

DRUGS OF ABUSE 1973: TRENDS AND DEVELOPMENTS

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INTRODUCTION

The accelerated transience of social phenomena is one of the most distinguishing features of the past decade. Drug abuse has been no exception. Major drug abuse patterns shifted so rapidly that descriptive and phenomenological analyses frequently were no longer valid by the time they appeared in print. Treatment efforts generally lacked the flexibility necessary to adapt to rapid change and fragmented as swiftly as they had coalesced around quickly shifting priorities and sources of funding.

Social reaction to drug abuse also shifted. As drug abuse became an activity of middle and upper class youth in the mid-1960s, enthusiasm grew for treatment instead of for criminal prosecution. Drug treatment of heroin dependence, especially methadone maintenance, was enthusiastically endorsed as the major thrust of treatment and research efforts. Politically, drug abuse was practically synonymous with heroin use, and the number of methadone clinics throughout the country mushroomed. Education was hailed as preventative. Predictably, when education and treatment failed to produce an immediate halt to the heroin abuse phenomenon, social attitudes gradually shifted back to a hard-line prohibition approach, especially with regard to the heroin pusher.

In 1973 divergent sources indicate, however, that the incidence of *new* heroin cases is declining markedly, although multiple or polydrug abuse is increasing. While this decrease in heroin use may be thought initially to be the result of treatment, law enforcement or education, other explanations are equally plausible, for the choice of a particular drug is dependent on a number of variables. For example, it is rarely considered that as a drug becomes faddish with different socioeconomic or cultural groups there is a reservoir of individuals who are ready to try it as soon as it becomes available. These individuals constitute the first wave of users who may eventually become addicts. A second population is susceptible to using the drug as a result of peer pressure. After a time everyone who is willing to

use the drug already has tried it, and new users are made up primarily by youth who are just reaching the age where experimentation with drugs is possible. Graphically the result appears as below:

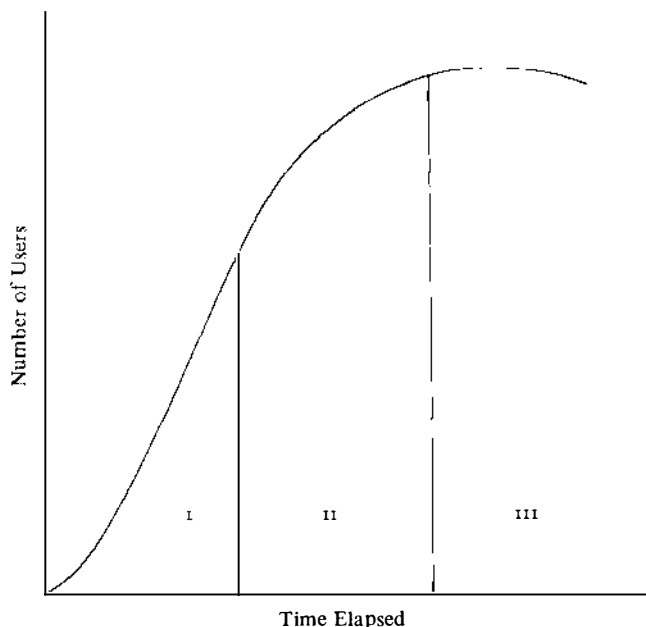


Figure 1 Phases of a drug "epidemic."

Phase I: New drug is introduced and receives enthusiastic acceptance. Tributes to the drug "high" spread through news media, underground press, and word of mouth. Individuals who will readily experiment with new drugs rush to get a supply.

Phase II: The number of new users begins to level off but continues to rise, because some new users succumb to peer pressure or become convinced of the drug's "safety."

Phase III: The total number of users of a particular drug levels off or begins to drop as drug users switch to other drugs, enter treatment, or die.

During the third phase the total number is increased by new youth who are reaching drug using age and decreased by individuals who enter treatment, die, or move to other drugs.

The shift from heroin to a variety of other drugs appears to be the dominant trend in the early 1970s. The differences that distinguish current use patterns from past ones are the wide variety of drugs used, the younger age at which drug use begins, and the worldwide communication and transportation systems that result in the rapid dissemination of drug-use patterns and fads throughout the world.

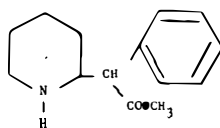
Some individuals believe that the motivation for drug use by preteens and adolescents also has changed. In the past, drug use by this group appeared to be motivated by sporadic efforts to prove they could handle "adult" pleasures or to "get even" with parents. Today's many youthful users seek the "high" or altered state of consciousness as an end in itself in addition to the traditional motivations of rebellion and response to peer group pressure.

The only constant about America's drug abuse scene is that it will change. The purpose of this chapter is to highlight some recent trends and developments in the major drug abuse groups.

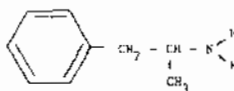
THE GENERAL CENTRAL NERVOUS SYSTEM STIMULANTS

Amphetamines

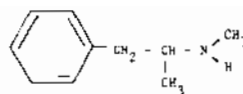
Amphetamines are CNS stimulants that have been widely prescribed by physicians for almost 40 years for a variety of disorders including parkinsonism, depression, narcolepsy, asthma, the hyperkinetic syndrome of children, and obesity as well as to counteract the sedative effects of other drugs. Methylphenidate (Ritalin®), a newer stimulant used medically for the same indications as amphetamines, has proven to have approximately the same abuse potential as dextroamphetamine.



METHYLPHENIDATE



AMPHETAMINE



METHAMPHETAMINE

The ability of amphetamines to relieve sleepiness and fatigue and to increase short-term performance has resulted in frequent nonmedically sanctioned use. As early as 1936, concern was expressed about the possible abuse potential of the amphetamines. A decade later, high-dose intravenous methamphetamine abuse in Japan reached epidemic proportions. The Japanese experience, however, did not receive widespread notice in this country, and in another ten years a similar abuse pattern began in the United States.

Because of the experience of Japan and the growing concern about abuse of many other psychoactive drugs, an awareness of the high abuse potential of amphetamines developed in this country. Amphetamines were the subject of Senate hearings in 1971 and 1972, focusing not only on high-dose intravenous use but also on the even more widespread oral misuse of physician prescribed amphetamines. The hearings were published in two volumes, *Amphetamine Legislation 1971* (1) and *Diet Pill (Amphetamine) Traffic, Abuse and Regulation* (2), which contain a wealth of material concerning the use and abuse of stimulants in the United States.

A clear trend is the development of increasing restrictions concerning the production and prescription of stimulants. The United States, for example, put federal control over stimulants in the same category as narcotics control and in 1972

reduced legitimate production of stimulants by 80%, with still further decreases in production in 1973.

Canada increased restrictions on amphetamine prescriptions and limited the use of these drugs to the treatment of narcolepsy, hyperkinetic disorders of children, mental retardation caused by minimal brain dysfunction, epilepsy, parkinsonism, and hypotensive states associated with anesthesia. Prescription of amphetamines for long-term weight control is not indicated according to recent FDA guidelines (3). A survey of 450 randomly selected US physicians (4), however, indicated that the majority of physicians felt that weight reduction was a legitimate indication for the use of appetite suppressants. Some county medical societies throughout the country asked their members to restrict voluntarily their prescription of amphetamines for weight control, and the debate over use vs misuse of legitimately prescribed amphetamines continues, although the high-dose intravenous abuse of black market synthesized amphetamine has declined significantly.

Cocaine

Cocaine, a general CNS stimulant which has gained recent greatly enhanced status, has emerged sporadically but did not achieve widespread use except in certain minority and artistic subcultures. In the late sixties, however, cocaine became a fad drug and re-emerged as a recreational drug among youth from all socioeconomic levels. The incidence of recreational cocaine use rose rapidly in 1970 and then increased at a slower rate until mid-1972. At present, cocaine is very much available to street drug buyers if they can afford its extravagant price. "Coke," "snow," "gold dust," "bernice," "the rich man's drug," or "the pimp's drug" (all slang terms for cocaine) can be bought on the street for \$500 to \$1500 an ounce or about \$50 a gram.

Much of what is sold as cocaine is not cocaine. Cocaine is rarely pure and may be a mixture of various drugs. Depending on how a pusher chooses to adulterate his goods, the cocaine user can wind up snorting or shooting almost anything. Data from street drug analysis programs reveal that heroin, methamphetamine, or other local anesthetics such as procaine mixed with methamphetamine are often sold as cocaine. Samples that do contain cocaine frequently include only a small percentage of actual cocaine with the larger portion being another white, powdery substance such as lactose. The chief danger to the user is that he cannot calculate the amount of cocaine he is using or even be sure of the quality or purity of the drug he is taking.

Cocaine can be either snorted or injected. Snorting consists of sharply inhaling cocaine power through one nostril while holding the other closed. The material usually is chopped up into a fine powder with a razor blade, arranged into thin lines or columns and then sniffed. Thus a user may say, "I just snorted two lines of coke." Silver straws, expensive coke spoons, or a rolled one hundred dollar bill often are used as symbols of affluence when snorting cocaine.

The user experiences 15 to 20 minutes of pleasurable exhilaration and euphoria. In spite of subjective interpretation the pharmacological effects are almost identical with those produced by the amphetamines. Typically, "cokeheads" talk a lot and feel energetic and self-confident until the tensed, "wired" high of cocaine is replaced by nervousness and depression which can last for hours or days. Irritability, loss of temperature sensations, and tightening of muscles often accompany cocaine's post-

reactive depressive state. This depression is in such marked contrast to the previous pleasurable sensations that heavy users will continue to sniff or inject cocaine every ten minutes or so for several hours to avoid the onset of depressive symptoms.

A second method of maintaining the euphoria produced by cocaine is to administer it in combination with a longer lasting euphoriant such as heroin. (Mixtures of cocaine and heroin often are sold in the street as "speedballs.")

Cocaine is also a popular drug among methadone maintenance clients, because cocaine will exert its powerful stimulant actions even in the presence of opiates.

The properties of the cocaine high are indeed appealing to the pleasure seeker, but the hazards inherent in chronic high-dose cocaine use make the drug equally dangerous. In addition to the dangers inherent in acute toxicity, a frequent side effect of heavy cocaine snorting is damage to the nasal membranes produced by intense vasoconstriction. After only a few months on the drug the cartilage separating the nasal passages may have necrosed.

Chronic use in the pursuit of maintaining a constant euphoric state increases the severity of cocaine's stimulant effects. After a few days the pleasurable effects give way to an intense anxiety state with gross paranoid features including auditory and visual hallucinations similar to an amphetamine psychosis.

Low-dose, chronic use of cocaine is not typical of American usage patterns, but such use is common in Peru where coca leaves are chewed by Andean Indians as a social ritual and mild stimulant, much as coffee drinking is enjoyed in the United States. Members of the upper socioeconomic classes in Peru make a tea from coca leaves. The pattern of chewing coca leaves or using them to make tea by Andean inhabitants involves only small doses of cocaine. Leaves of the coca plant contain only 0.6 to 1.8% cocaine, the rest of the coca ingredients being harmless alkaloids. This use parallels the use of caffeine in America and most individuals can use cocaine in this manner on a regular basis for months or years and experience no serious adverse effects.

Although psychological dependence on cocaine does occur, it is controversial whether or not cocaine produces true physical dependence. If deprived of his drug the cokehead will not experience the withdrawal symptoms seen with heroin or barbiturate addicts, but the compulsion to continue cocaine use is strong because of the severe depression accompanying abstinence.

Acute toxicity can occur from either snorting or intravenous use. The individual quickly becomes restless, garrulous, anxious, and confused. Pulse rate increases, and respiration becomes irregular. Nausea, vomiting, and abdominal pains occur frequently. Convulsions may then appear with the patient eventually lapsing into coma and death resulting from respiratory or cardiac arrest.

THE CENTRAL NERVOUS SYSTEM DEPRESSANTS

Methaqualone

The short-acting barbiturates constitute a major and growing drug abuse problem. In addition, nonbarbiturate sedative hypnotics such as methaqualone (available from US drug manufacturers under the brand names of Quaalude®, Sopor®, Op-timil®, and Parest®) became a fad drug of abuse in 1972–1973. Methaqualone was

introduced to the American medical market in 1965 for the treatment of insomnia and anxiety. Heavy advertising in medical journals by pharmaceutical manufacturers and promotion by drug salesmen emphasized that methaqualone was a *nonbarbiturate* hypnotic with low abuse potential and only rare incidence of physical dependence. Methaqualone has become widely prescribed by physicians, in great part because of their belief that it is a sedative-hypnotic with none of the abuse potential of short-acting barbiturates.

Inevitably, methaqualone was tried by those individuals looking for a better high. Knowledge of the drug spread throughout the country, helped along by publicity in the news media which reported the alarming increase in its use among youth nationwide and by articles that extolled the qualities of methaqualone intoxication. A new drug epidemic occurred throughout the country. By all indications it has reached the third phase (see Figure 1).

Basically, intoxication with methaqualone is similar to intoxication with barbiturates or alcohol and subjects the individual to the same risks: death by overdose, accidents due to confusion and impaired motor coordination, and escalating drug involvement to the point of addiction. Like barbiturate tolerance, tolerance to the intoxicating effects of methaqualone develops more rapidly than does tolerance to the lethal dose. Death has occurred with the ingestion of as little as 8 grams in a nontolerant individual. Overdose with methaqualone produces coma, muscle spasm, convulsions, and hemorrhaging due to interference with blood coagulation. Withdrawal from methaqualone dependence carries approximately the same risk as withdrawal from the short-acting barbiturates. The patterns of nonprescribed use of methaqualone

times taken in combination with wine, a practice known as "luding out." This is especially hazardous, however, as methaqualone has a compounding effect when taken with alcohol, making the simultaneous effect of both drugs particularly likely to result in overdose.

Methaqualone has gained special favor with individuals who are patients in methadone maintenance programs because of the "additive high" the drug combination produces. In addition, street mythology holds that methaqualone is difficult to detect in urine samples containing methadone. This is not the case, however. The myth most likely started when methadone maintenance patients discovered that they could use methaqualone without its being detected in their urine samples. Methaqualone use most probably escaped detection in methadone maintenance programs because it was not one of the drugs routinely looked for in the urine samples required by methadone programs to monitor drug use and not because of any technical difficulties of detection. With the widespread publicity given to the abuse of methaqualone, this drug is now being added to the "urine screen" in many methadone programs.

Recently evidence appeared that diversion of pure methaqualone from manufacturers is occurring before it is made into tablets or capsules. Sidney Schnoll reported finding two samples of orange capsules sold as "mandrakes" (a street name for the British product, Mandrax[®], which contains methaqualone and diphenhydramine, an antihistamine) containing over 200 mg of pure methaqualone hydrochloride

without filler (5). This finding appears to indicate that *bulk* methaqualone is now being diverted from legitimate manufacturing sources.

With only minimal knowledge of the past history of methaqualone, the current pattern of abuse in this country could have been anticipated. Methaqualone was available as an over-the-counter drug in Japan (under the trade name of Hyminal®) in 1960 and was widely abused by youth in that country.

During 1963 to 1966 a survey of drug addicts in mental hospitals in Japan found 176 out of 411 (42.8%) to be addicted to methaqualone. The primary reason for hospital admission was violent behavior associated with methaqualone abuse. Withdrawal convulsions occurred in 7% of the methaqualone addicts, and 9% developed delirium symptoms (Kato, 6).

Nonetheless, when methaqualone was introduced into the American market in 1965, advertising claimed low abuse potential for the drug, and controls over its manufacture, distribution, and prescription were minimal. This naiveté could be understood had the same pattern not occurred previously. In 1954 glutethimide (Doriden®) and in 1955 ethchlorvynol (Placidyl®) were initially acclaimed to be effective nonbarbiturate hypnotics free from some of the disadvantages of the barbiturates and without addictive potential. The drugs were widely prescribed, but gradually reports of fatal overdoses and addiction appeared in the literature. Controlled clinical studies found the drugs to be comparable to barbiturates in adverse reactions as well as efficacy. The consensus subsequently developed that the drugs were typical central nervous system depressants with no special advantages over the barbiturates.

Whether methaqualone could produce physical dependence was not determined prior to its being marketed in Japan, Germany, England, and the United States. Although physical dependence can be easily studied in laboratory animals, the ability of methaqualone to produce physical dependence was determined primarily by the study of patients who abused the drug.

In a letter to the Editor of the March 12, 1966, *British Medical Journal* (7), Dr. J. S. Madden of the Addiction Unit of Moston Hospital, Chester, England, mentioned four individuals who increased their use of methaqualone far beyond the usual prescribed levels. The *Medical Letter* (8), a bulletin which independently evaluates drugs and therapeutic information for physicians, in citing Dr. Madden in its April 22, 1966 issue indicated that he had reported four cases of physical dependence upon methaqualone. This was erroneous, as Dr. Madden had specifically written: "... not having had the opportunity to observe the patients when methaqualone was removed from them, I cannot objectively confirm or deny the presence of an abstinence syndrome" (7).

Gustav J. Martin, Director of Research of William H. Rorer, Inc. (the first pharmaceutical manufacturer to market methaqualone in the US), pointed out the *Medical Letter's* error in a letter to the Editor of the *British Medical Journal* on July 9, 1966 (9). Martin concluded: "This is an unfortunate lapse, and one which, by misinformation, indicts without justification a relatively safe and effective sedative-hypnotic."

The following year Drs. Robin B. Lockhart Ewart and Robin G. Priest, also writing in the *British Medical Journal* (10), reported a clear case of physical dependence upon methaqualone in a 47 year old man who was allegedly taking nine grams of methaqualone daily. One evening the man was found unconscious and his supply of methaqualone was taken from him. By the next evening he was "... restless and confused, and complained of seeing strangers in the dark corners of the room." The following day he was admitted to a hospital where he was reported to be anxious, restless, and having frightening visual hallucinations. He was reported to be in delirium with obvious tremor.

Subsequently other case reports have appeared in both the British and American literature. In 1969, the report of the Japanese experience with methaqualone appeared in the *International Journal of the Addictions* (Kato, 11). Research conducted recently at the Help Free Clinic in Philadelphia and the Haight-Ashbury Free Clinic in San Francisco have documented the high abuse potential and dependency producing properties of methaqualone as well as its cross-tolerance with the short-acting barbiturates.

In 1973 the *Second Report of the National Commission on Marihuana and Drug Abuse* (12) concluded: "The risk potential of methaqualone is roughly equivalent to that of the short-acting barbiturates." Although the Commission did not recommend placing Schedule II controls over any of the barbiturates it did recommend such controls for methaqualone:

Since unlike the barbiturates, methaqualone does not have large-scale medical uses, and does present a significant problem of misuse, it should be placed in Schedule II, along with the amphetamines (13).

Probably no short-acting hypnotic will be free of abuse potential. There is little doubt that those drugs improve the quality of life for some individuals who experience difficulty in adjusting their sleep cycle. Given the abuse experience of the past decade, however, the current competitive Madison Avenue marketing practices of drug manufacturers for sedative-hypnotics can at best be termed irresponsible.

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