Appendix E
Psychoactive Drugs Other than Narcotics and Stimulants

Chapter 2 presented information about illicit drugs whose use has been most frequently associated with the transmission of the human immunodeficiency virus (HIV). In addition to narcotics and related analgesics, including heroin, and central nervous stimulants, including cocaine and crack, psychoactive drugs fall into four additional categories: sedative-hypnotics, hallucinogens, phencyclidine, and cannabis and inhalants. This appendix reviews the major characteristics of substances in each of these four categories.

Sedative-Hypnotics and Other Central Nervous System Depressants

Sedative-hypnotics are sometimes referred to as tranquilizers and sleeping pills. Barbiturates ("downers") and benzodiazepines are the two major categories of sedative-hypnotics. These drugs are usually sold in capsules and tablets. Like narcotics, sedative-hypnotics can cause both physical and psychological dependence and tolerance.

The effects of sedative-hypnotic drugs vary enormously with dosage. When taken in low-to-moderate doses, these substances tend to decrease inhibitions and relieve anxiety. In higher doses, barbiturates may cause slurred speech, staggering gait, and uncertain reflexes--effects that make driving a car or operating machinery particularly dangerous. The main danger and fatal consequences of these drugs reside in their depressant action on central nervous system sites. The combined depressant effect of taking significant doses of two drugs from this class, e.g., alcohol and diazepam (Valium), can be fatal. Unlike narcotics, "sedative-hypnotics have a withdrawal syndrome that is life-threatening, specifically as a result of seizure and delirium tremens" (6).

Hallucinogens

Hallucinogens or psychedelics, which are usually taken orally, do not resemble any of the other classes of drugs mentioned above, though they are frequently contaminated with other drugs, such as phencyclidine (PCP) and amphetamines. Profound changes in mood, thought content, perception, sensations, and emotions are common effects of hallucinogens. First-time users of these drugs in particular have been known to experience "bad trips" where the drug user experiences feelings of panic, confusion, paranoia, anxiety, and helplessness. The effects of psychedelics are often unpredictable and depend on the amount taken and factors relating to the user's mood and surroundings. Although researchers have found some changes in the mental functions of heavy users of lysergic acid diethylamide (LSD), it is not yet known whether such changes are permanent or disappear when LSD use is stopped (312). Although psychedelic drugs are quick to produce high tolerance, there is no hallucinogen withdrawal reaction as there is with narcotics, stimulants, and sedative-hypnotics, and hallucinogens rarely produce a full dependence.

Phencyclidine PCP

Phencyclidine, commonly referred to as PCP or "angel dust," was developed in the 1950s as an anesthetic, but was subsequently taken off the market for humans in 1967 when it was discovered that the drug caused hallucinations in some individuals. PCP is sometimes classified as a hallucinogen "because in toxic doses it typically produces severe agitation, excitement, and quasi-psychotic reactions including paranoid delusions and auditory hallucinations" (6). In low doses, however, PCP may simply cause drowsiness or excitability but no hallucinosis effect. PCP is available in a number of forms, and it can be swallowed, smoked, sniffed, or injected, and is often mixed with other drug such as marijuana and other hallucinogens. Although PCP is illegal, it is relatively easy to synthesize and is manufactured illicitly in basements, vans, and garage-type laboratories all over the country (315).

PCP has two distinctive use patterns. PCP has a street reputation as a "bad" drug and after trying it once, many users will not try it again. Others, however, use PCP chronically. It is not yet fully understood why toxic PCP doses vary from one person to the next, and why its effects are so highly unpredictable. "Because PCP is an anesthetic compound it produces the inability to feel pain which can lead to serious bodily injury," especially since the effects of the drug tend to cause unpredictable outbursts, bizarre behavior, and disorientation (315).

Evidence is inconclusive as to whether tolerance and withdrawal symptoms result from PCP use.

PCP-addicted expectant mothers have been known to deliver babies with visual, auditory, motor disturbances, and symptoms similar to adult users of PCP (e.g., agitation and rapid changes in awareness).

Results from the 1988 household survey indicated that an estimated 6.1 million (3.1 percent of people over the age of 12) have tried PCP at least once in their lifetimes and that about 377 thousand (0.2 percent) have used PCP during the past year. The prevalence of PCP use in one's lifetime increased from 1985 to 1988 from 2.8 percent to 3.1 percent, with the percentage of Hispanics report having used PCP sometime within their lifetimes more than doubling (from 1.4 percent in 1985 to 3.0 percent in 1988). Regional trends show that between 1984 and 1988, the prevalence of lifetime PCP use increased in the Northeast (2.4 percent to 4.3 percent), in the North Central region (3.0 percent to 3.8 percent), and in the West (3.2 percent to 3.7 percent), but decreased in the South (2.7 percent to 1.7 percent). These figures may reflect selective emigration of drug users or a change in reporting bias instead of a real reduction in the percent of lifetime users. PCP was the only drug category reporting an increase in use among high school seniors from 1988 to 1989 (current use rose from 0.3 percent to 1.4 percent and annual use rose from 1.2 percent to 2.4 percent). This increase followed a decreasing trend in lifetime prevalence among high school seniors since 1980. The number of PCP-related emergencies reported by the Drug Abuse Warning Network increased somewhat from 6,242 mentions in 1984 to 8,403 mentions in 1988.

Cannabis and Inhalants (Toxic Vapors)

Substances made from the cannabis plant (including marijuana and hashish) and inhalants have been grouped into a category of their own because they do not readily fit into any of the other drug categories.

The main psychoactive ingredient in marijuana is THC (delta-9 -tetrahydrocannabinol). The present strength of marijuana, which is determined by the amount of THC in the drug, is up to ten times greater than marijuana used in the early 1970s (312). Several researchers and laboratories have recently made progress in determining how marijuana acts on the brain (321). Researchers have found that THC changes the way sensory information gets into and is acted on by the hippocampus, the component of the brain that facilitates learning, memory, and the integration of sensory experiences with emotions and motivation (321). Their findings help explain the symptoms of lethargy and attention and memory problems associated with acute marijuana use. There is little evidence that marijuana produces tolerance or severe physical withdrawal symptoms, though long-time users may become psychologically dependent on the drug.

Although cannabis is sometimes regarded as a substance of low abuse potential, it does have some serious health dangers. Inhaling the drug can be harmful to the lungs. Researchers at the University of California, Los Angeles, "found that the daily use of 1 to 3 marijuana joints appears to produce approximately the same lung damage and potential cancer risk as smoking 5 times "as many cigarettes: (321). Very few, however, use at this rate. After smoking marijuana, users may experience faster heartbeat (an increase by as much as 50 percent) and pulse rate, bloodshot eyes, lack of concentration, and impaired reaction time and motor coordination. It is also known that chronic use of marijuana may cause babies to be born prematurely, shorter in length, and with below average birthweights (380).

The intentional use of inhalants, such as glue sniffing is popular among some adolescents, in part because these chemicals are readily available and inexpensive (312). Other substances known to be inhaled include gasoline, paint thinners, and cleaning fluids. Nearly all of the abused inhalants produce effects similar to anesthetics, which slow the body's functions. Initial effects may also include nausea, sneezing, coughing, nosebleeds, lack of coordination, and loss of appetite. Some of the more serious effects of inhalants include damage to bone marrow, kidneys, liver, central and peripheral neural tissue, and even death from suffocation or fatally depressed central nervous system functioning. Tolerance is also likely to develop in regular users.

Marijuana remains the most commonly used illicit drug in the United States. Almost 66 million Americans (33 percent) have tried marijuana at least once in their lives according to the 1988 household survey (330). An estimated 21 million people (11 percent of the population aged 12 and over) had used marijuana in the last year, and 12 million (6 percent) had used marijuana at least once during the past month. Of the 21 million people who used marijuana at least once in the past year, almost one-third (6.6 million) used the drug once a week or more. Lifetime rates of marijuana use have been steadily declining for the 12-17 age group (from 24 percent in 1985 to 17 percent in 1988) and for the 18-26 age group (from 60 percent in 1985 to 56 percent in 1988), while the rates for the age 26 and over category have been increasing along with the aging pool of individuals who began using marijuana in previous years. Current use of marijuana continued to decrease for all age groups in the household survey.

The high school seniors survey has consistently shown a negative correlation between the perception of risk associated with regular marijuana use and actual rates of marijuana use reported by seniors (306). The percentage of seniors who have experimented with marijuana went from a peak of 60.4 percent in 1979 down to 43.7 percent in 1989, and the annual and current rates (use during the month before the survey) were 29.6 percent and 16.7 percent, respectively. The percentage of seniors using marijuana daily also decreased from 10.3 percent in 1979 to just 2.9 percent in 1989.

In the list of most frequently mentioned drugs in ER episodes, marijuana went from eighth (with 4.36 percent of ER mentions in 1984) to fourth (with 6.69 percent of ER mentions in 1988) (see fig. 2-5) (329). The increased percentage of ER cases associated with marijuana use may be a reflection of the increased strength of the street drug. Marijuana is about 10 times stronger today than it was in the early 1970s (312). The increased strength of marijuana would also help explain the increased perceived risk of regular marijuana use noted among high school seniors (306).