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DRUG ABUSE

Studies Show Treatment Is Effective, but Benefits May Be Overstated

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Drug Abuse: Studies Show Treatment Is Effective, but Benefits May Be Overstated

Mr. Chairman and Members of the Subcommittee:

We are pleased to be here today to discuss our recent report on drug abuse treatment research findings.¹ As you know, illicit drug use in the United States remains a serious and costly problem. In a 1996 survey, about 13 million Americans reported using illicit drugs in the past month. Each year, as many as 11,000 deaths are linked to illicit drug use. To combat the nation's drug abuse problem, the federal government and states spend about \$27 billion annually. Further, the total annual cost of illicit drug use to society is estimated at \$67 billion for costs associated with health care and drug addiction prevention and treatment programs, drug-related crime, and lost resources resulting from reduced worker productivity or death.

Because drug abuse treatment is a significant component of the nation's drug control strategy, you asked us to examine the major research findings on drug abuse treatment effectiveness. My remarks today will focus on (1) the overall effectiveness of drug abuse treatment; (2) the methodological issues affecting drug abuse treatment evaluations; and (3) what is known about the effectiveness of specific treatments for heroin, cocaine, and adolescent drug addiction. My comments are based on our review and synthesis of findings from major evaluations of drug abuse treatment effectiveness.

In brief, we found that large, multisite, longitudinal studies have produced considerable evidence that drug abuse treatment is beneficial to the individual undergoing treatment and to society. The studies have consistently found that a substantial proportion of clients being studied report reductions in drug use and criminal activity following treatment. The studies also show that clients who stay in treatment for longer periods report better outcomes. However, drug abuse treatment research is complicated by a number of methodological challenges that make it difficult to accurately measure the extent to which treatment reduces drug use. In particular, growing concerns about the validity of self-reported data, which are used routinely in the major evaluations of drug abuse treatment, suggest that the treatment benefit reported by these studies may be somewhat overstated. In addition, the research evidence to support the relative effectiveness of specific treatment approaches or settings for particular groups of drug abusers is limited. While one specific treatment approach—methadone maintenance—has been shown to be the

¹Drug Abuse: Research Shows Treatment Is Effective, but Benefits May Be Overstated (GAO/HEHS-98-72, Mar. 27, 1998).

most effective treatment for heroin addiction, research on the best treatment approach or setting for cocaine addiction or adolescent drug users is less definitive.

Background

In general, drug abuse is defined by the level and pattern of drug consumption and the severity of resulting functional problems. People who are dependent on drugs often use multiple drugs and have substantial health and social problems, including mental health disorders. One of the many challenges to providing effective treatment for addiction is the complicated nature of the disorder. Unlike other chronic diseases, drug addiction extends beyond physiological influence to include significant behavioral and psychological aspects. For example, specific environmental cues that a drug abuser associates with drug use can trigger craving and precipitate relapse, even after long periods of abstinence. Therefore, drug abusers may enter treatment a number of times, often reducing drug use incrementally with each treatment episode.

Despite the potential for relapse to drug use, not all drug users require treatment to discontinue use. For those who require treatment, services are provided in either outpatient or inpatient settings and via two major approaches—pharmacotherapy and behavioral therapy—with many programs combining elements of both. Although abstinence from illicit drug use is the central goal of all drug abuse treatment, researchers and program staff commonly accept reductions in drug use and criminal behavior as realistic, interim goals.

Since the early 1990s, federal spending for drug abuse treatment has grown steadily. Of the approximately \$16 billion budgeted for drug control activities in fiscal year 1998, drug abuse treatment accounted for \$3.2 billion, or 20 percent. Over half of federal drug abuse treatment funds were allocated to the Department of Health and Human Services (HHS) to support block grants to the states, drug abuse treatment services, and related research. An additional third of treatment dollars are spent by the Department of Veterans Affairs to support drug abuse treatment services to veterans and their inpatient and outpatient medical care. To meet the requirements of the Government Performance and Results Act of 1993, agencies are beginning to set goals and performance measures to monitor and assess the effectiveness of federally funded drug abuse treatment efforts. However, demonstrating the efficient and effective use of federal drug abuse treatment funds is particularly challenging because most of

these funds support services provided by state and local grantees, which are given broad discretion in how best to use them.

Research Consistently Demonstrates Benefits of Drug Abuse Treatment

In numerous large-scale studies examining the outcomes of drug abuse treatment provided in a variety of settings, researchers have concluded that treatment is beneficial. Clients receiving treatment report reductions in drug use and criminal activity as well as other positive outcomes. The studies have also demonstrated that better treatment outcomes are associated with longer treatment periods but have found that retaining clients in treatment programs is problematic.

Major Studies Report Reductions in Drug Use and Crime Following Treatment

Comprehensive analyses of the effectiveness of drug abuse treatment have been conducted by several major, federally funded studies over a period of nearly 30 years: the Drug Abuse Treatment Outcome Study (DATOS), the National Treatment Improvement Evaluation Study (NTIES), the Treatment Outcome Prospective Study (TOPS), and the Drug Abuse Reporting Program (DARP). These large, multisite studies—conducted by research organizations independent of the groups operating the treatment programs being assessed—were designed to measure people’s involvement in illicit drug and criminal activity before, during, and after treatment. Although the studies report on reductions in drug use from the year prior to treatment to the year after, most also track a subset of treatment clients for followup interviews over longer time periods. For example, DARP followed clients for as long as 12 years, TOPS for 3 to 5 years following treatment, and DATOS researchers are planning additional followup to determine long-term outcomes. 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.²

All of these major studies, which have evaluated the progress of thousands of people, concluded that drug abuse treatment was effective when outcomes were assessed 1 year after treatment. They found that reported drug use declined when clients received services through any of three drug abuse treatment approaches—residential long-term, outpatient drug-free,

²See Institute of Medicine, *Treating Drug Problems* (Washington, D.C.: Institute of Medicine, 1990). See also “Drug Abuse Treatment Outcome Study (DATOS),” *Psychology of Addictive Behaviors*, Vol. 11, No. 4 (1997), pp. 211-323. For information on NTIES, see *The National Treatment Improvement Evaluation Study—Final Report* (Mar. 1997), prepared by the National Opinion Research Center at the University of Chicago in collaboration with the Research Triangle Institute for the Center for Substance Abuse Treatment, Substance Abuse and Mental Health Services Administration.

or outpatient methadone maintenance—regardless of the drug and client type.³ DATOS found that, of the individuals in long-term residential treatment, 66 percent reported weekly or more frequent cocaine use in the year prior to treatment, while 22 percent reported regular cocaine use in the year following treatment. Also, 41 percent of this same group reported engaging in predatory illegal activity in the year prior to treatment, while 16 percent reported such activity in the year after treatment.

Previous studies found similar reductions in drug use and criminal activity. For example, researchers from the 1980s TOPS study found that across all types of drug abuse treatment, 40 to 50 percent of regular heroin and cocaine users who spent at least 3 months in treatment reported near abstinence during the year after treatment, and an additional 30 percent reported reducing their use. Only 17 percent of NTIES clients reported arrests in the year following treatment—down from 48 percent during the year before treatment.

Longer Treatment Episodes Have Better Outcomes, but Treatment Duration Is Limited by Client Drop-Out

Another finding across these studies is that clients who stay in treatment longer report better outcomes. For the DATOS clients that reported drug use when entering treatment, fewer of those in treatment for more than 3 months reported continuing drug use than those in treatment for less than 3 months. DATOS researchers also found that the most positive outcomes for clients in methadone maintenance were for those who remained in treatment for at least 12 months. Earlier studies reported similar results. Both DARP and TOPS found that reports of drug use were reduced most for clients who stayed in treatment at least 3 months, regardless of the treatment setting.

Although these studies show better results for longer treatment episodes, they found that many clients dropped out of treatment long before reaching the minimum length of treatment episode recommended by those operating the treatment program. For example, a study of a subset of DATOS clients found that all of the participating methadone maintenance programs recommend 2 or more years of treatment, but the median treatment episode by clients was about 1 year. Long-term residential programs participating in DATOS generally recommended a treatment duration of 9 months or longer, while outpatient drug-free programs

³In its 1990 report, *Treating Drug Problems*, the Institute of Medicine concluded there was little evidence to suggest that hospital-based chemical dependency programs, a type of inpatient treatment, were either more or less effective for treating drug problems than chemical dependency programs not located in hospitals. DATOS found that clients receiving treatment in short-term inpatient programs reported substantial reductions in drug use, but statistical analysis did not show that the reductions were attributable to the treatment.

recommended at least 6 months in treatment; for both program types, the median treatment episode was 3 months.

Treatment Benefits May Be Overstated by Major Studies

Because all of the effectiveness studies relied on information reported by the clients, the level of treatment benefit reported may be overstated. Typically, drug abusers were interviewed before they entered treatment and again following treatment and asked about their use of illicit drugs, their involvement in criminal activity, and other drug-related behaviors.⁴ Although this data collection method is commonly used in national surveys and drug abuse treatment evaluations, recent questions about the validity of self-reported drug use raise concerns about this approach. In general, self-reporting is least valid for (1) the more stigmatized drugs, such as cocaine; (2) recent use; and (3) those involved with the criminal justice system. A recent National Institute on Drug Abuse (NIDA) review of current research on the validity of self-reported drug use highlights the limitations of data collected in this manner.⁵ According to this review, recent studies conducted with criminal justice clients (such as people on parole, on probation, or awaiting trial) and former treatment clients suggest that 50 percent or fewer current users accurately report their drug use in confidential interviews.

As questions have developed about the accuracy of self-reported data,⁶ researchers have begun using more objective means, such as urinalysis, to validate such data. For example, NTIES researchers found that 20 percent of those in a validation group acknowledged cocaine use within the past 30 days, but urinalysis revealed recent cocaine use by 29 percent. TOPS researchers reported that only 40 percent of the individuals testing positive for cocaine 24 months after treatment had reported using the drug in the previous 3 days.

⁴A large percentage of the clients participating in the studies we reviewed were involved with the criminal justice system. For example, 56 percent of DATOS clients reported being on probation or parole or awaiting trial when they entered treatment; 31 percent of DATOS clients were referred into treatment by the courts.

⁵National Institutes of Health, *The Validity of Self-Reported Drug Use: Improving the Accuracy of Survey Estimates*, National Institute on Drug Abuse Research Monograph Series 167 (Washington, D.C.: HHS, 1997).

⁶The research literature prior to the mid-1980s showed drug use self-reporting to be generally valid, while studies conducted since then have raised concerns about validity. The apparent change in validity may be due in part to improved urinalysis testing that now detects drug use more accurately. It is also possible that individuals were more willing to admit to using illicit drugs when societal reaction toward drug use was not as strong as it is today. Even today, researchers are not in agreement on the limitations of self-reported data. For example, the researchers for DATOS, the most recently completed study of drug treatment, acknowledged limitations to self-reported data but asserted that most of these data are reasonably reliable and valid.

Because results from the major studies of treatment effectiveness were not adjusted for the likelihood of underreported drug use, reductions in drug use found may be overstated. However, researchers emphasize that client reporting on use of illicit drugs during the previous year (the outcome measure used in most effectiveness evaluations) has been shown to be more accurate than client reporting on current drug use (the measure used to assess the validity of self-reported data). Therefore, they believe that the overall findings of treatment benefits are still valid.

Although supplementary data collection, such as hair analysis or urinalysis, can help validate the accuracy of self-reported data, these tools also have limitations. Urine tests can accurately detect illicit drugs for about 48 hours following drug use but do not provide any information about drug use during the previous year. In addition, individual differences in metabolism rates can affect the outcomes of urinalysis tests. Hair analysis has received attention because it can detect drug use over a longer time—up to several months. However, unresolved issues in hair testing include variability across drugs in the accuracy of detection, the potential for passive contamination, and the relative effect of different hair color or type on cocaine accumulation in the hair. We have reported on the limitations of using self-reported data in estimating the prevalence of drug use and concluded that hair testing merited further evaluation as a means of confirming self-reported drug use.⁷

Evidence Varies on the Best Treatment Approaches for Specific Groups of Drug Abusers

Using federal treatment dollars most effectively requires an understanding of which approaches work best for different groups of drug abusers, but on this subject, research findings are less definitive. Although strong evidence supports methadone maintenance as the most effective treatment for heroin addiction, less is known about the best ways to provide treatment services to cocaine users or adolescents.

In addition, client and program-related factors can affect client success. For example, outpatient drug abuse treatment programs operate with different numbers and quality of staff and have varying levels of coordination with local agencies that offer related services generally needed to support recovering abusers. A treatment program with close ties to local service providers, such as health clinics and job training programs, is likely to have better treatment outcomes than a program without such ties. Similarly, client factors, such as motivation and readiness for

⁷See Drug Use Measurement: Strengths, Limitations, and Recommendations for Improvement (GAO/PEMD-93-18, June 25, 1993).

treatment or psychiatric status, can significantly affect the patient's performance in treatment. Current research generally does not account for these factors in evaluating the effectiveness of alternative approaches for specific groups of drug abusers.

Research Supports Methadone Maintenance as the Most Effective Treatment for Heroin Addiction

Methadone maintenance is the most commonly used treatment for heroin addiction, and numerous studies have shown that those receiving methadone maintenance treatment have better outcomes than those who go untreated or use other treatment approaches. Methadone maintenance reduces heroin use and criminal activity and improves social functioning. HIV risk is also minimized, since needle usage is reduced.

As we have previously reported, outcomes among methadone programs have varied greatly, in part because of the substantial differences in treatment practices across the nation.⁸ For example, in 1990, we found that many methadone clinics routinely provided clients dosage levels that were lower than optimum—or even subthreshold—and discontinued treatment too soon. In late 1997, a National Institutes of Health consensus panel concluded that people who are addicted to heroin or other opiates should have broader access to methadone maintenance treatment programs and recommended that federal regulations allow additional physicians and pharmacies to prescribe and dispense methadone.

Similarly, several studies conducted over the past decade show that when counseling, psychotherapy, health care, and social services are provided along with methadone maintenance, treatment outcomes improve significantly. However, the recent findings from DATOS suggest that the provision of these ancillary services—both the number and variety—has eroded considerably during the past 2 decades across all treatment settings. DATOS researchers also noted that the percentage of clients reporting unmet needs was higher than the percentage in previous studies.

Cognitive-Behavioral Treatments Show Promise for Cocaine Addiction

Evidence of a best approach to treat cocaine addiction is not as clear as it is for heroin addiction. Although a number of pharmacotherapies have been studied and some have proven successful in one or more clinical trials, no medication has demonstrated substantial efficacy once subjected to several rigorously controlled trials. Without a pharmacological agent,

⁸See Methadone Maintenance: Some Treatment Programs Are Not Effective; Greater Oversight Needed (GAO/HRD-90-104, Mar. 22, 1990).

researchers have relied on cognitive-behavioral therapies to treat cocaine addiction.

Studies have shown that clients receiving cognitive-behavioral therapy have achieved long periods of abstinence and have been successful at staying in treatment.⁹ The cognitive-behavioral therapies are based largely on counseling and education. One approach, relapse prevention, focuses on teaching clients how to identify and manage high-risk, or “trigger,” situations that contribute to drug relapse. A study of this approach showed cocaine-dependent clients were able to remain abstinent at least 70 percent of the time while in treatment. Another technique, community reinforcement/contingency management, establishes a link between behavior and consequence by rewarding abstinence and reprimanding drug use. A program using this approach found that 42 percent of the participating cocaine-dependent clients were able to achieve nearly 4 months of continuous abstinence. A third approach, neurobehavioral therapy, addresses a client’s behavioral, emotional, cognitive, and relational problems at each stage of recovery. One neurobehavioral program showed that 38 percent of the clients were abstinent at the 6-month followup.

Family Therapy Is Under Study for Adolescent Drug Abusers

Drug use among teenagers is a growing concern. It is estimated that 9 percent of teenagers were current drug users in 1996—up from 5.3 percent in 1992. Unfortunately, no one method has been shown to be consistently superior to others in achieving better treatment outcomes for this group. Rather, studies show that success in treatment for adolescents seems to be linked to the characteristics of program staff, the availability of special services, and family participation.

Many experts believe that family-based intervention shows promise as an effective treatment for adolescent drug abusers. This approach, based on the assumption that family behaviors contribute to the adolescent’s decision to use drugs, was identified by a 1997 study and literature review as superior to other treatment approaches.¹⁰ In fact, some researchers believe that family interventions are critical to the success of any treatment approach for adolescent drug abusers because family-related factors—such as parental substance use, poor parent-child relations, and

⁹See *Cocaine Treatment: Early Results From Various Approaches* (GAO-HEHS-96-80, June 7, 1996).

¹⁰M. D. Stanton and W. R. Shadish, “Outcome, Attrition, and Family/Couples Treatment for Drug Abuse: A Meta-Analysis and Review of the Controlled, Comparative Studies,” *Psychology Bulletin*, Vol. 122 (1997), pp. 170-91.

poor parent supervision—have been identified as risk factors for the development of substance abuse among adolescents. However, NIDA acknowledged in a recently published article that further research is needed to identify the best approach to treating adolescent drug abusers.¹¹ Similarly, the American Academy of Child and Adolescent Psychiatry acknowledged in its 1997 treatment practice parameters that research on drug abuse treatment for adolescents has failed to demonstrate the superiority of one treatment approach over another.¹²

Conclusions

With an annual expenditure of more than \$3 billion—20 percent of the federal drug control budget—the federal government provides significant support for drug abuse treatment activities. Monitoring the performance of treatment programs can help ensure that we are making progress to achieve the nation’s drug control goals. Research on the effectiveness of drug abuse treatment, however, is problematic given the methodological challenges and numerous factors that influence the results of treatment. Although studies conducted over nearly 3 decades consistently show that treatment reduces drug use and crime, current data collection techniques do not allow accurate measurement of the extent to which treatment reduces the use of illicit drugs.

Mr. Chairman, this concludes my prepared statement. I will be happy to answer any questions you and other members of the Subcommittee may have.

¹¹Naimah Z. Weinberg, M.D., and others, “Adolescent Substance Abuse: A Review of the Past 10 Years,” *Journal of the American Academy of Child and Adolescent Psychiatry*, Vol. 37, No. 3 (Mar. 1998), pp. 252-61.

¹²Oscar Bukstein, M.D. (principal author) and the Washington Group on Quality Issues, “Practical Parameters for the Assessment and Treatment of Children and Adolescents With Substance Use Disorders,” *Journal of the American Academy of Child and Adolescent Psychiatry*, Vol. 36, No. 10, Supp. (Oct. 1997), pp. 1405-1565.

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