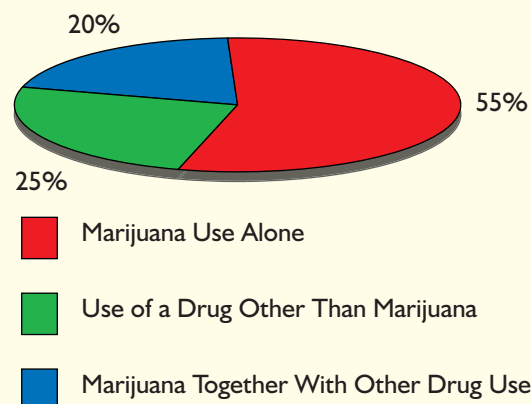
### Substance Abuse in the United States

As most readers of this *Handbook* undoubtedly are aware, the consequences of illicit substance use extend to health problems, productivity losses, psychological problems, and crime and other social problems. Heavy involvement in substance use has been known to stunt careers, limit horizons, induce suspicions and fears, and tear apart families; it also feeds corruption and tears mightily at the social fabric. In addition to its consequences, the sheer size of the problem is daunting. In 2002, the National Survey on Drug Use and Health (NSDUH) (Substance Abuse and Mental Health Services Administration [SAMHSA], 2003b) revealed that 8.3 percent of the American population—roughly 19.5 million people—were current users of an illegal drug (see Figure 1), while countless more individuals used and abused legal substances (SAMHSA, 2003b).

Moreover, almost one-half (46 percent) of the U.S. population 12 years of age and older has ever used an illegal drug (SAMHSA, 2003b). While some solace may be taken from the fact that substance use rates are generally down from the levels reported in the late 1970s and early 1980s and seem to be on the decline after a rise in the mid- to late 1990s, it would be premature to claim a victory in the so-called “war against drugs.” Evidence that the United States continues to be deeply affected by substance abuse abounds and includes the facts that:

- ▶ Substance abuse rates in the United States could be far lower than they are at present.
- ▶ The costs to society of current substance abuse levels are staggering.
- ▶ Substance abuse rates are likely to rise again without continued vigilance in the realm of substance abuse prevention (as well as interdiction, treatment, and law enforcement).

**Figure 1. Substances of Choice for Illicit Users Aged 12 and Older**



Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2002.

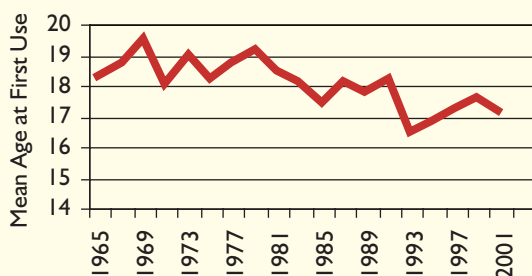
- ▶ For some drugs, disturbing trends have been observed in potency, usage, and age at initiation.
- ▶ For some individuals, even low levels of substance abuse can lead to addiction.

Those who have regular contact with young people are unlikely to be encouraged by recent decreases in substance abuse as they are well aware of the continued presence and threat of both legal and illegal drugs in the social, and sometimes even the academic environment of young people—in large part a reflection of a broad and continuing societal problem. Abuse of both legal and illegal substances poses an ever-present and continuing threat to this country.

Illicit substance abuse continues at high levels in the United States. In 2002, an estimated 2.6 million Americans used marijuana, by far the most commonly used illicit drug, for the first time (SAMHSA, 2003b). Indeed, marijuana was used by more than 6 percent of the U.S. population 12 years of age and older in 2001, and the mean age at first marijuana use has been steadily declining. In 2002, the mean age at first use was 17.1 years, compared with 19 years in the late 1960s (see Figure 2). There is growing evidence that these use levels are more cause for concern than previously thought:

- ▶ Contrary to many popular views of the past, researchers have determined that marijuana use can lead to addiction (National Institute on Drug Abuse [NIDA], 2002a); estimates suggest that approximately 9 percent of users will develop dependence, most likely in their first 5 years of use (NIDA, 2002a).

**Figure 2. Mean Age at First Use of Marijuana, 1965-2001**



Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2002.

### Common Terminology in Substance Abuse Prevention

Many terms (drug use prevention, drug abuse prevention, alcohol and other drug use/abuse prevention) are conventionally used in prevention-related materials. In some contexts, these terms have formal definitions (e.g., the American Psychiatric Association [1994] has a list of diagnostic criteria that define substance abuse as a clinical disorder). In this *Handbook* and its accompanying *Curriculum Guide*, many of these terms are used. However, more often than not, we refer to “substance abuse” because:

- ▶ It conveys the abuse of substances that may not be thought of as drugs (e.g., inhalants).
- ▶ It is the *inappropriate* use of substances (i.e., abuse rather than use) that we are trying to prevent—we are not trying to prevent the appropriate use of prescribed and over-the-counter drugs.
- ▶ Prevention leaders working with youth have told us they prefer *substance abuse* to other terms.

Still, ambiguity is impossible to avoid completely. It should be clear that we believe that underage use of even legal substances (e.g., alcohol and tobacco) is inappropriate and should, therefore, be an aim of substance abuse prevention. Likewise, there are times when it makes sense to distinguish between use of a substance (e.g., a 17-year-old sharing a friend’s beer) and abuse of a substance (e.g., regular binge drinking), even though both behaviors are illegal and thus perceived by many to constitute “abuse.”

Finally, if and when we refer to “drug” use and/or abuse, the word *drug* is meant to refer to illicit drugs as well as alcohol, tobacco, and other substances used for the purpose of intoxication.

- ▶ Marijuana use poses both health and cognitive risks, including risk of damaging pulmonary functions as a result of chronic use, deficits in short-term memory and learning ability, and increased risk of progression to other illicit substance abuse.
- ▶ Youth who have ever used marijuana are significantly more likely to eventually use cocaine than are those who have never tried marijuana.
- ▶ Today’s marijuana is substantially more potent than that in previous decades: 25 years ago, commercial-grade marijuana averaged less than 1 percent delta-9-tetrahydrocannabinol (THC, the active ingredient in marijuana). By 1999, average THC content had increased dramatically to 7 percent, with some samples measuring 30 percent (Office of National Drug Control Policy [ONDCP], 2003).

## Where Do the Data Come From?

Sources on substance abuse among youth nationwide include:

### **National Household Survey on Drug Use and Health (NSDUH)**

The NSDUH, previously known as the National Household Survey on Drug Abuse (NHSDA), has been conducted by the Federal Government since 1971. The survey collects annual data on the prevalence of illicit drug, alcohol, and tobacco use among persons aged 12 and older. A representative sample is administered questionnaires at its place of residence. The 2002 Survey resulted in 67,500 interviews. African Americans, Hispanics, and youth were oversampled to improve the accuracy of estimates for those populations.

### **Monitoring the Future (MTF)**

The MTF surveys, conducted for NIDA by the Institute for Social Research at the University of Michigan, collect data on the prevalence of alcohol, tobacco, inhalant, and other drug use from large samples of students from across the nation. Questions on age at first use, attitudes and beliefs regarding alcohol and other drug use, and perception of relevant aspects of their social environment are included. The 2003 national project gathered information from 50,000 8th-, 10th-, and 12th-grade students nationwide.

### **Partnership Attitude Tracking Survey (PATS)**

This annual study examines attitudes about illegal drugs. The PATS survey was first conducted in 1986. Each survey consists of three sample populations—preteens (grades 4 to 6), teenagers (grades 7 to 12), and parents—and can be generalized to the national population. The 2001-2002 Survey included more than 8,000 preteens and teenagers.

### **Parent Resource Institute for Drug Education (PRIDE) Survey**

The PRIDE Survey collects data from 4th- through 12th-grade students each school year. Participating schools are given explicit instructions for administering the anonymous, self-report PRIDE Questionnaire. Schools administer the PRIDE Questionnaire voluntarily or in compliance with a school district or state request. The 2002-2003 surveys included more than 72,000 4th-through 6th-grade students and more than 109,000 6th- through 12th-grade students.

### **Youth Risk Behavior Survey (YRBS)**

The YRBS is a component of CDC's Youth Risk Behavior Surveillance System, which biennially measures the prevalence of priority health-risk behaviors among youth through representative national, state, and local surveys (CDC, 2002). The 2001 YRBS included a national sample of more than 13,600 students in grades 9 to 12 in the 50 states and the District of Columbia.

### **American Attitudes Toward Substance Abuse—Teens and Parents**

The American Attitudes study has been conducted annually by The National Center on Addiction and Substance Abuse (CASA) at Columbia University for the past 8 years. The 2003 survey included almost 2,000 teens and over 500 parents. In addition to its American Attitudes surveys, CASA conducts national studies on issues ranging from cigarette smoking and marijuana use to underage drinking and the role and function of factors that place youth at risk for or protect youth from substance abuse.

- ▶ Reflecting a likely result of marijuana's greater potency and use, young people in treatment for marijuana-associated problems in 2003 accounted for 60 percent of all young people in treatment for illicit drug abuse (SAMHSA, 2003a).

In addition, a steady increase in first-time use of cocaine in the United States was noted throughout the 1990s, with lifetime use reported by 1.2 million Americans in 2002 (SAMHSA, 2003b). The 2002 NSDUH estimated that 2 million Americans were current cocaine users, and an estimated 567,000 were current crack users (SAMHSA, 2003b). NIDA's Community Epidemiology Work Group (CEWG) (NIDA, 2003d) observed that cocaine/crack use levels remained high in nearly all surveillance cities in mid-2003. While these use rates may appear relatively low, cocaine is a drug with high potential for addiction and dependence, even among those who simply experiment with it. In addition:

- ▶ It is estimated that approximately 21 percent of those who use cocaine even one time will develop dependence (NIDA, 2002a).
- ▶ Cocaine use has been linked to problems ranging from eating disorders to disability and death from heart attack and stroke; it consistently accounts for the greatest proportion of drug-related emergency department admissions each year (SAMHSA, 2003a).

While heroin use is not common, the highly addictive nature of heroin and a resurgence in its use by both youth and young adults in past years warrant careful monitoring; from 1995 to 2002, heroin use quadrupled among youth aged 12 to 17 and doubled among young adults aged 18 to 25 (SAMHSA, 2003b). In particular, attention should be paid to the following findings:

- ▶ More than half (53 percent) of heroin users are dependent on the drug.
- ▶ Recent increases in use of the drug likely reflect increased purity levels, which make possible the ingestion, through snorting and smoking, of a substance that traditionally has been injected (NIDA, 2003a).

- ▶ Use of heroin has been linked to a range of serious health conditions, including fatal overdoses, spontaneous abortions, and infection with the human immunodeficiency virus (HIV) and hepatitis (ONDCP, 1999).

Another drug with serious potential for addiction is methamphetamine, which is an amphetamine-like stimulant but has more dramatic effects than its predecessor. Whereas 1.8 million Americans reported ever having used illicit stimulants in 1984, this figure ballooned to 5.3 million by 1997, with methamphetamine use accounting for a large portion of that increase. Data from the 2002 NSDUH yielded estimates of a doubling of methamphetamine use from 1990 (149,000 users) to 2002 (326,000 users) (SAMHSA, 2003b).

Inhalants, including many readily available substances such as amyl nitrate, cleaning fluids, gasoline, paint, and glue, also pose a growing threat to Americans. The rate of initiation of inhalant use more than doubled between 1990 and 2000, rising to a figure of 1.2 million (SAMHSA, 2003b). This rise in use is disproportionately observed among youth, with 71 percent of new users in 2001 being under the age of 18 (SAMHSA, 2003b). This is especially worrisome because:

- ▶ Use of inhalants can produce anesthesia, loss of sensation, apathy, impaired judgment and functioning, dizziness, depressed reflexes, and even unconsciousness (NIDA, 2003b).
- ▶ Inhalants are inherently extremely toxic; use can result in irregular heart rhythms, heart failure, asphyxiation, and death (NIDA, 2003b).

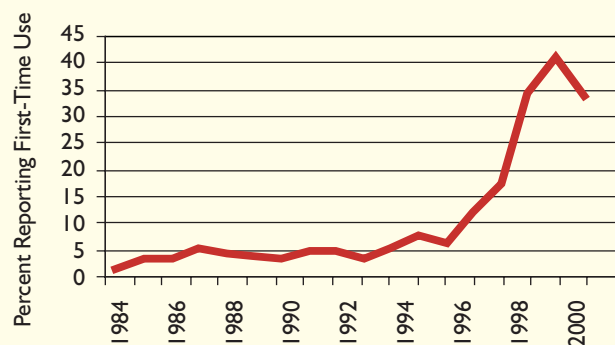
*Club drug* is a term used to describe a group of illicit substances often used by teens and young adults at large parties called “raves.” Substances encompassed by this description include methylenedioxymethamphetamine (MDMA), rohypnol, gamma-hydroxybutyrate (GHB), and sometimes methamphetamine. Unfortunately, the term “club drugs” has become less useful as a descriptor, as use of these substances has become more mainstream and is no longer limited to the club culture (NIDA, 2003d). After a rapid rise, however, use of these substances appears to have leveled off (NIDA, 2003d).

MDMA, also known as Ecstasy, is the most commonly used club drug and experienced a rapid rise in use—from 168,000 in 1993 to 1.9 million in 2000 and 1.8 million

in 2001 (SAMHSA, 2003b; see Figure 3). Ecstasy is a potentially addictive drug that has both stimulant-like and hallucinogenic effects. Since its advent on the drug scene, it has been learned that:

- ▶ Ecstasy has been associated with damage to brain cells, heart and kidney failure, and dangerous rises in body temperature.
- ▶ Heavy use of MDMA has been shown to damage the brain, with resultant effects including confusion, memory problems, impulsivity, and psychological problems (NIDA, 2004).

**Figure 3. First-Time Use of Ecstasy Among 18- to 25-Year-Olds, 1984-2000**



Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2002.

Rohypnol (trade name flunitrazepam) is an odorless, colorless sedative that is ten times stronger than Valium. Rohypnol, also commonly referred to as “rophies,” “roofies,” or “roach,” can be dissolved in a drink and remain undetected by the recipient and has been implicated in many cases of sexual assault. However, recent reports suggest that it is now the least available club drug, due in part to increased legislation against its use and importation from Mexico (ONDCP, 2003).

Finally, GHB (gamma-hydroxybutyrate) has euphoric, sedative, and bodybuilding effects and has also been implicated in sexual assaults. In addition:

- ▶ Use of GHB can result in coma and seizures and in combination with alcohol can produce very dangerous effects, including breathing difficulties (NIDA, 2003d).

- ▶ More than 3,000 emergency department visits were attributable to GHB in 2002 (SAMHSA, 2003a).

An even greater cause for concern is the fact that drugs are increasingly being used in combination, resulting in less-predictable negative outcomes for users. A trend toward greater levels of polysubstance abuse has been reported in all areas monitored for substance abuse by the CEWG (NIDA, 2003a). Use of illicit and licit drugs in varying and ever-changing combinations has been found responsible for a growing number of treatment admissions, health problems, and deaths (NIDA, 2003a). Polysubstance abuse is increasing as the result of access by dealers to a greater variety of substances. Many users intentionally combine substances to enhance or counteract the effect of a given drug (e.g., many heroin users use cocaine to counteract the “low” produced by the heroin). This recent trend includes new combinations of drugs promoted by dealers (NIDA, 2003a). In addition, these combinations are not always made known to the user. This trend is especially alarming given that:

- ▶ Reports suggest that pills sold as Ecstasy frequently contain other substances in addition to MDMA, including methamphetamine, ketamine, ephedrine, cocaine, and dextromethorphan—an ingredient present in over-the-counter cough medicines that taken in large amounts has hallucinogenic effects (NIDA, 2002b; NIDA, 2003a).
- ▶ The vast majority of deaths associated with illicit substance use in 2001 involved more than one drug (NIDA, 2003a).

### Use and Abuse of Legal Drugs

Countless Americans abuse legal drugs—so many that it can be argued that the negative impact of legal drugs on individuals, families, and society rivals and may surpass that of illegal drugs. According to the 2002 NSDUH, almost one-third (30.4 percent) of the U.S. population—71.5 million persons—reported current use of a tobacco product. Men no longer constitute the vast majority of smokers; the percentage of American women who smoke is rapidly approaching that of men (SAMHSA, 2003b). In addition, 120 million Americans aged 12 and older (51 percent of the population) reported current alcohol use (SAMHSA, 2003b), while about 54 million (22.9 percent of the population) persons self-reported

“binge drinking” (defined as drinking 5 or more drinks on one occasion at least 1 day in the past 30 days) (SAMHSA, 2003b). It is well known that cigarette smoking and alcohol abuse have a devastating impact on society.

- ▶ Cigarette smoking constitutes the single, primary cause of preventable premature death in the United States, accounting for 1 in 5, or 440,000, deaths per year (Centers for Disease Control and Prevention [CDC], 2003). It is estimated that if smoking trends remain unchanged, 6.4 million people under the age of 18 will eventually die from a tobacco-related disease (CDC, 2003).
- ▶ Cigarette smoking is a risk factor for heart disease, numerous cancers, and chronic lung ailments; more Americans die from smoking than from alcohol, cocaine, heroin, homicide, suicide, car crashes, fires, and AIDS combined.
- ▶ Alcohol use was accountable for almost 20,000 deaths from 1999 through 2001, nearly as many as for all illicit drugs combined (CDC, 2003).
- ▶ Approximately 33.5 million Americans reported driving under the influence of alcohol at least once in 2002 (SAMHSA, 2003b).

### The Overall Impact of Substance Abuse

Substance abuse profoundly affects numerous facets of U.S. society. Projected economic costs to U.S. society of illicit substance abuse in 2002 were \$160.7 billion (ONDCP, 2003). More than two-thirds (69 percent) of societal costs attributable to substance use are the result of loss of productive capacity due to drug-related premature death or incarceration. Other costs, including effects on the criminal justice system, attempts to control the drug supply, and social welfare issues, were estimated at \$35.3 billion, accounting for 22 percent of total costs. Finally, health care costs, including treatment and medical expenses for illnesses associated with illegal substance abuse (e.g., HIV/AIDS, tuberculosis, hepatitis), were estimated at \$14.9 billion for 2000, accounting for 9 percent of total costs (ONDCP, 2001). The costs of substance abuse are not limited to illicit substance abuse. Tobacco and alcohol use and abuse result in the greatest costs to the nation’s economy. Tobacco alone contributes an additional \$75 billion in direct medical costs and \$80 billion in costs associated with productivity losses

(CDC, 2002). The estimated cost of alcohol abuse totaled \$148 billion in 1998, an increase of 25 percent from 1992 levels (Harwood, 2000).

Needless to say, substance use and abuse also severely compromise users' physical health. For instance:

- ▶ In 2003, the National Center for Health Statistics reported 21,683 drug-induced deaths (i.e., the cause of death was identified as stemming from drug psychoses, drug dependence, nondependent use of drugs, accidental drug poisoning, suicide using drugs, assault using drugs, and other drug-related deaths).
- ▶ An estimated 22 million Americans—over 9 percent of the total population—were classified with substance dependence or abuse in 2002. Approximately 15 million, or over two-thirds of those who drank alcohol, abused or were dependent on it (SAMHSA, 2003b).
- ▶ A total of 670,000 drug-related hospital emergency room episodes were recently reported; such episodes have increased 29 percent from 1994 to 2002 (SAMHSA, 2003a).

Substance abuse is also strongly associated with criminal behavior and violence:

- ▶ According to the 2000 Arrestee Drug Abuse Monitoring (ADAM) Report, 64 percent of those arrested for a crime had recently used cocaine, marijuana, opiates, methamphetamine, and/or PCP. Marijuana was the drug most commonly used by male arrestees, followed by cocaine; female arrestees were more likely to have cocaine in their systems, followed by marijuana (National Institute of Justice [NIJ], 2003).
- ▶ Approximately 36.2 percent of Americans on parole or supervised release from prison could be classified with dependence on or abuse of a substance; likewise, 37.2 percent of Americans on probation are abusers of illicit drugs (SAMHSA, 2003b).
- ▶ Alcohol use and alcohol dependence were found to play a significant role in crime, with significant portions of arrestees (ranging from

67 to 90 percent) being at risk for alcohol dependence (NIJ, 2003).

- ▶ In 2002, nearly 1.5 million Americans were arrested for drug law violations (Federal Bureau of Investigation [FBI], 2002).
- ▶ Driving under the influence was the offense for which most adults were arrested in 2002; driving under the influence combined with drug law violation accounted for almost 22 percent of all arrests in 2002 (FBI, 2002).
- ▶ In 1997, nearly two-thirds of prisoners in the U.S. Federal system had been incarcerated for drug-related offenses (Mumola, 1998).
- ▶ Substance abuse contributes to acts of violence in the home. A 1999 report by the CASA at Columbia University estimated that drugs were a contributing factor in seven out of every ten reported cases of child maltreatment. Such cases cost Federal, state, and local governments \$10 billion per year in child welfare costs (CASA, 1999).

Substance abuse contributes to problems in the workplace as well. Substance users:

- ▶ Are more than twice as likely to be unemployed compared with nondrug users (SAMHSA, 2003b).
- ▶ Are fired more frequently.
- ▶ Switch jobs more frequently (one-quarter of substance abusers had left a job voluntarily in the past year). High job turnover rates increase training and other productivity-related costs to American businesses (SAMHSA, 1999).

### **Substance Abuse Among Youth**

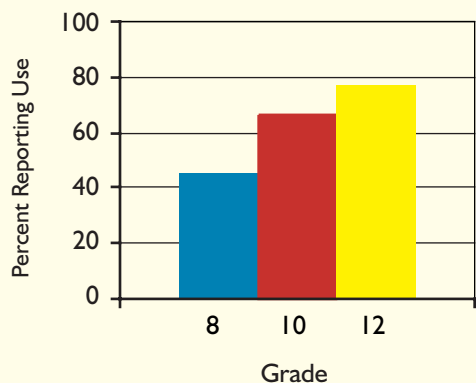
Unfortunately, substance abuse is not limited to adults; most substance abuse begins before the age of 20. Moreover, as the incidence of adolescent substance abuse increased through the 1990s, the age at which drug use began decreased. Adolescent substance abusers are different from adult substance abusers in a number of ways, with the former presenting a complex cluster of problems requiring multi-need treatment approaches.

An understanding of drug usage, prevailing norms, and attitudes toward substance abuse, specifically among youth, is an important prerequisite for prevention planners who wish to design programs that address critical issues in a manner that will have the greatest potential for success.

### Prevalence of Substance Abuse Among Youth

Alcohol is by far the drug of choice for young people. While teen alcohol use has recently declined, over half (55 percent) of teens still reported using alcohol in the past 30 days in 2003 (Johnston, O'Malley, & Bachman, 2003). Almost one-third of 12th graders reported binge drinking (Johnston et al., 2003). By 10th grade, over two-thirds of teens reported having used alcohol in the past year (see Figure 4).

**Figure 4. Lifetime Use of Alcohol by 8th-, 10th-, and 12th-Grade Students, 2003**



Source: Monitoring the future, University of Michigan, 2004.

According to the 2002 NSDUH, 2.5 percent of teens aged 12 to 17 years were classified as heavy drinkers (i.e., reported having had 5 or more drinks on the same occasion at least 5 different days in the past 30 days) (SAMHSA, 2003b). Aside from the potential for the development of alcohol dependence, legal consequences of underage drinking, and poor decision making that can result from alcohol use, Americans have become all too aware of the potentially deadly effects of alcohol use combined with driving. Alcohol-related car accidents are the leading cause of death among 15- to 19-year-olds (PRIDE, 2003).

Second to alcohol use among teens is cigarette use. Fortunately, use of cigarettes also appears to be on the decline as teens' perceived risk of smoking has increased.

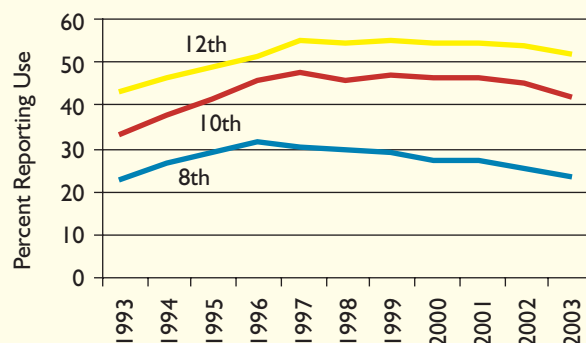
Still, almost 41 percent of teens reported ever having used cigarettes, with 17 percent reporting that they are current smokers (Johnston et al., 2003). In addition:

- ▶ An estimated 13 percent of U.S. children and adolescents aged 12 to 17 smoke cigarettes (SAMHSA, 2003b).
- ▶ Eleven percent of high school students report use of a smokeless tobacco product (Johnson et al., 2003).
- ▶ Despite declines in tobacco use, many teens are already dependent on nicotine and will likely require significant motivation and skills to quit (CDC, 2002).
- ▶ Teens who smoke are 14 times more likely to try marijuana than their nonsmoking peers (CASA, 2003b).

After rising in the mid-1990s to levels approaching those of the early 1980s, substance abuse among 8th, 10th, and 12th graders also demonstrated a decline from 2001 to 2003 (Johnston et al., 2003). Lifetime illicit substance abuse decreased 9 percent (to 37 percent); past-year use decreased 11 percent (to 28 percent); and use in the past 30 days decreased 11 percent (to 15 percent). Illicit substance abuse among high school seniors declined from 66 percent in 1980 to 41 percent in 1992, when use rates began to rise sharply before declining again to 53 percent in 2002 (Johnston et al., 2003; see Figure 5).

Marijuana is the illicit drug most commonly used among young people. Current use of marijuana by 8th, 10th, and 12th graders in 2003 was reported to be approximately

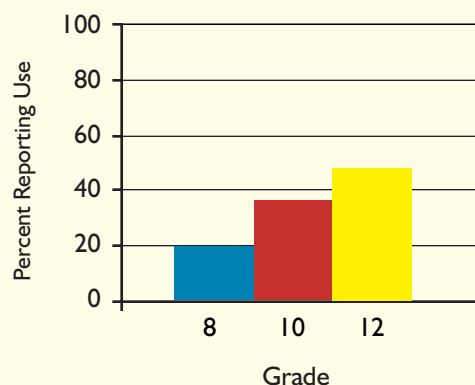
**Figure 5. Lifetime Use of Drugs Other Than Alcohol and Tobacco by 12th Graders, 1993-2003**



Source: Monitoring the future, University of Michigan, 2004.

15 percent, down 11 percent from 2001. Risk for marijuana use among teens increases with age (see Figure 6).

**Figure 6. Lifetime Use of Marijuana by 8th-, 10th-, and 12th-Grade Students, 2003**



Source: Monitoring the future, University of Michigan, 2004.

Ecstasy and LSD use have also decreased significantly. Current use over the past year of LSD dropped by almost two-thirds. Use of Ecstasy in the past year declined by 50 percent to 3.1 percent in 2003 (Johnston et al., 2003). The decline in LSD use is attributed to law enforcement activity, which resulted in a perception of decreased availability of the drug. In contrast, decreases in Ecstasy use were attributed to prevention efforts that apparently succeeded at significantly increasing the proportion of youth who perceive the use of Ecstasy to be harmful (Johnston et al., 2003).

Use of inhalants seems to be following the same declining trend, with past-year use down 11 percent since 2001. In 2003, approximately 6 percent of teens reported inhalant use. The exception is inhalant use among 8th graders, with an increase from 8 to about 9 percent reporting use in the past year (Johnston et al., 2003).

Fortunately, use of heroin and cocaine is not common among teens. Levels remained unchanged from 2001 to 2003 but were lower than in the late 1990s (Johnston et al., 2003).

Young people who are involved in substance abuse face not only the risk of becoming dependent on the drug, but also an increased risk of dropping out of school, becoming involved in crime, attempting suicide, and

adopting a variety of other dangerous behaviors (PRIDE, 2003b).

As many who work closely with youth are well aware, substance use is hardly confined to high-school-aged students. The PRIDE survey—a national annual survey of substance abuse among students in grades 4 to 6 and grades 6 to 12, (see “Where Do the Data Come From?” on page 1-3)—reveals that many youth in grades 6 through 8 are experienced substance users. In this age group, one-fifth (19.5 percent) had smoked cigarettes and/or drunk hard liquor; one-fourth (25.5 percent) had drunk beer; almost one-third had drunk wine coolers; and approximately 12 percent had smoked marijuana in the previous year (PRIDE, 2003b). In 1999, one-fourth (24.7 percent) of U.S. high school students reported that they had smoked a whole cigarette before age 13 (Kann et al., 2000).

Substance abuse is an issue with younger children as well; 6.1 percent of 4th-grade and 6.7 percent of 5th-grade students reported drinking beer in the past year. Likewise, approximately 4 percent of students in 4th grade reported inhalant use during the past year (PRIDE, 2003a).

Transitions from elementary to middle school and from middle to high school have been identified as particularly high-risk times for initiation of substance use (CASA, 2001). In addition, it has been demonstrated that youths’ perceptions of substance use by their peers has a great potential for influencing their own substance use behavior, regardless of whether their perceptions are accurate. In fact, research has also demonstrated that more often than not, perceptions of peer use are overestimated.

Many significant differences in substance abuse among youth have been noted along lines of gender and race/ethnicity. In fact, recent evidence from a 3-year survey suggests that girls and young women have different motivations, high-risk situations, and vulnerabilities for substance abuse than males. This research suggests that particular attention be given to girls, not only because unisex programs have not worked for millions of them, but also because girls may become dependent on substances more quickly than boys (CASA, 2003). In light of these findings, it is not surprising to learn that use of substances differs between female and male teens.

For instance, male teens are more likely than female teens to use illicit substances, with the exception of psychotherapeutics. Likewise, male teens are 50 percent more likely than female teens (3.1 percent compared with 1.9 percent) to meet the criteria for heavy drinking (SAMHSA, 2003b). Other data suggest that female youth are more likely than their male peers to report that obtaining crack, cocaine, or LSD would be easy (SAMHSA, 2003b). As of 2002, female teens have surpassed male teens in cigarette use (SAMHSA, 2003b).

Similarly, race/ethnicity appears to play an important role in substance use among youth. For example, lifetime cigarette use is highest among American Indian/Alaskan Native populations (27.7 percent), followed by white teens (15.6 percent), teens of two or more races (12.6 percent), Hispanic/Latino teens (10.0 percent), African-American teens (6.6 percent), and Asian teens (3.8 percent). A similar pattern emerges when examining the proportion of teens engaging in illicit substance abuse in the past year (SAMHSA, 2003b). Looking at gender in combination with race/ethnicity, white male teens are the most likely to be heavy drinkers (4.0 percent), followed by white female teens and Hispanic male teens (2.5 percent and 2.6 percent, respectively), female Hispanic teens (1.8 percent), African-American male teens (0.8 percent), and African-American female teens (0.4 percent).

### The Impact of Substance Abuse on Youth

Due perhaps in part to a recognition of the vast and numerous social and societal influences in support of substance abuse, some view experimentation with alcohol, cigarettes, and other drugs by young people as an inevitable, transient, and relatively harmless rite of passage. However, the data do not support this view. In fact, research finds that the opposite is true for many young people. Recent findings indicate that:

- ▶ Of youth who reported ever having smoked, the vast majority (85.7 percent) are still smoking in the 12th grade.
- ▶ Of youth who reported ever having been drunk, 83 percent are still getting drunk in the 12th grade.
- ▶ Of youth who reported ever having tried marijuana, over three-fourths (76.4 percent) are

still using marijuana in the 12th grade (CASA, 2001).

Greater exposure to a given substance leads to greater likelihood of harm. The consequences of substance use by youth may be immediate as well as long term. For example:

- ▶ Early use of marijuana has been repeatedly associated with a greater likelihood of other illicit substance abuse, perhaps in part because youth who smoke marijuana have greater access and opportunities to try other substances (NIDA, 2003e).
- ▶ Alcohol and tobacco use result in a greater likelihood of progression to other substance use (NIJ, 2003).
- ▶ Substance abuse among youth has been found to predict lower educational achievement, job instability, early pregnancy, and infection with HIV and other sexually transmitted diseases (Botvin, Botvin, & Ruchlin 1998; Kerber & Wallisch, 1999; Lillie-Blanton, Werthamer, Chatterji, Fienson, & Caffray, 1998; Maxwell & Liu, 1999).

Furthermore, alcohol or other substance abuse is associated with antisocial behavior and criminal involvement among youth:

- ▶ Possession and/or use of drugs can lead to a variety of legal sanctions and a permanent criminal record (ONDCP, 1999).
- ▶ Delinquent behavior among youth has been found to increase in direct proportion to frequency of marijuana use (SAMHSA, 2003b).
- ▶ A study of Maryland juvenile detainees revealed that 40 percent were in need of treatment for alcohol and other substance abuse (Center for Substance Abuse Research, 1998).

### What Now?

Given the prevalence and related negative consequences of substance abuse in this country, it is clearly evident that efforts toward reducing the extent of these problems should be encouraged and supported. The individual, social, and economic devastation resulting from substance

abuse, described above, underscores the importance of substance abuse prevention efforts. Teachers and others working closely with young people have a unique opportunity to use their skills and established relationships with youth to better prepare them for the challenges they face with regard to substance abuse decision making. Through careful adoption of research-based prevention strategies, there is the potential to play a critical role in helping to prevent youth from experiencing the negative effects of substance abuse. Such strategies may include presentation of antidrug messages, demonstration and rehearsal of drug refusal skills, building of self-esteem, and/or instruction in decision-making skills.

Downward trends in the use of alcohol, tobacco, and other drugs among youth are encouraging. In part, these trends are an indication that despite the competing messages youth receive through peers, the media, and society, prevention efforts can and often do have a measurable positive effect. Those in school- and community-based positions that endow them with the potential to influence young people often find themselves greatly motivated to make a difference but left without the specific tools with which to do so. The questions that remain for many of these individuals are twofold: (1) What does research tell us about prevention methods that are most likely to have the desired effect? and (2) How does a prevention practitioner effectively and efficiently put these findings to practical use for a given target population? The purpose of this *Handbook* is to provide prevention practitioners in school- and community-based settings with the information and tools to answer these questions and, ultimately, build substance abuse prevention curricula that have the greatest likelihood of success in preventing, delaying, or reducing substance abuse among the young people they serve.

### Conclusions

Alcohol, tobacco, and other substance use are all too common among youth and adults. In addition to the risk of developing dependence on a particular substance, abuse results in huge costs to individuals, families, and society. This *Handbook* will provide additional tools to allow those in the important position of planning and implementing substance abuse prevention programs to maximize the likelihood that their prevention efforts will achieve the intended outcomes.

### References

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: American Psychiatric Association.
- Botvin, G.J., Botvin, E.M., & Ruchlin, H. (1998). School-based approaches to drug abuse prevention: Evidence for effectiveness and suggestions for determining cost-effectiveness. In: W.J. Bukoski & R.I. Evans (Eds.), *Cost-benefit/cost-effectiveness research of drug abuse prevention: Implications for programming and policy* (pp. 59-82). (NIDA Research Monograph 176. NIH Publication No. 98-4021.) Rockville, MD: National Institute on Drug Abuse.
- Center for Substance Abuse Research, University of Maryland at College Park. (1998). Forty percent of juvenile detainees in Maryland need treatment—primarily for marijuana abuse/dependence. *CESAR Fax*, Vol. 7, No. 42.
- Center on Addiction and Substance Abuse. (1998). *1998 CASA national survey of teens, teachers and principals*. New York: Columbia University.
- Center on Addiction and Substance Abuse. (1999). *No safe haven: Children of substance-abusing parents* (pp. 4-5). New York: Columbia University.
- Center on Addiction and Substance Abuse. (2001). *Malignant neglect: Substance abuse and America's schools*. New York: Columbia University.
- Center on Addiction and Substance Abuse. (2003a). *The formative years: Pathways to substance abuse among girls and young women ages 8-22*. New York: Columbia University.
- Center on Addiction and Substance Abuse. (2003b). *Report on teen cigarette smoking and marijuana use*. New York: Columbia University.
- Centers for Disease Control and Prevention. (2002). Annual smoking-attributable mortality, years of potential life lost, and economic costs—United States, 1995-1999. *Morbidity and Mortality Weekly Report*, 51 (no. 14), 300-303.

- Federal Bureau of Investigation. (2002). *Uniform crime reports, 2002*. Washington, DC: U.S. Department of Justice.
- Harwood, H. (2000). *Updating estimates of the economic costs of alcohol abuse in the United States: Estimates, update methods, and data*. (Report prepared for the National Institute on Alcohol Abuse and Alcoholism.) Falls Church, VA: The Lewin Group.
- Hu, T., Lin, Z., & Keeler, T. E. (1998). Teenage smoking, attempts to quit, and school performance. *American Journal of Public Health, 88*, 940-943.
- Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (2001). *Monitoring the future: National results on adolescent drug use: Overview of key findings, 2000*. (NIH Publication No. 01-4923). Bethesda, MD: National Institute on Drug Abuse.
- Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (2003). *Monitoring the future: National results on drug use, 1975-2002*. Bethesda, MD: National Institute on Drug Abuse.
- Kann, L., Kinchen, S. A., Williams, B. I., Ross, J. G., Lowry, R., Grunbaum, J. A., & Kolbe, L. J. Youth risk behavior surveillance—United States, 1999. *Morbidity and Mortality Weekly Report, 49* (SS05), 1-96, 2000.
- Kerber L., & Wallisch, L. (1999). *1997 Texas survey of substance use among university students*. Austin, TX: Texas Commission on Alcohol and Drug Abuse.
- Lillie-Blanton, M., Werthamer, L., Chatterji, P., Fienson, C., & Caffray, C. (1998). Issues and methods in evaluating costs, benefits, and cost-effectiveness of drug abuse prevention programs for high risk youth. In: W.J. Bukoski & R.I. Evans (Eds.), *Cost-benefit/cost-effectiveness research of drug abuse prevention: Implications for programming and policy* (pp. 184-213). (National Institute on Drug Abuse Research Monograph 176; NIH Publication No. 98-4021.) Rockville, MD: National Institute on Drug Abuse.
- Maxwell, J. C., & Liu, L. Y. (1999). *1998 Texas school survey of substance use among students: Grades 7-12*. Austin, TX: Texas Commission on Alcohol and Drug Abuse.
- Mumola, C. (1998). *Substance abuse and treatment, state and Federal prisoners, 1997* (p.68). Washington, DC: Bureau of Justice Statistics.
- National Institute of Justice. (2003, April). *2000 arrestee drug abuse monitoring: Annual report*. Washington, DC: U.S. Department of Justice.
- National Institute on Drug Abuse. (2001). *Hallucinogens and dissociative drugs*. (NIDA Research Report Series; NIH Publication No. 01-4209). Rockville, MD: U.S. Department of Health and Human Services.
- National Institute on Drug Abuse. (2002a). Study sheds light on progression to drug dependence. *NIDA Notes, 17*.
- National Institute on Drug Abuse. (2002b). Testimony before the subcommittee on criminal justice, drug policy and human resources, Committee on Government Reform, United States House of Representatives—Research on MDMA. Rockville, MD: U.S. Department of Health and Human Services.
- National Institute on Drug Abuse. (2003a). *Epidemiologic trends in drug abuse: Advance report. Proceedings: Community Epidemiology Work Group*. Rockville, MD: U.S. Department of Health and Human Services.
- National Institute on Drug Abuse. (2003b). *Inhalant abuse*. (NIDA Research Report Series. NIH Publication No. 03-3818). Rockville, MD: U.S. Department of Health and Human Services.
- National Institute on Drug Abuse. (2003c). *Preventing drug use among children and adolescents: A research-based guide* (2nd ed.). (NIH Publication No. 04-4212(A)). Rockville, MD: U.S. Department of Health and Human Services.
- National Institute on Drug Abuse. (2003d). *Rohypnol and GHB*. (NIDA InfoFacts.) Rockville, MD: U.S. Department of Health and Human Services.
- National Institute on Drug Abuse. (2003e). Youths' opportunities to experiment influence later use of illegal drugs. *NIDA Notes, 17*.

National Institute on Drug Abuse. (2004). *MDMA (ecstasy) abuse*. (NIDA Research Report Series). Bethesda, MD: U.S. Department of Health and Human Services. [Online]. Available at: <http://www.nida.nih.gov/ResearchReports/MDMA>.

National Institute on Drug Abuse & National Institute on Alcohol Abuse and Alcoholism. (1998). *The economic costs of alcohol and drug abuse in the United States, 1992* (pp. 1-17). Rockville, MD: U.S. Department of Health and Human Services.

Office of National Drug Control Policy. (1999). *National drug control strategy*. Washington, DC: Office of National Drug Control Policy.

Office of National Drug Control Policy. (2001). *The economic costs of drug abuse in the United States*. Washington, DC: Office of National Drug Control Policy.

Office of National Drug Control Policy. (2003). *National drug control strategy update*. Washington, DC: Office of National Drug Control Policy.

Parents' Resource Institute for Drug Education. (2003a). *PRIDE surveys national summary for grades 4 thru 6*. Available at: <http://www.prideusa.org>.

Parents' Resource Institute for Drug Education. (2003b). *PRIDE surveys national summary for grades 6 thru 12*. Available at: <http://www.prideusa.org>.

Substance Abuse and Mental Health Services Administration (1999). *Substance use and mental health characteristics by employment status*. Washington, DC: U.S. Department of Health and Human Services.

Substance Abuse and Mental Health Services Administration. (2003a). Trends in drug-related emergency department visits, 1994-2002. *The DAWN Report*, November 2003, 1-7.