The Drug Abuse Treatment System
Prospects for Reform

John G. Haaga, Elizabeth A. McGlynn
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John G. Haaga, Elizabeth A. McGlynn
Preface

The research for this report was supported by RAND's Drug Policy Research Center with funding from The Ford Foundation and the Weingart Foundation. The purpose of this report is to provide background information on the historical development of the drug abuse treatment system in the United States as a means of understanding both the need for change and the challenges likely to be associated with reform. The report considers what the current research literature suggests about the potential for matching clients with optimal treatment programs. This study also discusses issues related to holding programs accountable for particular outcomes, then concludes with a discussion of the institutional changes that will be required to promote reform.

This report should be of interest to federal, state, and local substance abuse treatment system policymakers, as well as services researchers who are interested in a historical perspective on the development of the drug treatment system in the United States.

An earlier version of this report was presented at the 1990 meeting of the Western Economic Association held in San Diego, California.
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Summary

There are various proposals for increasing the effectiveness of the drug abuse treatment system, particularly the publicly funded component. Among these proposals are better mechanisms for matching clients with treatment programs and improving treatment program accountability through the use of outcome measurement. In this report, we discuss the recent history of the treatment system and assess the difficulties facing these reform proposals. The system has gone through two phases of rapid growth, before and after the 1980s, which were periods of stringency and shifting responsibility, respectively. In addition, the demands on the public system have changed considerably as a result of the recent cocaine/crack epidemic. Interagency coordination, diagnosis, and referral are largely new tasks for the agencies struggling at the same time with increased demand for their services.

There are a number of practical, theoretical, and policy problems in implementing reforms to better match clients with treatment programs. From a practical perspective, no tool is currently available to assist agencies in making better matches, and in many communities the number of alternatives (i.e., truly different program content and philosophy) is limited. From a theoretical perspective, there is no conclusive scientific evidence to support any particular matching strategy, such as assigning the most severely addicted patients to the most intensive treatment. Finally, from a policy perspective, it is unclear whether the goal should be to improve the probability of positive individual outcomes or to reduce aggregate drug use. Research could inform the practical and theoretical issues, whereas the policy issues must be addressed in the political arena.

Although improved accountability for drug treatment programs is clearly needed, regulatory and process-oriented approaches have not been successful in the past. New proposals for outcome monitoring are worth pursuing, though providers’ responses could defeat the purposes of reforms. Finally, research on treatment careers and implementation studies are needed before wide adoption of these reforms because such studies will help inform efforts to set reasonable performance standards.
Acknowledgments

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1. Introduction

The National Drug Control Strategy, a report released in September 1989 by the newly created Office of National Drug Control Policy (ONDCP), proposed a list of drug treatment priorities. The first was a predictable call for "increased federal funds for treatment in order to expand the number of treatment slots and the range of treatment methods available." Federal funding for treatment had been increasing for several years, and the first budgets prepared under the Bush administration's Strategy called for further large increases. But the Strategy went beyond simply calling for more of the same in drug treatment. The second and third priority recommendations reflected the perceived widespread dissatisfaction with the system for delivering treatment that had evolved in recent decades. The recommendations called for "greater state, local, and individual treatment program accountability for effectiveness" and "improved coordination among local treatment facilities . . . so that drug users are referred to the most appropriate treatment provider." Simple lack of capacity is only part of the problem; the Strategy (and its first follow-up, published in February 1990) identified many "systemic weaknesses." The system needs to improve its ability to identify persons who could benefit from treatment, match clients with effective treatment programs, and use financing mechanisms to encourage efficiency. These institutional reforms imply that the drug treatment system can operate more effectively and efficiently by implementing what is already known about how to treat drug abuse.

Some of these concerns are important topics on the agenda for health policy in general: how to simultaneously control costs, ensure access to appropriate care, and maintain high-quality care. Perhaps because the mechanisms for funding drug treatment and the institutions that provide treatment have developed quite separately from the regular system of health care in America there has been less attention to these issues for drug treatment. In fact, many substance abuse treatment providers have tried to design interventions that are different from the medical model. As with health care in general, rising drug treatment expenditures have alarmed private and public payers. Further, there are special challenges in determining exactly how many people could benefit from drug treatment and what constitutes appropriate drug treatment.

In this report, we discuss the background for these service delivery issues in drug treatment. First, we describe the history of the treatment system to better
understand the institutional setting in which current reform efforts have to work. Next, we discuss the evidence that is frequently used to suggest that improved effectiveness in matching clients to treatment programs is possible today. Then, we turn to a related set of proposals for using outcome measures to ensure program accountability. We conclude by recommending institutional changes to implement such reforms and suggest the types of policy research that are needed to guide these approaches to improving the system. For the most part, this report concerns the system for publicly financed drug treatment, but some issues are independent of the source of financing.
2. Evolution of the Treatment System

Drug abuse treatment in the United States dates back to pioneering efforts to help Civil War veterans who had become addicted to morphine while in military service. But the current treatment system—the set of institutions, providers, and funding mechanisms that are designed to reduce demand for drugs and help dependent persons recover from their addictions—began developing in the 1960s.

The National Institute of Mental Health (NIMH) sponsored a survey in 1968–1969 of every organization that operated a program specifically designed to treat drug addiction. Of the 183 programs identified, more than 75 percent had been operating five years or less (and of those that had been operating more than five years, half were in New York City). Only two federal hospitals that were not connected to prisons had been in existence for more than 20 years. There may have been other programs that did not survive until the late 1960s to be included in the survey (or that were not identified for the survey), but these data indicate that specialized drug treatment outside of the federal prison system prior to about 1965 was mainly a phenomenon of the large cities, notably New York, and that significant expansion of drug treatment programs began in the mid-1960s.

The growth of specialized drug treatment outside prison and hospital settings coincided with a movement in the larger field of mental health toward deinstitutionalization of those with severe mental disorders. The community mental health movement affected substance abuse treatment through the creation of new institutions called Community Mental Health Centers (CMHCs), which were able to reach populations traditionally not served by mental health professionals. The Alcoholic and Narcotic Rehabilitation Act of 1968 authorized federal grants to support building and staffing CMHCs to “provide incentives for localities to initiate and develop new services for alcoholics and alcohol and drug abusers.”

Subsequent legislation in 1970 and 1972 set up a system of project and formula grants to states and localities for substance abuse treatment to be administered by two new institutes within the Department of Health, Education, and Welfare (HEW): the National Institute on Drug Abuse (NIDA) and the

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1 Public Law 90-574, Title III, sec. 301.
National Institute on Alcohol Abuse and Alcoholism (NIAAA). 2 NIDA and NIAAA also had responsibility for treatment research and demonstration programs.

In the late 1960s, the drug problem was defined from the treatment perspective as a problem of heroin users in big cities and was part of the Nixon administration's larger concern with crime. Much research, and even more public discussion, focused on the amounts and types of crimes committed by heroin addicts in need of money to support their habits (see Wilson, 1975, for a review). While supporting crop eradication in Mexico and Turkey and interdiction of heroin supplies from Southwest Asia, President Nixon entrusted "demand-side" policy to "a group of liberal, nominally Democratic drug-abuse specialists [commissioned] . . . to lead a relatively humane treatment effort" (Trebach, 1982). The method promoted by the federal programs during this first real growth phase of publicly funded drug treatment was outpatient methadone maintenance for heroin addicts, which had been pioneered by Vincent Dole and Marie Nyswander in New York in a series of clinical trials in the mid-1960s. 3

During the first half of the 1970s, the federal categorical programs providing money to states, local governments, and sometimes directly to programs steadily expanded. Since then, expenditure patterns have tended to follow the administrative structure of the alcohol, drug, and mental health agencies, which vary among the states. The state mental health agency is responsible for administering alcohol and drug programs in 22 of the 55 states and territories. In 12 states, the mental health agency is separate from the alcohol and drug agency but both report to a larger state agency. In the other 21 states and territories, the mental health agency is completely separate from the alcohol and drug agency; in 8 of those states, the alcohol and drug agencies are separate from one another. Despite block grant funding that was introduced in the 1980s to support alcohol, drug abuse, and mental health, money continues to be distributed categorically and it is rare for agencies to combine funds for substance abuse treatment programs (Ridgely, Goldman, and Willenbring, 1990). Mutual mistrust among the different treatment communities is responsible for at least some of the continued separation of authority and spending.

By the time of the 1978 National Drug and Alcohol Treatment Utilization Survey (NDATUS), the system had grown significantly and spread throughout the

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2 See Cloud (1989) for a legislative history of federal prevention and treatment programs. Glasscote et al. (1972) provide a useful history of drug treatment in the 1960s.

3 Lewis and Seesler (1980) discuss the development of methadone maintenance and other treatments for heroin abuse.
nation; 3,147 programs responded to the survey, compared with the 183 identified by NIMH only a decade earlier. Of the 234,542 drug treatment slots in reporting programs, 85 percent were for outpatient treatment. Heroin was the primary drug of abuse named by over 60 percent of those in drug treatment.

The growth was not all due to public funding. In the 1970s, for the first time since the early twentieth century, private medical institutions and practitioners began providing treatment for large numbers of persons dependent on cocaine and marijuana. Typically, these clients also had significant alcohol problems. Freestanding alcohol treatment units were increasingly seeing people with secondary diagnoses of other drug abuse, and alcoholism programs in hospitals began to rename themselves “chemical dependency units.” The partial “remedicalization” of drug treatment in the 1970s was marked by controversies over naming and defining disease states associated with the most common drugs of abuse in the American Psychiatric Association’s Diagnostic and Statistical Manual (third edition, 1980). These were not just nosological concerns of research-minded clinicians—rather, getting addictions labeled as diseases was an essential preliminary step to incorporating treatment into standard mental health practice and making treatment reimbursable. Private health insurance plans increasingly provided substance abuse treatment benefits, but in many cases, benefits were restricted to particular settings (e.g., inpatient, medically supervised care) or carried strict limitations on the extent of care covered (e.g., 28 days).

The remedicalization of drug treatment was limited by public sector reimbursement trends. Federal health policy in the 1960s and 1970s was dominated by expanding public funding for health care to the elderly, disabled, and Aid to Families with Dependent Children (AFDC) recipients under Medicare and Medicaid. These programs, by design, excluded many types of long-term care and specifically did not reimburse treatment in psychiatric facilities. Some states paid for an unknown amount of substance abuse treatment through the Medicaid “Clinical Services” option, and many methadone programs could bill their state’s Medicaid program for partial reimbursement. But the major channels for government subsidies for drug treatment were grants to states for direct provision of services.

The Reagan administration consolidated programs, cut overall budgets, and reduced the number of federal controls on states by introducing block grants. Title IX of the Omnibus Budget Reconciliation Act of 1981 consolidated previously categorical programs into the Alcohol, Drug, and Mental Health (ADM) block grant. States were required to spend half the funds on mental health programs and half on substance abuse; of the substance abuse funds, at
least 35 percent had to be spent on alcohol programs and at least 35 percent on other drug programs. At the same time, the federal contribution to substance abuse treatment and prevention was cut significantly. As Figure 1 shows, the increases in federal funding for drug treatment in the last few years brought the level of funding, in real terms (adjusted for changes in the purchasing power of the dollar), back to what it had been at the high point in the mid-1970s. The request for the 1991 fiscal year, outlined in the National Drug Control Strategy Budget Summary, would bring the level of expenditure for the first time well above that of the 1970s. The expenditures in the 1970s, however, were mainly aimed at curbing demand generated by heroin addicts, who probably never numbered more than a half million (Kozel et al., 1985). The expenditures in the 1980s responded to demands generated by several million persons dependent on cocaine, as well as a persistent cohort of heroin users and large numbers of persons for whom marijuana was the primary drug of abuse.

\[\text{Figure 1—Federal Expenditures on Drug Treatment: 1969–1991}\]

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4Data presented in Figure 1 were taken from the Budget of the United States, various years, for the period before 1980, and from data compiled by the Office of Management and Budget (OMB) for the period since 1980. The gross national product (GNP) deflator was used to express current year expenditures in terms of constant 1990 dollars. The OMB figures were calculated on a consistent basis from agency reports; the pre-1980 data are taken from the functional accounts of HEW and NIDA budgets and may not include all treatment service and research expenditures. The overall picture would likely not be changed if a completely consistent data series were available, however.
As Figure 2 shows, the proportion of total program funding listed as "Private and other" (e.g., private third-party payments, client fees, charity care) was much larger in the 1987 NDATUS than it had been in 1977. The federal government had largely succeeded in handing over responsibility for treatment financing to the private sector and other levels of government. This shift was part of a wider trend in health and social service spending in the 1980s in which federal funds were combined into block grants to the states with reduced aggregate budgets (Nathan and Lago, 1990).

The drug treatment system as a whole did not grow much during the early part of the 1980s. The 1987 NDATUS received responses from 5,158 treatment units (a 64 percent increase from 1977), but they reported only a 12 percent increase in the number of current clients: 263,510 (NIDA and NIAAA, 1979 and 1989). The NDATUS data are not strictly comparable from year to year, in part because the response rate is not known and may differ between the two years. Treatment programs relying exclusively, or nearly so, on private sources of funding were expanding most rapidly in the late 1980s. Because state agencies are primarily responsible for data collection in the NDATUS, programs that rely entirely on

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5NDATUS was fielded again in 1989, but results had not yet been published at the time of writing.
private sources of funding were more likely to be missed in the count than were programs receiving funding from the agency doing the count. Nonetheless, this picture of slow growth over the decade seems reasonable given the reduced public funding commitments during the early 1980s.

Drug abuse treatment is delivered by a variety of institutions and providers: long-term residential programs; detoxification facilities, either freestanding or hospital-based; chemical dependency units in hospitals; outpatient clinics; community mental health clinics; psychologists or psychiatrists in private practice; counselors, both certified by various national credentialing agencies and uncertified; and "alternative" providers such as hypnotists, acupuncturists, diet therapists, and others on the periphery of the established mental health professions. Most individuals and institutions that provide mental health care, and many of those that provide care for somatic disorders, also provide drug abuse treatment.

NDATUS was designed to cover all licensed drug and alcohol treatment facilities. The Client-Oriented Data Acquisition Program (CODAP) was designed to obtain individual-level data on admissions and discharges from publicly funded treatment programs. CODAP reports continued in a severely truncated form, reporting most recently on admissions during 1985. The National Association of State Alcohol and Drug Abuse Directors (NASADAD) has published each year since 1984 a summary of information collected from each state on client demographics, primary drugs of abuse, and sources of funding for all programs that receive any state funds. State licensing agencies and the Joint Commission on Accreditation of Healthcare Organizations maintain listings of institutions that are eligible to receive public funding or submit bills to insurance companies. But there are no data systems covering all these sources of treatment, nor are there any comprehensive estimates of the number of people in treatment at a given time or the number of treatment episodes provided during a year.

NDATUS, state reporting systems, and the large-scale treatment outcome evaluations funded by NIDA use broad classifications for the type of treatment (e.g., detoxification, maintenance, or drug-free) and setting (e.g., hospital, other residential, or outpatient). Most drug clients (85 percent in the 1987 NDATUS) and most programs are in the "drug-free/outpatient" category, but this label only tells us what the treatment is not (not methadone maintenance and the clients do not live there), not what it is. Within these categories there can be very wide variation in the scope, content, intensity, and duration of treatment services, as well as the mix and type of staff.
3. Implications for System Response to the Cocaine Epidemic

In the mid-1980s, the treatment system was put under a terrific strain by the need to deal with increasing numbers of cocaine users voluntarily or involuntarily seeking treatment. In part, this pressure was caused by the rapid emergence of cocaine in its ready-to-use, free-base form ("crack") as a cheap drug that was widely available. The private system that had emerged mainly to deal with the alcohol problems of the well-insured was faced with increasing numbers of polydrug abusers. Those who had begun using cocaine during its years of greatest popularity among middle-class young people were beginning to reach the stages of drug use in which their cocaine and alcohol use was beyond their control. The public system, meanwhile, had to cope with suddenly enlarged numbers of referrals from the criminal justice system of cocaine user/dealers arrested as a result of intensified drug law enforcement. Many of the "systemic weaknesses" identified by the ONDCP and other proponents of greater efficiency and accountability in drug treatment can be ascribed to the way in which the drug treatment system developed in the 1960s and 1970s.

Fall and Rise of the Public System

The cocaine epidemic hit the treatment system just after the difficult period of adjustment to declining federal expenditures. Although the states absorbed much of the slack, the adjustment process was not instantaneous, and treatment agencies at the state and local levels and programs relying on public funds had been forced to live with considerable uncertainty during the lean years. When expansion came following passage of the 1986 Anti-Drug Abuse Act, it came suddenly. Gearing up to handle larger amounts of money and larger numbers of clients put a strain on the largely informal mechanisms that state and local agencies, and programs themselves, had come to rely on for quality assurance.

Based on the experience of the heroin epidemics, we can predict that the burden on the public treatment system will last long past the time when the incidence of cocaine use and abuse diminishes. Even with little recruitment of new heroin users during the 1970s, the aging addict population sought additional episodes of treatment following relapse; there is no reason to believe that cocaine addiction will be any more amenable to sustained recovery with one or two treatment
episodes. Addiction recovery is characterized by repeated relapse and reentry into treatment. Even if prevention efforts and deterrence through user sanctions ensured that no new cocaine users were recruited, the number of clients appearing for treatment at public agencies would likely continue to grow for many years (for example, as those with insurance benefits exhausted their substance abuse treatment coverage, or lost the employment that provided the insurance). Political interest in drug treatment (or drug policy in general) may follow the cycles of drug abuse prevalence, while the needs of public treatment agencies are a lagged function of drug abuse incidence.

Different Clients and Treatment Methods

Using the single term "drug treatment" to describe the provision of methadone to heroin addicts in the big cities in the early 1980s and the provision of individualized or group counseling and psychotherapy to cocaine addicts in the late 1980s obscures important practical differences in what was being demanded of public programs. Treatment professionals do not always regard the distinction among substances of abuse as especially relevant for planning recovery: "You treat the person, not the drug," is a common admonition. Even so, the cocaine epidemic has brought changes in the types of clients showing up for treatment and in their treatment needs that have forced institutions developed for heroin addicts and alcoholics to adapt. In many public systems, the average age of clients has declined, and the proportion that are referred from the criminal justice system has increased. In the early 1980s, when most clients were heroin addicts, most were categorized as self-referred, and most had been in treatment several times before. In the 1985 CODAP data,\(^1\) for example, 89 percent of the heroin admissions in reporting states were classified as voluntary, compared with 52 percent of the cocaine admissions; 22 percent of those admitted for heroin reported no previous treatment, compared with 66 percent of those for whom cocaine was recorded as the primary drug of abuse (NIDA, 1985). For voluntary admissions there is little need for coordination between the criminal justice and the treatment systems, and within the latter, between central intake agencies and the programs themselves, to make sure that the clients actually show up at least once. Now, with the increased number of involuntary clients, coordination of both types is a major challenge for treatment agencies.

\(^1\) States now report to CODAP on a voluntary basis. In 1985, fifteen states provided data to CODAP.
The goal of cocaine treatment is abstinence (rather than maintenance) and treatment consists largely of psychotherapy or counseling (rather than dispensing methadone), which requires more time per client. These programs tend to be staffed largely by paraprofessionals who have high rates of turnover. The Treatment Outcome Prospective Study (TOPS) found that clients who stayed in treatment more than a short time often reported having several counselors directing their care (Hubbard et al., 1989). A succession of counselors may not be a bad thing if it is planned variation, but it is likely that the multiplicity of counselors is more often unplanned and disruptive.

Another example of a change in the client population that has put new demands on the public treatment system is the increase in the number of women seriously involved with cocaine. Heroin was predominantly abused by men. Although many women were drug dependent before cocaine became popular—using benzodiazepines and other tranquilizers, for example—the public system was not designed to detect these forms of drug abuse and get women into treatment. The concern over "crack babies" has also brought into sharp relief the lack of appropriate ancillary facilities for women.

This neglect of women may not take the form of a simple supply constraint. There are many anecdotal reports of a greater unwillingness of women to seek treatment, due to the greater stigma associated with substance abuse for women than for men. Also, because the criminal justice system is a primary source of referrals to public drug treatment in big cities, the fact that few women are in such programs may reflect the fact that women are much less likely than men to get arrested.

Unfortunately, there are no objective population-based measures of "need for drug treatment" that can be compared with data on the number of women in treatment. (The same holds true for other types of comparisons one would want to make to study access issues, such as analyzing underrepresentation of poor people, racial or ethnic minorities, rural and inner-city residents.) A few proxy measures of the need for treatment can be derived from drug use indicators. Table 1 compares the percentage of women in public and private treatment in the 1987 NDATUS with the percentage of women involved in drug-related emergency room visits (other than suicides) reported to NIDA's Drug Abuse Warning Network (DAWN) system; women constituted about a third of both the population in treatment and the population seeking emergency services. Specifically for cocaine use, the percentage of women among drug treatment clients whose primary drug of abuse was cocaine falls in between the
Table 1
Percentages of Women Among Drug Treatment Clients and Persons Apparently in Need of Treatment by Data Source

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987 NDATUS drug abuse clients in treatment</td>
<td>33%</td>
</tr>
<tr>
<td>1987 DAWN emergency room “mentions” for all drugs, except suicides</td>
<td>36%</td>
</tr>
<tr>
<td>1984 CODAP clients in treatment, with cocaine listed as primary drug</td>
<td>27%</td>
</tr>
<tr>
<td>1985 NIDA household survey, weekly cocaine users</td>
<td>19%</td>
</tr>
<tr>
<td>1985 DAWN emergency room mentions of cocaine</td>
<td>33%</td>
</tr>
</tbody>
</table>

percentages of women among emergency room cocaine cases and among self-reported weekly cocaine users. In addition to issues regarding access to treatment for women, special ancillary services may be necessary to keep women engaged in treatment. Child care, to take a basic example, was not a high-priority ancillary service in many programs before large numbers of young women began to turn up as clients. Failing to provide such services may lead to higher rates of treatment dropout for women.

Lack of Connection to the Health and Mental Health Care Systems

Another legacy of the past is the separation of the public drug treatment system from the larger health care system. Public funding of drug treatment took the form of direct provision of services, for the most part, rather than the more usual form for American health services of public insurance reimbursing indigent care by mainstream institutions (e.g., as done under Medicaid). This disconnection from the general health care sector affects the prospects for institutional reform in several ways.

Integrating drug treatment into mainstream health care has been a topic for reform proposals almost since large-scale treatment began. One of the first of the national drug strategies, for example, claimed that “in the long term it is critical that drug abuse treatment services be incorporated into the general health services system. However, it is impractical to do so at this time” (Domestic Council Drug Abuse Task Force, 1975). The idea of incorporating drug treatment for indigents into the mainstream of health care financing has resurfaced in the form of proposals before Congress to expand Medicaid reimbursement for drug treatment. Medicaid advocates fear that this would add a new set of chronic-

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2 The 1988 NIDA Household Survey also reported data on weekly cocaine use, but there are no data on cocaine admissions nationwide that are more recent than the 1984 CODAP with which to compare them.
disease claimants to the dwindling resources available for basic health care coverage of poor families. Further, there are certain groups of individuals (e.g., the working poor, young males) who are not eligible for Medicaid but who might need drug treatment services; they might be excluded from treatment under these alternate approaches.

Since the introduction of methadone, the technology of drug treatment has changed little, at least in comparison to most fields of medicine. The reasons for this are unclear but may include inadequate research funding or interest and a lack of consensus within the treatment community about what constitutes high-quality treatment. The drug treatment system is also unaffected by the mechanisms that are used, albeit imperfectly, to assure quality in the health care system at large: formal regulation, accreditation, licensing and credentialing; informal peer pressure, hospital privileges, and continuing education; and even malpractice litigation and the threat of it. There is no mechanism in the drug treatment world really comparable to the National Institutes of Health’s (NIH) consensus development conferences, for example. Again, this may reflect the lack of consensus among treatment professionals regarding the characteristics of effective treatment.

The distinctions embodied in federal legislation between alcohol and other drug treatment and between substance abuse treatment and mental health care have created organizational and financial barriers to treatment for individuals who suffer from multiple problems. Abusers of other drugs typically abuse alcohol as well; the reverse is also true, although to a lesser extent.

Recent investigations document a high comorbidity of substance use disorder among persons with severe mental illness in the community. Data from three sites in the Epidemiologic Catchment Area (ECA) study (Regier et al., 1984), for example, show that people with schizophrenia report a 10.1 times greater rate of alcohol use disorders and a 7.6 times greater rate of other drug use disorders during the previous month than nonschizophrenic people (Boyd et al., 1984). A more recent analysis of the ECA data (Regier et al., 1990) supports the increased risk of substance abuse or dependence among those with severe mental illness. For example, 47 percent of individuals with a diagnosis of schizophrenia or schizophreniform disorder met lifetime criteria for some form of substance abuse or dependence.

Persons with coexisting severe mental and substance use disorders, commonly referred to as the dually diagnosed, present a particular treatment challenge to both the mental health and substance abuse systems. Each disorder complicates the diagnosis, treatment, and prognosis of the other disorder. Traditional
approaches to treatment that work well for persons with only one of these diagnoses may not work for persons who suffer from both disorders. The dually diagnosed, thus, often fall between the cracks of both systems.3

Hypertrophied Management Information Systems

One consequence of the consolidation of programs into the ADM block grant was that federal reporting requirements, beyond basic auditing functions, were eliminated. CODAP, operated by NIDA, had produced nationwide information on admissions and discharges from treatment programs receiving any public funding. Fifteen states continued to report to NIDA voluntarily, and others maintained for their own purposes CODAP-like management information systems, but most states, facing cuts in federal aid during the most severe economic recession since World War II, decided to eliminate their drug treatment reporting systems. Thus, little comparable national data are available for studying trends in treatment and its effectiveness.

Considerable upgrading of the state and local treatment data systems that were allowed to deteriorate in the 1980s is needed for public funders to be able to implement proposals to better match clients to particular types of treatment, or to monitor the process and outcomes of treatment more closely. The NDATUS provides useful census-type information at the national level, but because it does not link admission and discharge data for the same clients, NDATUS cannot support the kind of analysis that state and local officials need for implementing and monitoring reforms in matching/referral systems and quality control. However, because treatment policies are implemented at the community level, national systems may be less critical for system reform than improvements at the local level.

Lack of Referral Mechanisms

Another way in which the current public drug treatment system has been shaped by its origins is the underdeveloped capacity for diagnosis, triage, and referrals. Until quite recently, public drug treatment was designed primarily to handle heroin addicts. Methadone programs were required by federal regulations to

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3Thacker and Tremaine (1989) discuss the advantages of housing services for the mentally ill and for substance abusers in the same state agency in Virginia. Resources can be allocated to programs for the dually diagnosed more easily; intake assessment and cross-referral services function more smoothly, etc. Virginia is unusual in this arrangement; more common is the administrative segregation of substance abuse and mental health.
admit only those who met criteria for the severity of their opiate addiction. Federal regulations also required that methadone programs offer various ancillary services (counseling, job training) because of the general unease with the “dispensing window” model of maintenance therapy. Addicts no doubt varied in their personalities and psychosocial needs, and programs no doubt varied in the emphases they put on different components of the therapeutic package. But whatever differences there were did not lead to a great emphasis on matching particular types of addicts to particular types of programs. The system was not designed in its formative years to make subtler distinctions. Indeed, Dole and Nyswander argued from the rationale that all opiate addicts had a common neurological deficit that required a synthetic opiate to assure normal functioning—in this crucial respect for treatment planning, according to their theory, addicts were all alike. Proposals to improve system effectiveness by better matching of clients to treatment methods entail getting agencies to adopt new approaches to making referrals.

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4A recent General Accounting Office (GAO) report discusses the considerable variation among methadone programs in ancillary services, treatment goals, dosages, and other program elements (GAO, 1990).
4. Matching Clients to Treatment

There exists a widely held belief that treatment—not only treatment for substance abuse disorders, but psychotherapy for all sorts of mental disorders—could be made more effective if clients were better matched to particular types of treatment. “Types of treatment” could be defined as different settings, different combinations of services, different therapeutic approaches, even different personal characteristics of therapists.

The rationale for matching is not hard to understand: We want to believe that achieving recovery is possible the first time with the right intervention tailored to the special needs of each client. Suppose that two treatment methods have different “success rates” for clients who are different on some characteristic. The situation could be as pictured in the top half of Figure 3. The vertical axis represents a measure of successful outcomes. The horizontal axis represents some measurable characteristic of drug treatment clients such as the severity of their addiction problems, the presence of comorbid psychiatric conditions, or even demographic traits like age, race, or sex. The two upper lines in the space defined by these axes represent hypothetical outcomes of two alternate treatment methods (A and B) as a function of the client characteristic. The line labeled “No treatment” is meant to represent “spontaneous remission” (the proportion of successful outcomes for those not formally treated). As drawn in the top half of Figure 3, method A is more effective for clients who score low on characteristic X, and method B is more effective for clients who score high on characteristic X. For any given number of treatment slots, the system could do better if clients scoring low on this characteristic were routinely assigned to method A and those scoring high on this characteristic were routinely assigned to method B.

If, by contrast, there were no systematic attempts to assign clients to method A or B based on their scores, then studies of treatment outcomes in this hypothetical population would tend to find that: (1) some treatment is better than none; (2) the strongest predictors of outcome are client characteristics, not treatment variables; and (3) no treatment method shows a consistent advantage. These are familiar conclusions from the treatment effectiveness literature. Different readers draw different implications from such conclusions: researchers claim that we need more research on predictors of successful outcomes; insurers conclude that they might as well reimburse only the cheaper forms of treatment; and clinicians say that they have little to gain from the evaluation literature.
The conclusion that the system could do better by matching clients to treatment methods does not depend on having a crossover point, as shown in the top half of Figure 3, such that each method has an absolute advantage for one type of client. The situation could be as shown in the bottom half of Figure 3: method C is more effective than method D for every type of client, but its relative superiority is greater for those scoring high on the scale than for those scoring low. The system could achieve higher success rates overall by assigning clients with the best prognosis to method C and those with the worst prognosis to method D. The treatment and health care systems as a whole may presently serve, without conscious design, to do just this sort of matching. Current practice tends to result in those clients with the best prognosis (those with jobs or stable connections to family members with health insurance that includes dependent coverage) engaging in the “best” treatments (private programs, with intensive services, low client-to-staff ratios) and the clients with the worst prognoses (indigent, long-time addicts in trouble with the law) ending up in the overworked public systems. This largely reflects the budget constraints faced by public sector programs and the high cost of private treatment and assumes that such constraints will continue. There is a further attribution problem: Do the programs with good prognosis clients have good outcomes because of the program or the clients? Some proportion of good prognosis clients might have
recovered without the program intervention. Sorting out client effects from program effects requires research with experimental designs.

Discussions of matching often assume that effectiveness criteria would simply dictate that the clients with the worst prognoses (usually operationally defined as those with the most severe addiction problems at intake) should be assigned to the most intensive treatments (in the situation depicted in the lower half of Figure 3, the clients with low scores would be allocated to method C). The Appendix gives a numerical example showing the potential conflict between what is best for these individual clients and what would produce the greatest reduction in drug use and the number of severely addicted persons overall.

Matching is often suggested as a means of reducing the high rates of treatment dropout. Figure 4 shows the results from TOPS for persons admitted to treatment programs during the period 1979–1981. Both outpatient and residential programs lost more than half their clients before they had been in treatment for three months, which is used in the TOPS evaluations as a marker for the length of treatment that can be expected to produce positive results (Hubbard et al., 1989). The situation may have improved in recent years, since a great deal of attention has been devoted to the need for “pretreatment groups” to accustom new entrants to what will be demanded of them (and sort those serious about getting better from those who are not). But many treatment providers report that a good deal of effort, particularly in the public sector, is still being expended on people who show up only once or a few times. Some of this may be due to problems that cannot be solved by better screening and matching at intake. Matching would reduce dropouts among individuals who want to make an effort to get better but find that they do not fit with the program or the individual counselor to whom they were first assigned. Matching may not reduce dropout rates if recovery requires a progression through various stages, and cycling through earlier stages is typical prior to achieving sustained recovery (Prochaska, DiClemente, and Norcross, 1992).

Other evidence used to support matching is provided by a few studies that have investigated how outcomes for different sorts of clients vary with the type of treatments they received. A series of studies conducted at the Philadelphia Veterans Administration Medical Center has been particularly influential (McLellan et al., 1983; Woody et al., 1986). The VA studied outcomes for a small network of inpatient and outpatient alcohol and drug treatment programs, among which clients were assigned to programs based on fairly typical, implicit criteria (e.g., clinical judgment of the admitting staff member, the clients’ own preferences, location of the clinic, which program had openings). There were no overall differences in success rates among programs. The factor most strongly
associated with outcomes was a very general index of severity of psychiatric
problems, one of the subscales of the Addiction Severity Index (ASI) developed
originally by McLellan and his research group, measured at an intake interview.
Clients with the most severe rating of psychiatric severity did not do well in any
of the treatment programs. Clients with low psychiatric severity did fairly well
in all sorts of programs. Most significantly, the clients in the middle range of
psychiatric severity had different success rates in different types of programs;
those with more severe family and employment problems, for example, did
ter better in inpatient than outpatient programs (McLellan et al., 1983). In a related
study, opiate addicts (many simultaneously on methadone maintenance) were
assigned randomly to three different sets of treatments. Standard drug
counseling by paraprofessionals did little for the clients with more severe
psychiatric problems; they benefited more when their treatment included
psychotherapy directed at their comorbid mental disorders (Woody et al., 1986).
Kadden and colleagues (1989), working with alcoholics, found that those with
high ratings for sociopathy, perhaps not surprisingly, did not do well in forms of
treatment calling for good interpersonal skills and formation of a therapeutic
alliance between client and therapist; instead, they did best with didactic “coping
skills” training. Among other conclusions, these results emphasize the need for
specialized treatment of persons with co-occurring substance use and mental disorders.

The crucial implementation question is whether there is some client characteristic (or set of characteristics) that can be measured objectively in advance (or at least in the early stages of treatment) that could serve as a predictor of how well that client will do under operationally distinguishable treatment regimens. There is also a question of whether the goal of the system (especially under a limited budget) is to optimize outcomes at the individual versus aggregate level. Matching is an individual-level strategy.

The studies that are commonly cited have dealt mainly with psychological characteristics of the clients and measures of the severity of their addiction. There are other possible bases for matches, some relying on simple and easily measured characteristics of clients, such as age, sex, and race or ethnicity. It is often said, for example, that culturally appropriate treatment programs are needed for members of racial and ethnic minorities. Since much therapy relies on interpersonal communication and the formation of a therapeutic alliance, a demographic match between client and counselor has face validity, but there is not much evidence to support this approach to matching. At a minimum, the service continuum should be matched to client need; for example, women in treatment often require different ancillary services than men need, such as child care, because of their different social and familial roles. However, collectively attempting to match clients to programs based on multiple dimensions could quickly strain a central intake and referral agency.

In current practice, most clients entering public treatment systems do not get a great deal of individualized attention and assessment designed to match them to the most appropriate program or form of treatment. To some extent, this may reflect little variation among the available programs. For example, most treatment programs for alcohol abusers, as Miller and Hester (1986) point out, pay "lip service to the need for individually tailoring intervention programs" but "the status quo . . . appears to be undifferentiated and at best modestly effective treatment." In practice, "matching" may mean little more than accepting or rejecting the client for the primary regimen offered by the program (Institute of Medicine, 1990).

It may be that matching clients to treatment is a skill that itself requires clinical acumen and experience, and thus cannot easily be made a routine function of central intake facilities handling large numbers of clients. "The realities of drug abuse treatment in the public sector," according to Barry Brown, "... dictate that the material to be collected at intake be collected through the simplest and least
costly means available, for example, a standardized test administered by an
intake worker whose responsibilities are largely clerical” (Brown, 1989). He lists
the ASI and short depression scales as forms that can be administered reliably in
such settings. But other clinicians dispute the usefulness of ratings derived from
standard tests and call for forms of assessment that would require more of the
time of skilled counselors. DeLeon (1989) points out that such assessment is
beyond the capabilities of many of those who perform the intake functions;
programs often have their least experienced staff members dealing with intake
and new admissions.

Yet another difficulty is posed by the fact that the most effective matching may
be between a client and a particular counselor (rather than between a client and a
program or type of therapy). This fine level of detail might require a great deal
of local knowledge and experience on the part of those making the referral, and
treatment programs may not be equipped or willing to handle counselor-specific
waiting lists. The director of a private social services agency in Detroit, a clinical
psychologist who makes many referrals to drug and alcohol treatment programs,
reports that he always tries to refer people to particular counselors who have a
good record with similar persons. Significantly, though, he relies on his personal
contacts with large numbers of counselors to make such referrals. And when we
asked if he thought the skills required to match a client with the right counselor
could be taught to a new intake worker or the steps could be written down in a
manual, he replied that this would be hard; experience, especially local
experience, is required. Public agencies with high staff turnover, required to deal
with large numbers of clients and large numbers of treatment providers, are
unlikely to be able to perform this task well on a routine basis. Indeed, some
research designed to test therapists’ confidence that they know who would do
well under particular regimens found that confidence misplaced: They could not
pick who would succeed ahead of time (Luborsky and McLellan, 1978; Kadden
et al., 1989).

In larger metropolitan areas, clients may self-select themselves into particular
programs based on their preferences for treatment styles or ancillary services or
prior experience with programs in the area. The problems with this approach are
readily apparent, though. There is no evidence in the literature that allowing
clients to select their own treatment program based on what appeals to them
results in improved outcomes. Many clients, particularly those who are assigned
to treatment involuntarily or who feel coerced into participating, may not have
obtaining effective treatment as their primary goal. They also may not know
what approach will work best for them. Similarly, in the general health sector,
patients are often not able to assess the technical quality of care.
Although the debate over matching might be informed by better treatment evaluation research, it is difficult to measure all the relevant client characteristics that might interact with treatment factors and to account for them in the analysis of treatment outcome data. Most evaluations, especially those attempting long-term follow-up, have very high attrition rates. Missing data problems can bias estimates or reduce sample sizes needed for examination of large numbers of interaction variables. The relevant client characteristics may be difficult to assess, especially in retrospective evaluations relying on information gathered at admission, which often occurs during a crisis of some kind for the client. Error in the measurement of the client characteristic would tend to make statistical estimates of the lines shown in Figure 3 “flatter” than the true relationships.

There is also a problem with the fineness of the classification of treatment variables. The few large-scale, long-term evaluations of treatment of drug abuse other than alcohol have focused primarily on the issues of methadone versus drug-free treatment for heroin addicts and residential (mainly Therapeutic Community) versus outpatient treatment (as in Hubbard, 1989). The great majority of clients (85 percent in the most recent NDATUS census) are now in outpatient drug-free programs, which are not further subdivided by content or provider characteristics in these studies. Again, there is a barrier to institutional reform posed by the lack of good information systems at the state and local levels. If programs are characterized only as “outpatient drug-free,” without further elaboration about the specific content of treatment, then a referral agency cannot match clients to treatments with any specificity.

Besides such implementation problems, there are equity concerns that would have to be addressed if matching were to become a routine practice in the public system. As James Q. Wilson has argued, public agencies by their very nature are not well suited for tailoring interventions to match individual circumstances (Wilson, 1989). Bureaucracies are the way they are precisely because we do not want the frontline workers to exercise a great deal of discretion—we as a society have been willing to sacrifice much efficiency in order to constrain agencies’ behavior with procedural rules and appeals processes. Our societal definition of equity is that, in like circumstances, people are to be treated the same. Treatment choices in the public system are often made in the context of bargaining within the criminal justice system. Could we tolerate an efficient system that, say, sent the middle-class married cocaine user to a few outpatient counseling sessions and the lower-class unmarried cocaine user to jail for aversion therapy by unlicensed practitioners?
5. Assuring the Quality of Drug Treatment

Just as the system itself is fragmented, responsibility for assuring the quality of treatment services actually delivered is diffuse. Pressure for improvements in quality comes from many sources. The federal government can influence quality through regulations, research and demonstration funding, and in making direct purchases of substance abuse treatment for special populations like military dependents. State agencies are responsible for most licensing functions, and they oversee provision of treatment services by local health agencies directly or through contractors. In the private system, third-party insurers may enforce quality standards by limiting access to expensive treatment programs such as those found in hospital settings. Clients who are allowed free choice might select only high-quality programs (as measured by client satisfaction), but as in other aspects of health care, their choices may be limited. For increasing numbers, Employee Assistance Program (EAP) professionals function as knowledgeable "purchasing agents" acting on the clients' behalf.

Studies of the quality of general health care have shown "an astounding degree of variability among geographic areas, practitioners, and institutions" (Donabedian, 1985), even in such seemingly standard procedures as appendectomies. We expect greater variability in quality when the intervention consists mainly of the unsupervised interaction of a counselor and client, typically under the auspices of a small organization.

The standards that are imposed by state licensing agencies on outpatient drug-free programs focus largely on "inspectables"—things that an agency representative can check in the files, such as whether a treatment plan was written down and signed by both the client and the provider, whether the plan and the client's record have been updated periodically, whether ratios of staff to clients are above acceptable minima, whether facilities meet fire and other local codes, and the like. Clearly, these are important, but even when such standards are satisfied, there is still plenty of room for variation in the quality of services. The effectiveness of the system overall could be improved if agencies could identify the good programs and steer clients and funds toward them.

The record of enforcement of federal regulations for methadone programs does not lead to optimism about the ability of regulators to keep track of an expanding system. A recent study by the General Accounting Office concluded that the
Federal Drug Administration (FDA) and NIDA did little to enforce existing regulations during the 1980s (GAO, 1990).

Both state licensing standards and federal regulations for methadone programs have largely been concerned with indicators of structural and process quality. An ambitious attempt to move beyond this into continuous assessment of outcomes is planned for NIDA's Methadone Maintenance Quality Assurance System. As designed, this will require every methadone maintenance program to collect individual-level demographic data and scores on the ASI for each client at admission. Programs would also be selected on a random basis and required to collect urine specimens, following standardized procedures, for analysis at federally approved laboratories. Each program would be required to maintain logs and submit frequent reports on clients currently receiving treatment, discharges since the last report, reasons for discharge, urine test results, and so on. Aggregate results (e.g., positive urine tests, dropout rates) for programs with different mixes of clients (defined presumably by average scores on the intake assessments) will be published periodically, with the intention that NIDA, FDA, state licensing agencies, and the programs themselves can make comparisons of their performance with appropriate yardsticks.

The idea of routine assessment of outcome indicators as a way to put pressure on institutions to improve quality is reminiscent of the program under which the Health Care Financing Administration has been publishing standardized mortality rates at the hospital level for Medicare patients. The outcome indicators for the methadone quality assurance system are less crude than mortality rates (and therefore less subject to random variation in small populations), but one can foresee that the providers' objections will be similar. Programs that serve poorer and sicker populations will complain that whatever statistical adjustments are made for differences in the client population at intake will not adequately capture the critical clinical differences.

An important concern is that programs could respond to attempts to use outcome measures to control referrals or reimbursement rates by "creaming"—taking in only those clients who are likely to get better. Whether creaming would defeat the purposes of the treatment system or not depends in turn on a couple of points. One is whether program staff really can figure out ahead of time who will do well; as discussed above, research addressed specifically at that issue does not always support the common sense conclusion that they can decide this. Another point is that giving program staff an incentive to do some "creaming" may even enhance the overall effectiveness of the system (though perhaps with some damage to equity goals), as discussed in the Appendix to this report. (One person's "creaming" is another person's "triage.")
The problem is that a concentration on outcome measures alone would not measure the value added by the treatment episode, unless a reasonable set of factors for adjustment were developed that could differentiate reliably among clients at intake in terms of their degree of difficulty. The ASI and the “Cleveland Criteria” are widely used already, for example, to sort out those who will be referred to residential treatment.¹ Such instruments are susceptible to “diagnosis creep,” though, and probably to a greater extent than has been found with the prospective payment system used by Medicare and some other funders for reimbursement of medical procedures.

When programs discover that their performance is judged on the basis of improvements in clients’ ASI scores, for example, intake workers will presumably take greater care to make sure that new clients report the full extent of their problems when completing the interviews. Dropout rates are not an unambiguous concept—if programs were judged in part on the basis of dropout rates, then they might be more reluctant to admit clients formally until after they had passed through a pretreatment sequence, or they might be tempted to carry on their books clients who in fact had not shown up for appointments for some weeks. All these responses might translate into improved treatment effectiveness, depending on how they were implemented and what the opportunity costs were. For example, delaying formal assignment of “dropout” status might be a sign of better care if staff continue to attempt to engage the client in treatment—allowing for some intermediate “failures” as part of the stages of recovery. But attempts to impose simple rules or to make simple comparisons on a routine basis outside the confines of intensive outcomes research could easily be defeated by the behavior of staff and administrators. Defining and measuring quality is likely to prove even harder in addictions treatment than in other branches of health care.

¹Although a recent study found that clients who were “mismatched” to intensive day treatment on the basis of the Cleveland Criteria (which use the ASI) did no worse on any of the outcome criteria than those who were appropriately “matched” to treatment (McCay, McClellan, and Altermann, 1992). The authors conclude that the criteria do not appear to effectively discriminate among clients for the purpose of making assignments to treatment.
6. Conclusions

Reviewing the recent history of the drug treatment system should instill an appreciation for the magnitude and novelty of the tasks facing reformers, but it should not lead to despair. Making the system work well as an instrument of demand reduction will require changes as well as expansion.

Better matching and quality assurance ("holding programs accountable," in the language of the National Strategy) might improve the effectiveness of the system. As we have seen, though, in neither case does existing research provide a clear set of principles for action or mechanisms for implementing these ideas. Matching, as usually understood, might not even improve overall effectiveness of the system; something like emergency triage may be required especially when treatment slots must be rationed. Regulatory approaches to quality assurance, even those that go beyond the current focus on process measurement and deal with outcome measurement, must take into account the likely behavioral responses of providers; these could either enhance or detract from the overall effectiveness of the system.

Given these ambiguities, it is likely that implementation of both sets of reforms should be decentralized. Though the tone of the National Drug Control Strategies has been one of prescribing measures for universal implementation, reorganization of treatment services is an area that could profit from using what the reformers of the Progressive Era referred to as "the Laboratory of the States." Since no one knows exactly how to implement these reforms, or even what is desirable, all could benefit if different cities and states tried different expedients—provided care were taken now to analyze the effects of planned changes. It is equally plausible that different strategies will work better in some communities than others and that a variety of approaches can be taken to achieve the desired end.

There have already been some interesting innovations in public systems involving the separation of assessment and referral from the provision of treatment (whether direct or through contractors). The province of Ontario and the state of Minnesota have set up separate centers for assessment and referral of alcohol and drug clients (see the description in Institute of Medicine, 1990). One local "coordinating agency" in Michigan (Southeast Michigan Substance Abuse Services, covering several counties around the city of Detroit) has implemented a
more fundamental reform. Under its old system (common in Michigan and other states for local agencies handling federal and state treatment funds) the agency contracted with a small number of treatment providers each year for a certain number of beds or treatment slots. Under the new system, the agency does initial assessment, refers clients to any of a much larger number of programs in the area, reimbursing the programs as a private insurance company would, and follows up with the client directly, as an EAP in the private sector would, to see that improvement is being made. This has several possible advantages for both matching and quality control: The agency could continuously evaluate overall program effectiveness, or effectiveness with particular types of clients; referrals in the future could reflect program experience. It would no longer be necessary to impose an all-or-nothing sanction like terminating the contract. This approach does introduce opportunities for corruption (e.g., payments to ensure a certain census). Some regulatory oversight might be necessary to discourage such practices.

This change in procedures would alter the nature of the tasks for the agency staff. It would also put providers at greater risk, since they would no longer know at the beginning of each year exactly how much business to expect from their major customer. Indeed, part of the reason for such a reform in some areas could be the desire of agencies to sever their relations with existing contractors, many of which serve publicly funded clients almost exclusively. The treatment field offers many alternatives, and public agencies could use their market power more effectively by opening up competition to a wider number of suppliers than was feasible when current contracting practices were established.

Many such innovations are being implemented. But it will be difficult for local agencies to learn from their experience with them unless more research is funded specifically to measure effects on clients and providers before and after the innovations, or to assess implementation problems as they happen. This focus on institutional, supply-side issues would be fairly novel in the drug treatment field. The Center for Substance Abuse Treatment (formerly the Office of Treatment Improvement) in the newly created Substance Abuse and Mental Health Services Administration might be one focal point for advancing this agenda.

There is also a clear need for prospective studies to address some of the basic questions about both the feasibility and usefulness of matching on various criteria; existing studies are almost all post hoc and rarely consider more than one approach to matching. Although there will be a lag between obtaining the results of prospective studies and the incorporation of such information into
institutional reform, the problems for the treatment system created by the cocaine epidemic will persist long enough for the nation to realize the return on this investment.
Appendix

Triage Rules for Assignment of Clients to Treatment Methods

Which clients should get the most intensive and expensive treatments for drug abuse? The current practice in many agencies is to use a screening device like the ASI and to assign the clients who are most heavily involved with drugs (i.e., use the “worst drugs,” use drugs most frequently, and report more problems arising out of their drug use) to the most intensive forms of treatment (usually inpatient or residential). The reasoning is that the intensive treatments have the highest success rates with these clients, who do not do well in less structured outpatient programs.

But this argument is not sufficient. It runs counter to a “triage” line of reasoning: The less severely addicted may also have better outcomes from intensive treatment than do the more severely addicted (just as they have better outcomes from outpatient treatment than do the more severely addicted). Within a fixed budget, it might be more cost-effective if agencies spent more on the clients with the better prognoses. The current practice is justified only if one is willing to make one of two further arguments: (1) it is not the number of “successes” we care about, but the aggregate reduction in the amount of drugs consumed; or (2) the relative superiority of the intensive treatment over outpatient treatment is greater for the most severely addicted clients than it is for the less severely addicted clients. The first proposition takes us into the question of the social goals of drug treatment, among which there are important trade-offs to be considered. The second proposition is not backed up by currently available research on treatment effectiveness.

To illustrate these points below, we use arithmetic calculations based on success rates reported by the Treatment Outcome Prospective Study (TOPS). Hubbard and colleagues (1989) summarize the results and provide references to the detailed outcome studies. A crucial area of uncertainty is the relative amounts of drugs that are consumed in a given time period by clients categorized by the severity of their addictions; as a start we will assume that a successfully treated client in the most severely addicted group will reduce his consumption by five times the amount of a successfully treated client who was less severely addicted at intake, and a moderately addicted client by twice that amount.
Suppose there are two overall goals of treatment: (1) maximize the number of people who show a decline in their drug use and (2) minimize the amount of drugs consumed.\(^1\) There are three classes of drug user—light, moderate, and heavy—and two treatment modalities—inpatient and outpatient.

For estimates of how the treatment outcomes depend on the severity of pretreatment drug use, we can use the TOPS data on drug use patterns for residential treatment clients one year before and one year after treatment. Hubbard and his colleagues (1989) rank drug use patterns roughly in order of severity. We will take their category of "heroin/other opioids" to stand for the heaviest users, "non-opioids" to stand for the moderate group, and "alcohol/marijuana" to stand for those less severely addicted before treatment.\(^2\) The TOPS category "minimal drug use" (which includes complete abstinence) is taken as the treatment outcome of interest. "Success rates" for purposes of this exercise will be taken to mean the proportion of clients in each initial (pretreatment) severity group who ended up in the minimal drug use category in the year after treatment. For the most severely addicted, the success rate of residential treatment is 28 percent; for the moderately addicted, 38 percent; for the less severely addicted, 40 percent.\(^3\)

Hubbard and his colleagues did not report data on the differential effectiveness of treatment for groups defined by severity of addiction. (They note enigmatically that "findings are similar for outpatient methadone and outpatient drug-free clients and are not presented here.") For this exercise, we test two sets of assumptions. First (in the "baseline case"), we assume that outpatient treatment is half as effective as residential treatment for each group (that is,

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1. The quantity of drugs consumed might matter if one policy goal was to reduce the size of the illegal market. More generally, the "amount of reduction" as used in this exercise can be taken as a proxy for any benefit of drug treatment that is greater when a very severely addicted person switches to abstinence or a light drug addiction than when a formerly less addicted person improves.

2. The TOPS "drug abuse pattern index" from which these categories are chosen was developed as an analogue to the ASI commonly used for intake screening: "The index is hierarchical: that is, the seven categories describe drug abuse patterns of increasing severity and complexity, from minimal use of any drugs to regular abuse of heroin and other opioids" (Hubbard et al., 1989). The posttreatment measures confirmed that the index did in fact predict treatment outcome, since the proportion of clients who were minimal drug users at follow-up increased monotonically for each level of the index as measured at intake.

3. These rates are chosen somewhat arbitrarily. They measure "success" only in the first year after treatment; most groups in the TOPS study showed slightly better outcomes in the second year, but worse outcomes in years three to five after treatment than in the first year. More importantly, success rates are measured only for those clients who completed at least three months of treatment; dropouts fared much worse in the TOPS study, and untreated addicts were not measured at all, so one cannot say from these data alone what improvement over the course of the disease was due to treatment. In a cost-effectiveness analysis, one would also want to take account of treatment careers rather than single episodes; the residential clients in TOPS had more episodes before the study treatment episode, and more treatment episodes during the years when outcomes were measured, than did the outpatient clients.
instead of a 28 percent success rate for the most severely addicted, outpatient treatment leads to a 14 percent success rate, and so on). Second (in the "differential effectiveness case"), we assume that outpatient treatment is half as effective as residential treatment for the most severely addicted, three-quarters as effective for moderately addicted, and just as effective as residential treatment for the least severely addicted. We have 200 drug users in each severity category referred for treatment and 200 residential slots and 400 outpatient slots to allocate.

Table A1 shows the results for the baseline case. Four different assignment rules are tested: (1) assign the most severely addicted clients to inpatient treatment and all others to outpatient treatment; (2) reserve the inpatient slots for the moderate severity group, and assign the most and the least severely addicted clients to outpatient treatment; (3) assign only the least severely addicted to inpatient treatment, and send the more severely addicted to outpatient treatment; and (4) randomly assign one-third of the group to residential treatment and two-thirds to outpatient treatment. Recall that for each assignment rule, the total costs are the same, so that the rule that produces the best results is also the most cost-effective.

Table A1
Results of Alternate Rules for Assigning Clients to Treatment Modalities When Effectiveness Is the Same Across Severity Groups

<table>
<thead>
<tr>
<th>Status at baseline</th>
<th>Number of clients assigned by modality and severity group</th>
<th>Number of successes</th>
<th>Reduction in consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most severe</td>
<td>Inpatient 200</td>
<td>Outpatient 0</td>
<td>134</td>
</tr>
<tr>
<td>Moderate</td>
<td>0</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Least severe</td>
<td>0</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most severe</td>
<td>Inpatient 0</td>
<td>Outpatient 200</td>
<td>144</td>
</tr>
<tr>
<td>Moderate</td>
<td>200</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Least severe</td>
<td>0</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most severe</td>
<td>Inpatient 0</td>
<td>Outpatient 200</td>
<td>146</td>
</tr>
<tr>
<td>Moderate</td>
<td>0</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Least severe</td>
<td>200</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most severe</td>
<td>Inpatient 67</td>
<td>Outpatient 133</td>
<td>141</td>
</tr>
<tr>
<td>Moderate</td>
<td>67</td>
<td>133</td>
<td></td>
</tr>
<tr>
<td>Least severe</td>
<td>66</td>
<td>134</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Assumes drug consumption is reduced by 1 unit for successfully treated client in least severe category, 2 units for moderate category, and 5 units for most severe.
If the social goal of treatment is to maximize the number of treatment successes, then the best rule is to send the least severely addicted clients, those with the best prognosis, to the most intensive form of treatment. If the social goal of treatment is to reduce the total amount of drugs consumed, then the best rule is to send the most severely addicted to the most intensive treatment. If both goals are desirable, and the maximand is some weighted average of the two outcomes, then (depending on the exact choice of a weighting scheme), rule number 4—assign clients to treatments at random—might be the best. Assignment at random, of course, runs counter to the whole notion discussed above that the system’s efficiency would be improved by better matching of clients and treatments. Note that these conclusions hold even though residential treatment works best for everyone, the most severely addicted are the hardest to treat, and the success rates for the severely addicted in outpatient programs are quite low (the points often made to justify the usual assignment rules).

The situation is different in Table A2, where the relative effectiveness of the two modalities differs among groups defined by addiction severity at intake in such a way that outpatient treatment and residential treatment are equally effective for the least severely addicted, but the former is only half as effective for the most severely addicted. If this is the case, then rule number 1 wins on both counts.

Table A2
Results of Alternate Rules for Assigning Clients to Treatment
When Effectiveness Differs by Severity Group

<table>
<thead>
<tr>
<th>Status at baseline</th>
<th>Number of clients assigned by modality and severity group</th>
<th>Number of successes</th>
<th>Reduction in consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Inpatient Outpatient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most severe</td>
<td>200 0</td>
<td>193 362</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>0 200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Least severe</td>
<td>0 200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Inpatient Outpatient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most severe</td>
<td>0 200</td>
<td>184 316</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>200 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Least severe</td>
<td>0 200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Inpatient Outpatient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most severe</td>
<td>0 200</td>
<td>165 278</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>0 200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Least severe</td>
<td>200 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Inpatient Outpatient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most severe</td>
<td>67 133</td>
<td>181 319</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>67 133</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Least severe</td>
<td>66 134</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Assumes drug consumption is reduced by 1 unit for successfully treated client in least severe category, 2 units for moderate category, and 5 units for most severe.
How do these results change when we modify the initial conditions? Briefly, the policy of assigning the most severely addicted to the most intensive treatment makes more sense when: (1) the differences among the addiction severity groups in success rates are smaller; (2) the differences among the addiction severity groups in the amounts by which each successful client reduces drug consumption are larger; and (3) society values the reduction in consumption more, relative to the simple numbers of clients showing improvement. Changing assumptions in the opposite direction makes the policy of assigning the most severely addicted to the least intensive treatment more attractive.

If the differences in effectiveness between treatment modalities were smaller—say, the success rates in outpatient programs were three-quarters those of the residential programs for all groups—the same conclusions hold as for the baseline case shown in Table A1, except that the differences in outcomes among assignment rules are much reduced. In the limiting case, if outpatient treatment and residential treatment are equally effective, then the assignment rule does not affect the outcomes.

Thus far, of course, we have only considered effectiveness and have not allowed the number of slots of the two types of treatment, and thus total costs, to vary. A cost-effectiveness analysis would probably show that the number of successful outcomes is maximized (for a treatment budget of any fixed size), so long as there are any drug users left untreated, by eliminating inpatient programs and sending everyone to outpatient programs. The former have been found in many studies (including TOPS) to be more effective than the latter, but not by a factor as large as the cost differences. Note that studies of treatment programs for alcohol abusers do not show any consistent advantage in effectiveness, let alone cost-effectiveness, for inpatient versus outpatient programs (Miller and Hester, 1986). In TOPS, as in other nonexperimental studies, the residential programs did tend to get more severely addicted clients than did the outpatient programs, precisely because of the formal or informal allocation rules described above. So there may be an identifiable subset of clients for whom the effectiveness differential was indeed so much greater that it would outweigh the cost differential. Even this, if it were shown, would not be sufficient by itself to justify public spending on the more intensive modalities; one would also have to argue that treating one of these clients is more valuable to society (in terms of reduction of other health problems, total drug use, or other social costs) than treating three or four additional outpatient clients.
References


Institute of Medicine, Committee for the Study of Treatment and Rehabilitation Services for Alcoholism and Alcohol Abuse, *Broadening the Base of Treatment for Alcohol Problems*, IOM: Washington, D.C., 1990, ch. 11, "Matching," pp. 279–312.


