CRS Report for Congress

"Crack" Cocaine

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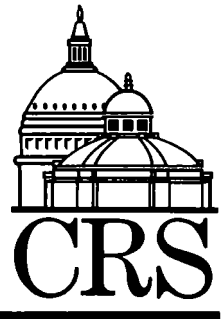

"CRACK" COCAINE

SUMMARY

Cocaine, a central nervous system stimulant, is acknowledged to be the problem drug of the 1980s. "Crack," a smokable form of cocaine, is probably the most accessible and powerful form of the drug. Cocaine use is characterized by a euphoric rush or high followed by a "crash." For many years, widespread use of cocaine led to the belief that it was safe and non-addicting. Recently, however, it has become clear that cocaine use can lead to physical dependency even if it is not addictive in the same sense as an opiate such as heroin. Crack is absorbed into the system more quickly; the rush is faster and higher; the "crash" comes sooner and is deeper; and the user needs to repeat the experience more often. Thus, the risk for dependency is greater.

Since its first appearance in the mid-1980s, when it was available primarily in a few urban centers, "crack" has become easily available in every State and in both urban and rural areas. Congress is deeply concerned about the rapid spread in the availability and use of "crack" because of its devastating impact on both crime and health care.

The Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA) of the U.S. Department of Health and Human Services conducts or supports several surveys to measure substance abuse in the United States. ADAMHA's 1988 National Household Survey on Drug Use showed decreases from the 1985 survey in the numbers of persons trying cocaine just once or using it on a monthly basis; it also shows disturbing increases in the number of those who used the drug weekly or daily. It also reports that 2.5 million Americans had tried "crack," and nearly a half million used it regularly. The National High School Senior Survey in 1988 survey showed a decrease in the reported use of "crack" by high school seniors over the previous year. The Drug Abuse Warning Network survey of hospital emergency room admissions shows an escalating trend in admissions for cocaine-smoking incidents over the past 4 years.

The health and social effects of addiction to cocaine, particularly "crack," are immeasurable. Large city health systems are increasingly overwhelmed by problems relating to drug abuse, for treatment both of addiction and related illnesses and of the victims of drug-related violence. In addition, the babies of mothers who abuse cocaine and other drugs are at risk of serious birth defects. Children of parents who abuse drugs often suffer from abuse and neglect. In some areas, the spread of "crack" has led to an apparent increase in the incidence of sexually transmitted diseases.

Addiction to cocaine in general and "crack" in particular is difficult to treat. A variety of treatment settings and modes are used, both inpatient and outpatient, but there is no generally accepted method of treatment available.

CONTENTS

"CRACK" COCAINE

INTRODUCTION

Drug abuse is a major national concern. The Congress in 1986 and 1988 enacted major comprehensive legislation to attack the problem of drug abuse on many fronts, including increased support for law enforcement to reduce the supply of drugs and for prevention, treatment, and education to reduce the demand for drugs. (For information on recent drug abuse related legislation, see CRS Report No. 89-288 GOV, *Anti-Drug Abuse Act of 1988 (P.L. 100-690): Summary of Major Provisions*, and Issue Brief 88009, *Alcohol, Drug Abuse, and Mental Health Block Grant and Related Programs.)*

The problem drug of the 1980s has been cocaine. The rapidly increasing availability and use of "crack," a smokable form of cocaine, has become an issue of major concern to the Congress. "Crack" has had a broad and devastating impact on many facets of American life, particularly law enforcement and health care. The following paper provides background information on cocaine in general and "crack" in particular.

COCAINE AND "CRACK"--GENERAL BACKGROUND

Cocaine is acknowledged by many to be the problem drug of the 1980s, and "crack" cocaine is probably the most easily accessible and powerful form of the drug. Cocaine is a drug derived from the coca plant, which grows in South America. Traditionally, cocaine has been used primarily in its white powder form, taken intranasally or "snorted." It can also be taken intravenously or smoked in the form known as "free-base." Until recently, the preparation of the "free-base" form of cocaine required a knowledge of a dangerous process using volatile chemicals such as ether. (In a well-known incident, the comedian and actor Richard Pryor in 1980 set himself on fire preparing free-base cocaine with ether.) As a result the smoking of cocaine was generally limited to heavily committed users. Beginning in 1985 or 1986, however, there appeared a smokable form of cocaine known as "crack" or "rock," which became available in a limited number of cities. "Crack" is cocaine powder converted to a smokable base state by mixing with baking soda (or ammonia) and water. The mixture is then dried, broken into smaller chunks or "rocks," and packaged for sale, often in small plastic vials, for $10 to $20.

Cocaine is a central nervous system (CNS) stimulant. The drug initially elevates the user's mood, temporarily producing a sense of exhilaration and well-being. Stimulants, such as amphetamines and cocaine, ". . . produce a neurochemical magnification of the pleasure experienced in most activities. They produce alertness and a sense of well-being; they lower anxiety and social inhibitions, and heighten energy, self-esteem, sexuality, and the emotions aroused by interpersonal experiences." (Gawin and Ellinwood, *New England Journal of Medicine*, May 5, 1988, p. 1174.) The pleasure derived from occasional cocaine use can lead to increased use. "Users discover that higher doses intensify the pharmacologic euphoria. Unless there are self-imposed or external limits on supply, doses gradually increase. While

intoxicated, the user focuses increasingly on intense euphoric internal sensations--withdrawing, over time, from what began as a social experience.

The pursuit of this direct, pharmacologically based euphoria becomes so dominant that the user is apt to ignore signs of mounting personal disaster." (Gawin and Ellinwood, p. 1174.)

COCAINE ADDICTION

Through the 1970s, widespread occasional use of cocaine led to the belief that it was a "safe, non-addicting" drug. In recent years, however, it has become clear that use of cocaine can lead to physical dependency, even if it is not addictive in the classic sense that an opiate such as heroin is, with the physical withdrawal syndrome that accompanies opiate addiction. Another difference between cocaine abuse and heroin addiction is that cocaine is often used in occasional compulsive binges rather than everyday as is customary with heroin. A 1987 report to Congress on drug abuse research notes, however, that cocaine's ". . . now well established ability to lead to compulsive use makes earlier arguments over whether or not cocaine is 'physically' addictive seem academic." (*Drug Abuse and Drug Abuse Research*, the Second Triennial Report to Congress from the Secretary, Department of Health and Human Services, 1987, p. 144.) This view is also taken by Dr. Michael A. Bozarth of Concordia University in Montreal, a cocaine research scientist quoted by the *New York Times*: "We should define addiction in terms of the compulsion to take the drug rather than whether it causes withdrawal. In this sense, cocaine is at least as addictive as heroin." (*New York Times*, August 17, 1986, sec. 4, p. 24.)

Evidence of the addictive and compulsive qualities of cocaine has been demonstrated in animal experiments and in human experience. Research has shown that "laboratory animals will 'work' harder and longer to receive cocaine injections than for any other drug, ignoring all their other needs." (*Drug Abuse and Drug Abuse Research*, p. 144.) In one experiment, ". . . rats with unlimited access to intravenous cocaine lost weight and stopped grooming themselves. Some suffered seizures while taking cocaine, but as soon as the convulsions stopped they began to give it to themselves again. By the time the psychologists' experiment ended, 90 percent of the rats on cocaine were dead; those left alive were in bad shape. In contrast, only about a third of the rats self-administering heroin died and the survivors were still in good health." (Zurer, *Chemical and Engineering News*, November 21, 1988, p. 10.) People with ready access to cocaine often show similar behavior. Compulsive use is common despite disastrous effects to the user's physical health and social well-being.

"CRACK"

As bad as addictive or compulsive use of cocaine in its powder form can be, the use of "crack" cocaine is apparently much worse. Cocaine use is characterized by a euphoric rush or high followed by a "crash." With "crack"

the rush is faster and higher, and the "crash" similarly comes sooner and is deeper. Cocaine is absorbed most quickly when it is smoked. Evidence indicates that when the drug is taken intranasally, the effect takes 15 to 20 minutes to peak, and the high lasts for one to one-and-a-half hours. Smoking "crack" produces a much faster rush, taking effect in just a few seconds. Dr. Mark Gold, director of research for a drug abuse treatment facility and administrator of a national cocaine helpline, has described the "crack" experience:

- When the crack smoke enters the body, it is absorbed through the highly vascularized lung surface. The effect is 10 times greater than that achieved by absorption through the nasal mucous membranes.

- When crack is smoked, the user experiences an intense rush lasting a few minutes, followed by a state of lesser excitement. Within 5 to 15 minutes, however, the feeling is gone, replaced by an irritable, restless, and depressed state. While cocaine powder users can often glide through this period, the downside is so intense for crack users that they almost immediately will try to repeat the experience.

- Crack use rapidly becomes a cycle of chasing the high through continued repeated use despite the obvious adverse consequences." (Gold, *Medical Times*, April 1987, p. 29-30.)

Dr. Herbert Kleber, a Yale University professor of psychiatry and drug abuse researcher, has stated that: "Smoking cocaine is much more euphoric and therefore more likely to get you addicted. People often snorted cocaine for a year or two before they got in trouble with it, whereas people smoking crack can get into trouble within a matter of a few weeks or months." (Zurer, p. 9.)

A July 13, 1989, article in the *New York Times* reports a disturbing new development in the use of "crack". According to this article, chronic drug abusers in New York City have begun to use a mixture of "crack" and smokable heroin as a means of lengthening the "crack" high and reducing the intensity of the depression that follows it. A survey of 97 drug abusers entering a treatment program recently found that 37 percent had used the "crack"-heroin mixture during the past year. (*New York Times*, July 13, 1989, p. A1, B3.)

Drug abuse experts, according to this report, fear that the combination could addict a new generation to heroin. Heroin has been declining in popularity in recent years, particularly because of its association with hypodermic needles--the traditional form of administration--and Acquired Immune Deficiency Syndrome (AIDS). However, if "crack" users smoke the combination with heroin, many will probably become addicted to heroin and eventually turn from smoking to injecting.

EXTENT OF AVAILABILITY OF "CRACK"

The ease of producing "crack" and its relatively inexpensive cost per dosage, along with the highly addictive nature of the drug, have led to a rapid spread of the drug's availability across the Nation. The Drug Enforcement Administration (DEA) in 1986 surveyed its field offices throughout the United States and found "crack" available in 28 States and the District of Columbia. When the DEA conducted such a survey again in December 1987, the agency found "crack" to be available in every State except Alaska, Montana, South Dakota, and Wyoming. The DEA survey reports that "although Crack cocaine is primarily an inner-city drug problem at the present time, recent seizures indicate that Crack has appeared in rural parts of Georgia, Mississippi, Louisiana, Florida, Alabama, North Carolina, Delaware, Maryland, New York, and California. This rapid appearance of the drug in rural areas highlights the easy marketability and speed with which it is capable of spreading through society." (Drug Enforcement Administration, *Crack Cocaine Availability and Trafficking in the United States*, January 1988, p. 4.) The 1989 Crack/Cocaine Overview of DEA confirms that "crack" is available in almost every State.

SURVEYS OF COCAINE AND "CRACK" USE

Survey data on cocaine and other drug use are limited. The Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA) of the Department of Health and Human Services conducts or supports several surveys to measure substance abuse in the U.S. The National Household Survey on Drug Abuse is a periodic series of surveys to measure drug use prevalence among the American household population aged 12 and over. The 1985 Household Survey found that 22.2 million Americans aged 12 and over had used cocaine at least once, and that about 5.75 million were current users, meaning that they had used cocaine in the past month. The 1988 Household Survey, released on July 31, 1989, shows a slight decrease, to 21.2 million,in the number of persons who had tried cocaine at least once; and a decrease by one-half, to 2.9 million persons, in the number of current cocaine users. Despite these encouraging signs, however, the 1988 Household Survey found disturbing increases in the numbers of weekly and daily cocaine users, including users of "crack". The report estimates that, in 1988, 862,000 persons used cocaine once a week or more, compared with 647,000 in 1985; 292,000 used the drug daily in 1988, compared with 246,000 in 1985.

The 1988 Household Survey also, for the first time, includes information on the use of "crack," reporting that nearly 2.5 million persons aged 12 and over have used "crack" at least once, and that 484,000 were current users.

Another ADAMHA-supported survey of substance abuse is the National High School Senior Survey conducted by the University of Michigan's Institute for Social Research. This survey, conducted annually since 1975, administers questionnaires to 16,000 to 17,000 high school seniors nationwide on their use of and views on drugs, alcohol, and tobacco. The class of 1988 survey,

released in part in February 1989, reported a continued decline in cocaine use. According to Dr. Lloyd Johnston of the University of Michigan, "the proportion of seniors reporting any cocaine use in the prior 12 months dropped between 1986 and 1988 from 13 percent to 8 percent, following a 6-year period in which use remained fairly level. Over those same 2 years the proportion of seniors who said there was great risk associated with even experimenting with cocaine rose from 34 percent to 51 percent, and the proportion who saw great risk associated with occasional cocaine use rose from 54 percent to 69 percent." (University of Michigan press release, February 24, 1989, p. 2.)

Questions about the incidence of "crack" use have been in the High School Senior Survey only since 1986, and the 1988 survey showed a significant decline among "crack" use for the first time. Lifetime prevalence of "crack" use fell from 5.6 percent of seniors surveyed in 1987 to 4.8 percent in 1988, while annual prevalence fell from 4.1 percent of seniors in 1986 to 3.1 percent in 1988. According to Dr. Johnston, this decline in reported "crack" use occurred because "an increasing number of young people have come to believe that even experimentation with 'crack' is dangerous." (UM press release, p. 3.) It must be emphasized that the High School Senior Survey has significant limitations in reporting drug use because it does not include high school dropouts. Dropouts are more likely to use drugs such as "crack" than are those who remain in school.

A third measure of drug abuse incidence conducted by ADAMHA is the Drug Abuse Warning Network (DAWN) survey published annually. The DAWN survey includes data on admissions to hospital emergency rooms and on cause of death as reported by medical examiners in major cities in the U.S. DAWN data in recent years have indicated cocaine as the drug mentioned most frequently for drug-related emergency room admissions and smoking as the increasingly dominant method of administration of cocaine. DAWN data for 1988 continue an escalating trend in admissions to emergency rooms for cocaine-smoking incidents over the past 4 years. Cocaine-related hospital emergencies involving smoking surpassed those involving injection and snorting for the first time ever in 1987 and continued the trend through 1988.

HEALTH AND SOCIAL EFFECTS

The health and social effects of cocaine addiction, including "crack," are immeasurable. The New York City health care system, for instance, has become increasingly overwhelmed by drugs in general and "crack" in particular, involving both those patients needing treatment for their addiction and related illnesses as well as the victims of the extreme violence associated with "crack" trafficking. Addiction to drugs such as "crack" affects not only those who actually abuse the drugs but to everyone around them. Long-term addicts tend to lose weight, suffer insomnia and be more prone to infections.

Preliminary studies suggest that cocaine-addicted mothers are more likely to lose their fetuses or have smaller, less healthy babies. The effects on

mothers and children of cocaine and "crack" use are especially critical. The National Association for Perinatal Addiction Research and Education in 1988 reported that an average of 11 percent of pregnant women in 36 hospitals surveyed around the country had used illegal drugs during pregnancy.

These and other data suggest that 375,000 babies born in the U.S. each year, 1 in 10 of all infants, are born to mothers who abuse drugs of one kind or another. These babies face the possibility of sustaining serious disabilities, such as permanent brain damage, retarded growth, abnormalities of the genital and urinary organs, seizures, and neurological problems. Physicians from Boston City Hospital reported in March of 1989 on a survey of mothers and infants at the hospital between 1984 and 1987 that 18 percent of the mothers had used cocaine during pregnancy. On average their babies had lower birthweight, were shorter in length, and had smaller head circumference than the babies of mothers who had used no drugs. The babies of mothers who had used cocaine were also smaller than the babies of mothers who had used marijuana during pregnancy. (Zuckerman et al, *New England Journal of Medicine*, March 23, 1989, p. 762.) In addition, babies born to drug addicted mothers who are unable or unwilling to care for them remain in hospitals, so-called "boarder babies," until other care arrangements, such as foster care, can be made for them.

Children of parents who use "crack" often suffer from abuse and neglect. The *Christian Science Monitor* describes the example of a mother with a "crack" habit and the impact on her children: "She lost weight, quit sending her children to school, sold the television, and then sold all the furniture. Then she began selling her daughters, aged 12 and 13, to men for crack money, according to both neighbors and social service professionals. Neighbors gave the children food, but stopped when they found out the mother was selling it. Now they give the girls only cooked meals. Several weeks ago, relatives took a baby from the house to a local hospital for severe dehydration." (*Christian Science Monitor*, April 12, 1988, p. 32.)

In some areas, the spread of "crack" use has led to an apparent increase in the incidence of sexually transmitted diseases (STD) among those who use the drug. A study on teenage sexual activity and "crack" use in San Francisco found a strong link between "crack" use and a high incidence of STD. About half of the study group of 206 black teenagers said that they combined "crack" use with sexual activity, and STDs were more common among the study group than among the sample population as a whole. Female "crack" users in the study had a 36 percent incidence of gonorrhea compared to a 6 percent rate among a control group of non-"crack" users. San Francisco Director of Health, Dr. David Werdegar, in releasing the report, is quoted as saying that unsafe sex among "crack" addicts "threatens to destroy an entire generation" of black adolescents. (The *Journal*, May 1, 1989, p. 2.) Other studies indicate that "crack" abuse plays a major role in encouraging the kind of unsafe sex and intravenous drug abuse by which AIDS is spread.

TREATMENT OF COCAINE AND "CRACK" ADDICTION

The long-lasting craving for cocaine and "crack" makes treatment of serious abusers extremely difficult. Treatment is provided in a variety of settings using a variety of techniques; there is no generally accepted mode of treatment for cocaine abuse. Treatment for abuse of stimulants such as cocaine usually features two phases: initiation of abstinence through detoxification and prevention of relapse. The detoxification phase is generally carried out in some form of inpatient facility, such as a psychiatric facility, a drug or alcohol treatment facility, or in a general health care facility. The treatment of relapse prevention can be carried out also in a variety of settings either outpatient or residential. Group therapy, including the use of self-help support groups modeled on Alcoholics Anonymous, is commonly used as a method of treatment for relapse prevention. For many cocaine abusers, several courses of treatment are necessary in order to get off and stay off the drug.

Much treatment for cocaine abuse is patterned after treatment for abuse of alcohol or opiates such as heroin and often is not adapted for the special problems of abuse of stimulants such as cocaine. Gawin and Ellinwood note that ". . . specialized stimulant-abuse treatments are being developed and applied, including adaptations of most types of psychotherapy as well as pharmacotherapy trials." According to their survey, outpatient therapy is often successful, with reports that ". . . thirty to 90 percent of abusers who remain in programs of outpatient treatment with a range of psychotherapeutic orientations stop using stimulants while in treatment." They also emphasize, however, that ". . . there are no clear data to suggest that any one treatment approach is superior or that specific patients should be matched to particular psychotherapies." (Gawin and Ellinwood, p. 1177.)

Treatment researchers are experimenting with different types of neuropharmacological substances in the treatment of cocaine abuse. Some promising results have been reported, for instance, on the use of antidepressants along with psychological counseling and other therapies as a means of reducing the craving for cocaine and the stimulation produced by cocaine.

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