

A Primer on Drug Addiction, Crime, and Treatment

Part 4 of 4 in the Series on Disproportionate Incarceration of Minorities for Drug Crimes

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This report is the fourth in a series of publications on the disproportionate number of African Americans who have been incarcerated for drug crimes in Illinois. The first report in the series examined racial disproportionality in sentences for drug crimes from a national perspective (Lurigio, 2003), the second described the passage of drug laws in Illinois from 1985 to 2002 (Lurigio, Heaps, and Whitney, 2002), and the third focused on racial disparities in sentences for drug crimes in Illinois (Lurigio, 2006). TASC and Loyola University Chicago collaborated on these publications as part of the Disproportionate Minority Confinement Workgroup, funded by the Illinois Criminal Justice Information Authority (ICJIA) and created in response to a 2000 Human Rights Watch (HRW) report that found Illinois led the country in the disproportionate incarceration of African American men for drug crimes, especially compared to White men convicted for the same classes of drug offenses (HRW, 2000). The work group convened to inform the public about drug-related sentencing disparities in Illinois and to encourage a dialogue among criminal justice professionals and politicians who could help remedy the problem.

Previous reports in this series indicated that the passage of onerous drug laws in Illinois led to increasingly large numbers of drug-related arrests, prosecutions, convictions, and incarcerations, mostly for Class-4 felony possession charges (Lurigio, 2003; 2006). For example, from 1994 to 2003, drug arrests increased 26 percent in Cook County, 22 percent in Chicago, and 49 percent in suburban Cook County. During the same period, the number of drug arrests in Illinois, outside Cook County, more than doubled from 264 to 561 per 100,000 residents (ICJIA, 2004). The number of people incarcerated for drug crimes in Illinois and across the country exploded from the 1980s to the early 2000s (Lurigio, 2003,

2006), heightening the problem of racial disparities in sentencing and calling attention to the need for sentencing reforms.

The present report consists of four sections, focusing on drug addiction, crime, drug treatment, and system reform. The first section describes drug abuse and dependence and discusses the types and effects of drugs, the addictive process, and the nature and extent of substance use disorders. The second section explains the basic categories of drug offenses, the federal schedule of illegal drugs, the relationship between drug use and crime, and the prevalence of drug use and substance use disorders in the general and correctional populations. The third section briefly discusses the types of treatments for addiction, summarizes evidence for the effectiveness of drug treatment, and reviews the principles of science-validated drug treatment, including the usefulness of coerced drug treatment for people under the control of the criminal justice system. The fourth and final section presents a comprehensive framework of drug-related justice reforms as an alternative to the prevailing criminalization model of addiction.

Drug Abuse and Dependence

Drug abuse and dependence disorders are chronic but treatable brain diseases, involving compulsive drug-seeking and -using behaviors that persist despite immediate or potentially harmful consequences for users and their families and communities. Drug abuse and dependence are serious threats to public health and safety, costing hundreds of billions of dollars in yearly healthcare expenditures, crime, poor work productivity, and job loss (Hoffman & Fromeke, 2007). For example, illegal drug use in the United States cost nearly 200 billion dollars in 2002; approximately two-thirds of the costs (129 billion) were economic losses attributable to people's inability to work because of drug-precipitated

illness, premature death, or incarceration. The treatment of healthcare problems of drug addicts cost 16 billion dollars, while drug-related criminal justice and welfare costs totaled 36 billion dollars in 2002 (Office of National Drug Control Policy, 2004). Addiction can also result in intangible costs, such as homelessness, academic failure, and troubled relationships, and is one of the most pervasive and intransigent mental health disorders in the world, affecting the thoughts, feelings, and behaviors of millions of people annually (World Health Organization, 2004).

Drug Effects and Classification

Drugs are psychoactive substances that change moods and behaviors by altering brain chemistry and function (Hyman & Malenka, 2001). Drugs of abuse include medically prescribed (e.g., barbiturates and pain relievers), legal (e.g., alcohol and nicotine), and illegal (e.g., marijuana and heroin) substances. Some drugs, such as alcohol, have been used since ancient times, whereas others, such as methamphetamines and designer drugs (e.g., Ecstasy), are relatively new. People consume drugs to feel good (some drugs produce euphoria, confidence, and relaxation), to keep from feeling bad (some drugs combat anxiety, depression, and hopelessness), to accelerate performance (some drugs sharpen attention and enhance physical strength and athletic prowess), and to experience altered sensory perceptions (some drugs cause visual, auditory, or tactile hallucinations) (National Institute on Drug Abuse [NIDA], 2007).

Drugs of abuse can be classified into five groups according to effects. The first class consists of stimulants, which increase alertness and decrease fatigue; examples include amphetamines, Benzedrine, caffeine, Dexedrine, ephedrine, and nicotine. The second class consists of depressants, which reduce tension, alleviate nervousness, and induce sedation.

Among these drugs are Nembutal, Seconal, Tunial, Veronal, Valium, and Xanax. The third class, hallucinogens, changes sensory perceptions; examples include cannabis, Lysergic Acid Diethylamide (LSD), Mescaline, Phencyclidine (PCP), and psilocybin. The fourth class consists of opiates, which induce sleep, euphoria, and relaxation as well as relieve pain and anxiety; opiates include codeine, heroin, opium, OxyContin, Percodan, and morphine. The fifth class consists of performance enhancers; they increase athletic strength and speed and stimulate the growth and recovery of skeletal muscles. Anadrol, Depo-Testosterone, Dianabol, and Winstrol are some examples of such performance enhancers (Abadinsky, 2007).

Drug abusers typically prefer one class of drugs over others. However, when they have difficulty obtaining their drug of choice, they often turn to other drugs in the same class that produce similar effects. Psychoactive drugs in the same class can be compared on the basis of their potency and efficacy. The potency of a drug is the amount that must be ingested to produce a desired effect whereas efficacy is a drug's ability to produce a desired effect regardless of dosage. Both the strength and the potency of a substance can determine an abuser's drug of choice as well as the drug's potential for abuse and dependence (see below) (NIDA, 2007).

The Addictive Process

Drug use can escalate to substance use disorders: abuse or dependence. The progression to uncontrolled use depends on several risk factors. For example, biological factors play a role in addiction; in other words, genetics can predispose a person to addictive behavior—a predisposition that is shared among close biological relatives. Scientists estimate

that genes account for nearly half of a person's vulnerability to a substance use disorder (NIDA, 2007).

Age of first use and psychiatric history are also important factors for explaining drug use problems. Younger users are more likely to become addicted because developing adolescent brains are more susceptible to a drug's ability to change brain chemistry and functions. Likewise, people with mental illness are also more likely to abuse or become dependent on drugs. In addition, a person's exposure to a parent's or a peer's use of drugs can increase his or her risk of addiction. The mode of drug ingestion can also raise the potential for abuse and dependence: a drug that is inhaled or injected is more addictive than one that is ingested orally. Inhalation and injection send the drug to the brain faster and produce more intense highs and lows. Drug-seeking behavior intensifies in response to the cycle of peaks and valleys that the user experiences (Hoffman & Fromeke, 2007).

Psychoactive drugs are thought to become addictive through their activation of the brain's mesocorticolimbic dopamine pathway, extending from the brain's ventral tegmental area to the nucleus accumbens to the frontal cortex. Drugs of abuse stimulate this pleasure circuit by increasing the amount of dopamine in the brain two- to ten-fold, creating an extremely pleasurable experience for users that compels them to repeat the incident. Drugs of abuse either mimic the effects of dopamine on neurotransmitters (i.e., they act as agonists) or block the reabsorption of dopamine so that it can continue to activate neurons (i.e., they act as antagonists). Eventually, the brain shuts down its own production of dopamine, causing the user to ingest the drug merely to stave off feelings of listlessness, depression, and other withdrawal symptoms. Drugs of abuse also affect the brain's frontal regions, impairing judgment and leading addicts to crave drugs even as the rewards of use steadily diminish.

Hence, relapses—a return to drug use after a period of abstinence—are common among people with substance use disorders and can be triggered by stress, mood changes, and cues that remind the abuser of the substance (Karch, 2007; NIDA, 2007).

Substance Use Disorders

Substance abuse and dependence disorders are diagnosed according to criteria in the American Psychiatric Association's Diagnostic and Statistical Manual IV-TR (American Psychiatric Association, 2007). A substance abuse disorder is diagnosed when drug use in the previous 12 months has led to significant distress and impairment in functioning and meets at least one of several diagnostic criteria—namely, failure to fulfill obligations at work, school, or home; recurring use of substances in dangerous situations (e.g., driving while intoxicated); recurring substance use-related criminal justice involvement; and continued substance use that leads to interpersonal conflicts.

A drug-dependence disorder—more serious than a drug-abuse disorder—is diagnosed when drug use in the previous 12 months has reached the level of abuse and meets at least three of seven criteria that include tolerance (i.e., increasing amounts of the drug must be taken to achieve desired effects), physical withdrawal (i.e., symptoms that accompany the cessation of drug use, such as tremors, chills, drug craving, restlessness, bone and muscle pain, sweating, and vomiting), and persistent failure to reduce drug consumption.

Prevalence of Drug Use and Substance Use Disorders

General population. The National Survey on Drug Use and Health assesses the prevalence of substance use and substance use disorders in the United States. In 2005, an estimated 20 million Americans age 12 or older (or 8 percent of the total population in this age group) reported having used an illicit substance in the previous month; marijuana was the

most commonly used drug (15 million), followed by cocaine (2 million), hallucinogens (1 million), methamphetamine (580,000), and heroin (166,000). Meanwhile, an estimated 22 million people age 12 or older were classified with a substance abuse or dependence problem (9 percent of the population). Among them, more than 3 million were classified with abuse of or dependence on both alcohol and illicit drugs; more than 3.5 million had abused or were dependent on illicit drugs but not alcohol; and more than 15 million had abused or were dependent on alcohol but not illicit drugs (Substance Abuse and Mental Health Services Administration, 2007).

In 2005, within the general population, the relative percentages of people who reported the use of different illicit drugs in their lifetime paralleled the percentages of people who reported the use of different illicit drugs during the past month. In other words, for both lifetime and past month use, marijuana was the most frequent illicit drug used, followed by crack or powder cocaine, hallucinogens, methamphetamine and heroin. For example, nearly half (46 percent) of people age 12 and older reported the lifetime use of any illicit substance, with marijuana as the most popular drug (40 percent), followed by powder or crack cocaine (17 percent), hallucinogens (14 percent), methamphetamine (4 percent) and heroin (2 percent).

Correctional population. The prevalence of drug use and substance use disorders is significantly higher in the criminal justice and correctional population than in the general population. In 2003, the Arrestee Drug Abuse Monitoring (ADAM) Program found that nearly two-thirds (median among 39 sites) of male arrestees tested positive for one or more of five illicit drugs at the time of arrest (marijuana, opiates, cocaine, methamphetamine, PCP). For example, in Chicago, 86 percent of male arrestees tested positive for one or more

of these drugs—53 percent tested positive for marijuana; 51 percent, for powder cocaine; 25 percent, for opiates; and 1 percent, for methamphetamine. Approximately half were assessed as heavy drug users (52 percent) or at risk of substance dependence (49 percent) (Zhang, 2003).

In 2004, 83 percent of state prisoners reported lifetime use of any illicit substance — 78 percent, marijuana use; 47 percent, cocaine or crack cocaine use; 33 percent, hallucinogen use; 29 percent, amphetamine or other stimulant use; 23 percent, heroin or other opiate use; and 21 percent, barbiturate or other depressant use (Mumola & Karberg, 2006). The percentages of drug use among jail detainees in 2002 indicate similar rates; specifically, 82 percent reported lifetime use of any drug, 76 percent, marijuana use, and 48 percent, cocaine or crack cocaine use. More than two-thirds of jail detainees were diagnosed with a substance use disorder; these diagnoses were highest among detainees convicted of burglary (Karberg & James, 2005).

In 2004, much larger percentages of state prisoners also reported past-month drug use than members of the general population. More than half of inmates (56 percent) indicated that they used drugs in the month before their current offense. The most commonly used drug was marijuana (40 percent), followed by cocaine (21 percent), methamphetamine (11 percent), heroin (8 percent), and hallucinogens (6 percent).

Several national surveys of adult prison inmates, jail detainees, and probationers have all shown that many were under the influence of drugs when they committed the offenses for which they had been most recently arrested. For example, more than half of state and federal prisoners in the late 1990s indicated they had been under the influence of alcohol or drugs when committing their offenses (Munola, 1999; Mumola & Bonczar, 1998). In 2004, a

combined total of 58 percent of state (32 percent) and federal (26 percent) prison inmates reported being under the influence of drugs when they committed the crime for which they had been most recently arrested. Being under the influence of drugs during the commission of a recent crime was most common among state inmates convicted of drug and property crimes and among federal inmates convicted of drug and violent crimes (Mumola & Karberg, 2006).

Jail detainees with mental health problems were more likely than those with no mental health problems to report drug use in the month before their recent arrests—60 percent versus 40 percent, respectively (Mumola & Karberg, 2006). Similarly, a study of prison inmates showed that substance use disorders were more common among those with mental health disorders than those with no mental health disorders—74 percent versus 56 percent, respectively (Mumola & Karberg, 2006). The use of illegal drugs was also found to be more common among prison inmates who reported a history of physical, emotional, or sexual abuse (Harlow, 1999).

Drugs and Crime

Schedule of Controlled Substances

Crime and illicit drug use, especially the use of narcotics (opiates, opiate derivatives, and cocaine), have been closely linked since the passage of the Harrison Act in 1914, which made the distribution of narcotics a federal felony offense. Prior to this act, narcotics were the basic ingredients in numerous nonprescription or patent medicines that claimed to cure a variety of symptoms and illnesses. The typical narcotics user then was a white, middle-aged woman (Musto, 1987). The Harrison Act profoundly influenced public perceptions about illicit drug use. Mostly because of the political climate surrounding this and other anti-drug

legislation, illicit drug use in the United States has been (and still is) viewed predominantly as a criminal justice instead of a public health problem (Massing, 1998). Since the introduction of drug-law enforcement strategies, policing activities have focused on young male narcotics users from minority groups (Musto, 1987).

In 1970, Congress passed the Controlled Substances Act as Title II of the Comprehensive Drug Abuse Prevention and Control Act. The purpose of the law was to place the manufacture, importation, distribution, and possession of certain psychoactive and other substances under federal authority and regulation. The legislation created five schedules (I-V) that categorize drugs according to their medical use and potential for abuse and are arranged in descending order of potential for abuse and ascending order of approved medical use in the United States. Schedule I drugs, such as heroin and Ecstasy, have no accepted medical use and a high potential for abuse while schedule V drugs have an accepted medical use (i.e., they are available only for medical purposes) and a low potential for abuse (e.g., Lomotil and Motofen, the brand names of medications used to treat diarrhea).

Types of Drug Crimes

Illegal drugs are involved in drug-defined, drug-related, and drug-induced crimes. Drug-defined offenses are violations of laws that prohibit the manufacture, distribution, possession, or sale of illegal substances (e.g., amphetamines, cocaine, heroin, or marijuana). Drug-related offenses result from an individual's need for money to purchase drugs (e.g., property crimes and prostitution) or are occasioned by conflicts inherent in the illicit drug trade (e.g., violence among competing drug dealers). The psychoactive effects of illicit substances (and alcohol) can encourage reckless or violent behaviors or result in drug- or

alcohol-induced offenses, such as driving under the influence and domestic battery. These crimes are drug-induced offenses (see below).

Drug-Crime Nexus

Overview. The association between drug use and crime is complex (White & Gorman, 2000). Studies have found no single, specific, or direct cause-effect relationship between drug use and criminal activity, which is neither an inevitable consequence of illicit drug use (apart from the illegal nature of drug use itself) nor a necessary or sufficient condition for criminal behavior. Many illegal drug users commit no other types of crimes (Nurco, 1998). An unknown number of illegal drug users—perhaps even dependent users—are able to maintain steady employment and stable relationships. Because drug use is an illegal and socially undesirable behavior, accurate, self-reported estimates of the size and nature of this hidden population are difficult to obtain from national prevalence surveys (Waldorf, Reinerman, & Murphy, 1993).

People can commit crimes while using illegal drugs without there being a causal connection between the two activities. Most crimes result from a variety of personal, situational, cultural, and economic factors; hence, even when drug use is a cause, it is more likely to be only one factor among many (White & Gorman, 2000). Therefore, no evidence suggests drug use alone leads inevitably to criminal activity. The same conclusion applies to the association between alcohol use and crime, which is also influenced by multiple factors (Lurigio & Swartz, 1999; Office of National Drug Control Policy, 1997). As White and Gorman (2000) aptly noted, “Just as there are many types of criminals and noncriminals among drug users, there are also many types of drug users and nonusers among criminals” (p. 187). Notwithstanding the complexity of the drug-crime connection, several models have

been proposed to explain the relationship between drug use and crime: the psychopharmacological model, the reciprocal or common-cause model, the economic-motivation model, and the systemic model (White & Gorman, 2000).

Psychopharmacological model. The psychopharmacological model posits that the direct effects of psychoactive drugs (e.g., disinhibition, cognitive deficits and distortions, paranoia) lead to criminal behavior, especially violence (Fagan, 1990; Goldstein, 1985). In this explanatory model, the side effects of chronic drug use, such as sleep deprivation, neuropsychological impairment, and withdrawal symptoms (e.g., irritability), can also increase the propensity toward violent or other illegal acts (Virkkunen & Linnslie, 1993). A survey of violent crime victims indicated that nearly 30 percent believed the offender was using drugs and/or alcohol at the time of the victimization (Bureau of Justice Statistics, 2007). Although little research has established a conclusive casual connection between violence and illicit drug use, including cocaine, heroin, and marijuana, numerous studies have linked alcohol use to violent behavior (White & Gorman, 2000).

Reciprocal or common-cause model. Contrary to common beliefs about the direction of the relationship between drug use and crime, the reciprocal or common-cause model posits that criminal involvement causes drug use by providing situations or environments that are conducive to drug use and sales (Collins, Hubbard, & Rachal, 1985). In this perspective, criminals use drugs either immediately before committing offenses to lower their anxiety or immediately after committing offenses to celebrate their success (Hamid, 1998; Wright & Decker, 1996). In general, the theory that crime precedes drug use suggests that drug use is simply another form of deviant behavior, with criminal involvement affording many opportunities for drug use (Lab, 1992).

Delinquent and criminal behaviors can predate drug use among juveniles (Johnson, O'Malley, & Eveland, 1978). For example, the National Youth Survey showed that minor delinquency led to alcohol consumption and more serious offenses, which led to marijuana and polydrug use (in that order). Minor delinquency preceded drug use in nearly all cases studied (Huizinga, Menard, & Elliott, 1989).

The relationship between drug use and crime can be bidirectional and mutually reinforcing; specifically, as people commit more income-generating crimes, they find it easier to buy drugs as "a consumer expenditure" (White & Gorman, 2000, p. 175). Consequently, as people use drugs more frequently, they are compelled to commit more crimes to support their growing addiction. According to this theory, drug use and crime are interrelated; the correlation between drug use and criminality lies at the intersection between addiction and criminal pursuits (Hamid, 1998).

For many youth, drug use and delinquency are not causally related in either direction. Instead, they are contemporaneous; both behaviors arise from common causes, such as social disaffection, poor relationships with parents, school failure, and deviant peers (Hamid, 1998; Inciardi, Horowitz, & Pottieger, 1993). Among adult offenders, the connection between drug use and crime can be explained by criminal subculture theory (Fagan, Weis, & Cheng, 1990; McLellan, Luborsky, Woody, O'Brien, & Kron, 1981). In this framework, members of criminal subcultures are described as self-indulgent, hedonistic, materialistic, and risk seeking (i.e., they are committed to living the "fast life") (White, 1990; Wright & Decker, 1996). For these individuals, drug use and crime operate along parallel lines and are components of a larger constellation of destructive behaviors that also include high-risk sexual practices (Inciardi, et al., 1993). Hence, illicit drug use and criminal activity often

occur simultaneously and are mutually reinforcing aspects of a deviant lifestyle (e.g., Ball, Shaffer, & Nurco, 1983; Collins & Messerschmidt, 1993).

Economic motivation model. The economic motivation model posits that drug users commit crimes to obtain money to purchase illegal substances (Goldstein, 1985). Three types of studies support an income-generating explanation for the drug-crime nexus: studies of the relationship between illegal income and drug purchases, studies of the relationship between drug use intensity and criminal activity, and studies of the effects of drug treatment on drug use and criminal activity (Lurigio & Swartz, 1999; White & Gorman, 2000). At the most intense levels of drug use, drugs and crime are directly and highly correlated (Lurigio & Swartz, 1999).

Although substance use itself is not necessarily the cause of criminal behavior, as discussed earlier, the need for money to purchase drugs can certainly be a motivating factor for criminally active drug users (Lurigio & Swartz, 1999). Illegal drug use intensifies criminal activity among crime-prone individuals. As illegal drug use increases in frequency and amount, so does criminal behavior (Anglin & Speckart, 1988); conversely, as offenders' drug use decreases, so does the number of crimes they commit. Thus, serious drug use can amplify and perpetuate pre-existing criminal activity (Wright & Decker, 1996). For example, a study of heroin-dependent people found that their criminal activities decreased by more than 80 percent during the months and years in which they refrained from the use of the drug and other opiates (Ball, Rosen, Flueck, & Nurco, 1981).

The annual National Youth Survey found that juveniles who commit serious crimes are significantly more likely to use drugs than juveniles who commit minor crimes or no crimes at all (Johnson, Wish, Schmeidler, & Huizinga, 1993). Other long-term studies of

youth have also found that delinquents who commit more serious offenses are heavier drug users than those who commit less serious offenses (Elliot, Huizinga, & Ageton, 1985). Consistent with research on the relationship between drugs and crime among youth, a survey of adult drug users revealed that they had engaged in numerous criminal activities—excluding drug-law violations—in the 90 days before they were interviewed for the study (Inciardi, McBride, McCoy, & Chitwood, 1995).

Investigators have shown that offenders' income from property crime increases proportionately with their drug use (Ball, et al., 1981). In one study, heroin users reported that 90 cents of every illegal dollar they earned was spent on drug purchases (Goldman, 1981). Other researchers have found a direct relationship between illegal income and drug spending among cocaine users (Spunt, Goldstein, Bellucci, & Miller, 1990). The need to generate an income to purchase illegal drugs often leads to prostitution among drug-addicted women; estimates suggest that between 40 and 70 percent of female narcotic addicts maintain their drug habits by earning money through the sex trade (Erickson & Watson, 1990; McBride & McCoy, 1993). The exchange of sex for drugs seems to be especially common among women who use crack cocaine (McBride & Inciardi, 1990).

The propensity for crime-prone, drug-using people to commit property or violent crimes might be expressed only after they cross the threshold from use to abuse or dependence. For example, criminal activity is substantially greater among frequent drug and polydrug users (i.e., users of two or more substances at the same time) than among sporadic drug users or nonusers (Wexler, Lipton, & Johnson, 1988). Thus, drug-using offenders, especially those with substance abuse and dependence problems, commit both a greater number and a greater variety of income-generating crimes as well as engage in higher rates

of crimes than offenders without drug-use problems (Dembo, Williams, & Schmeidler, 1993).

In 2004, among all state and federal prison inmates nationwide, nearly 20 percent reported that they had committed their current offense to obtain money to buy drugs. State prisoners who committed property (30 percent) or drug crimes (26 percent) were more likely than those who committed violent (10 percent) or public-order crimes (7 percent) to report that they committed their current crimes to obtain money to purchase drugs (Mumola & Karberg, 2006). One quarter of convicted jail detainees who had been convicted of property or drug offenses reported that they committed their current crimes to obtain money to purchase drugs, compared to 5 percent each of jail detainees who were convicted of violent or public-order offenses (Karberg & James, 2005).

Systemic model. The systemic violence of the drug trade was first recognized as a serious problem in 1985 when crack cocaine sales became widespread in major metropolitan areas such as New York City and Washington, D.C. Well-armed and violent drug dealers led the struggle to protect and gain control over initially unstable, highly lucrative drug markets. At that time, the proliferation of automatic weapons made drug violence even more lethal. When the drug markets stabilized, homicide rates fell in most major cities (Lemmer, Bensinger, & Lurigio, in press).

Drug trafficking and violence are associated in several ways. The violence that accompanies illicit drug use can occur because of conflicts that stem from competition among drug sellers for drug markets and customers. Public drug selling in particular is associated with high rates of violent crime. Furthermore, disputes and “rip offs” in drug-cash transactions can erupt among individuals involved in illegal drug markets; drug traffickers

frequently use violence to resolve such conflicts. Moreover, locations where street drug markets proliferate tend to be economically and socially disadvantaged; legal and social controls against violence in such areas tend to be ineffective (Goldstein, 1985). In 2005, the Federal Bureau of Investigation reported that of the homicides in which the circumstances were known, 4 percent were designated as drug-related murders that occurred during a narcotics felony, such as drug trafficking or manufacturing (Federal Bureau of Investigation, 2005). Other types of violence are a direct result or byproduct of the illegal drug trade, including the robbery of drug sellers who then retaliate, the killing of drug informants and witnesses, and violent altercations between buyers and sellers over debts or the quality of purchased drugs (Lyman & Potter, 2003).

Drug Treatment: Types, Effectiveness, and Principles

Types of Drug Treatment: A Brief Overview

As mentioned previously in this report, addiction is a recurring disease that often requires repeated episodes of treatment. The ultimate goal of treatment is sustained abstinence. During the process of recovery, treatment is designed to improve overall functioning while minimizing the social and medical consequences of substance abuse and dependence disorders. The recovery process begins with treatment and progresses as addicts gain insights into their uncontrolled use of alcohol and drugs and start to manage their thoughts, feelings, and behaviors (Center for Health and Justice, 2006).

The course of treatment for drug-dependent persons follows a general therapeutic process and lies on a continuum of care (NIDA, 2006b). Drug treatment encompasses a broad range of services, including detoxification, educational and vocational training, urine testing, counseling, HIV education and prevention, life and interpersonal skills training, psychiatric

care, pharmacotherapy, psychotherapy, relapse prevention strategies, and self-help groups (see section on drug treatment principles below) (Anglin & Hser, 1990; Hoffman & Fromeke, 2007; Peters, 1993). Depending on the nature and severity of the addiction and an individual's progress toward recovery, treatment can occur at various levels and in diverse settings: inpatient, intensive outpatient, outpatient, or sobriety maintenance (Center for Health and Justice, 2006). NIDA (2006b) classifies treatment into two broad categories: pharmacological and behavioral.

The use of medication in recovery typically begins during detoxification. Persons who are physically dependent on alcohol and drugs are placed on medications to safely alleviate the painful symptoms and control the adverse physical consequences of withdrawal. Medication is used in the treatment and relapse prevention process to “help re-establish normal brain function and to prevent relapse and diminish [drug] cravings” (NIDA, 2006b, p. 3). For example, buprenorphine and methadone effectively treat opiate addiction by blocking withdrawal symptoms and reducing drug cravings. The passage of the Drug Addiction Treatment Act in 2000, permits physicians to prescribe these medications in medical settings; previously, such medications could be dispensed only in specialized drug treatment clinics. Promising new medications for drug addiction are pending FDA approval, including Baclofen (for cocaine addiction), Nalmefene (for opiate addiction), Topiramate (for alcohol, opiate, and cocaine addiction), and Disulfiram (for cocaine addiction [although for many years used for alcohol addiction]) (Hoffman & Fromeke, 2007).

Behavioral therapy consists of interventions designed to change addicts' attitudes and behaviors as well as help them acquire the skills and competencies they need to avoid relapses. Several behavioral approaches have proved successful in treating addicts—used by

themselves or in combination with medications. The most common are cognitive behavioral therapy (helps addicts avoid relapse triggers), multidimensional family therapy (focuses on adolescents and their peers and family members), motivational enhancement therapy (capitalizes on addicts' readiness to change their behaviors and begin treatment), and motivational incentive therapy (employs positive reinforcement and contingency management techniques to promote abstinence) (NIDA, 2006b).

Drug Treatment Studies

Abundant research demonstrates that drug treatment reduces illegal drug use, crime, and recidivism in the general and correctional population (Anglin & Hser, 1990; Anglin et al., 1996; Gerstein & Harwood, 1990; Office of Technology Assessment, 1990). Since the 1960s, numerous studies at the local, state, and federal levels have shown that drug treatment works (Lurigio, 2000). The best research on drug treatment consists of large-scale, federally funded studies that involve large samples of participants and employ longitudinal designs and a comprehensive range of outcome measures. These studies have provided the most compelling evidence that addiction is a treatable disease and have identified the principles of drug treatment that characterize the most useful and effective programs (see below).

Large-Scale Studies of Drug Treatment

Three large-scale, multisite investigations, funded by NIDA, strongly support the conclusion that drug treatment works: the Drug Abuse Reporting Program (DARP), the Treatment Outcome Prospective Study (TOPS), and the Drug Abuse Treatment Outcome Study (DATOS). These evaluations of community-based treatment have contributed greatly to our knowledge about the benefits of drug treatment and significantly influenced drug treatment policies, programs, and research (Gerstein & Harwood, 1990; McLellan, Metzger;

Alterman, Cornish, & Urschel, 1992; Simpson, Chatham, & Brown, 1995). As Lillie-Blanton (1998) stated, "these studies are generally considered by the research community to be the major evaluations of drug abuse treatment effectiveness, and much of what is known about 'typical' drug abuse treatment outcomes comes from these studies" (p. 3).

Drug Abuse Reporting Program. DARP involved more than 44,000 persons admitted to drug treatment between 1969 and 1973. Participants were in 52 federally funded treatment programs that administered four types of treatment modalities: methadone maintenance, therapeutic communities, outpatient drug-free treatment, and detoxification. Conducted by researchers at Texas Christian University, data were collected through client interviews with treated clients and persons who applied for treatment but never returned for services (intake-only clients). Information was also collected from clients' progress reports and other program records. Follow-up intervals occurred from 3 to 12 years after treatment. "The DARP findings have been widely used to support continued public funding of drug-abuse treatments and to influence federal drug policy in the United States" (DARP, 2007, p.3)

DARP found that clients' daily use of opiates declined from 100 percent prior to treatment to 36 percent in the first year after treatment and 24 percent 3 years after treatment. In the DARP study, addicts who were in treatment for more than 90 days were significantly less likely to use drugs in the year after treatment than those who were in treatment for fewer than 90 days (Simpson & Sells, 1982). Outpatient drug-free treatment, methadone maintenance, and therapeutic communities were equally effective at producing positive outcomes; clients in detoxification programs or those who dropped out of treatment within 3 months showed no positive outcomes. Moreover, among drug treatment clients in general, arrest rates declined 74 percent and employment rates increased 24 percent after treatment.

Twelve years after treatment, daily heroin use remained 74 percent lower (Simpson, 1993; Simpson & Sells, 1982, 1990).

Approximately three-fourths of the opiate addicts studied in DARP reported at least one relapse to daily use after they had experienced a period of sobriety. The highest percentage of addicts (85%) who quit using drugs, did so while in treatment. The most common reasons reported for staying sober referred primarily to the adverse consequences of addiction. For example, 83 percent of the treatment participants indicated that they quit because they were “tired of the hustle,” 56 percent, because they were “afraid of going to jail,” and 54 percent, because they had to “meet family responsibilities” (Simpson & Sells, 1990).

Treatment Outcome Prospective Study. TOPS involved 11,000 people admitted from 1979 through 1981 to 41 drug treatment programs in 10 cities. Three types of programs were examined—outpatient drug free, residential, and methadone maintenance—and clients were followed 1, 2, and 3 to 5 years after treatment. TOPS found that drug treatment reduced drug use for as many as 5 years after a single treatment episode; different treatment modalities appeared to be equally effective in helping drug users recover. Declines in drug use were most dramatic among heroin and cocaine users (Hubbard et al., 1989)

TOPS also produced solid evidence that drug treatment reduces drug users' criminal activities. Three to 5 years after treatment, the proportion of clients engaged in pretreatment predatory crimes decreased by one-third to one-half among the three treatment modalities. Moreover, TOPS demonstrated that drug treatment is cost-effective and cost-beneficial; data showed that the costs of treatment were recouped largely during treatment and that additional cost savings accrued with reductions in post-treatment drug use. Criminal justice savings were

significant. Researchers reported a 30 percent decline in costs to victims of drug-related crimes and a 24 percent decline in costs to the criminal justice system (Harwood, Collins, Hubbard, Marsden, & Rachal, 1988). TOPS' principal investigators, Hubbard et al. (1989), concluded that "publicly funded drug abuse treatment is essential to our national effort to reduce the demand for drugs and its related social and economic costs" (p. 12)

Drug Abuse Treatment Outcome Study. DATOS, the third NIDA-funded comprehensive evaluation of drug abuse treatment (Leshner, 1997), followed a sample of 10,000 clients in 96 programs located in 11 large- and medium-sized cities in the United States for 36 months, from 1991 through 1993. DATOS participants were selected from four treatment programs: outpatient drug-free, outpatient methadone maintenance, short-term inpatient, and long-term residential. According to Leshner (1997), DATOS was "the first national study of treatment outcomes since the AIDS epidemic began, the first to examine outcomes for community-based cocaine abuse treatment, the first since the transition to NIDA block grants in 1981, and the first to include public and private short-term inpatient hospitals as a treatment modality" (p. 211) (also see Hubbard, Craddock, Flynn, Anderson, & Etheridge, 1997).

DATOS found that a larger percentage of drug-free outpatients than similar TOPS participants were involved in the criminal justice system and that clients with psychiatric disorders were more likely to be polydrug users (Flynn, Craddock, Luckey, Hubbard, & Dunteman, 1996). Drug treatment significantly reduced drug use from pretreatment baseline levels to 12-month post-treatment levels for persons addicted to heroin, cocaine, and other types of drugs (Hubbard, et al., 1997; Simpson, Joe, & Brown, 1997). DATOS also found that ancillary services for addicts had declined, but drug treatment programs were delivering core services (i.e., assessment, treatment, and aftercare) more

effectively than they had in the DARP and TOPS studies (Etheridge, Hubbard, Anderson, Craddock, & Flynn, 1997).

In a five-year study of cocaine addicts, DATOS researchers reported that treatment reduced cocaine use from 100 percent at intake to 25 percent 5 years after discharge from treatment. Illegal activity declined from 40 percent in year 1 post-treatment to 25 percent in year 5 post-treatment. In general, the study found that clients with more serious drug and psychosocial problems at intake had poorer outcomes in treatment. However, more exposure to treatment was related to more positive long-term outcomes (Simpson, Joe, & Broome, 2002).

National Treatment Improvement Evaluation Study

Another federally funded, national evaluation of drug treatment was the National Treatment Improvement Evaluation Study (NTIES). Funded by the Center for Substance Abuse Treatment and conducted by the National Opinion Research Center and the Research Triangle Institute, NTIES used a highly rigorous methodology and extensive outcome measures. The purpose of the project was to investigate the impact of drug treatment on more than 4,000 clients in publicly supported drug treatment programs across the country.

NTIES found that drug treatment had numerous favorable effects on clients, including reductions in drug use. For example, one year after treatment, clients' use of heroin dropped from 73 to 38 percent while cocaine use dropped from 40 to 18 percent. The study also found post-treatment reductions in arrests rates, self-reported criminal activities, drug selling, and illegal earnings. Among treatment participants, homelessness, unemployment, and welfare dependency declined while overall physical and mental health problems became less severe. Moreover, participants engaged in safer sex practices after drug treatment than before;

specifically, the percentage of participants who reported having sex for money declined 56 percent, and the number who had sex with an intravenous drug user declined 51 percent (Substance Abuse and Mental Health Services Administration, 2007).

Services Research Outcome Study

The Services Research Outcome Study (SROS), conducted by the Substance Abuse and Mental Health Services Administration (SAMHSA), was the first nationally representative study of drug treatment in the United States. SROS involved 1,800 participants in inpatient, outpatient, and residential care who were discharged in 1990 from a random sample of 100 facilities in rural, suburban, and urban areas nationwide. Five years after treatment, participants were interviewed; the results showed consistent reductions in drug use—namely, 45 percent in cocaine use, 28 percent in marijuana use, 17 percent in crack cocaine use, and 14 percent in alcohol and heroin use. The study also reported 23 to 38 percent reductions in criminal activity, such as burglary, the selling of drugs, and prostitution. Finally, after completing drug treatment, participants were less likely to be involved in physically abusive relationships or attempt suicide and were more likely to live in secure housing (SAMHSA, 1998).

Treatment in Correctional Settings

Correctional programs are often the only treatment opportunities for addicted offenders who otherwise would not have access to such services (Wexler, Williams, Early, & Trotman, 1996). Drug abuse programs in jails and prisons primarily treat offenders with the most serious substance abuse disorders; such programs have several advantages over community-based treatment programs for addicted offenders (Peters & May 1992; Wexler, 1995). For example, the participants in jail- and prison-based drug treatment programs have

relatively low drop-out rates and receive good-time incentives for their attendance in the program—a strong motivator for retention (Tunis, 1995).

Drug treatment programs in correctional settings are generally located in the safest and least-crowded areas in jails and prisons. As a result, even offenders with low motivation for drug treatment are likely to remain in these programs long enough to benefit from the experience. In addition, jail and prison inmates are already being housed; hence, residential treatment, which is expensive provided on the outside, costs much less per capita when implemented in jails or prisons. Finally, inmates in drug treatment are less likely to break rules or to be involved in violent altercations than those in the general prison or jail population. Therefore, jail and prison drug treatment programs help administrators better manage and control their inmate populations (Early, 1998).

Drug treatment in prisons. In 1997, slightly more than one-third of state prisoners nationwide reported previous participation in substance abuse treatment (e.g., detoxification, in-patient treatment, or professional counseling), while more than 40 percent reported previous participation in other types of substance abuse interventions (e.g., educational awareness sessions, self-help groups, or peer counseling activities). Nearly 60 percent indicated that they had previously participated in either or both types of programs. Approximately half (48%) indicated that they had received drug treatment or other types of addiction-related services while under correctional supervision; 32 percent indicated that they were participating in drug treatment or other types of services while currently incarcerated.

Participation in drug-related interventions of any kind was higher among prison inmates who reported that they were under the influence of drugs or alcohol at the time of their most recent arrest as well as those who had six months or less to serve on their current

prison sentence. Prison inmates with the highest percentages of participation in current drug treatment or other drug-related programs reported being under the influence of drugs or alcohol at the time of their most recent offense. Within that group, 18 percent were receiving current treatment, 32 percent were receiving other drug-related services, and 39 percent were receiving either or both (Mumola, 1999).

From 1991 to 1999, the percentage of inmates who participated in prison-based treatment during their present incarceration declined significantly from 24 to only 10 percent. Among state prisoners who reported regular drug use prior to incarceration, 34 percent indicated that they were currently participating in prison-based drug treatment in 1991; in 1997, that percentage dropped to 14 percent. However, from 1991 to 1997, the percentage of inmates who reported present involvement in other types of drug programs increased slightly from 15 to 20 percent among all inmates, and from 22 to 26 percent among inmates who regularly used drugs (Mumola, 1999).

Therapeutic community. One of the most common, studied, and successful prison-based drug treatment programs is the therapeutic community (TC) (Mitchell, MacKenzie, & Wilson, 2006). The term “therapeutic community” has been used to describe treatment in various drug-free residential settings, including prisons, jails, camps, ranches, group homes, and special schools, and for various conditions, including psychiatric problems, alcoholism, and drug abuse and dependence disorders (Lipton 1998). In the United States, TCs focus mostly on the rehabilitation of drug addicts in prisons and secured community-based settings. The typical TC participant has multiple addictions, comorbid psychiatric disorders, a history of criminal involvement, and a paucity of human and social capital (NIDA, 2002).

TC interventions are directed at the whole person rather than concentrating on the individual's criminal tendencies or drug abuse problems (NIDA, 2002). The key instrument or agent of change is the community itself and "recovery involves persons interacting with the community in a process of 'curing' themselves" and taking responsibility for their own rehabilitation (Lipton, 1998, p. 34). TCs are administered by a hierarchical "community of peers," role models, or surrogate family members not by clinicians or other professionals. The intensive and highly regimented atmosphere of the TC is permeated by immutable behavioral norms that encourage resocialization, total lifestyle changes, and correctives in residents' thinking, feeling, and moral decision-making. The hierarchical structure of the TC helps develop residents' self-discipline and control, and redirects their energies away from criminal behavior and drug use and toward more productive prosocial pursuits, such as sporting, religious, or work activities (Lipton, 1998).

The TC's daily schedule is regimented; residents' time is spent participating in group sessions, community meetings and seminars, vocational and educational classes, and fulfilling communal responsibilities, such as maintaining the physical and programmatic integrity of the community. Treatment in the TC usually follows invariant stages, namely, induction (i.e., acclimating to the environment, learning the rules of the community, and committing to the recovery process), primary treatment (i.e., participating in social, psychological, and educational interventions), and re-entry and structured aftercare services (i.e., preparing for transition to larger society) (NIDA, 2002). "Elements of TCs (e.g., encounter groups, rule setting and rule enforcement, rewards, and work) allow clients to learn—often for the first time—interpersonal, educational, and vocational skills and to

develop psychological, moral and social strengths” (Office of National Drug Control Policy, 1996, p.10).

Several investigations in Delaware, Texas, and California have found that, compared to control samples, graduates of TCs have lower rates of rearrest, relapse, and reincarceration (Knight, Simpson, & Hiller, 1999; Martin, Butzin, Saum, & Inciardi, 1999; Wexler, Melnick, Lowe, & Peters, 1999). Delaware’s KEY/CREST program is widely regarded as an exemplary prison-based TC. The program consists of three major stages of care: primary (i.e., orientation and treatment services in the institution), secondary (i.e., a transitional services in a work-release setting), and tertiary (i.e., aftercare services and reentry planning in the community in a supervisory program).

An evaluation of KEY/CREST, which followed a cohort of 690 residents for five years post-release, found that participants were more likely than controls to remain drug- and arrest-free. The success rates in avoiding criminal recidivism and relapse to illicit drug use were highest for program completers who had aftercare services, followed by program completers with no aftercare services, program drop-outs, and no-treatment control group inmates (Inciardi, Martin, & Butzin, 2004). However, in a three-year follow-up study of TC participants and a comparison group of inmates in a prison-based TC in Pennsylvania, Welsh (2007) found that the program was effective in reducing rearrest and reincarceration rates but not relapse rates. Furthermore, he reported that post-release employment reduced rearrests for older, but not younger, ex-offenders.

Drug treatment in jails. In 2002, nearly two-thirds (63%) of substance-abusing or dependent jail inmates reported that they were presently participating in drug treatment programs; 30 percent were in residential facilities, professional counseling sessions, and

detoxification units or in other drug-related interventions, and 36 percent were in educational classes or self-help groups or both. Previous participation in drug treatment and other drug-related services was higher for substance-dependent jail inmates (63%) than for substance-abusing jail inmates (52%). Irrespective of whether they were drug-dependent or -abusing, jail inmates with previous treatment experiences in correctional settings were more likely to receive such services while on probation or parole (25%) than while in jail or prison (20%). From 1996 to 2002, the percentage of jail inmates reporting participation in drug programs in correctional settings increased slightly in three categories of substance use: from 39 to 47 percent among regular users, from 39 to 47 percent among those who used in the month before their most recent offense, and from 43 to 52 percent among those who were using at the time of their most recent offense (Karberg & James, 2005). At the preadjudication stage, the drug treatment participation of jail detainees can be abruptly terminated when their cases are called to court for disposition. In those instances, treatment is terminated on the basis of administrative rather than clinical considerations and can be highly disruptive to the recovery process. Most problematic is that such truncated treatment is rarely followed by appropriate or timely community-based care (Lurigio & Swartz, 1994).

Drug treatment in probation. In 1995, more than one in five probationers (22%) reported previous participation in drug treatment. The most common types of services were outpatient care (17%) and self-help groups (14%); the least common were crisis intervention and inpatient care (8% each). The highest percentages of probationers with drug treatment histories reported that they used drugs in the month prior to their most recent offense (51%), followed by those who used drug regularly (46%), and those who used drugs ever (32%).

Less than one in five probationers (17%) indicated that they were currently participating in probation-based drug treatment or other type of addiction-related program. Half of all probationers reported that they were tested for drug use during their present sentence. The percentage of probationers in current drug treatment was highest among those who reported that they had ever used a needle to inject drugs (62%), followed by those who used drugs at the time of their most recent offense (53%), those who committed their most recent offense to get money to buy drugs (48%), those who used drugs in the month before their most recent offense (42%), those who used drugs regularly (36%), and those who used drugs (25%) ever (Mumola & Bonczar, 1998).

Cost-Benefits of Drug Treatment

Numerous studies have demonstrated the cost-effectiveness and cost-benefits of drug treatment (Center for Health and Justice, 2006). The economic benefits of drug treatment accrue mostly from reductions in incarceration, criminal victimization, medical treatment, and lost wages (Hoffman & Fromeke, 2007). A recent study in California found that the state saved 7,500 dollars in aggregate reductions in crime and incarceration for every person treated (Ettner, Huang, Evans, Ash, Hardy, Jourabchi, & Hser, 2007). Similarly, another study found that every dollar spent on drug treatment resulted in an average of 7 dollars in savings stemming from decreased crime and its corollaries (e.g., increased employment and major reductions in healthcare expenditures) (McCarthy, 2007).

In an extensive review of hundreds of studies of drug treatment programs, Belenko, Patapis, and French (2005) found drug treatment to be effective in reducing drug use and crime while improving the health and social functioning of persons in recovery, especially those who participated in programs with evidence-based practices. Furthermore, the authors

found that drug treatment yielded robust economic benefits arising from savings in the costs of crime, incarceration, and victimization as well as reductions in health care expenses and other medical costs. Belenko et al. concluded that “it is clear from research on the economic impacts of substance abuse and addiction on health, crime, social stability, and community well-being that the costs to society of *not* (authors’ italics) treating persons with substance abuse problems would be quite substantial” (p. 58).

Principles of Effective Drug Treatment

Several basic principles underlie and characterize successful drug treatment practices. These principles have largely been derived from studies of whether and how drug treatment works to change addicts’ behaviors; many of these studies were discussed earlier in this report (Anglin et al., 1996, 1998; Prendergast, Anglin, & Wellisch, 1995; Taxman & Spinner, 1997). With funding and guidance from NIDA, researchers explored the implementation of drug treatment programs and their effects on a variety of populations. Their aggregate findings led to the identification of core program elements that assist addicts in achieving sobriety and improving their lives in many areas of functioning (NIDA, 1999; 2006a). The following is a synthesis and distillation of NIDA’s principles of effective drug-treatment programs.

Drug Assessment and Treatment Matching

The first principle is that no single drug treatment regimen is useful for all addicts (NIDA, 1999). To develop successful treatment approaches, tailored to each client’s addiction and service needs, clinical evaluations must be conducted to assess the specific nature and extent of clients’ substance use disorders. The fundamental clinical question is what type of treatment or intervention is most appropriate for what type of client, in which type of setting,

and for what length of time (NIDA, 1999).

A crucial first step in the formulation of an individualized treatment plan is the use of comprehensive and standardized assessment protocols that collect accurate information about a client's current and previous drug use; criminal history; medical conditions; drug and psychiatric treatment experiences; education and employment records; cognitive, psychological, and interpersonal adjustment; and social support networks (Anglin et al., 1996). Before treatment begins, a client's readiness and motivation for change must also be thoroughly evaluated (NIDA, 1999).

At intake, clients should be tested for communicable diseases (e.g., HIV/AIDS, tuberculosis, and Hepatitis B and C), which are significantly more prevalent among people who use drugs (NIDA, 2006a). If they test positive, clients should be counseled on treatment options and the importance of avoiding behaviors that can spread infections to others. If they test negative, clients should be counseled on ways to prevent infection through safer sex and drug-use practices (so-called harm reduction strategies) as they strive for recovery.

Following assessment, clients' problems and needs should be matched to treatment settings and strategies (NIDA, 1999). Addicts who openly acknowledge their drug problems and commit fully to the recovery process can benefit greatly from drug treatment and adjunctive social and medical services (Simpson, 1998b). Repeated, unfavorable consequences from substance abuse can lead addicts to realize that professional interventions are necessary to achieve sobriety (Hoffman & Fromeke, 2007). Thus, addicts with extensive drug use and criminal histories are often amenable to treatment (Anglin et al., 1996).

Clients in the early stages of drug use can also be excellent candidates for drug treatment programs (Center for Substance Abuse Treatment, 1994). With the implementation

of proper assessment and treatment-matching techniques, most persons with substance use disorders can be helped by treatment at any juncture in their addiction careers. The old adage that drug abusers must “hit rock bottom” before they can begin recovery is supported by neither research nor clinical experience (Hoffman & Fromeke, 2007).

Availability and Length of Participation

The second principle is that effective treatment takes time and must be highly accessible and readily available to take advantage of addicts’ readiness for change (NIDA, 1999). People with substance use disorders can lose their interest and willingness to enter treatment when they languish on waiting lists for services. Drug users must break through their denial and hesitancy and become motivated in the early stages of the recovery process, paving the way for long-term care (Anglin et al., 1996). Motivational interviewing techniques can be quite effective in encouraging engagement in the initial phases of treatment (NIDA, 2006a).

Treatment takes time. Addiction is an intractable disease and cannot be overcome with brief interventions. Hence, the goal of treatment should be the management of addiction, not its cure. Many studies show that the length of stay in treatment is positively related to outcomes (De Leon, 1991; Simpson, 1979, 1998a; Simpson, Joe, Lehman, & Sells, 1986). However, clients frequently leave drug treatment prematurely; therefore, different strategies must be used to engage and retain addicts in services long enough for them to gain therapeutic benefit from their participation. The threshold for achieving significant improvement in treatment is generally reached in three months, and several episodes of treatment, aftercare, and relapse are expected before abstinence is attained (Gendreau, 1996; Wexler, Falkin, Lipton, & Rosenblum, 1992).

Fletcher, Tims, and Brown (1997) observed that the "association between treatment duration and outcomes is strong enough to warrant research simply to improve retention." Furthermore, they stated that "time itself is a surrogate measure that might represent, for example, motivation, willingness to adhere to treatment, a process of behavioral change, or the ability of the practitioner to engage the patient" (p. 223). Therefore, favorable treatment outcomes depend not only on time spent in treatment but also on what happens during treatment to change clients' behaviors (Anglin et al., 1996).

Recovery is a nonlinear process. Addicts learn to eschew old patterns of thinking (e.g., criminogenic attitudes and beliefs) and behaving and to replace them with new problem-solving skills for reducing cravings, avoiding relapse triggers (i.e., places, persons, and paraphernalia that remind the addict of drug use), and re-establishing healthy interpersonal relationships. Recovery involves steady progress toward a responsible, abstinent, and productive life (NIDA, 2006a).

Treatment Structure and Coercion

The third principle is that treatment should be both highly structured and adaptable, involving medical detoxification for persons with a substance dependence disorder and a contingency management component for all clients. Detoxification safely alleviates the acute physical symptoms of withdrawal and is a necessary (but not sufficient) precursor to successful drug treatment. Under a physician's care, detoxification is conducted in a hospital or residential setting and lasts from three to five days (Hoffman & Fromeke, 2007; NIDA, 1999). After a client becomes stabilized through detoxification, progressive incentives can be incorporated into treatment. Different types of contingency contracts include positive and negative reinforcements to encourage addicts to remain drug free and engaged in the therapeutic

process (Onken, Blain, & Boren, 1997). Voucher-based incentives can be combined with nonmonetary rewards, such as verbal recognition, reward ceremonies, and certificates of completion (NIDA, 2006a).

Graduated sanctions should be leveled against participants who do not adhere to program regulations, and rewards should be given to those who do. To be most effective, positive and negative sanctions must be clearly specified, explicitly tied to behaviors, and swiftly administered (NIDA, 2006a). They should also be progressive and commensurate with the severity of clients' rule breaking or their degree of improvement. Clients should be monitored throughout treatment to overcome their struggles to identify and avoid the triggers for relapse. The continued use of drugs should be tracked through urinalysis or other objective drug tests (NIDA, 2006a).

Treatment success depends on the adaptability of services in meeting addicts' changing life circumstances (McLellan, Arndt, Metzger, Woody, & O'Brien, 1993). Interventions are most effective when they are responsive to addicts' evolving needs at different points in the recovery process (Anglin et al., 1996). Treatment and service plans should be continually renewed and modified throughout recovery. They must always be sensitive and responsive to differences in clients' age, gender, race, ethnicity, and sexual orientation. Practitioners should be skilled at combining several modalities, including medication, individual and group psychotherapy, family interventions, childcare assistance, and legal services.

Medications, such as methadone, LAAM, Naltrexone, and bupropion, can be essential aspects of care, especially when administered with psychotherapy and other supportive interventions (NIDA, 1999). In addition, "self help can complement and extend the effects of

professional treatment” (NIDA, 1999, p. 20). Self-help interventions include 12-step programs (e.g., Alcoholics Anonymous, Narcotics Anonymous, and Cocaine Anonymous) (NIDA, 1999).

Drug treatment programs must be flexible in their responses to relapses—expected, not exceptional, setbacks on the pathway to sobriety. Relapses can occur even after prolonged periods of abstinence, although addicts are most vulnerable to relapse in the first three to six months after treatment (Hoffman & Fromeke, 2007; NIDA, 2006a). Occasional drug use by participants, which minimally disrupts the recovery process, should be handled immediately through placement in detoxification, exposure to graduated sanctions, or return to a higher level of care. As a rule, one or two minor relapses should not result in participants being summarily dropped from drug treatment programs as the termination of treatment after relapse is ill-advised, unjustified, and unethical from a medical standpoint (Hoffman & Fromeke, 2007).

Addicts who are coerced into drug treatment by legal mandates are just as successful in recovery as those who enter treatment programs voluntarily, and legally coerced participants typically remain in treatment programs longer (Anglin et al., 1990). Whenever possible, legal mandates should be used to order offenders to participate in drug treatment programs and to hold them accountable for their progress in recovery (NIDA, 2006a).

Coercion involves entering and complying with drug treatment or facing legal consequences. Participation is mandatory and noncompliance can result in sanctions, such as incarceration, the loss of child custody rights, or more stringent conditions of community supervision. Coerced treatment can be mandated at various stages of the criminal justice process and imposed with varying degrees of restrictiveness. Judges can offer a defendant the

choice between treatment and incarceration. Probation officers can recommend and enforce treatment as a court-ordered condition of probation. Prison administrators can place inmates involuntarily into drug treatment programs (Lurigio, 2002).

A willingness to enter treatment is not a prerequisite for success (Hoffman & Fromeke, 2007). Legal coercion compels addicts make decisions that they might not be able to make on their own. Coercion is leverage that keeps addicted offenders in treatment long enough to benefit from the positive effects of a supportive therapeutic experience and become intrinsically motivated to remain and succeed in care. In short, coerced treatment provides services for addicts that would otherwise have been unavailable to them (Lurigio, 2002).

Evidence-Based Treatment

The fourth principle is that drug treatment must be evidence-based (science-validated) and implemented in accordance with proven models of recovery (Hoffman & Fromeke, 2007). Evidence-based practices are never grounded in a drug treatment agency's traditions or the experiences or preferences of its staff; instead, they are supported by independent research that demonstrates their effectiveness in achieving outcomes that are broadly endorsed by experts and practitioners in the addiction field (Lurigio, 2006). As Brady states in Hoffman and Fromeke (2007, p. 135)

Evidence-based treatment is treatment that has been proven to work through rigorous scientific studies. Evidence-based treatment is particularly important in the addictions field because many myths and personal biases have infiltrated the treatment area and are often accepted without question.

The most compelling evidence of a program's effectiveness emerges from research that includes representative samples of participants, random assignment to treatment and control groups, and baseline and follow-up measures of client performance that are valid

(accurate) and reliable (consistent). Moreover, the most useful results of studies—for the purpose of establishing evidence-based practices—are based on evaluations of programs that are manualized and implemented by trained, credentialed, and experienced staff persons. Practitioners must implement treatment protocols carefully and consistently, and participate regularly in professional development activities (Lurigio, 2006). Evidence-based drug treatment services include: relapse prevention therapy, supportive-expressive psychotherapy, individualized drug counseling, motivational enhancement therapy, multidimensional family therapy for adolescents, and the matrix model (NIDA 1999).

Network of Services

The fifth principle is that people with substance use problems should receive services that address their other difficulties (NIDA, 1999). Drug abusers tend to suffer from a variety of psychological, medical, and social problems as well as deficits in education, employment, and housing (Swartz & Lurigio, 1999b). Many of these problems persist throughout the recovery process (McLellan, et al., 1981). Drug treatment practitioners should collaborate with other service providers (e.g., psychiatrists and psychologists, vocational training experts, and housing advocates) in addressing the multifaceted problems of drug addicts, especially those with comorbid psychiatric disorders who need integrated substance use and psychiatric treatment services. Addicts must be treated comprehensively; their various problems should be addressed simultaneously, not sequentially (Waller & Weiner, 1989).

Continuity of Care

The sixth principle is that residential (short- or long-term) treatment must be followed by a continuum of care, namely, intensive outpatient treatment, aftercare, and relapse prevention services. Seamless interventions are instrumental in achieving sobriety (NIDA,

1999; Russell, 1994). As mentioned throughout this report, drug abuse and dependence disorders are chronic, and several cycles of treatment and aftercare services—often “with a cumulative impact”—are required to minimize relapses and sustain recovery (NIDA, 1999, p. 16). If drug abusers remain in intensive treatment for at least 90 days and receive continuous care after treatment, they are more likely to attain sobriety, get a job, and stop committing crimes (NIDA, 1999).

Continuity of care is particularly crucial to the recovery of drug-involved offenders leaving correctional settings (NIDA, 1999; Peters, 1993). Offenders who complete structured drug treatment programs in jails or prisons should be assisted in their transition to community-based services by engaging in prerelease planning and programming activities. Without aftercare services (i.e., continuity of care), the gains that offenders make in prison or jail treatment programs are frequently diminished or lost altogether (Lipton, 1995; NIDA, 2006a).

Prison inmates who participated in a TC and follow-up TC treatment in work release centers demonstrated significantly lower drug use and recidivism rates than those who participated in institutional treatment only (Inciardi, 1998). Similarly, offenders participating in both prison- and community-based TCs were less likely to commit subsequent crimes than offenders who participated in drug treatment without follow-up care (Wexler, 1996; Wexler, De Leon, Thomas, Kressel, & Peters, 1999).

Numerous obstacles can impede the delivery of aftercare services, including the fragmented nature of the criminal justice system, the lack of coordination between criminal justice practitioners and treatment providers, and the absence of incentives and sanctions for offenders to remain drug free after unsupervised release from jails and prisons.

The paucity of community treatment programs and treatment providers' inexperience with offenders are also impediments to recovery (Field, 1998). Relapse prevention services for offenders should be more thoroughly studied and understood (Vigdal, 1995) as suggested by the following under-investigated and unresolved issues:

- Reasons why offenders are especially vulnerable to relapse, including stressors related to release from correctional facilities and psychosocial factors related to crime and drug use;
- The evolving recovery process at its various stages;
- The destabilized and stabilized relapse-prone individual;
- Methods to overcome recovery plateaus;
- Basic components of relapse prevention therapy (e.g., self-knowledge and identification of warning signs, coping skills and management of warning signs, and involvement of family members and others in the relapse prevention plan; and
- The timing of relapse prevention efforts, particularly in advance of release from jail and prison.

Service Coordination

The seventh principle is that drug treatment programs for offenders work best when criminal justice professionals (e.g., probation, parole, and detention officers) and service providers communicate with one another and coordinate their efforts (NIDA, 2006a). Cross-training can help both groups understand the competencies and limitations of the other and work more effectively as a case management team. As stated in NIDA (2006a), “The coordination of drug abuse treatment with correctional planning can encourage participation in drug abuse treatment and can help treatment providers incorporate correctional

requirements as treatment goals.” (p. 3)

Treatment Alternatives for Safe Communities (TASC) was the culmination of a federal effort to establish and promote coordination between criminal justice agencies and treatment providers at the local level. Seeded in 1972 with funding from the Law Enforcement and Assistance Administration, TASC’s first pilot program was implemented in Wilmington, Delaware. By 2007, more than 220 TASC programs were operating in 30 states. TASC identifies, assesses, and refers offenders at the pretrial and post-adjudication levels to treatment and adjunctive services. TASC monitors clients' treatment progress through case management, urine testing, and other techniques, and reports violations of the conditions of release to the court.

Case managers establish linkages between treatment providers and correctional staff in order to develop coordinated strategies that hold offenders accountable and protect community safety (Anglin et al., 1996; Inciardi & McBride, 1991; Swartz, 1993; Weinman, 1990). The critical elements of TASC operations include “a process to coordinate justice, treatment, and other systems; procedures for providing information and cross-training to justice, treatment, and other systems; policies and procedures for regular staff training; clearly defined client eligibility criteria; and performance of client-centered case management” (National TASC, 2007).

Program Evaluation

The eighth principle is that drug treatment programs should be routinely examined by outside evaluators to determine whether services are being implemented as planned (treatment fidelity) and to measure the overall impact of services (treatment effectiveness). Process evaluations should provide program staff members with real-time information that can be

used to improve service delivery and preserve treatment integrity. Outcome evaluations should be based on internally valid research designs that incorporate random assignment and control groups; such designs yield data that permit confident conclusions about program effectiveness. Researchers should also consider client selection criteria and attrition (i.e., program dropouts) when interpreting results.

Evaluations of program impact must include a variety of outcome measures, such as number and type of drugs used; frequency of drug use; treatment retention; desistance from criminal activities; length of time to relapse and rearrest; vocational skills; employment; social, psychological, and family functioning; reliance on social service agencies; physical and emotional health; HIV risk behaviors; and mortality rates (Anglin & Hser, 1990; Swartz, 1993; Vigdal, 1995). Finally, researchers should test different treatment modalities to ascertain which approaches work best with which groups of clients; they should also employ longitudinal and nested research designs to understand more precisely the effectiveness of interventions as well as the trajectories of participants' addiction and criminal careers (Leukefeld & Tims, 1992).

No Entry Strategy

The effectiveness of drug treatment transcends settings and populations; its practices have been science-validated and its ability to save taxpayer dollars is incontrovertible. Nonetheless, the revolving door of addiction, crime, and incarceration continues to spin, especially for drug-involved minorities—a point made crystal clear in the current series of reports. The door spins, in part, because of the firmly entrenched policy of criminalizing addiction and the paucity of drug treatment programs for addicted offenders. Indeed,

treatment resources have never kept pace with the ever-increasing numbers of offenders with substance use disorders (Office of National Drug Control Policy, 2001).

Braude, Heaps, Rodriguez, and Whitney (2007) have developed a sweeping No-Entry Strategy (NES) to divert non-violent drug offenders in Illinois from prison and into treatment. This public policy framework emphasizes the viability of treatment at every point of contact in the criminal justice process—from arrest to release from prison. The NES is fully supported by research and designated to enhance public safety and the quality of life in communities throughout Illinois. The strategy is built on the following six core principles, which are affirmed throughout this report.

Principle I: Addiction is a brain disease. Changes in brain chemistry and functions are responsible for the chronicity of substance use disorders despite their adverse consequences (e.g., declining health and the threat of incarceration). Therefore, public policy initiatives to combat drug use, crime, and disproportionate minority confinement must first recognize the powerful science of addiction and the paramouncy of treatment and recovery management in combating addiction and its widespread negative repercussions.

Principle II: Drug use is correlated with crime. Drug use can intensify criminal behavior, especially among offenders who commit crimes to generate the income they need to purchase drugs. As use graduates to abuse and dependence, criminal activity increases in both frequency and number. The link between drug use and crime provides a forceful argument in favor of treatment as the best vehicle for achieving the goals of public health and safety.

Principle III: Current laws and drug enforcement practices that encourage racial disproportionality in prison sentences for drug-law violations must be confronted head-on.

As noted in Lurigio (2006), the public nature of drug sales and the pervasiveness of drug-free zones in African American communities have created a recipe for disparate minority confinement. The constitutionality and fairness of drug-free zones and other statutes have ravaged the African American community and must be challenged. In short, “public policies must consider the implications of current laws, strategies, and practices that perpetuate (racial) disparities and harm individuals, families and communities” (Braude et al., 2007, p 14.)

Principle IV: Sentencing statutes must be brought in line with an equitable dispensation of justice. Since the 1980s, drug laws in Illinois have become increasingly harsh. Nearly one-fifth of all new prison sentences in Illinois are for low-level (Class 4) felony possession charges (Illinois Department of Corrections, 2005). Because of “triggering weights,” prison sentences for smaller amounts of drug possession have become longer and have had a disproportionate impact on minority offenders. For example, the possession of only a half gram of cocaine can result in a prison sentence that is comparable to the sentences that are meted out for sexual assault. Furthermore, offenders who are sentenced for a higher (i.e., more serious) class of felony are less likely to have access to drug treatment services. Drug laws misguidedly assume that incarceration is effective in reducing crime without addressing the root problem (i.e., addiction) that causes or encourages criminal behavior.

Principle V: Drug treatment saves money. Drug treatment for addicted offenders is a highly sound investment, yielding substantial dividends in improved public health and safety. The imprisonment experience is likely to produce people who are stigmatized, disenfranchised, dispirited, and unemployable. They leave prison more inclined to resume illicit drug use and criminal pursuits and, ultimately, they are reincarcerated. In contrast, drug

treatment is likely to produce people who are law-abiding, willing and able to attend school and work, and engage in social and family networks that help sustain the recovery process. “Public policymakers must recognize that incarceration of nonviolent, drug-involved offenders is not an affective or efficient return on the investment of taxpayer dollars” (Braude et al., 2007, p.18).

Principles VI: Treatment alternatives to incarceration enjoy a high level of voter support. National and statewide polls have demonstrated that voters recognize addiction as a brain disease and drug treatment as a better option than incarceration for nonviolent drug-involved offenders. Voters are also strongly in favor of treatment on demand for people with substance use disorders. Collectively, these polls show that voters will stand behind politicians who change onerous drug laws and provide more dollars for drug treatment and recovery programs (Hart Research Associates and Coldwater Corporation, 2004; Illinois Department of Human Services, 2003; Open Society Institute, 2002).

The preceding principles are the foundation for five major NES recommendations designed to reduce the number of incarcerated people for low-level, drug-law violations, which would alleviate the problem of racial disparities in sentencing, to provide treatment for drug-involved offenders in lieu of incarceration, and to save substantial tax payer dollars in the process. These recommendations are as follows: 1) increase the state’s capacity to provide community-based treatment for 25,000 nonviolent addicted offenders each year; 2) appropriate 10 million dollars (in state fiscal year 2008) to lay the fiscal ground work for the above treatment plan; 3) appropriate annual increases of 23 million dollars for the next five years (in state fiscal years 2009 – 2013) to ensure the success and continuation of the treatment plan; 4) rescind statutory provisions that limit access to drug treatment alternatives

but do not increase public safety risks; 5) stop legislating enhanced punishment for every new drug that enters the market; and 6) require that any proposed penalty enhancements for drug crimes be accompanied by a fiscal and community impact analysis (Braude et al., 2007).

Summary

Approximately 20 million Americans reported illegal drug use in the previous month—marijuana and cocaine were the most popular substances used—and nearly half of all Americans reported that they used illicit substances during their lifetime. People use drugs for different reasons—mostly because drugs improve their mood and performance. However, drugs alter the chemistry and functions of the brain’s pleasure center and frontal cortex, leading to the signs and symptoms of drug abuse and dependence, which are classified in the psychiatric nomenclature as substance use disorders. Drugs can be grouped according to their effects (e.g. stimulants, depressants, hallucinogens) or their legitimate medical use and potential for abuse, as defined in the Controlled Substances Act.

Addiction is a chronic brain disease that affects millions of Americans and their families and communities. A major threat to public health and safety, addiction costs billions of dollars each year in terms of lost work productivity and healthcare expenditures. Current and lifetime drug use are substantially higher in correctional populations (i.e., jail detainees, prison inmates, and probationers) than in the general population. Large numbers of offenders reported being under the influence of drugs when they committed their most recent crimes or tested positive for one or more drugs at the time of their arrest. Those most likely to use drugs also have other psychiatric disorders or histories of emotional, sexual, or physical abuse.

The relationship between drug use and crime is complicated, and many models have been posited to explain their purported association. Some studies show that drug use causes crime, others that criminal involvement causes drugs use, and still others, that crime and drug use are concomitant aspects of a deviant lifestyle. Offenders can commit violent acts to obtain money to purchase drugs; others commit violent acts as a part of the illicit drug trade or because of the drug's disinhibitory effects. Among criminally involved persons, drug use intensifies criminal behavior whereas abstinence reduces it.

The best means to achieve abstinence is through drug treatment, which is effective in reducing drug use and its consequences and corollaries, namely, crime, unemployment, family dysfunction, and school failure. Treatment can be administered in various settings and at different levels and is classified into two broad categories: medical and behavioral. Drug treatment success has been demonstrated in several large-scale, federally funded investigations that employed longitudinal designs and variety of outcome measures, including DARP, TOPS, DATOS, NTIES, and SROS. Hence, the power of drug treatment to change addicts' lives has been demonstrated among different populations and settings and reported in investigations that have employed a variety of methods, outcome measures, and statistical analyses.

Several fundamental principles of effective drug treatment have been identified by years of research and clinical expertise. The principles include treatment matching and accessibility as well as the use of ancillary services to meet the wide ranging clinical and habilitation needs of persons with substance use disorders. These principles also underscore the importance of implementing a continuum of care that responds to the ever-changing needs of addicts throughout the recovery process. Based on research and clinical experience

and focused on the attainment of equitable sentencing decisions, the no-entry public policy framework recognizes addiction as a brain disease, recommends significant increases in treatment resources to divert low-level, non-violent drug offenders from incarceration, and argues for rational and race-neutral drug laws and enforcement strategies.

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