

**RECENT DEVELOPMENTS IN
ALCOHOLISM**

**VOLUME 15
SERVICES RESEARCH IN THE
ERA OF MANAGED CARE**

**Organization
Access
Economics
Outcome**

EDITED BY MARC GALANTER

*An Official Publication of the American Society of Addiction Medicine
and the Research Society on Alcoholism.*

This series was founded by the National Council on Alcoholism.

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Preface

From the President of the Research Society on Alcoholism

On behalf of the Research Society on Alcoholism I welcome the important contribution that Volume 15 of this excellent series on Recent Developments in Alcoholism brings to our field. It is not enough for our scientists to develop effective and efficient methods to identify and treat alcohol abuse and alcohol dependence; the availability of these services is often limited and it is certainly nonexistent for the early problem drinker.

In nineteen outstanding chapters, Volume 15 deals with organizational issues concerning access to and delivery of substance abuse treatment and the role of managed care. Several chapters deal with economic issues, cost-benefits, and financing of these services. Lastly, five address recent treatment outcome studies. Thus, this volume will be of great value to both scientists and practitioners. The Editor and Associate Editors are congratulated for this conceptual and organizational accomplishment.

Yedy Israel, Ph.D.
President, Research Society on Alcoholism

From the President of the American Society of Addiction Medicine

The rise of managed care has had a major effect in all areas of the health care system, and this volume provides a context for understanding this effect. In recent years, treatment has been compromised in many ways by changes in insurance coverage. A recent comprehensive evaluation sponsored by ASAM revealed that the value of substance abuse insurance coverage for corporate employees declined by 74.5% from 1988 through 1998. This compared with declines during the same period of only 11.5% in the value of general medical coverage.

Clinician options for providing treatment have suffered, as the shift toward managed care has come to be associated with a marked reduction in frequency and duration of inpatient hospitalization, despite the demonstrable need of many patients who require this level of treatment intensity. Significantly, this decrease has not been offset by a corresponding increase in outpatient treatment utilization. The impact of these developments is apparent in another ASAM survey of physicians specializing in addiction, a majority of whom indicated that managed care had a

negative impact both on inpatient detoxification and rehabilitation, and on inpatient and outpatient rehabilitation. I recommend to the reader the report of our society in this volume for an extensive review of this issue.

Marc Galanter, M.D.
President, American Society of Addiction Medicine

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Thomas D'Aunno, Section Editor

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Marc Galanter, Section Editor

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RECENT DEVELOPMENTS IN

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VOLUME 15

SERVICES RESEARCH IN THE ERA OF MANAGED CARE

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The Organization of Service Delivery

Thomas D'Aunno, Section Editor

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Overview

Thomas D'Aunno

This section has two related goals. The first is to advance understanding of the organization of services for individuals with alcohol and drug abuse problems. The second is to examine the role that the organization of services plays in the kind and quality of treatment services that these individuals receive. Throughout this section, “treatment services” are broadly defined to include a wide range of interventions and practices that are used not only to reduce substance abuse but also to address the social, psychological, and medical causes and effects of substance abuse. This definition includes, for example, medical care that individuals might need to address particular physical problems that often accompany alcohol or drug use. Further, the chapters in this section do not distinguish treatment services for individuals with alcohol abuse problems from treatment services for individuals who have other drug abuse problems (e.g., heroin, cocaine). This approach is taken, in part, because there are very few treatment providers that specialize in offering treatment exclusively for alcohol abuse and, in part, because abuse of multiple drugs is common and it is often difficult to identify an individual’s “primary” problem.

This section is based on two key observations and a central argument that attempts to account for these observations. The first observation is that treatment services vary in their effectiveness: some interventions and practices result in better post-treatment outcomes than others.¹ This view has relatively strong support from clinical studies of treatment effectiveness which indicate that particular interventions and practices are related to a variety of important posttreatment outcomes, including abstinence or reduced use of alcohol and drugs, reduced criminal behavior, and employment. One of the most important aspects of interventions, for example, is their duration; clients who stay in treatment longer (at least three months) are much more likely to have good posttreatment outcomes.² A recent publication by the National Institute on Drug Abuse³ summarizes the treatment effectiveness literature by identifying several principles for effective treatment.

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A second key observation is that treatment providers often fail to use practices that are known to produce good outcomes. Empirical support for this view is also relatively strong. Results from a series of studies show, for example, that many methadone treatment units do not provide methadone dose levels that are high enough to be effective.^{4,5} In fact, a recent Institute of Medicine report⁶ focuses on ways to close the gap between the treatment practices that community-based clinics typically use and those that are recommended on the basis of empirical evidence.

To account for the foregoing observations, the chapters in this section develop a central proposition: Differences in treatment organizations account for a substantial part of the variation that occurs in the services they provide. In general, organizations consist of behavior patterns and routines that are combined to produce services or goods. Organizations also consist of a variety of resources (information, funds, materials) that are converted to services and products. Thus, the overall argument developed in this section is that observed variations in the use of treatment interventions and practices are, to an important extent, a function of the ways that activities and resources are combined and expressed in the behavior of staff members.

This argument about the role of treatment organizations emphasizes their dependence on a wide range of actors in their external environment who control critical resources, especially funds, referrals, and regulatory requirements.⁷ These external actors, including managed care organizations, state and federal agencies, and local health care and social service agencies, shape many aspects of substance abuse treatment organizations and the services they provide.⁸ For example, state agencies have the authority to determine if an organization will be licensed to provide substance abuse treatment and, if so, the amount of state funds that the organization receives. Thus, treatment organizations typically face problems in acquiring resources and maintaining their autonomy.

In addition, treatment organizations also face a great deal of uncertainty that stems from another external source: substance abuse clients themselves. These individuals often suffer from a complex set of problems, including psychological, social, and physical problems, that are implicated both as causes and consequences of alcohol and drug use. As a result, treatment providers have difficulty both recognizing clients' needs and responding to them.⁹ In turn, this difficulty results in variation in treatment interventions and services.

A related source of uncertainty for treatment providers is that, despite the progress cited above, the scientific foundation for interventions in the substance abuse field is still developing. This means that treatment providers apply techniques with somewhat limited confidence that they will work for any given client. Perhaps more importantly, it is sometimes difficult to develop consensus, even among experts, about what treatment interventions should be used. Lack of consensus among groups that are either external to treatment organizations or internal to them also leads to variation in their services.

The influence of external actors on a focal organization may be subtle and indirect. That is, external actors influence organizations not only by coercion (e.g.,

by withdrawing funds or licenses), but also by promoting norms, values, and role models to which organizations often conform.¹⁰ For example, treatment organizations may voluntarily mimic the behavior of their successful peers.

Societal beliefs about substance abuse and its treatment seem to play a very important role in shaping organizations and services.¹¹ In particular, multiple and often inconsistent societal views on how to deal with individuals who have drug and alcohol problems create inconsistent and often conflicting demands for treatment providers. Moreover, there are societal questions about how much to emphasize the cost versus the quality of treatment interventions. How much of a state budget, for example, should be allocated to inpatient versus outpatient substance abuse treatment? Given varying views and values about substance abuse and its treatment, it is not surprising that treatment providers differ in the services and interventions they offer; organizations mirror the social and cultural environment in which they operate.¹²

At the same time, it would be a mistake to argue that external forces entirely shape treatment organizations and services.¹³ Rather, organizations respond to external demands using a variety of strategies designed to preserve their autonomy. For example, organizations often band together for lobbying efforts to influence state regulations. Moreover, compliance with external demands is often superficial: organizations may adopt some practices to please external actors, while buffering their core activities from external influences.¹⁴ To the extent that such efforts are successful, the behavior of treatment organizations depends more on their internal structures and processes than on external influences. In most instances, of course, it is probably a mix of external and internal factors that shape organizational behavior. In any case, it is very difficult, if not impossible, to understand treatment services, or to improve them, without analyzing the organizational context in which they are produced.

The chapters in this section contribute to this goal in a variety of ways. They summarize prior empirical research, provide some data from recently completed studies, apply conceptual perspectives to analyze central problems in service organization, and identify issues that need additional empirical research.

More specifically, the first chapter below, by Horgan and her colleagues, examines a range of important organizational issues in the delivery of substance abuse treatment. This chapter primarily draws on data from a recently completed survey of a relatively large sample of all of the nation's substance abuse treatment providers. These data are unique; there is no other current survey that involves a nationally representative sample of all types of treatment providers and that collects detailed information on these providers. In short, this chapter provides a broad, empirically based view of the various kinds of organizations that provide treatment services.

This chapter is followed by two chapters that focus on the role of managed care in substance abuse treatment. Managed care has, of course, been the focus of much interest lately among all actors involved in the treatment system.¹⁵ The complexity of managed care and its effects clearly demands continued attention from researchers and policy-makers. The chapter by Sosin and D'Annunzio provides an analysis of

relationships among the central actors involved in managed care arrangements: purchasers of care (both public and private), managed care organizations, and treatment providers. This chapter describes key features of these relationships (including differences among the types of managed care arrangements) and discusses explanations for variation in them. This chapter draws on published studies, organizational theory, and data from a recently completed national survey of treatment providers and managed care organizations that work with them.

The chapter by Steenrod and her colleagues focuses on the effects of managed care on substance abuse treatment. This chapter reviews the growing body of empirical studies that examines various effects that managed care may have on treatment organizations and their services. Among the issues examined are relationships between various types of managed care arrangements and changes in the use of inpatient and outpatient treatment services; costs of these services; changes in treatment organizations (mergers and closures; staff composition); and changes in treatment practices (e.g., use of protocols; standardization of care).

The final chapter in this section, by Calloway et al., examines linkages among local social and health care organizations that are established to meet the variety of needs that substance abuse clients have. These linkages (involving contracts and case management, for example) are critical because, as noted above, these clients typically suffer from medical, psychological, and social problems that are both causes and consequences of their use of alcohol and drugs. Further, there is evidence that clients have been receiving fewer of these services in the past several years.¹⁶ These authors draw on results from their own empirical studies as well as from other published work.

As even the brief discussion above suggests, there is a wide range of important issues that fall under the general heading of “the organization of substance abuse treatment services.” Given their likely impact on the kind and quality of services that individuals receive, these issues demand much more empirical research. The chapters in this section provide a useful summary of our current knowledge of many of these issues as well as a solid foundation for future study.

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Organizational and Financial Issues in the Delivery of Substance Abuse Treatment Services

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Abstract. Examination of organizational and financial characteristics of the specialty substance abuse treatment system allows an understanding of how to meet the needs of clients in the system. Further, this assessment may afford insights into how the specialty sector may adapt in the changing environment of managed care. Data from Phase I of the Alcohol and Drug Services Study (ADSS) describe the specialty substance abuse treatment system in terms of type of care, setting, level of affiliation, licensure/accreditation, ownership, revenue sources, client referral sources, client's primary substance of abuse, and managed care. Although the system is largely outpatient and remains substantially two tiered in terms of public/private funding mix, it varies along a number of organizational and financial dimensions which have implications for system structure and facility viability in the changing environment of substance abuse treatment service delivery.

1. Introduction

The organization and financing of substance abuse treatment impacts service delivery in terms of who gets treated and where and what type of services they receive. Substance abuse treatment in the United States is delivered in three major sectors: specialty substance abuse, nonspecialty medical, and outside the health system.^{1,2} The specialty substance abuse sector encompasses a continuum of services provided in a variety of settings. It may take place in ambulatory settings, including outpatient and intensive outpatient programs, as well as in office-based practice by psychiatrists, psychologists, and social workers. It also includes treatment in 24-hour facilities, including hospital inpatient, short-term residential, and long-term

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residential such as therapeutic communities.¹ Nonspecialty substance abuse treatment may be provided by practitioners in other medical settings, particularly office-based or facility-based primary care.^{3,4} Much of the substance abuse treatment outside the health care system is provided in the criminal justice system. Also, mutual help groups, such as Alcoholics Anonymous, play an important role in the recovery of many individuals, although they are not typically thought of as part of the formal substance abuse treatment system.

The process that determines when and which sector an individual is treated in is not well understood. Indeed, individuals who have alcohol and drug abuse problems frequently do not receive any substance abuse treatment at all.² The translation of need for treatment into actual treatment is influenced by a myriad of factors.⁵ The purpose of this chapter is to examine organizational and financial factors in one sector—the specialty facility-based substance abuse treatment system. According to the periodic census of these facilities, just under 11,000 substance abuse treatment facilities provided treatment to nearly one million clients in 1997, representing almost a doubling of the number of clients served in 1980.^{6,7} This chapter is based on the Alcohol and Drug Services Study (ADSS), which collected data from a nationally representative sample of specialty substance abuse treatment facilities.

ADSS collected data in three phases. Phase I consisted of a questionnaire mailed in advance and collected by a telephone interview with the facility director or administrator of a stratified random sample of approximately 2,400 substance abuse treatment facilities. The sampling frame was augmented to include the universe of treatment facilities; however certain types of providers were excluded from the ADSS sample, including halfway houses without paid counselors, solo practitioners, jails/prisons, military/Department of Defense, Indian Health Service, and facilities that were for intake and referral only. Phase II involved a site visit to a subset of approximately 300 facilities and included two components: (1) an in person interview with the facility administrator to collect more detailed information on facility practices, policies, and costs, and (2) the abstraction of a sample of over 6,000 client records. Phase III involved follow-up interviews with clients whose records were abstracted regarding treatment history, characteristics at admission to the index treatment, and characteristics at follow-up; it also included urine testing.

This chapter relies exclusively on data from Phase I of ADSS, conducted during 1997 with data collected for the point prevalence date of October 1, 1996, and for the most recent twelve-month reporting period of the facility. Data were collected which described facility characteristics, as well as aggregate information on clients. The response rate was 91.4%. Since ADSS is based on sample data, weights were used to produce national estimates of facilities and characteristics of clients in treatment. Item nonresponse was very low and imputation was performed to account for missing values. A detailed methodology report is available.⁸

2. The Specialty Substance Abuse Treatment System

The specialty substance abuse treatment system is composed of a complex array of different types of treatment facilities that vary along a number of important

dimensions. It is important to understand the organization and financing of this system because of the implications not only for meeting the needs of clients it serves, but also for the adaptability and continued viability of the system itself in the changing environment of managed care.

2.1. Organizational Characteristics

Several organizational characteristics of the specialty substance abuse treatment system are described in Table I. Almost two-thirds of treatment facilities report providing only outpatient care. Facilities providing only outpatient nonmethadone treatment predominate (61%), with another 4% of facilities reporting the provision of only outpatient methadone services. Just over one-fifth of facilities report providing only treatment that involves 24-hour care, with the bulk delivering non-hospital-based residential care (17%) and 3% of facilities offering hospital inpatient care only. An additional 15% of facilities provided more than one type of care.

Table I. Organizational Characteristics of Substance Abuse Treatment Facilities, October 1, 1996^a

	Percent of Facilities	
Total (n = 12,387)	100.0	—
Type of Care		
Hospital Inpatient Only	3.1	(0.20) ^b
Non-Hospital Residential Only	17.2	(0.84)
Outpatient Methadone Only	3.8	(0.21)
Outpatient Non-Methadone Only	60.7	(1.05)
Combination Facilities	15.2	(0.89)
Setting		
Hospital (inpatient and outpatient)	16.1	(0.98)
Non-Hospital Residential, Therapeutic		
Community or Halfway House	24.2	(0.92)
Community Mental Health Center	18.5	(1.19)
Other Outpatient	45.5	(1.43)
Other	11.4	(1.02)
Level of Affiliation		
Parent	21.5	(1.10)
Affiliate	49.0	(1.24)
Non-Affiliate	29.6	(1.19)
Licensing ^c		
State Alcohol and Drug Agency	82.4	(1.22)
State Dept. of Mental Health	28.8	(1.47)
State Dept. of Public Health	29.1	(1.43)
State Hospital Licensing Authority	10.3	(0.84)
JCAHO	28.7	(1.32)

^aNumbers may not sum to 100.0 due to rounding. Source: Alcohol and Drug Services Study, 1997 Phase I facilities data (weighted). Office of Applied Studies, Substance Abuse and Mental Health Services Administration.

^bStandard errors in parentheses.

^cCategories not mutually exclusive.

Organizational setting indicates the location within which care is delivered. Setting may be reflective of other aspects of care delivery, such as treatment philosophy or linkages to other systems of care. Level of human resources was also found to be important in determining access to primary care and mental health services.⁹ Substance abuse clients have high levels of medical and mental health need, and certain substance abuse treatment settings may be better positioned to develop linkages with primary care and mental health.⁴ Greater links to the medical system might be expected in the 16% of facilities that are hospital based, i.e., located in either the inpatient or outpatient setting (or both) of a general, Veteran's Administration, psychiatric, or other specialized hospital. Stronger linkages with the mental health sector may occur in the 19% of facilities located in community mental health centers. Almost onequarter of facilities report being based in a therapeutic community, halfway house, or free-standing residential setting (24%).

Level of affiliation refers to whether a facility is an independent entity or an integral part of a larger organization. The broader health care environment has seen a plethora of changing organizational configurations. Greater integration appears to be occurring as well in the substance abuse treatment system which has historically been composed of small, independent, free-standing organizations.¹⁰ Facilities may establish affiliations for a variety of reasons that impact both on care delivery and financial performance. Affiliation may allow for a facility to more easily link clients to a broader continuum of care, providing greater access to services.⁹ Economies of scale associated with shared resources and greater referrals may result in better financial performance. The majority of facilities report some sort of affiliation, either as a parent of other organizations (22%) or as being legally part of another organization (49%). Just 30% of substance abuse treatment facilities report no affiliation with other organizations. Although facility reports of affiliation should be interpreted cautiously, ADSS data indicate that unaffiliated facilities were significantly more likely to offer a low number of treatment services than parent or affiliated facilities.¹¹

Almost all substance abuse treatment facilities (95%) have some form of licensure, certification, or accreditation. Licensure is critical for obtaining third-party reimbursement and is used by government to oversee treatment and to set standards of care.¹⁰ Several state agencies can be involved in the regulation of substance abuse treatment, depending both on the setting where substance abuse treatment is provided and on how the substance abuse authority fits into the state bureaucracy. Facilities may have multiple licenses. Over four-fifths of substance abuse treatment facilities (82%) were licensed by their state alcohol and drug agency. Licensing by state mental health (29%) and public health (29%) agencies was also common. State hospital licensing authorities licensed 10% of substance abuse treatment facilities. Other organizations are also involved in regulating aspects of substance abuse treatment. The federal government regulates methadone treatment¹² and accrediting agencies also regulate substance abuse treatment. For example, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) has guidelines for substance abuse facilities and mental health organizations and performs hospital accreditation as well. JCAHO provided accreditation to 29% of substance abuse

treatment facilities. Accrediting organizations are becoming increasingly important in substance abuse treatments,⁹ perhaps reflecting demands for more quality assurance in a managed care era.

2.2. Financial Characteristics

A financial overview of the specialty substance abuse treatment system is provided in Table II. Ownership status, defined as the type of entity responsible for the operation of the facility, remained relatively constant from 1990 to 1997,⁷ following a dramatic increase in the number of private treatment facilities in the late seventies and eighties.¹³ ADSS data indicate that the specialty substance abuse treatment system consists primarily of private nonprofit facilities (63%); however, a substantial minority are private for-profit (23%) or publicly owned (14%). Ownership may be a particularly important characteristic because of its relationship to organizational objectives, such as profit maximization and access to care.¹⁴ Indeed studies have shown that private for-profit outpatient treatment units provide less access to care than other ownership type.^{9,14,15} Additionally, for-profit entities served less-impaired clients.¹⁵

Table II. Financial Characteristics of Substance Abuse Treatment Facilities, October 1, 1990^a

	Percent of Facilities	
Total (n = 12,387)	100.0	—
Ownership		
Private For-Profit	22.7	(1.44) ^b
Private Non-Profit	63.4	(1.45)
Public	13.9	(0.80)
Percent Public Revenue		
None	14.0	(1.09)
>0–50%	19.3	(1.20)
>50–90%	34.7	(1.40)
>90–<100%	19.2	(1.19)
100%	12.8	(0.92)
Revenue Source		
Public	62.3	(1.16)
Subsidy	44.3	(1.12)
Medicaid	12.5	(0.60)
Medicare	2.5	(0.25)
Other Federal Government	3.0	(0.35)
Private	32.7	(1.20)
Client Fees	17.5	(0.78)
Private Insurance (fee-for-service)	7.1	(0.51)
Private Insurance (managed care)	8.1	(0.61)
Other	4.8	(0.38)

^a Numbers may not sum to 100.0 due to rounding. Source: Alcohol and Drug Services Study, 1997 Phase I facilities data (weighted). Office of Applied Studies, Substance Abuse and Mental Health Services Administration.

^b Standard errors in parentheses.

Historically, funding for the substance abuse treatment system has been primarily public; however, the proportion of funding from public sources has declined substantially from the late seventies and the financing environment has become increasingly complex.^{16,17} In 1976, it was estimated that about 90% of revenues were from federal, state, and local government; however, the contribution from private sources, particularly private insurance, increased throughout the eighties as hospital-based chemical dependency programs expanded.¹³ ADSS estimates that 62% of revenues in the specialty system came from public sources, 33% from private sources, and the remaining from other sources, such as philanthropy. The largest amount of revenue was from federal, state, and local public subsidies (44%), such as the federal block grant. Out-of-pocket fees paid by clients accounted for 18% of revenue overall. Next in importance were insurance sources: private insurance accounted for 15% and Medicaid for 13% of total revenues. It is important for financial viability that substance abuse programs understand the complexity of the financing environment with its multiple funding sources, and the different payment mechanisms and eligibility rules that accompany these sources.¹⁷

The specialty substance abuse treatment system in the late 1980s has been described as two tiered with little overlap of either providers or clients.¹³ The public tier was comprised of programs, both public and private nonprofit, whose revenue was derived primarily from public sources. The private tier consisted of private nonprofit and for-profit programs that relied primarily on private revenue sources. ADSS data suggest that this public/private dichotomy still exists to some degree. Overall about one-third of facilities can be described as private tier, receiving none (14%) or some but less than half (19%) of their revenue from nonpublic sources. The public tier consisted of the two-thirds of facilities that were primarily publicly funded, including the almost 13% of facilities receiving all revenue from public sources, another 19% obtaining greater than 90%, and 35% getting between 50 and 90% of revenue from public sources.

2.3. Client Characteristics

Table III describes characteristics of clients in specialty substance abuse treatment. Mirroring the number of treatment programs, the overwhelming proportion of clients were in outpatient treatment (76% in nonmethadone and 14% in methadone). A significant minority of clients were in nonhospital residential treatment (9%), and substantially fewer were in hospital inpatient treatment (1%). The current picture of the treatment system is different from the 1980s during which there was a substantial increase in the provision of inpatient hospital chemical dependency treatment.¹³ A shift from inpatient to outpatient care became more pronounced in the managed care era of the 1990s.^{18,10}

Examining pathways to treatment may be important given the large gap between need for treatment and actual receipt of care. Coercion or some form of external pressure plays a role in treatment participation for many clients.¹⁹ Historically, the criminal justice system has had close links with the substance abuse treatment system. Increasingly, correctional facilities are providing on-site substance

Table III. Characteristics of Clients in Substance Abuse Treatment Facilities, October 1, 1996^a

Total (n=12,387)	Percent of Clients	
	100.0	–
Type of Care		
Hospital Inpatient	1.4	(0.08) ^b
Non-Hospital Residential	9.2	(0.81)
Outpatient Methadone	13.9	(0.71)
Outpatient Non-Methadone	75.6	(3.25)
Referral Source		
Other Treatment Facility	11.7	(0.55)
Criminal Justice System	34.1	(1.04)
Self-Referred/Voluntary	20.7	(0.72)
Family	5.3	(0.31)
Friend	2.3	(0.17)
Employer	4.6	(0.39)
Health Care or Mental Health Provider	9.3	(0.43)
Welfare Offices or Other Social Service Agency	7.5	(0.45)
Other	4.5	(0.43)
Principal Drug of Abuse		
Heroin/Other Opiates	10.1	(0.44)
Cocaine (including crack)	19.2	(0.65)
Benzodiazepines	1.0	(0.15)
Barbiturates	0.5	(0.08)
Amphetamines	3.7	(0.29)
Marijuana/Hashish/THC	11.6	(0.67)
PCP/LSD	0.8	(0.21)
Alcohol	46.8	(0.80)
Other Drugs (not alcohol)	2.6	(0.25)
Unknown	3.7	(0.41)

^aNumbers may not sum to 100.0 due to rounding. Source: Alcohol and Drug Services Study, 1997 Phase I facilities data (weighted). Office of Applied Studies, Substance Abuse and Mental Health Services Administration.

^bStandard errors in parentheses.

abuse treatment to inmates²⁰ and the criminal justice system continues to be an important source of referrals in community-based settings. Many courts use commitment or referral to treatment as alternatives to incarceration or as adjuncts to probation or parole.¹³ ADSS data show that about one-third of clients were referred to treatment by the criminal justice system. Health care or social service providers also play a role in referral to specialty treatment. Other substance abuse treatment facilities refer about 12% of clients, with another 9% referred by general health or mental health providers and another 8% referred by some type of social service agency. About one-fifth of clients are self-referred. Employers, families, and friends refer some clients, but to a lesser degree than other referral sources.

The underlying epidemiology of substance use fluctuates over time leading to changes in the drugs of abuse that appear in the treatment population. While alcohol remains the most common principal drug of abuse (47%), there has been an increase during the 1990s in the proportion of clients who abuse both alcohol and

drugs.⁶ Among illegal drugs, heroin predominated as the primary drug of abuse for clients in treatment in the 1970s and 1980s, with a shift to cocaine during the 1990s.^{21,22} ADSS estimates that about 19% of clients primarily abused cocaine, 12% abused marijuana/hashish, and 10% abused heroin or other opiates. Consistent with growing heroin use in this country, the increase in the number of heroin clients relative to clients abusing other illicit drugs, as well as heroin-related emergency room episodes, may foreshadow another shift in the primary drug of abuse in the treatment population.^{23,24}

3. Organizational and Financial Interrelationships

The specialty substance abuse treatment system consists of complex interrelationships between organizational and financial characteristics. Variation by type of care is noted in Table IV.

Ownership varies significantly across care types. Although the majority of treatment facilities are owned by private nonprofit entities, the range is wide with non-hospital residential-only facilities being the most likely to have private nonprofit ownership (83%) and outpatient methadone only facilities being the least likely (49%). Private for-profit ownership is also prevalent in substance abuse treatment, especially for outpatient methadone-only care (39%) and outpatient non-methadone-only (27%). Given the preponderance of individuals in substance abuse treatment who are in outpatient care, for-profit ownership can potentially have implications for service delivery to a large proportion of clients. Hospital inpatient only facilities are more likely to be publicly owned than any other facility type (22%), reflecting the role of both the public hospital system and the Veterans' Administration in the delivery of care.

The treatment system overall has a heavy reliance on public funding across all types of care, ranging from 77% of funding for non-hospital residential-only treatment to 58% for outpatient non-methadone-only facilities. ADSS data (not shown) demonstrate important differences within public revenue categories by type of care. Public revenue dollars were most likely to be from Medicaid for inpatient hospital and outpatient methadone facilities and from governmental grants and subsidies for residential and outpatient nonmethadone.²⁵ Although predominantly public, a substantial amount of outpatient revenue is from private sources. Almost two-fifths of both outpatient methadone only (39%) and outpatient nonmethadone only (38%) are from private sources with significant differences noted within the private category. ADSS data (not shown) indicate that out-of-pocket client fees account for most of the private revenue in outpatient methadone only facilities, whereas in outpatient nonmethadone only facilities, private insurance is almost as important as client fees within the private revenue category.²⁵

Although the specialty substance abuse treatment system is heavily dependent, overall, on public dollars, there are substantial differences in facility reliance on public revenue by type of care. For example, almost one-fifth of both outpatient methadone only (19%) and outpatient nonmethadone only (19%) facilities reported

Table IV. Types of Care of Substance Abuse Treatment Facilities, October 1, 1996^a

	Type of Care					
	Total	Hospital Inpatient Only	Non-Hospital Residential Only	Outpatient Methadone Only	Outpatient Non-Methadone Only	Combination Facilities
Number of Facilities	12,387	378	2,135	464	7,524	1,886
Ownership						
Private For-Profit	22.7 (1.44) ^b	18.7 (2.89)	7.7 (1.42)	38.9 (2.58)	26.6 (2.06)	21.2 (3.26)
Private Non-Profit	63.4 (1.45)	59.1 (3.27)	83.2 (1.92)	48.7 (2.26)	59.0 (2.07)	62.8 (3.49)
Public	13.9 (0.80)	22.2 (1.83)	9.2 (1.54)	12.5 (1.51)	14.4 (1.25)	16.0 (1.91)
Percent Public Revenue						
None	14.0 (1.09)	7.4 (1.59)	7.5 (1.17)	18.5 (2.62)	19.1 (1.75)	1.7 ^f (0.55) ^f
>0–50%	19.3 (1.20)	29.7 (4.12)	7.1 (1.37)	17.8 (2.44)	19.0 (1.61)	33.3 (3.48)
>50–90%	34.7 (1.40)	32.8 (3.21)	43.3 (2.95)	30.2 (2.27)	32.7 (1.83)	34.5 (3.98)
>90–<100%	19.2 (1.19)	20.4 (3.27)	27.6 (2.21)	31.4 (2.28)	15.5 (1.70)	20.8 (2.92)
100%	12.8 (0.92)	9.8 (1.21)	14.5 (1.82)	2.2 (0.27)	13.8 (1.39)	9.8 (1.75)
Revenue Source						
Public ^c	62.3 (1.16)	64.1 (3.43)	76.7 (1.97)	59.8 (2.57)	57.7 (1.91)	63.9 (3.08)
Private ^d	32.7 (1.20)	29.2 (2.16)	13.5 (1.10)	38.8 (2.51)	38.2 (1.72)	32.1 (2.14)
Other ^e	4.8 (0.38)	3.7 ^f (1.02) ^f	9.7 (1.08)	1.3 (0.14)	3.8 (0.54)	4.2 (0.85)

^a Numbers may not sum to 100.0 due to rounding. Source: Alcohol and Drug Services Study, 1997 Phase I facilities data (weighted). Office of Applied Studies, Substance Abuse and Mental Health Services Administration.

^b Standard errors in parentheses.

^c Public revenue includes public subsidy, Medicaid, Medicare, and other Federal government.

^d Private revenue includes client fees and private health insurance.

^e Other revenue includes philanthropy or in-kind services and unknown.

^f The coefficient of variation (CV) for this estimate is greater than or equal to 0.3, indicating that this number should be interpreted with caution.

receiving no revenue from any public sources and another 18% and 19%, respectively, received some but less than half of their revenue from public sources. However, some outpatient nonmethadone only facilities (14%) receive all of their funding from public sources. Residential only facilities are more likely than others to be almost exclusively publicly funded, with 42% receiving more than 90% of their total revenue from public sources. This tendency for some facilities to be exclusively or almost exclusively publicly or privately funded provides further evidence that the two-tiered nature of the treatment system continues at least partially in this era of managed care.

Ownership status is related to substantially different financing patterns as shown in Table V. Almost three-fourths of total revenue in private for-profit facilities (74%) comes from private sources, which is about equally divided between private insurance and client fees.²⁵ The opposite occurs in facilities of other ownership types with 71% of revenue in private nonprofit and 84% of revenue in publicly owned facilities coming from public sources.

Examining variation in ownership status by a facility's reliance on public revenue shows that, while the overwhelming majority of for-profit facilities rely primarily on private dollars, about 20% get at least half of their funding from public sources. The reverse pattern appears for public facilities, with a small minority (10%) receiving less than half of their revenue from private sources and the majority (56%) relying almost exclusively on public revenue (greater than 90%). Private nonprofit facilities are the most likely to have a more mixed revenue stream with a smaller proportion of exclusively privately funded than for-profit facilities (7% vs. 43%) and

Table V. Ownership of Substance Abuse Treatment Facilities, October 1, 1996^a

	Total	Ownership		
		Private for Profit	Private Non-Profit	Public
Number of Facilities	12,387	2,814	7,847	1,726
Revenue Source				
Public ^c	62.3 (1.16) ^b	23.4 (1.84)	70.8 (1.19)	83.5 (1.74)
Private ^d	32.7 (1.20)	73.8 (2.26)	22.8 (1.18)	14.3 (1.71)
Other ^e	4.8 (0.38)	2.6 (1.20)	6.1 (0.46)	2.0 (0.40)
Percent Public Revenue				
None	14.0 (1.09)	42.6 (3.48)	6.9 (0.91)	2.4 (0.79) ^f
>0–50%	19.3 (1.20)	37.9 (3.73)	15.6 (1.12)	7.8 (2.32)
>50–90%	34.7 (1.40)	15.4 (2.45)	41.5 (1.73)	33.8 (3.31)
>90–<100%	19.2 (1.19)	2.7 (0.62)	22.7 (1.64)	28.6 (3.17)
100%	12.8 (0.92)	1.5 ^g (0.53) ^f	13.4 (1.30)	27.4 (2.90)

^a Numbers may not sum to 100.0 due to rounding. Source: Alcohol and Drug Services Study, 1997 Phase I facilities data (weighted). Office of Applied Studies, Substance Abuse and Mental Health Services Administration.

^b Standard errors in parentheses

^c Public revenue includes public subsidy, Medicaid, Medicare, and other Federal government

^d Private revenue includes client fees and private health insurance

^e Other revenue includes philanthropy or in-kind services and unknown

^f The Coefficient of Variation (CV) for this estimate is greater than or equal to 0.3, indicating that this number should be interpreted with caution.

a smaller proportion of exclusively publicly funded than publicly owned facilities (13% vs. 27%). The way that a treatment facility is funded may have important implications for the delivery of care in terms of both the types of clients that a facility serves and the types of services that a facility may be able to offer. Funding sources may vary in terms of client eligibility and also in terms of what services are reimbursable. Additionally, financing sources may be associated with different payment mechanisms, such as fee-for-service or capitation, as well as in the generosity of payments themselves, thereby also affecting service delivery.¹⁶

Table VI explores whether the primary expected source of client payment varies by organizational characteristics of the substance abuse treatment facility. Source of payment data is as reported by the facility director and is not necessarily based on record checking for actual source of payment. Private for-profit facilities appear to be strikingly different from other ownership types. Less than 2% of clients in for-profit facilities have no expected source of payment, indicating that without some assurance of payment a client is not served, although it is possible that some other types of payment, particularly self-pay, may in fact ultimately result in no pay. Publicly owned facilities have the highest proportion of no-pay clients (15%), suggesting that they serve as the provider of last resort. Clients in for-profit facilities are most likely to have insurance as the expected primary payer for their care, especially private insurance (41%), with a smaller reliance on public insurance, which is largely Medicaid (15%). Interestingly, there is little difference in proportion of Medicaid clients across other ownership types, with 19% for public and 20% for private non-profit ownership. For-profit facilities (6%) are the least likely to serve clients where another public source is expected to pay the bill; however, this is the most important expected source for both the publicly owned (30%) and private nonprofits (37%).

Clients' expected source of payment varies by type of care. Relatively few clients in non-hospital residential (10%) and outpatient methadone only (6%) treatment rely on private insurance; however, expected payment sources differ significantly. Non-hospital residential treatment relies largely on public noninsurance payment for more than half of their clients (52%). Outpatient methadone only relies heavily on both clients with public insurance, especially Medicaid (32%), and clients who are expected to pay out-of-pocket (39%). In outpatient nonmethadone only treatment, which serves the largest number of clients, there is not a predominant expected source of payment. About one-fourth each of clients' expected source of payment comes from self-payment (25%), private insurance (24%), and public noninsurance sources (23%), with another fifth coming from public insurance, largely Medicaid (17%). Hospital inpatient only treatment, which serves the fewest number of clients overall, relies heavily on insurance mechanisms, both private (36%) and public (38%).

Variations by treatment setting are similar to type of care described above. Community mental health centers are somewhat more likely to have clients expected to have some type of public source of payment (50%) than are other outpatient settings (42%).

Table VI. Expected Primary Source of Payment of Clients in Substance Abuse Treatment Facilities, October 1, 1996^a

	No Payment	Client Self- Payment	Private Insurance ^b	Public Insurance ^c	Other Public Payment	Unknown
Total	7.5 (0.54)	23.1 (0.98)	19.3 (0.91)	18.5 (0.86)	28.7 (1.04)	3.0 (0.46)
Ownership						
Private For Profit	1.5 (0.25) ^d	32.6 (2.65)	41.4 (3.35)	15.3 (1.76)	6.1 (0.95)	3.1 (1.36)
Private Non-Profit	8.0 (0.77)	19.4 (1.04)	13.8 (0.86)	19.6 (1.13)	36.6 (1.53)	2.6 (0.40)
Public	15.0 (1.75)	23.7 (2.13)	8.5 (1.02)	18.9 (2.22)	29.8 (2.79)	4.1 (0.92)
Type of Care						
Hospital Inpatient	5.3 (0.90)	5.6 (0.75)	36.2 (3.23)	37.6 (3.02)	11.0 (1.83)	4.3 ^e (1.40) ^f
Non-hospital Residential	9.9 (1.48)	15.3 (1.39)	9.7 (1.12)	12.3 (1.46)	51.5 (2.17)	1.3 (0.38)
Outpatient Methadone	4.1 (0.95)	38.6 (1.82)	6.2 (0.91)	31.8 (1.67)	17.5 (1.87)	1.8 ^e (0.84) ^f
Outpatient Non-Methadone	7.4 (0.65)	24.7 (1.23)	23.7 (1.25)	17.4 (1.13)	23.4 (1.20)	3.4 (0.52)
Treatment Setting						
Hospital	5.2 (0.91)	8.3 (0.93)	41.7 (3.24)	28.5 (2.3)	13.7 (1.64)	2.5 (0.69)
Free-standing Residential, Therapeutic Community or Halfway House	10.1 (1.28)	17.2 (1.41)	8.3 (0.91)	12.9 (1.57)	49.9 (2.24)	1.6 (0.45)
Community Mental Health Center	7.9 (1.23)	25.6 (2.36)	13.4 (1.13)	19.6 (2.20)	30.2 (3.24)	3.3 (0.73)
Other Outpatient	6.6 (0.77)	29.6 (1.49)	17.8 (1.33)	17.9 (1.33)	24.5 (1.63)	3.6 (0.80)
Other	8.7 (2.12)	26.8 (3.54)	26.5 (3.68)	16.3 (2.71)	18.2 (2.78)	3.6 ^e (2.08) ^f

^a Numbers may not sum to 100.0 due to rounding. Source: Alcohol and Drug Services Study, 1997 Phase I facilities data (weighted). Office of Applied Studies, Substance Abuse and Mental Health Services Administration.

^b Includes both fee-for-service and HMO, PPO or other managed care. ^c Includes Medicaid and Medicare.

^d Standard errors in parentheses. ^e Not mutually exclusive. The Coefficient of Variation (CV) for this estimate is greater than or equal to 0.3, indicating this number should be interpreted with caution.

4. Role of Managed Care

The rapidly changing health care system is increasingly relying on managed care approaches for those who are privately insured, for those on Medicaid, and for those covered by other public payers.¹⁶ Care is provided through a variety of different types of managed care entities, including health maintenance organizations (HMO), preferred provider organizations (PPO), point of service plans (POS), and specialty managed behavioral health organizations (MBHO). This typically requires some type of selective contracting with providers.¹⁰ Table VII examines the extent to which substance abuse treatment facilities are involved in managed care contracting. Overall, 47% of facilities have at least one managed care contract, and for facilities with managed care contractual arrangements, it is estimated that about 29% of their clients are covered under these arrangements.

Whether or not a facility is involved in managed care varies by type of care. At least half of inpatient hospital-only (55%), outpatient nonmethadone only (51%), and combination facilities (64%). Non-hospital residential only (23%) and outpatient methadone only (17%) are much less likely to participate in managed care arrangements. Given these differences in level of participation, there is little variation across types of care in the percent of clients covered under such arrangements, ranging from 26% for residential facilities to 35% for combination facilities.

Table VII. Managed Care Contractual Arrangements in Substance Abuse Treatment Facilities (over 12-month reporting period)

	Percent of Facilities with any Managed Care Contracts		For Facilities with Contracts, Percent of Clients Covered Under Managed Care Contracts	
Total (n=12,387)	47.1	(1.16) ^a	28.8	(1.4)
Type of Care				
Inpatient Hospital Only	55.2	(3.32)	30.9	(3.4)
Non-Hospital Residential Only	23.1	(2.13)	25.7	(3.9)
Outpatient Methadone Only	17.2	(1.44)	29.1	(2.1)
Outpatient Non-Methadone Only	51.2	(1.74)	27.1	(1.9)
Combination Facilities	63.8	(2.94)	35.3	(2.3)
Ownership				
Private-For-Profit	62.5	(3.19)	42.0	(3.3)
Private Non-Profit	46.3	(1.49)	24.0	(1.4)
Public	25.8	(3.01)	16.3	(2.4)
Percent Public Revenue				
None	41.8	(4.14)	42.0	(7.0)
>0–50%	75.2	(2.51)	40.0	(2.4)
>50–90%	53.4	(2.26)	20.8	(1.4)
>90–<100%	29.5	(3.29)	16.3	(2.8)
100%	14.1	(3.87)	15.7	(7.6)

^a Standard errors in parentheses. Source: Alcohol and Drug Services Study, Phase I facilities data (weighted). Office of Applied Studies, Substance Abuse and Mental Health Services Administration.

There is a strong relationship between ownership status and managed care involvement. Over three-fifths of private for-profit facilities (63%) had managed care contracts, accounting for 42% of clients in facilities with such contracts. Although least likely to participate, just over one-fourth of publicly owned facilities (26%) had managed care contractual arrangements. Given managed care arrangements, public facilities had the lowest level of covered clients (16%). Private nonprofits fell in between public and for-profits both in terms of participation (46%) and clients covered under managed care contracts (24%). There also appears to be a relationship between reliance on public revenue and managed care involvement. As reliance on public revenue increases, it is less likely a facility will participate in managed care, and the percentage of clients covered under managed care contracts decreases. Because of the growing prevalence of managed care, it is important to understand the lower level of managed care involvement of more publicly oriented programs. These types of programs have been the mainstay of the specialty treatment system and their survival may be intertwined with their success in a managed care environment.

5. Conclusion

Although the specialty substance abuse treatment system is largely outpatient and remains substantially two tiered in terms of public/private funding mix, it varies along a number of organizational and financial dimensions. These have implications for system structure and facility viability in the changing environment of how substance abuse treatment services are delivered. In addition to the expanding role of managed care in the health care delivery system, there are a number of developments specific to substance abuse that may impact service delivery. These include changes in the underlying epidemiology of substance use, criminal justice linkages, medications developments, and parity with medical care in substance abuse insurance coverage.

Long-term trends in substance use are cyclical.²⁶ For example, this country is currently seeing an upswing in heroin use. As heroin impacts the treatment system, we may expect to see an increased demand for methadone maintenance or other ways of treating opioid dependence. Clearly, regulations controlling where and under what conditions these medications can be dispensed affect how the system organizes itself and, ultimately, client access to these medications. Changes in demographic patterns of substance use may also impact the organization of substance abuse treatment programs. For example, more programs specifically developed to meet women's or adolescents' treatment needs have emerged, although many would argue that the number falls short of what is needed for these targeted populations.^{1,27}

Referrals from the criminal justice system have historically had an important role in community-based treatment programs. The rapid proliferation of drug courts is likely to see further strengthening of linkages between the criminal justice and substance abuse treatment systems in areas where drug courts have been established.^{28,29} Since the first drug court began in Dade County, Florida, in 1989, federal support for the planning, implementation, and enhancement of drug courts for

nonviolent drug offenders has contributed to the rapid growth of drug courts across the country. An important difference between drug courts and other types of criminal justice interventions is the partnership between the judiciary, criminal justice agencies, and substance abuse treatment providers which is viewed as more effectively linking offenders with drug treatment.²⁸

The development of new pharmacologic therapies for substance abuse is widely viewed as likely to contribute to improved treatment effectiveness.³⁰ Indeed pharmacologic therapies, such as naltrexone, have been effective in decreasing alcohol consumption when provided along with counseling in alcohol dependent clients.³¹ The use of these types of medications may have an impact on where substance abuse treatment services are delivered and who provides them. Use of pharmacologic therapies places a greater emphasis on medicalization of treatment and necessitates the involvement of staff with prescribing authority. The adoption of these types of medications may require some specialty substance abuse treatment programs to adapt staffing requirements. Additionally, these new pharmacologic therapies have considerable potential for application by primary care physicians.³¹

This past decade saw a flurry of federal and state legislative activity around mental health parity, i. e., insurance mandates requiring that medical care and mental health be covered at the same level.³² The federal legislation passed in 1996 excluded substance abuse, as did many of the state parity initiatives. However, recently passed federal legislation requires full parity in 2001 for both mental health and substance abuse under the Federal Employees Health Benefit Program (FEHBP), the largest employer-sponsored health benefit system of its kind.³³ Although an analysis of state mental health parity laws found little effect on mental health services utilization, it was concluded that the results could be different if strong national parity legislation were passed.³⁴ Since substance abuse is now at the parity table with the passage of the FEHBP legislation and if state parity legislation becomes more encompassing of substance abuse services, there is the potential that private insurance may indeed become a more important revenue source for substance abuse treatment.

Managed behavioral health care is having a major impact on the way substance abuse services are delivered in this country as both public and private payers move to this approach.³⁵ Millions of people now access their behavioral health care directly through managed care organizations or through carve-out arrangements with specialized managed behavioral health organizations.³⁶ By 1999 it was estimated that the managed behavioral health industry covered over 170 million enrollees³⁷ and that since 1993 the number of enrolled individuals had doubled.³⁸ Growth in the public sector has been particularly dramatic in recent years, with 16 state Medicaid programs contracting separately for behavioral health services for all or some of their enrollees in 1999.³⁹ The push for parity in benefit design is likely to increase the importance of managed care mechanisms as a way of controlling costs.^{38,40} The importance of managed care in the delivery of specialty substance abuse services is likely to continue to grow as private and public payers rely on this approach. Specialty treatment providers need to be acutely aware of this changing environment and how it involves the clients whom they serve.

In sum, there are a number of environmental developments occurring in this country that affect substance use, as well as access to and use of specialty substance abuse treatment services. These developments will help shape the organizational and financial structure of the treatment system of the future.

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The Organization of Substance Abuse Managed Care

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Abstract. Managed care came to dominate the delivery of substance abuse services during the 1990s. This paper uses literature and new data to describe and analyze the set of arrangements it implies. The description suggests that substance abuse managed care typically is “carved out” of the general health care plan and treatment is coordinated by a behavioral health managed care company that manages treatment access, length, type, and intensity. This administrative agent is provided financial incentives to keep costs low and otherwise faces such mandates as to ensure timely access to treatment and to deliver reports. A typical agent has some interest in improving the quality of decision-making, but has few incentives for controlling the treatment technology. In contrast, agents tend to control treatment providers through relatively rigid rules that substitute outpatient for inpatient care, regulate the length and intensity of services, provide limited social services, mandate accreditation, allow limited clinician discretion, administer an entire “network” of providers as an only slightly differentiated mass, and rarely shape the details of the treatment process. These patterns are analyzed in terms of transaction cost economics and institutional and resource dependency theories. In general, it is argued that managed care reflects an interest in controlling costs but also in ensuring access within an environment where there is uncertainty accompanying competing demands, varying conceptions of the client, and controversies over the efficacy of specific treatment technologies.

1. Introduction

Most substance abuse health care benefits in the United States are delivered under a managed care arrangement¹—an administrative system where rules and incentives are consciously structured to govern treatment access, length, or character. This system is commonly the province of a specialized *administrative agent*, who may be an insurance company, employer, or even a network of providers, but more typically is a specialized, generally for-profit, behavioral health managed care organiza-

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tion (BHMCO). From the point of view of clinicians and organizations that provide substance abuse services, the resulting managed care arrangements can interfere with professional autonomy due to the agent's influence over the initiation and course of treatment. Yet, agents typically claim to promote preventative care and appropriate service use. From the point of view of the payer—usually an insurance company, employer, or government agency—the arrangements provide more of a choice over the nature and cost of covered treatment. Yet, choices of all except for the largest payers are limited by an agent's managed care plans. From the point of view of the client or plan enrollee, care is governed by a set of rules that are meant to make their health care dollar stretch further, but that also limit input into the receipt of care.²⁻⁶ In other words, managed care has its ambiguities.

It is likely that such ambiguities reflect fundamental obstacles to building a rational administrative system in substance abuse managed care.⁷ For example, there are many influential groups and actors whose preferences and interests are too diverse to easily be resolved in a single, uniform system. In simple terms, employers may wish to see individuals return to work or be conditionally excluded from the workforce, providers and professionals may desire the complete elimination of drinking and drug use, and clients and their families may wish to ameliorate family disruption.⁸ Preferences also vary because professional organizations emphasize divergent standards of care, while clients are referred from sources with disparate interests, like the justice system, other government programs, and employers.

As this implies, there also are conflicting goals. These in part reflect preferences and interests and in part reflect the varying conceptions of the client; historically, substance abuse has been viewed as a moral failing, a disease, or a social disorder.^{9,10} Perhaps more fundamentally, goals conflict because of disputes over which “technology,” or treatment process, to pursue. A wide variety of technologies are used, including everything from paraprofessionally based twelve step programs, to psychotherapy, to cognitive behavioral models, to social service models. It is difficult to obtain a consensus about these technologies because each has its adherents, some are rarely tested in the research literature, and none always proves itself superior. There also are unresolved controversies over the relative merits of inpatient and outpatient care, intensive and traditional services, and short-term and long term interventions, so that preferences vary. There is similar disagreement over the best way of matching individuals to types of services—even though it seems clear that different individuals require somewhat divergent treatment strategies and that treatment success also sometimes depends upon confronting various other highly individualized problems like comorbidities, family difficulties, or financial destitution.¹⁰⁻¹² Finally, given the novelty of the system, there are debates over the impact of any given administrative arrangement.

All this leads to the classic dilemma of “human service organizations”¹³—that of administering an organized system despite uncertainty over what techniques work best, which goals should be pursued, and which administrative structure is most useful and legitimate. Organizational theorists suggest that such uncertainty places the relevant leaders under stress. It becomes difficult to satisfy all parties, and orga-

nizations therefore must develop complicated, expensive systems that ward off some pressures and flexibly, if imperfectly, deal with others.¹⁴⁻¹⁶ This is particularly difficult to accomplish when uncertainty surrounds approaches to the treatment of clients.^{17,18} Uncertainty and other factors also increase the costs of making and monitoring agreements between the “buyers” and “sellers” of care, further complicating the choice of an efficient administrative system.^{19,20} It thus should be no surprise that the managed care system is confusing, contradictory, controversial, and cumbersome. This paper uses existing literature and new data on substance abuse providers and administrative agents to describe and analyze the complex way the substance abuse managed care system has organized to reflect that uncertainty.

2. Background

The managed care model first gained some general popularity in healthcare during the 1960s, when support grew for the use of health maintenance organizations (HMOs). These were viewed as the lynchpin of fully comprehensive and organized systems of care in which individuals would see specialists only after being funneled through a primary care physician. In the opinion of some analysts and advocates, the HMO model provided the best of two worlds, in which costs decreased and quality increased. Use of HMOs was thought to control unnecessary testing, encourage health prevention, ensure that patients are provided needed specialized services, and reduce the use of overly invasive procedures. But cost concerns were paramount during the welfare state crisis, when the Federal government passed the 1973 HMO Act, which mandated that HMOs must be an option in the health plans of most employers.²¹

While use of HMOs then expanded, this delivery form soon was criticized for restrictiveness and for controlling costs with too little interest in the quality of medical care. Less restrictive forms of managed care thus emerged. The most prominent was the preferred provider organization (PPO) arrangement, whereby practitioners offer discounts to a plan and patients who choose these practitioners pay less for their care. All in all, by 1996, 77% of employees were under one of the many types of managed care arrangements, with PPOs dominating. Only slightly over half were under managed care in 1993.²²

For substance abuse services, the impetus for the transformation to the managed care model is generally attributed to a mid-1980s cost “crisis,”²³ which of course relates to the more general health care and welfare state crisis. As medical care in general came to be more fully controlled by Medicare plans, private insurance, and state certificate of need requirements (for hospitals), there was expansion of less fully regulated (and temporarily relatively lucrative) inpatient drug, alcohol, and mental health care. Some of this reflected conversions of inpatient hospital units.²⁴ Inpatient bed capacity doubled in the 1980s,^{25,26} and some believe that the accepted course of substance abuse care almost uniformly came to include an expensive, 28- or 30-day inpatient stay. Cost pressures may have grown for substance abuse in any

case, in that treatment costs and caseloads (like mental health care) expanded substantially from the 1960s through the 1990s. This expansion reflected a host of environmental factors, including a growing economy in the early years and thus a larger potential revenue stream, the maturation of acceptable treatment approaches, the developing perception that substance abuse might be a disease and not a complete matter of choice, and increased general interest in social services. It also reflected specific government policies, like the 1965 Medicaid legislation, which provided substance abuse treatment for the poor; the 1970 Hughes Act, which provided funds for state and local substance abuse treatment services and established the National Institute of Alcohol Abuse and Alcoholism; the 1988 Drug Free Workplace Act; and state laws mandating coverage of substance abuse in the insurance plans of most employers. Employers also began to develop employee assistance programs (EAPs), which at first heavily stressed substance abuse services.^{3,25,27-30} By 1996, 6.3 billion dollars were spent for alcoholism treatment and 1.9 billion for drug abuse treatment.³¹ A 1997 study³² suggested that only 9% of small firms, and 1% of large firms, failed to offer behavioral health care benefits at about that time. Plans typically packaged substance abuse and mental health treatment.

Under cost pressures, the first managed behavioral health services were frequently encapsulated within strictly controlling HMOs. Again, however, some payers and sponsors (that is, payers who rely on others to make decisions) found this too restrictive. Primary care physicians tended to refer few clients to drug and alcohol specialists, many individuals may have been embarrassed to discuss such matters with the physicians, and the HMOs sometimes offered limited benefits and few eligible providers. Further, it was difficult to develop upper and lower bounds on substance abuse expenditures when medical and substance abuse costs were mixed. Accordingly, BHMCOs came to dominate and to provide care in the late 1980s and early 1990s, quite frequently making available service in PPOs or EAPs.

BHMCOs offered many advantages, like their ability to negotiate service discounts, select more efficient providers, or adopt formal, specialized, expert review procedures.^{33,34} They also aggressively sought out business by claiming to dramatically reduce costs (compared to indemnity insurance). This was accomplished by substituting outpatient for inpatient care, legitimating this with reference to a few academic works that found no treatment advantage to the latter.³⁵⁻³⁸

Some BHMCO firms began as utilization reviewers (who monitor only length of stay) under Medicare regulations, and others began as a “network” of treatment providers. Regardless, most larger firms came to administer decisions concerning the entire range of care, from admissions to the length of stay in various inpatient and outpatient treatment options. While business strategies vary along many dimensions, BHMCOs now frequently provide utilization review, case management for high cost clients, comprehensive managed care administration, EAP integration, and other services such as health and safety consultation or preventative education.³⁹

As early as 1989, 54% of employers reported that they had special procedures for managing behavioral mental health (and thus probably substance abuse) care, and 52% of these used a specialty vendor.³⁹ The analysts for the trade publication

Open Minds report that, by 1999, 72% of the 176.8 million individuals with health insurance had mental health or substance abuse coverage, or both, under a BHMCO.⁴⁰ This is somewhat consistent with a 1996 employer survey²² suggesting that nearly all of the 77% of employers are under managed care had some mental health and substance abuse coverage. The two works together indicate that the vast majority of substance abuse coverage under managed care now occurs through a BHMCO.

Public health care benefits also are increasingly covered under some form of managed care, although it is not yet clear if BHMCOs are always used. As of 1996, roughly 11.6 million of the 36.2 million individuals with Medicaid coverage had some type of managed care program, and some 3.8 million Medicare clients were so enrolled.³ An examination of 37 Medicaid plans suggests that at least 32 have some substance abuse coverage beyond referral and simple case management.⁴¹ Of course, as also seems to be the case in private plans, coverage may vary considerably. In Medicaid plans, for example, 25 programs allow individual counseling, 14 cover detoxification services, and 20 allow for group therapy. But 29 allow for short-term residential treatment, and 32 allow for outpatient treatment programs.⁴¹ Forty-nine states have waivers in their Medicaid program allowing for managed care.³

In general, managed care was part of the broader trend by which policies became less fully a function of government interests in expanding rights and more fully a result of “near” market reforms. Managed care first attracted business by saving money while claiming to at least maintain treatment objectives. It also was legitimated because markets generally were gaining respect. However, just like in the typical government programs that were popular a few decades earlier,¹⁸ the care system emerged from and ran into issues of competing goals (and competing interests). Indeed, as will be further explained, by the 1990s, BHMCOs began to compete on what they called “quality,” whether this was the quality of their decisions concerning access and levels of care, of the treatment providers, or of their additional prevention services.⁴²

Over this period, there also was increased uncertainty arising from diversity in approaches to substance abuse treatment. Research undermined confidence in the 12-step approach while providing many alternatives; substance abuse services were offered as part of employer-sponsored programs having many aims. Benefits also were offered within government benefit, child welfare, or law enforcement systems. All this created uncertainty and undermined any possible expectations that the system might be noncontroversially or even simply organized.

3. General Organization of Managed Care

3.1. Overview

Currently, there is much variation in the organizations of the behavioral health managed care system, which perhaps reflects the uncertainty concerning the effectiveness and efficiency of any given model as well as different preferences along the

cost/quality continuum. As Table I suggests, however, the current treatment system can be described in terms of six functional components. These include the enrollee or beneficiary, the payer, the insurance agency, the administrative agent, the provider of care, and miscellaneous "stakeholders."

Because various managed care functions can be integrated, a given organization or entity may be placed within multiple components. Some larger employers can by-pass insurance companies to subcontract directly to a BHMCO or to providers. During the mid 1990's, some insurance companies attempted to develop their own networks of providers, thereby by-passing the BHMCOs.⁴³ In theory, clients can benefit from such integration, particularly when the administrative entity has access to needed "wraparound" medical or social services (although insurance companies may be motivated by the desire to protect their financial status and avoid sharing administrative power). Another relatively uncommon variant occurs when a group of providers attempts to independently manage care.⁴⁴ Some observers believe this type of arrangement will eventually challenge the supremacy of the BHMCO and improve the quality of care.⁴⁵ To do so, the administrators might need to learn to control providers more and to master accreditation standards. Clearly, however, the currently predominant arrangements involve distinct payers, administrative agents, and providers.

3.2. Alternate Plans

Currently, there also are various types of health care plans. As Frank and McGuire⁴⁶ suggest, the typical plan arrangement is a "carve-out," where the behavioral health care component is administered separately from the rest of the benefit plan (BHMCOs and other actors in the field do not use standard terminology, although scholars are more uniform in this respect). This is distinguished from a "carve-in," where an entity like an HMO delivers substance abuse care along with regular care. In the latter instance, the primary care provider may refer clients to behavioral health specialists, or an entire group of providers may administratively separate out its behavioral healthcare services. Thus, the distinction between the carve-out and carve-in reflects the point in the process where separation begins. Peterson and Wholey's relatively early (1992) study suggests that nearly half of HMOs rely on a separate entity to deliver behavioral health care, even if HMO organized care would be considered as reflecting a carve-in.⁴⁸ Some HMOs rely on BHMCOs or other agents.

Frank and McGuire⁴⁹ further distinguish "payer carve-outs," where the employer, Medicaid, or other payers directly subcontract behavioral health care to a separate administrative entity (or, in rare instances, administer it themselves), from "health plan subcontracts", where the insurance provider either administratively separates out behavioral healthcare or subcontracts it to an entity like a BHMCO. Matters can be more complicated depending on whether clients (beneficiaries) have access to plans that vary in the way they carve-out or carve in-benefits (or provide them in EAPs). Clients may have access to an HMO plan with lower costs that directly provides limited behavioral health care benefits, a PPO with somewhat

Table I. Functional View of Behavioral Health Managed Care: Selected Organizations and Other Entities

Beneficiary	Payer	Functional Role			
		Contract Principal	Contract Agent	Provider	Stakeholder
Employee Self-Insured	Company Employee Assistance Program	Company Employee Assistance Program	Company Employee Assistance Program	HMO Provider Network	Local, State, Federal Government
Income Eligible in Government Program	Company Insurance Benefit	Company Union	Company Union	Private/Public Treatment Unit	Families General Public
Mandated in Government Program	Union Government/Medicaid, Medicare Criminal Justice System State/Local Substance Abuse Agency HMO Philanthropy	Government Insurance Agency HMO	Insurance Agency Behavioral Health Managed Care Company HMO Provider Network	Independent Practitioner Hospital Unit	Healthcare Advocates Professional Associations Unions Insurance Industry Hospital Industry Accreditation Group

greater coverage, an indemnity (fee for service) plan that may or may not carve-out the benefits, or a group health plan that may carve-out its own benefits. Individuals have more choice when there are multiple plans, but there also can be “adverse selection,” whereby clients (or families) who have more behavioral problems choose the option with the most services, even if this incrementally increases their costs. In other cases, a special managed care plan may be used only for “high risk” clients.

Despite the lack of empirical work, the general perception is that carve-in and HMO plans promote the lowest utilization of benefits.⁴⁹ If so, the trend to use the various types of BHMCO carve-outs and also a trend toward PPOs represent “moderate” shifts away from both the highest and the lowest cost alternatives? Still, it seems likely that benefit packages within various administrative arrangements will become more similar over time, so that the key elements will be the rules concerning who receives coverage and what types of services they are provided, with what type of copayment.⁷

4. Organized Entities and Their Incentives

4.1. Sources of Data

Without detailing this too much at this point, it seems likely that the intricacies of such managed care relations must reflect the way payers and agents solve the problems caused by three previously mentioned, interacting sources of uncertainty, thus determining which interest groups must be taken into account,¹⁶ which goals should dominate,⁵⁰⁻⁵⁵ and given these goals, which administrative forms are most efficient.^{19,20,56-59} Here, we overview what is known about preferences of key interests and the administrative forms of managed care and then attempt to explain how the dominance of certain forms represents solutions to the problems caused by the three sources of uncertainty.

The data for the overview include not only published work, but also the preliminary results from an ongoing study of providers and administrative agents. The survey uses a previously developed sampling frame⁶⁰ to locate outpatient drug treatment providers who had managed care contracts (unfortunately, we do not have comparable information on the treatment system for inpatient programs). It interviews each provider’s chief executive and a clinical manager. These officials were requested to identify their particular managed care contracts, and using a random design that selected contracts proportional to the number of clients covered within the treatment provider, were asked detailed questions on three contracts (or all of their contracts if they had three or fewer). Finally, telephone questionnaires were completed by two representatives of each of the three relevant administrative agents. Agents responded for 244 plans.

This study provides a sample of both contracts and the firms that administer them. For the latter, it focuses on the local or regional office of the agent, not the national office. This is important because offices frequently are allowed some autonomy in setting policy. The study may contain a slightly biased sample of admin-

istrative agents under a number of circumstances (alcohol treatment units that do not treat drugs are excluded; independent practitioners are excluded; inpatient-only providers are excluded), but it should be basically representative. Because sampling weights are not applied, the responses essentially self-weight to the number of clients covered by a given local or regional administrative agent. We consider findings on relations between agents and payers and between agents and providers.

4.2. Administrative Agents and Payers: Goals, Motives, and Dependencies

While work is under way, there actually is little definitive data concerning the agent–payer relationship. A few interviews conducted for the ongoing study suggest some relevant preferences and interests of payers in business firms. Some informants from business firms that rely on insurance companies as intermediaries told us that they essentially take what they are given with respect to behavioral health care. They adopt a “hands off” approach as long as there are few complaints. Others suggest that, at first, their major interest in managed care was in controlling costs, but that they have become increasingly interested in various dimensions of quality.

One study helps suggest some of the special preferences and interests of some payers by examining mandates made by 124 Fortune 500 employers⁶¹ who replied to a survey and reported that they directly carved-out behavioral health care. The work finds that three-fourths added their own mandates to the general contract and that 91.6% of these mandated additional administrative standards, particularly standards for telephone response times, claims processing speed, or the frequency and type of administrative reporting. Only 45.3% mandated something about the providers, like standards for enrollee satisfaction and quality assurance. Outcomes (usually measured as the number of recidivists), the use of social services, the professionalization of provider staff, and other similar issues were reportedly not frequently addressed. If this survey captures general preferences of payers, it suggests that most are particularly interested in easy-to-measure process requirements. This might reflect the difficulties of measuring anything more substantive (at reasonable cost), but the implication is that enrollee interest in obtaining a particular treatment technology is not likely to be reflected at the employer level.

As was mentioned, the agent–payer relationship also forms in the context of concern over certain quality issues. This might reflect preferences of businesses, or at least attempts of agents to market themselves to businesses now that the easy financial gains have been almost uniformly achieved (by limiting inpatient costs). However, it also can reflect other preferences and interests, like the growing professionalization of agents, their association with the general health care sector, or their desire to ward off government regulation and growing complaints about quality.⁶² In any case, when asked in our ongoing survey about business strategies used “much” or “most” in attempting to obtain contracts, agents covering only 25.3% of covered lives list having the lowest bid, and those covering only 30.8% report stressing the frequency of inpatient care. The most common responses are providing services in a timely manner (80.7%), stressing the quality of clinical decisions

(79.6%), offering a strong quality assurance program (71.3%), and offering a choice of providers (70.7%).

4.3. *Administrative Agents and Payers: Organization*

An *Open Minds* survey⁴⁰ suggests something of the structure of the relationship by suggesting that administrative agents are asked to deal with heterogeneous plans. This survey of BHMCOs summarizes the results in the proportion of “covered lives” under various contracts with payers. It suggests that 19% of these are in contracts involving only utilization review; 24% are in contracts for employee assistance programs; 8% are in contracts for employee assistance programs that are integrated with a larger managed care program; 28% are in comprehensive managed care contracts where risk is shared with the payer; and 21% are in comprehensive arrangements where agents do not share risk.

In understanding the structuring the agent–payer relationship, this risk sharing is key. In risk sharing contracts, the administrative agent may receive a payment per covered life or family (capitation). The firm may keep part of the payment if the cost of care is reduced below the payment level. There also may be more limited risk sharing, whereby agents receive rewards or fiscal penalties depending on whether costs are above or under a predetermined limit. The previously noted on-going survey suggests that, across all types of plans, 51.2% of the covered lives are in risk-adjusted capitation plans, even if one-quarter of the clients are managed by administrative offices that never share risk in this way. The offices are less likely to face financial penalties (31.1% of covered lives) or to receive bonuses for keeping costs low (9.6%).

Otherwise, most contracts for comprehensive care appear to share a fair number of specific requirements. These tend to be process standards that control the technology of care less than the speed, access, and documentation of delivery. Brisson⁶³ thus summarizes what apparently are the most common standards as specifications and performance measures involving staffing requirements (such as the disciplines of clinicians), distance to clinic, the offer of bilingual services, clinic hours, and standards in the form of mandates that phones must be answered within five rings and first appointment must be scheduled within one week of the call, that claims must be processed within 30 days, that intermediate services (partial hospitalization) must be offered, that patient and provider satisfaction surveys must be conducted annually, and that utilization reports must be submitted.

Whether for the benefit of employers or insurance companies, administrative agents also stress credentials, presumably thereby giving payers some guarantees about quality, but in the process also involving the preferences of accreditation bodies. The two chief accreditation bodies are the Joint Commission on Accreditation of Health Care Organizations (JCAHO), which provides standards for many aspects of health care, and the more recently formed National Committee for Quality Assurance (NCQA), which essentially developed from managed care associations. Our survey suggests that agents covering 61.4% of enrollees mandate that their providers are JCAHO accredited. Agents covering 51.6% of enrollees mandate NCQA credentials.

The administrative agents also are frequently accredited by these two associations. From the standards we have perused, it seems that accreditation bodies tend to mandate that agents develop their own, well-justified procedures. For example, until recently NCQA demanded that satisfaction surveys must be part of a quality assurance program, but the agents decided how to make use of the surveys (these surveys are no longer required). Other requirements include having grievance procedures and some methods of taking them into account, and developing clinical guidelines that are based on scientific evidence and knowledge of best practices. (A variety of standards also have been developed by professional groups without clearly influencing BHMCOs.⁵) While industry insiders suggest that field reviewers tend to have somewhat specific ways of applying some of these standards, the movement toward quality among the agents clearly is moderate. The dominant modes of organizing agent–payer relations is through risk sharing moderated by process rules and credentialing.

4.4. Agents and Providers

There is less literature about the preferences of the agents with respect to providers, although it is clear that they expect to make a profit (or if nonprofit, remain solvent), maintain or increase their market share, and perhaps pursue high-quality and low-cost prevention and continuing care. But much more is known about the agent–provider administrative relation. The most surprising aspect of this is that it essentially hinges on bureaucratic controls. That is, while the relationship of payer to agents frequently involves risk sharing, the relationship to provider almost never does; according to our survey, only 15.2% of lives are covered in shared risk programs. We now work our way from provider selection to more specific rules.

4.4.1. The Network. When agents manage care, their first key device for developing control may be to establish what we (but not necessarily agents) call a network or panel of providers,⁶⁴ that is, a group of authorized drug and alcohol treatment units which enrollees are allowed to utilize under the managed care plan (some utilization review contracts use existing providers, however). The network is not necessarily local; agents can have one network for all of their plans, coast to coast. Some informants suggest that many of the recent BHMCO mergers are motivated by the desire to have complete coverage in any location in which national employers or insurance companies have plan enrollees.

In our survey, agents that cover only 22.7% of clients have more than one network. Quite obviously, a second network is needed when health plans are so disparate that they cannot be handled in a similar way. Qualitative interviews suggest that agents frequently use alternate networks for Medicaid plans, where per diem costs are lower and social services often are heavily stressed.

In developing a network, agents may locate treatment providers who contact them (perhaps because the provider's clients are covered by a plan the agent administers), or more frequently, who respond to a formal or informal proposal. The providers are selected geographically and based on whether their costs and services are compatible with the agent's expectations. In some states, providers must be ac-

cepted into a network if they meet basic standards. This does not guarantee that they will be referred clients when this is under the control of the BHMCO's intake system. Ineffective providers can be informally dropped in this way.

Two studies suggest that agents make decisions on network composition with a limited set of criteria that are not attuned to subtle differences in the nature of the delivered services. Lemak, Alexander, and D'Aunno⁶⁵ found that providers who have contracts are more likely to have accreditation from JCAHO, are less likely to be publicly funded, are larger, are less likely to be methadone clinics, and receive more referrals from within the health care system. While this may reflect the choices of the providers, these authors stressed that it also is consistent with selection criteria where BHMCOs use simple "proxies" to find firms that deliver low cost services, services of acceptable quality, or services within guidelines. For example, it costs less to use large providers, while those with more experience are more likely to be able to follow the rules. Fisher et al.⁶⁶ found that Massachusetts providers decided to apply for a Medicaid managed care contract when they already delivered more inpatient care and when more of their previous caseload included the population to be served under managed care. Only the previous emphasis on psychiatric care and the region of the state affected their probability of winning a bid.

There can be large costs in administrating a network, and perhaps because of this, managed care firms apparently try to use one set of rules across all providers for all contracts within a network (although some agents instead use different providers within a network for different contracts). Our survey of agents suggests that only 15.0% of covered lives are under the control of administrative agents who believe that the differences between mandates on providers within a network vary to "a great extent" or "a very great extent" across contracts with payers. Only 29.4% of covered lives are served in networks that are believed to vary to a great or very great extent on the comprehensiveness of services, and 21.1% reportedly so vary in demanded extensiveness of reports on client progress. The respondents report that only 16.8% vary greatly or very greatly on the average length of stay. This provides a first indication that there are relatively rigid controls.

4.4.2. Protocols, Precertification, and Concurrent Review. Another chief tool of the administrative agent is the treatment protocol. As administered to a clinician or another representative of the provider, this is used to gather information from the treatment provider about the client's situation either informally or, as we believe is increasingly the case, based on a formal interview. Using that information, the agent's clinicians use a formula to make decisions about care. While these decisions sometimes concern whether a client can become part of a plan (that is, become a "member" of a group eligible for substance abuse services), they more frequently occur in precertification (authorization of treatment) or concurrent reviews (decisions about continuing treatment). These decisions determine how much treatment is allowed at what level: whether care is inpatient, traditional outpatient, or intensive outpatient. Wells et al.⁶⁷ note that "precertification and concurrent review share certain features: they consider the severity and acuity of the condition; they examine the appropriateness of the type and intensity of care for the condition; they judge the

efficacy of the proposed treatment; and they weigh issues like medical necessity. . . .”

Many agents believe that they achieve a competitive advantage for their protocol and their ability to sensitively apply it. Even so, criteria can be very similar to those of the American Society on Addiction Medicine (ASAM), in part because payers, sponsors, or their representatives now demand this. Criteria stress such issues as the *DSM-IV* criteria for substance abuse, the client’s previous success in treatment programs, the severity of the client’s problem, and the nature of the family environment. Protocols also are highly standardized and thus rigid, if for no other reasons than to keep costs low and to ensure uniformity. According to the results of the ongoing survey, administrative agents frequently suggest that additional treatment sessions are “much more likely” to be approved when clients are a threat to themselves and others (in agents covering 77.0% of covered lives), *DSM-IV* criteria are met (56.9%), or there are comorbid emotional or behavioral problems (41.9%). The number of previous admissions of the client (16.0%), the use of multiple drugs (25.1%), and client employment histories (6.5%) are less frequently deemed crucial, in part suggesting a bias toward medical and not social problems.

Clinical providers frequently are disturbed about the extent to which the use of protocols threatens their autonomy,^{45,68} particularly given concern about the training and knowledge of the reviewer in the BHMCO who applies the protocols. One study⁶⁹ suggested that commonly used criteria for psychiatric hospitalization (which include such factors as whether an individual had a specific suicide plan or had made a prior suicide attempt) missed a high percentage of suicide attempts and that a highly disproportionate percentage of the attempts occurred under managed care plans. In contrast, another work⁷⁰ found that, in three western Pennsylvania clinics, clinicians’ judgements of the demands of ASAM criteria agree with the administrative agent’s judgement about level of care in 85% of the cases, even if the agent’s ratings tended to suggest lower levels of care in the cases with disagreement. Eventually, 93% of the clients received care consistent with the ASAM criteria. Of course, it is unknown if workers applied the criteria differentially due to their exposure to managed care. More generally, the nature of the review depends on the particular protocol and its uses. Schelsinger, Gray, and Pereira,⁶⁸ who examined the review processes for medical care, found that some review procedures support physician autonomy, others are more concerned with basing decisions on clinical trends, others (usually in physician-run agents) standardize care, and a final group bases criteria on scientific research but allows some discretion to the agent’s reviewers.

4.4.3. Administrative Controls in General. The uses of protocols is part of a larger set of administrative controls. Administrative agents can mandate not only the length and levels of care, but also such treatment activities as aftercare and such credentials as the professional status of clinicians. They can control treatment providers by using various fiscal rewards and punishments. Each of these mechanisms can be applied in different ways: ongoing reviews can be based on records or can demand telephone contacts with the clinician, a physician, or an administrator. The important point here is that different contracts demand different forms of control, making matters rather complicated for the treatment provider who has multiple con-

tracts. Lemak,⁷¹ who bases her work on outpatient providers' perceptions of all of their managed care contracts, found six dimensions.

Our ongoing work does generally suggest that rigid mechanisms dominate. The most common mechanism reported, used more than 80% of the time, is to specify the maximum number of authorized visits. The second most common mechanism, used with similar frequency, is to withhold reimbursement for services for unacceptable care. Over 75% of clients reportedly are covered by plans that specify correspondence with a clinician for ongoing authorizations of additional sessions. In contrast, roughly half of the clients are covered by plans requiring various forms of written correspondence. Only 22% of clients are covered by plans that specify the sequence of treatment, and only 19% are in plans requiring follow-up with clients. Thus, typical mechanisms are rule-bound and punishment oriented, controlling the number of treatment visits more than their character.

Students of bureaucracy insist that rule systems inevitably engender discretion; some individuals have problems that do not quite fit the rules, and some treatment units may balk at the rules.^{17,18} Given this and the uncertainty around substance abuse treatment, it is no surprise that there is some leeway. In our survey, the administrative agent's clinical supervisors suggest that outpatient providers attempt to change the agent's minds in 8% of the cases regarding admissions and 10% of the cases regarding additional sessions (according to the median). These clinicians report that they change their minds in 5% and 10% of the cases. Less than 20% of the clients are covered by programs in which clinical supervisors say that they change their minds in 0% of the cases for either decision. Providers generally believe that they are most successful in reversing decisions when they appeal to their professional expertise or the special needs of clients, but that they also are occasionally successful by citing the rules.

One other discretionary activity is the provision of various other supportive services, including medical care, employment counseling, mental health care, and the like. In our survey, 34% of the clients are reportedly covered in arrangements where no services are allowed; half are covered in arrangements that allow mental health services. Otherwise, reported coverage is sporadic. For example, only 37% of the clients are covered in arrangements that reportedly allow for medical examinations, and only 18% are covered in arrangements allowing for employment counseling. In summary, the providers' managed care system looks much like a bureaucratic system that relies heavily on rules and is narrowly focused on substance abuse services. The system almost inevitably leaves a bit of discretion in the application of these rules, and it allows for selected additional services.

5. Interpreting and Control System

In earlier times, clients apparently tended to be routinely served by 28-day inpatient programs and then were referred to outpatient aftercare. This may have given rise to decision-making that was very routine or that reflected political prefer-

ences as well as the economic and insurance status of the client. Now, care now seems to be decided on the basis of another routine, which involves the standard application of rules that also might have political and economic overtones.^{4,72,73} These rules place individuals into care and a type of care based on evidence or beliefs concerning what a typical person needs, given a small set of characteristics. This means that managed care now has the character of a mass-production-like organization, even if rules by necessity give rise to some discretion to deal with individuals who do not fully fit them.

The use of rules gives rise to conflict-laden relations between providers and agents. Treatment professionals, who expect to base decisions on their professional judgement, must present evidence to an outsider who has the power to restrict the length of stay and the nature of care. The outsider has no inherent legitimacy except for control of the funds; the decision-making clinician does not directly speak to the client; and decisions are made on a set of abstract standards that the treatment professional cannot affect. These standards are not generally varied by provider and thus are insensitive to the particular treatment technology. There also may be problems in handling specific types of cases, like those on the border of mental illness and substance abuse. The inherent loss of control may affect the professional's perceived efficacy in helping clients.

As discussed in more detail later in this volume, the organizational changes affect the nature of care. Inpatient admissions are greatly reduced by intention.⁷⁴ Cross-sectional surveys suggest that the stringency of managed care limits on the number of visits correlates with fewer months in treatment and reduced intensity of treatment.⁷⁵ This may be crucial, given that several reviews of the treatment effectiveness literature suggest that the duration of treatment is the single most important predictor of posttreatment outcomes.^{11,76,77} Managed care arrangements also seem to increase the administrative burden of treatment organizations.⁷⁸ It is possible, but not yet clear, that the rise of managed care brings to organizations a more market-oriented approach where services are adjusted to demand, efficiencies are attempted, and organizations generally use fewer social services.

Even if more empirical work is needed, it is possible to further explain why managed care has its general administrative features (which, presumably affect treatment in predictable ways). To be sure, this explanation must be tentative, requiring later detailing and verification. But some preliminary headway can be made by considering that, under conditions of uncertainty, crucial theories consider the "technical," "institutional," and "resource dependency" environments, which mirror the previously noted role of costs, goals, and interests.

5.1. Transaction Cost Theories

Technical considerations range from determining what "works" best in substance abuse care, to determining which mode of organization is best suited for that purpose. Transaction cost economics speaks to the latter. It insists that the organization of a delivery system varies with the (perceived) costs to the purchaser of

services of seeking out sources for delivering a good, making agreements with the providers about delivery, and monitoring and enforcing these agreements. To be sure, transactions are believed to always entail costs. These largely occur because of opportunism, or the ability of providers (who directly do the work) to either “shirk” by rendering something of lower quality than agreed to, or to charge a higher cost than the market otherwise dictates. They also reflect the information and cognitive limits of the purchasers (“bounded rationality”), who are not able to fully anticipate the problems that might emerge. According to this theory, however, the choice of structure depends on what minimizes these costs.

In general, the basic choice of “buyers” is believed to involve relying either on a more market-like, or a more hierarchical (bureaucratic in common terms, although some versions of the theory distinguish different forms of hierarchy) delivery structure. Markets are generally preferred, in that a buyer engenders competition by contracting a service out. Competition reduces opportunism when this buyer is able to relatively easily make, monitor, and enforce agreements through a classic business contract or a similar mechanism. But under a variety of situations that are specified below, the costs become too high, and there is preference for the fierce, if expensive, control and loyalty engendered by the hierarchical approach—that is, for delivering the service within the buyer. This theory more recently is applied to fine-grained decisions, like why managed care might be more or less market-like.^{19,20,56-59}

5.2. Choices in Managed Care: Transaction Cost Views

The dominance of the carve-out (and the administratively similar EAP plan) represents a widely desired compromise between the most and least restrictive systems, but it also involves a market-hierarchy choice: most payers decide to use a managed care organization rather than to provide their own administrative system. From the transaction costs point of view, this suggests that small payers may be unable to obtain sufficient price or quality concessions from providers or to bear the administrative burden (transaction costs) for the moderate numbers of individuals they cover. The larger entities, who do sometimes administer their own plans, may otherwise find that there are acceptable transaction costs for using a market. They contract with only one or a few agents or insurance companies and thus might believe they can easily monitor care.

Given the description presented earlier, this decision to contract to agents can reflect the payers’ (or other sponsors’) beliefs that they can sufficiently control providers by (generally) using risk-based contracting, albeit joined with some rules about the treatment process. To be sure, risk sharing contracts may not exactly be what transaction cost theories had in mind when describing the basic, or “classical” contracts, under which those who buy services negotiate a cost and a set of services. Still, risk-based contracts may represent an adjustment to the classical contract that lowers costs by reducing the need to negotiate new agreements (which generally last between one and three years) and that provides economic incentives

to help insure that the agents do not “shirk” during this period. However, risk-sharing apparently is largely used for cost purposes, while other mandates that have no attached incentives apparently are deemed sufficient to ensure speed of processing and the like.⁷⁹ As will be argued later, this can only be understood when asking questions about the way goals are determined.

Ironically, agents control providers not with risk sharing, but (in general) with a more stringent set of rules. In essence, the rules mandate processes demanded by payers, as well as processes the agent believes help reach financial and treatment goals. This might seem odd, but it can be explained in part when considering more details of the theory of transaction costs. This generally suggests three conditions under which transaction costs favor the use of markets: when there are sufficient number of sellers to insure that none can take advantage and charge extraordinary costs; when goals are sufficiently stable, or certain, so that the payers can be assured that the conditions of the contract will be helpful to them for a reasonable length of time; and most important, when there is little asset specificity in the part of the seller. Asset specificity occurs when the skills, expertise, or resources involved in providing the good are so specialized that the seller can develop a near monopoly, charging high fees compared to their services (without easily being replaced).

While we later will argue that only a special adoption of the theory can incorporate risk sharing between payers and agents, it seems possible to argue that agent-provider relations have the types of conditions that begin to work against the market, thus requiring many rules and much day-to-day monitoring. This may reflect that the numbers of providers is so large as to increase the cost of other types of monitoring.²⁰ It also may reflect that providers have moderate asset specificity. This arises because it is difficult to replace them in their geographic location; there must be one provider in each geographic area, and it is costly to keep finding replacements. Accordingly, the agents spend more administrative time using rules and monitoring to make sure that providers deliver services in the ways the agents (and to some degree, the payers) desire.

In general, control is much stricter than is the case in a classic contract but it still is not fully hierarchical; the agent does not fully own the provider. The arrangements, therefore, usually are in something like what transaction costs economists call a “hybrid” form, even if they are not identical to widely explained examples of this form.²⁰ Transaction cost economics argue that use of such a form arises when there is intermediate asset specificity and relatively low uncertainty. Hybrids are not possible when there is high uncertainty because the control techniques they use are difficult to change; uncertainty means that change might be needed.

In the current case, the former condition may hold. Asset specificity is moderate due to the geographic issue (a moderate problem because agents can search for new providers) and perhaps because only some providers have sufficient expertise to deliver care in the desired way. But the uncertainty situation is more complex. Uncertainty is low only if agents simply attempt to meet a standard set of rules and keep to general cost estimates and credential levels. The fluid nature of substance abuse treatment otherwise might lead to demands for flexibility.

5.3. *Institutional and Dependency Perspectives*

Transaction cost theory does not clearly apply to all contingencies involving uncertainty, and it also is problematic in other ways. For example, one might suspect that, as managed care expands, it undermines some of the conditions said to favor use of a marketlike, BHMCO-oriented structure. The growing concentration of BHMCOs in the hands of a few firms suggests the problems of small numbers bargaining. There were 106 firms in 1994, but 92 as of 1999 (some of which have relatively autonomous regional and local offices). In 1999, Magellan dominated the market and covered 36.6% of the lives. The top three firms covered 57% of the lives, and the top eleven covered 85% of the lives.⁴⁰ Further, as agents gain familiarity with their providers and develop special relationships with them, and as their rule systems become more complex yet remain proprietary, asset specificity is increasing. According to the theory, this should convince payers to rely less on a market-based system. In reality, however, BHMCOs are more and more likely to dominate and are not facing unusual attempts to control their behavior or costs.

One also can envision circumstances under which the treatment providers deal with such uncertainty and have such asset specificity as to undermine the hybrid form of control over them. Uncertainty might be high because of the limited and constantly changing knowledge about which treatment techniques work for each individual. That is, demands for given types of treatment might not be easy to anticipate. Moreover, given the state of knowledge, providers have a near monopoly over the arcane expertise needed to match clients and treatment, providing assets specificity. While the current, rule-based system deals with these phenomena by allowing for some agency discretion, the difficulties of delivering care might demand further response.

Accordingly, current arrangements may reflect that both payers and agents avoid being extremely concerned about the intricacies of the technology of care, at least in the cases where risk-sharing and (for providers) hierarchy dominate.⁵⁶ As noted below, institutional and resource dependency theories are the likely candidates for explaining how this occurs.

5.3.1. A Review of the Theories. Institutional theory frequently suggests that it is possible to predict the way an activity is organized by finding out the way things are done in closely linked organizations or entities, assuming that such procedures are supported by socially accepted norms, values, or unstated premises of action. A focal organization may agree with these externally derived social expectations, may mimic behaviors and thus the norms, values, and premises of those who are successful, or may experience coercion by outsiders, regardless of efficiency concerns. The theory also warns that, when there are conflicts, leaders of any given organization may choose one set of socially sanctioned expectations and may then attempt to convince others that it is appropriate. Institutional forces are manipulated; actors support one or another partially socially accepted model of organization. Often, the actors may in the process undermine or at least deemphasize some other issues, goals, or procedures. Further, actors can adopt some outward practices or symbols

without adopting all of the intricacies this might seem to entail; there can be so much support for a given type of structure that actors may simply claim to (for example) use rules, write reports, or keep to time-lines, thereby warding off criticisms of their precise actions. This is a particularly popular strategy when process standards are respected but outcome standards are obscure and, if made apparent, controversial.⁵⁰⁻⁵⁵

Dependency theory suggests that actors or agencies who have highly valued discretionary resources have power to choose the preferred goals and arrangements. Such actors generally consist of those who control fiscal, administrative, and legal resources, like payers, administrative agents, and governments. Various other interest groups, such as professional groups who can demand legislation, also have some power. In general, organizations are believed to seek to reduce dependencies so that their existence or modes of operation are not easily disrupted by the demands of others. If they cannot, they attempt to find ways of anticipating and therefore minimizing the disruption.¹⁶ The major issues here are that, given the ambiguities in goals and methods of substance abuse treatment, the nature of the system may be partly explained by power relations among relevant entities.

5.3.2. Managed Care under Institutional and Resource Dependency Relations. When considering only the relationship of payer and agent, an institutional perspective⁵³ might suggest that delegation of authority is also delegation of the responsibility to the administrative agent. This occurs because agents gain legitimacy by mimicking currently legitimated business practices and forms. Therefore, the payers (or other sponsors) who use agents gain some level of protection from employee complaints. Problems in coverage can be seen as inevitable consequences of using a socially sanctioned (institutionalized) arrangement.

This strategy will not be successful if plan enrollees are powerful and have many specific complaints about the nature of care, and thus if the payer eventually is held liable. Accordingly, there probably are few complaints from often stigmatized and frequently powerless clients and families. The individuals are particularly unlikely to have much of a say because the quality of care is often in such dispute and because agents use research on average outcomes to back up their positions.

These conditions must allow the agent to also focus on procedures more, credentials some, and technology less. This reduces operating uncertainty (not the theoretical possibility of uncertainty) and allows the hybrid form to work. The common focus on the process and credentials also can develop because large employers seek advice from a small group of behavioral health care consultants, who dispense somewhat similar advice. Further, agents have the authority of NCQA accreditation standards, while employers currently have much authority to cut costs in general. From a dependency and power perspective, it is possible to shift much risk of dealing with rules to providers, who seem to need contracts badly, but not to agents, who form part of a concentrated industry.

To put this in other terms, institutional and dependency issues may define which transaction costs are relevant: given that the risk of being penalized for having a poor quality of care is only moderate and that the focus on process standards (and

not the details of treatment) is legitimated, the payers may provide some discretion to the agents that enables them to control costs, mandate processes, and worry less about treatment technology. Resource dependency theory also helps explain which goals dominate. The form of the system may reflect that there are strong interests in keeping down the cost of inpatient care, making sure there is timely access to some type of care (employers wish employees to improve soon or wish to prove that they cannot improve), and meeting very general quality standards. Of course, agents and payers have incentives to focus on costs and the process because it is difficult to otherwise determine which type of care is superior. If standards were more uniform, one would expect to see more provider-level risk sharing or delegation. Wolff and Schlesinger⁸⁰ thus argue that, for health care in general, stringent controls on providers are more likely to emerge under conditions of high uncertainty.

6. Conclusion

Managed care has clearly dramatically altered substance abuse services in some ways, in that inpatient care has declined and shorter-term and group care have increased. It is very possible that it more generally alters decision-making about care. It brings into being new sets of actors, and it complicates the treatment environment. It adds elements of risk sharing for agents and should increase their sensitivity to new demands from employers, Medicaid officials, and the like. Eventually, it also probably brings about more bureaucratic controls for providers, although it is not clear whether their services become more routine or more individualized as a result. More crucially, it changes conditions so much that providers' practices can now be understood only by analyzing not only advancements in treatment methods, but also a range of administrative and political decisions that originate in distant places and involve unfamiliar sets of criteria reflecting matters of efficiency, value, and power.

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Effects of Managed Care on Programs and Practices for the Treatment of Alcohol and Drug Dependence

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Abstract. Managed care is affecting the organization and financing of treatment services for alcohol and drug dependence. This paper examines the effects of managed care on program operations including the use of clinical protocols, the administrative burden, information systems, staffing, and program consolidation. It also reviews the effects of managed care on system performance related to employer-sponsored health plans, state employee health plans, and Medicaid and other public plans. Our review of managed care's influences on the alcohol and drug abuse treatment system finds evidence of systemic reductions in access to inpatient care and increased reliance on outpatient services. Moreover, although analyses of behavioral health carve-outs often suggest increases in the use of outpatient care, evaluations of substance abuse claims report reductions in ambulatory utilization for the treatment of alcohol and drug dependence.

1. Overview

Private 28-day alcoholism treatment programs were common in the early 1980s. State insurance mandates required coverage for up to 30 days of inpatient rehabilitation services¹ and treatment services were designed to maximize the benefit. Trend data from the National Drug and Alcohol Treatment Utilization Survey (NDATUS) and its successor the Uniform Facility Data Set (UFDS) suggest that 15% of the clients in care were served in private residential treatment facilities in the early 1980s.² By 1995, however, the proportion of clients being treated in these facilities

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declined to 6%. Smaller proportions of clients were also being treated in private 24-hour inpatient detoxification settings (4.5% in 1980 to 1.5% in 1995). Conversely, the proportion of private sector clients served in outpatient settings increased from 80% in 1980 to 93% in 1995. What happened? Why did private sector 28-day treatment programs practically disappear?

Although there is no single cause, the constellation of changes associated with the introduction and expansion of managed care is clearly implicated. Employers struggling to control rapid increases in the cost of health insurance began to self-insure and thus were no longer subjected to state insurance mandates. At the same time, they relied more heavily on health maintenance organizations and other forms of prepaid health care to better control costs. Specialized organizations emerged to manage benefits for mental illness and substance abuse—managed behavioral health care organizations. Health plans and managed behavioral health plans reduced costs by limiting access to expensive inpatient care and by promoting use of outpatient services. Thus, managed care appears to have begun to alter the organization and delivery of treatment for alcohol and drug dependence. Private residential rehabilitation centers appear to have been affected quickly and early. Aggressive utilization management reduced lengths of stay dramatically and rehabilitation services were shifted from residential settings to intensive outpatient settings. Traditional 28-day programs were unable to maintain utilization levels and no longer were economically viable.

The fate of the private for-profit 28-day rehabilitation programs suggests that the introduction and expansion of managed care is affecting the organization and delivery of alcohol and drug abuse treatment services. This chapter examines managed care and its influence on treatment programs for alcohol and drug dependence. The first two sections provide context for the assessment of impacts. An overview of managed care explains common approaches to the management of care and, based on those technologies, suggests potential influences on treatment programs and their operations. To assess the relative influence of managed care, the third section reviews current research that describes the participation of substance abuse treatment programs in managed care and notes differences between providers with greater and lesser participation in managed care arrangements. Program and system level impacts of managed care are explored in the fourth and fifth sections of the chapter. The fourth section examines studies on the use of clinical criteria, workforce characteristics, administrative burdens related to managed care, and program consolidation and closure. The fifth section, an assessment of system performance, reviews investigations of managed care's influence on utilization and cost of addiction treatment services in commercial health plans, health plans for state employees, and Medicaid and other public plans. The paper concludes with an assessment of the impacts of programmatic and systemic change on the delivery of care and a discussion of services research needs and opportunities related to managed care and treatment for alcohol and drug dependence. The review leads to an inescapable conclusion: managed care has affected and will continue to affect the organization and delivery of alcoholism and addiction treatment services.

2. What Is Managed Care and How Are Treatment Programs Affected?

Managed health care has evolved to include a variety of health maintenance organizations (staff model, group model, network model, individual practice association model, and mixed model), preferred provider organizations, point-of-service plans, management service organizations, employee assistance programs and managed behavioral health care organizations.³ As they continue to evolve, health plans provide multiple products in multiple locations to multiple clients and become increasingly diversified.⁴ Despite a multiplicity of models, three sets of tools are typically used to facilitate the management of health care: financial incentives, utilization management, and provider selection.^{3,5,6} These procedures exert direct and indirect influences on the structure and delivery of care and empirical investigations can identify and monitor the effects.

2.1. *Financial Incentives*

Managed health care tends to be financed through prepaid fees calculated on a per member per month (PMPM) basis. In return for up-front payments, the health plan provides all required medical care and assumes financial risk if the costs of care exceed the fees collected. The potential for financial profit and loss raises concerns that health plans and their service providers may deliver suboptimal amounts and intensity of services in order to minimize the cost of care and maximize profits.^{7,8} A major area for research, therefore, is the impact of different managed care arrangements on access and utilization of care and ultimately on the quality and effectiveness of care. For example, a 25% reduction in mental health visits per episode was observed when case rates replaced fee-for-service payments.⁹ Purchasers, however, can structure contracts to increase or decrease financial risk and alter the incentives to undertreat or to limit access to and utilization of more expensive services.^{3,10} Risk-based contracts, in fact, are not the norm for behavioral health care. Managed behavioral health plans reported that about one in four (28%) of their 175 million beneficiaries (1999 data) were enrolled in plans with full or partial risk.¹¹ The presence of full risk, partial risk, and no risk contracts means that contract conditions must be examined carefully to appropriately describe the nature of the financial incentives and to assess their potential influences.¹²

2.2. *Utilization Management*

Utilization management exerts more direct influences on service access and utilization. Gatekeeping, preauthorization, case management, level of care criteria, and treatment protocols are designed to guide the delivery of appropriate levels and intensity of care.^{3,13,14} Although these mechanisms can be perceived as inhibiting access to specific types of care, they can standardize treatment processes and, in theory, improve the efficiency with which care is provided. Treatment guidelines,^{15,16} however, are not well developed for treatment of mental illnesses and sub-

stance abuse.^{17,18} It is critical, therefore, to investigate standardization of diagnostic and assessment processes, the use of level of care criteria, and the development and diffusion of treatment protocols. Utilization management may also lead to increased administrative burdens on treatment providers.

2.3. Selective Contracting

Provider selection is a third set of approaches used to manage care.³ Managed care organizations tend to restrict the number and types of practitioners and agencies that participate in their network of providers. Providers can be selected based on qualifications and willingness to accept specific fees. A limited network enhances the health plan's ability to manage quality of care and require adherence to utilization management criteria. In behavioral health care, managed care organizations often rely on panels of individual practitioners. Thus, research needs to assess impacts on the composition of the workforce and the organization of service delivery programs.

Managed care has contributed to consolidation of health care systems and has facilitated program mergers and closures in the general health care system,¹⁹ and similar effects may be apparent among drug and alcohol treatment services. Employed alone and in concert, financial incentives, utilization management, and provider selection may reshape the delivery of care and the organizations that deliver care. When asked about program changes related to managed care, for example, units participating in the Drug Abuse Treatment Outcome Study (DATOS) commented on agency reorganizations, changes in staffing, and shifts in program financing.²⁰ Program directors also reported declines in length of stay, development of brief interventions, and shifts to group therapy models. Program contractions and expansions were noted as payers reduced the use of inpatient care and encouraged outpatient services. The DATOS reports, however, were based on perceptions of change and pre/post data on changes were not available.²⁰ It is important, therefore, to examine the presence of managed care in treatment programs and empirically assess effects on access, utilization, cost, standardization of service delivery, workforce, and agency consolidation.

3. Participation in Managed Care

Data suggest that many drug and alcohol treatment programs continue to operate outside the direct influence of managed care. In 1995, the first year managed care items were included UFDS, 40% of more than 10,000 responding treatment units reported that they had a formal arrangement with a managed care organization and that 44% of the clients in these units were covered by managed care.² About one in four (23%) of the clients in the facilities that did not have a formal arrangement with managed care (60% of respondents) were also covered by managed care. Formal managed care arrangements were more common among treat-

ment programs run by for-profit corporations (52%) than among programs in not-for-profit organizations (40%) and services operated by state or local government (22%) and the federal government (10%).² The proportion of treatment services with formal managed care arrangements increased slightly to 44% in 1996.²¹

Another assessment of managed care penetration used data from NDATSS—a survey of a nationally representative sample of about 600 outpatient substance abuse treatment units conducted in 1988, 1990, 1995, and 1999.²²⁻²⁴ Items on participation in managed care were introduced in the 1995 survey. Treatment units were considered to participate in managed care if 10 or more clients were covered under managed care arrangements and more than one-third (38%) of outpatient substance abuse treatment units met this definition of managed care involvement.²⁵ For-profit units with hospital affiliation were more likely to participate in managed care, and methadone units were less likely. Programs with at least 10 managed care clients reported a mean of four formal or informal agreements with public or private managed care firms and nearly half (46%) of the total revenue was attributed to managed care organizations.

A study of licensed substance abuse outpatient programs located in the six New England states also found variation in program participation in managed care.²⁶ A large portion (40%) of licensed outpatient centers indicated that they had no formal involvement with managed care. One in four programs (25%) reported direct contracts with managed care organizations. Another 25% were members of managed care panels and held contracts with managed care organizations. One in ten (10%) programs were among the most involved—they reported an ownership position in a managed care network and participation on managed care panels and they contracted with managed care organizations. Overall, one-third (33%) of total revenues were from managed care organizations and the mean number of agreements with managed care organizations was six. Finally, two-thirds (66%) reported some revenue from managed care firms.²⁶

In summary, current data on program participation in managed care suggests that many programs still have little or no direct interaction with managed care organizations. The relative lack of involvement may reflect the public funding base of many alcohol and drug treatment programs. Commercial health insurance accounted for little more than one-fifth (23%) of the payments for substance abuse treatment in 1996.²⁷ Two-thirds of the spending on addiction treatment services (68%) was from public resources: Medicare (8%), Medicaid (15%), federal appropriations (14%), and state and local appropriations (26%).²⁷ Managed care's influence on most public sector drug and alcohol treatment programs was limited until states began contracting with health plans and managed behavioral health plans to manage Medicaid benefits. Since Massachusetts's implementation of the first statewide Medicaid managed behavioral health carve-out in 1993,²⁸ however, the small community-based organizations that treat alcohol and drug disorders have begun to confront a rapidly changing economic and regulatory environment. As the implementation of managed care in public and private health plans expands, the impacts on program operations and staffing and access, and on utilization and cost become more apparent.

4. Program Operations and Staffing

Substance abuse treatment services are noted for inconsistency in practice patterns.^{29,30} Typically, there are multiple treatment alternatives and little consensus on the value of many treatment options.³¹ To reduce variation in the type of substance abuse services being delivered, therefore, managed care organizations encourage, and sometimes require, substance abuse treatment organizations to use standardized assessment instruments, patient placement criteria, and practice guidelines. For example, one of the nation's largest managed behavioral health care organizations (United Behavioral Health) recently adopted the American Society of Addiction Medicine Patient Placement Criteria (ASAM PPC-2) for use among all substance abuse providers (ASAM Press Release, 1999). The use of standardized clinical tools is designed to reduce inconsistency in practice and deliver more efficient and effective care. Treatment guidelines and patient placement criteria are forms of clinical standardization. Managed care may also affect program operations through work force expectations, increased administrative burdens, and demands for automated information systems.

4.1. Clinical Criteria

Due to the scarcity of empirical work in this area, it is difficult to form conclusions about the influence of managed care on a variety of clinical standards. For example, there are criteria for admission to services (medical necessity criteria), criteria to determine the type of services needed and the best level of care in which to receive it (patient placement criteria), and criteria for treatment processes such as detoxification from cocaine or alcohol (practice guidelines). Unfortunately, the language describing clinical tools is often used interchangeably, making it difficult to interpret which type of criteria are actually being discussed. Nonetheless, the use of clinical criteria, though in its infancy, is expected to rise as managed care organizations and treatment programs seek clinical standardization and advances in clinically effective care.

Very few studies quantify the use of clinical tools in substance abuse programs. Similarly, very little research attention has been directed to managed care organizations' use of medical necessity criteria, patient placement criteria, or practice guidelines. A telephone survey of 31 utilization review firms that managed mental health and substance abuse benefits assessed the qualifications of case management personnel, clinical criteria used to authorize admission or to extend days, utilization review procedures for outpatient services, and the integration of managed care and employee assistance programs.³¹ Results suggested that while utilization reviewers use explicit criteria to assess treatment appropriateness or determine length of stay, the criteria used were often proprietary in nature and undisclosed to the program under review. Only three corporations (less than 10% of the sample) reported using publicly available criteria.³¹

The New England Outpatient Survey (NEOS) surveyed program managers or clinical directors in the 341 clinics licensed or approved to provide outpatient sub-

stance abuse treatment in Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. Responses were obtained from 281 programs (82% response rate).³² Questions probed the use of screening and assessment tools, patient placement criteria, and practice guidelines; the influence of managed care involvement was assessed on the use of standardized tools.²⁶ Use of standardized clinical tools and procedures was limited but programs high on managed care involvement were more likely to report use. Factor analysis identified two dimensions of managed care involvement—"potential managed care revenue" (number of staff credentialed by a managed care organization, proportion of managed care revenue, number of agreements with managed care organizations, and number of direct contracts with managed care organizations) and "managed care network participation" (ownership position in a network, panel member in network, and formation of a network in the last 24 months). The relationship between potential managed care revenue and the use of standardized tools, the setting and size was examined with discriminant function analysis. Outpatient substance abuse programs with high potential managed care revenue were more likely to use psychiatric (*DSM-IV*, GAF) and biomedical tools (urine screens, breath tests), and they were located in a community mental health center. Programs located in free-standing substance abuse clinics had a negative relationship to potential managed care revenue. Similarly, discriminant function analysis suggested that managed care network participation was positively related to the use of psychiatric tools, being located in a community mental health center, and the number of outpatient facilities the organization operated. Programs located in free-standing substance clinics were significantly less likely to report high managed care network participation.

In summary, studies of both managed care organizations and substance abuse treatment programs suggest variation in the use of standardized tools. On the managed care organization level, utilization review firms use various sets of clinical criteria to manage services.³¹ On a programmatic level, clinics high in managed care involvement were more likely to use standardized tools and clinical criteria.²⁶ But how does the use of standardized tools such as medical necessity criteria, patient placement criteria and practice guidelines benefit managed care organizations? Standardized practices are used to reduce variation in treatment practices and provide more efficient and effective care.

Table I highlights the differences between medical necessity criteria, patient placement criteria, and practice guidelines. While overlap exists between categories, differentiation between the three may reduce confusion about what clinical criteria are. These tools are used by managed care organizations to facilitate utilization review. In addition, they can also be used by treatment programs to manage their own cases, especially under capitated or other risk sharing arrangements.

Patient placement criteria standardize decision-making about client placement and client movement in the substance abuse system. In the last few years, there has been an initiative to develop a singular, or uniform, set of patient placement criteria for the substance abuse field to replace the myriad sets of criteria being used by individual managed care organizations and provider organizations. The most prevalent criteria were developed by the American Society of Addiction Medicine

Table I. Standardized Criteria being used by Managed Care Organizations

Type of Criteria	Definition	Purpose of Criteria	How Used by Managed Care
Medical Necessity Criteria	Criteria to access clinical appropriateness for treatment services	Admission to Service	Gatekeeping Preauthorization
Patient Placement Criteria	Standardized criteria to direct patient placement to various levels of care	Intensity of service	Concurrent review Retrospective review
Practice Guidelines	Systematically developed treatment protocols	Course of treatment	Treatment planning Case management Best practices

(ASAM)^{33,34} and have been generally accepted by providers, state substance abuse authorities, and managed care organizations. For example, one national managed care organization recently announced adoption of the ASAM patient placement criteria for their substance abuse services and staff and network providers were trained to use the criteria (www.asam.org/presrel/valueoptions.htm). Adoption in outpatient substance abuse programs however is incomplete. Only one in four (26%) of the respondents in NEOStudy reported use of the ASAM criteria.²⁶

Practice guidelines are “systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific circumstances. Ideally, practice guidelines are developed through a process that combines scientific evidence of effectiveness with expert opinion”. (p. 2)¹⁴ While practice guidelines have been widely used in the field of medicine, their application to the field of substance abuse is limited though recognition of their usefulness is growing. A review of practice guidelines for the addictions in 1994 reported that several professional organizations (American Psychiatric Association, American Society of Addiction Medicine, American Nurses Association, National Association of Social Workers, and Center for Substance Abuse Treatment) were in the process of developing guidelines for substance abuse treatment.¹⁸ A more recent analysis highlighted the relationship between the development of guidelines and corresponding efforts to identify and measure effective treatment practices and stressed the convergent paths of guideline development with the development of expectations to document efficacy of care.¹⁷

The development and use of practice guidelines holds promise for managed care organizations and service providers. Potentially, practice guidelines can enhance the quality and consistency of care, reduce inefficiency, inform medical and patient decision making, and improve coordination of care and assessment of outcomes.¹⁴ However, practice guidelines have not been a panacea for the practice of medicine. Their usefulness is dependent on the process used to develop and disseminate the guideline as well as the actual adherence to and clinical effectiveness of the guidelines.¹⁴

4.2. *Workforce*

Managed care organizations tend to credential individual practitioners. “Credentialing” is the process of reviewing and validating practitioner qualifications and is required for staff and panel members based on standards from major health care accreditation bodies (e.g., the Rehabilitation Accreditation Commission, Joint Commission on Accreditation of Healthcare Organizations, National Committee for Quality Assurance).³ These review processes and standards are designed to protect patients and assure that only appropriately trained individuals deliver care. Credentialing reflects the standards of the general health care systems and the increased medicalization of drug and alcohol treatment.³⁵ Because credentialing processes assess professional licensure, they may not recognize certification in alcohol and drug abuse counseling. Many counselors in the substance abuse workforce have specialized and achieved certification status but may not be licensed to practice independently. Thus, the expectations for professional licensure are likely to influence the training and hiring of staff in drug and alcohol treatment programs. Currently, however, there is little data on change in the workforce related to managed care, and studies of the workforce are dated.^{36,37} The individuals most affected may be counselors with personal experience in recovery from alcohol and drug dependence. Counselors in recovery have been valued in the field and have been a distinct feature of addiction treatment. Although individuals in recovery often complete graduate educational programs and achieve licensure, an earlier investigation of workforce characteristics found that licensed counselors were less likely to report that they were in recovery.³⁷ Thus, expectations from managed systems of care for licensed practitioners may make it more difficult for treatment programs to hire and retain individuals in recovery as counselors. Roles and responsibilities, other than counseling, may need to be defined in order to retain the skills and insights achieved through personal experience with recovery. Periodic assessments of the workforce, however, are needed to monitor changes.

4.3. *Administrative Burden*

Interviews with treatment staff suggest that managed care organizations impose greater reporting requirements and require providers to invest more time and resources in administrative responsibilities. In annual surveys of provider experience with the Massachusetts Medicaid mental health and substance abuse carve-out, for example, treatment directors report perceptions of increased paper work, reduced continuity of staff in the managed care organization, and the need to hire additional administrative staff.³⁸⁻⁴⁰ Few studies, however, directly monitor administrative burdens related to managed care requirements. Indirect evidence comes from analysis of data from the 1995 National Drug Abuse Treatment System Survey (NDATSS). Alexander and Lemak defined administrative burden as “the cost to an organization of managing the requirements of managed care” and operationalized the measurement in terms of the percentage of total administrative time spent on managed care requirements and as the hours of managed care administration per

client.⁴¹ As expected, administrative burden, measured as the percentage of administrative time spent on managed care, increased with an increase in the proportion of revenues from managed care. Managed care requirements to conduct patient follow-up after discharge also increased the burden on administrative time and led to more administrative time per client. Other data from the 1995 NDATSS suggest that outpatient substance abuse treatment units devoted sizable staffing resources to meet the expectations of managed care. They reported spending a mean of 38 hours per week devoted to administrative expectations of managed care organizations. To reduce these burdens, programs may need to invest in automated information systems.

4.4. Information Systems

Managed care organizations strive to maintain value through increased efficiency and improvements in quality. Both goals benefit from strong information systems that facilitate the collection and sharing of clinical, financial, and administrative data. Treatment planning and the management of clinical caseloads may improve with automated clinical records that can be shared (with appropriate confidentiality safeguards) among counselors, levels of care, and facilities. Quality improvement and assurance processes monitor the delivery of care and use databases to identify problematic facets of clinical and administrative processes. Administrative and financial management may be enhanced when encounters and units of care are tracked for each patient and when the productivity of clinical staff is monitored. It is also critical to identify payers and health plan membership accurately so that eligibility is verified, services are authorized appropriately, there is adherence to utilization review protocols, and claims are filed accurately. An analysis of group medical practices found that most had automated information systems but were not using the systems specifically to manage the financial risks associated with capitated contracts.⁴²

Data from surveys of alcohol and drug abuse treatment programs suggest that most have some automated information systems but the systems appear to be used primarily for complying with funding requirements to report the numbers and characteristics of individuals in care. The Alcohol and Drug Services Study (ADSS) surveyed a nationally representative sample of 2,400 alcohol and drug treatment facilities that were not located in correctional settings.⁴³ The mail/telephone survey completed in 1997 included an item assessing the presence of “an operational computerized information system.” Preliminary analyses found that, although information systems were generally in use, prevalence varied by size and setting of the treatment program.⁴³ About 8 of 10 programs with a client census of more than 100 clients reported having an automated information system (78%); programs with a census of 16 or fewer clients were less likely to have such a system (59%). Similarly, residential programs (which tend to be smaller) were least likely to report having information systems (54%) and methadone services (which tend to be larger) were most likely to be using an automated information system (77%).

The ADSS data, however, do not provide information on how the information

systems are used. Unpublished data suggest that automated information systems tend to monitor client characteristics and invoice for services delivered but are not used to manage caseloads and clinical services.³² The NEOS suggested that most outpatient programs supported an automated information system (85%). The systems were used primarily for collecting information on client demographics (98%), diagnosis (80%), services provided (90%), and to invoice payers (75%). Relatively few agencies used the systems to schedule appointments (36%), maintain clinical records (27%), monitor utilization (47%), assess counselor productivity (59%), record client satisfaction (34%), and monitor client follow-up (21). Thus, the picture that emerges is that information systems are still relatively unsophisticated and will benefit from continued investment and development. Ten years ago, Institute of Medicine committees reviewed the state of the art in research on treatment for alcohol and drug abuse and lamented the lack of data systems to monitor programs, record client change, and track treatment costs.^{44,45} While data systems have developed during the ensuing decade, survival in an era of managed services may require that providers and payers make better use of data to examine and monitor services and effectiveness. Providers that accept risk-sharing arrangements are likely to build comprehensive information systems to improve the likelihood of financial and clinical success. Future assessments of managed care's influence on the organization and delivery of addiction treatment services should find a rapid evolution of information systems and enhanced application and use in alcohol and drug abuse treatment organizations. Management information systems, however, can be expensive to purchase and maintain, and smaller independent organizations may have more difficulty affording the investment.

4.5. Program Consolidation

Community-based drug and alcohol treatment agencies are likely to survive within managed care environments only if they can deliver quality services efficiently and control costs effectively. Effectiveness and efficiency may require greater use of standardized assessment and treatment protocols, reductions in administrative overhead, and consolidation of small providers. Expectations to integrate mental health and substance abuse services and provide linkages to primary care may encourage mergers and alliances with mental health and health care providers. Opportunities to assume financial risk, moreover, require access to capital and may be less risky for larger rather than smaller entities. Finally, managed care's emphasis on outcome measurement and performance monitoring can stimulate the construction and use of automated management information systems. Because of the expense of purchasing and operating complex information systems, larger organizations that spread costs over more sites, patients, and payers are more likely to afford and to benefit from investments in information infrastructures. As a result of these economic forces, observers anticipate that mental health and substance abuse treatment programs will form provider networks and merge into larger corporations.^{35,46,47} Few empirical studies, however, examine managed care's influence on provider organizations and their delivery of care.

A survey of 450 alcohol and drug abuse treatment centers in 1995 and 1997 found that 40 had closed and 46 had participated in a merger or acquisition in the two years since the first survey.⁴⁸ Agencies that merged reported more conflict with managed care organizations about lengths of stay and patients with exhausted benefits. In addition, agencies that experienced more conflict with managed care organizations over discharging patients and utilization management decisions were more likely to increase capacity than programs where perceived conflict was low. There were no apparent relationships between conflicts with managed care and agency closures. Thus, managed care appears to be only one of many factors that affect agency growth and survival.

5. System Performance

Managed care organizations not only affect the delivery of care in programs that provide alcohol and drug abuse treatment, but also alter the systems in which programs function. A common expectation is that managed care leads to reductions in cost and utilization because of financial incentives to limit care and restrictions on provider behavior through direct controls, reimbursement approaches, and incentives to remain in the provider panel.⁴⁹ More sophisticated observers might note that moving insured enrollees from fee-for-service care into a behavioral health carve-out could actually improve access, as the carve-out does not face the same selection-related incentive to under-treat mental illness and substance abuse.⁴⁹

Studies conducted in private health plans sponsored by employers and public health plans for state employees and Medicaid recipients were reviewed to identify systemic influences from the application of managed care to substance abuse treatment. The evidence relies heavily on investigations of behavioral health carve-outs. Even studies of carve-outs, however, often do not provide separate results for substance abuse services. It is difficult, therefore, to form firm conclusions. Six papers that included data on changes (pre-versus postmanaged care) in cost and utilization for substance abuse treatment services are summarized in Table II. Generally, three types of measures were found and percent change was calculated: (a) utilization per enrollee, (b) users per enrollee and days or visits per user, and (c) costs per enrollee. Comparisons across investigations are inhibited because different measures are reported; a consequence is that cells in Table 2 are blank. Overall, there appears to be a tendency for greater decrements in services for substance abuse treatment than for mental health services.

5.1. *Employer-Sponsored Health Plans*

Large employers contributed to the growth of managed care. They encouraged enrollment in managed care plans, such as health maintenance organizations and preferred provider organizations, and led the move toward behavioral health carve-out contracts. Almost four of ten (39%) of Fortune 500 employers carved-out the management of behavioral health benefits in 1997 and larger employers were more

Table II. Changes in utilization and cost of substance abuse treatment under managed care: Summary of findings

Study	Brisson 1999	Brisson and Frank 1999	Stein et al 1999	Ma and McGuire 1998	Sturn 1998	Callahan et al 1995		
Setting	Private insurer (HMO)	employers	Private	State employees in Massachusetts	State employees in Ohio	Massachusetts Medicaid (FFS enrollees)		
Intervention	Expansion of carve-out		Carve-out from HMOs	Carve-out from FFS	Carve-out from FFS	Carve-out from FFS		
Scope of results	SA	MH & SA	SA	SA	MH	MH & SA	SA	MH & SA
Change in utilization:								
Inpatient days			-76.4%	-3.6%	+4.8%	-74.6%		-38.2%
Outpatient visits			-73.5%	-44.2%	-44.0%	-42.1%		-12.9%
Change in enrollees receiving treatment:								
Inpatient	-80%	-76.7%						-61.2%
Outpatient	-28%	+78.1%		-33.2%	-25.1%			-4.4%
Any setting	-40%	+71.4%						+4.6%
Change in utilization:								
Inpatient days								
Outpatient visits				-16.6%	-25.2%			
Change in payments:								
Inpatient	+12%	+10.2%						
Outpatient	-67%	-54.7%		-10.3%	-7.0%			
Any setting	-56%	-69.6%						

likely to use carve-out arrangements.⁵⁰ Studies of employer-sponsored behavioral health carve-outs suggest substantial cost savings through reductions in the use of inpatient care and shifts to outpatient services.

Analysis of six years of data from a large behavioral health organization found significant cost savings following the implementation of a behavioral health carve-out in a large corporation despite expanded benefits.⁵¹ The behavioral health firm provided administrative services only (ASO) and did not assume financial risk. Expenditures declined 40% in the year after the carve-out was implemented. Costs continued to decrease in subsequent years. Increases were observed in the number of individuals using services. The reduction in expenditures was associated with reduced length of stays for inpatient care, reduced probability of inpatient admissions, fewer outpatient sessions per user, and lower costs per unit of services. Substance abuse treatment services, however, were deleted from the analysis. Thus, although this study suggests that a behavioral health carve-out can lead to services for more beneficiaries at lower total cost, it does not provide data on the delivery and use of alcohol and drug abuse treatment.

Brisson and colleagues analyzed the cost and utilization of substance abuse services in a commercial health plan following changes in a behavioral health carve-out.^{52,53} An HMO altered its behavioral health carve-out to include financial risk for outpatient and inpatient services (the prior program was at risk only for outpatient care). Moreover, service delivery changed from a network model (private practitioners delivered care on a fee-for-service basis) to a hybrid model—master level therapists were on salary and sited in clinics; fee-for-service practitioners were used only for patient overflow or when a condition required special clinical expertise. Overall, the number of clients with outpatient visits increased 78% (from 3.2 to 5.7 members per 1000 per month; inpatient visits decreased 77% (4.3 to 1.0 users per 10,000 members per month).⁵³ Analysis of the 262 patients with only substance abuse treatment, however, suggested a 28% decrease in the number of outpatient users per month and an 80 percent reduction in inpatient users per month.⁵² Average monthly spending for mental health and substance abuse services decreased from \$2.40 per member per month (PMPM) to \$1.25. Outpatient payments per user declined 67% for substance abuse patients and 55% for individuals with behavioral health services.⁵² Average length of stay for inpatient services decreased from 6.2 days to 3.7 days, and days per thousand enrollees per year decreased from 28 to 4.⁵³

This analysis suggests that, while behavioral health carve-outs can increase use of mental health services, effects for substance abuse treatment may differ. The new carve-out preceded a decrease in the number of inpatient and outpatient substance abuse service users, and substantial declines in expenditures were observed. The investigators raise the issues of how much reduction in expense and access to care is feasible and when impacts will be observed on quality of care.⁵³

Decreased access to alcohol and drug abuse treatment was also observed when Stein, Reardon, and Sturm analyzed an employer's experience replacing 23 HMOs with a single behavioral health carve-out.⁵⁴ Total utilization of substance abuse services declined from 64 members per thousand per year in 1993 to 41.3 in 1996 the second year of the carve-out contract. Reductions were observed in inpatient care

(from 10.6 to 2.5 members per thousand per year) and outpatient care (45.7 versus 12.1 members per thousand per year). There was, however, an increase in the use of intermediate hospitalization and outpatient services (7.7 to 26.7 members per thousand per year). The annual cost for substance abuse treatment per member declined from \$7.32 to \$4.90.

Analyses of private employer health plans suggests that, although behavioral health carve-outs may be associated with increased utilization of mental health services, substance abuse services may be especially susceptible to reductions in utilization. More aggressive utilization management may inhibit members from seeking services. More over, reductions in access to inpatient services do not seem to be offset by increased use of outpatient care. Substance abuse services must be separated from mental health services to observe these effects. It is critical, therefore, to examine publicly sponsored health plans to determine if similar reductions are observed in the use of substance abuse treatment.

5.2. State Employee Health Plans

Health plans for state employees are a subset of employer-sponsored health plans. But, because state government is the employer, they are more likely to reflect shifting public policies (e.g., parity for mental illness) and much of the information about the plan is in the public record and may facilitate analysis. A series of analyses, for example, were completed using data from a change in the health plan for Massachusetts state employees. A behavioral health carve-out was introduced and benefit limits were eliminated. The carve-out program implemented utilization management strategies, relied on a provider network, and had a soft capitation contract (i.e., the state and the vendor shared financial risk). Behavioral health benefits expanded. Despite rather weak financial incentives in the contract, spending for mental health and substance abuse services were reduced by at least 30–40% in the first year of the program. Ma and McGuire suggest a “reputation effect” occurred, meaning that the vendor was new to the market and wanted to perform above and beyond the expectations of the carve-out hoping for continued business, new contracts, or both.⁵⁵ Huskamp analyzed the same data and observed a decrease in the probability of having a mental health or substance abuse visit. A third analysis suggests an improvement in a common measure of quality of care: outpatient services following a hospital discharge. There was an increase in the probability of outpatient treatment following inpatient discharges for major depressive disorders.⁵⁶ Linkages to care following inpatient detoxification and treatment for substance abuse were not examined.

Sturm’s analysis of data from the Ohio health plan for state employees also found reductions in cost and utilization.⁵⁷ A managed behavioral health care organization assumed full financial risk for providing behavioral health care to state employees enrolled in HMO and indemnity health plans. Results differed for the two groups of enrollees. Individuals switched from indemnity plans incurred a 75% reduction in inpatient days and a 40% reduction in outpatient visits per 1000 members; there was an increase in the use of intermediate services. The number of visits

per 1000 decreased, even though there were no limits on the number of allowed visits. Costs continued to decline during the subsequent years. Beneficiaries enrolled in HMOs, however, experienced an increase in the number of outpatient visits per 1000 and, like the indemnity members, a reduction in inpatient days and an increase in intermediate services. Separate analyses, however, were not reported for substance abuse treatments.

5.3. *Medicaid and Other Public Plans*

Increasingly, states use managed care to deliver mental health or substance abuse treatment services, or both, to Medicaid beneficiaries and other groups served with public funds.⁵⁸ Over half (54%) of Medicaid's 30 million beneficiaries were enrolled in managed systems of care by 1998 (<http://www.hcfa.gov/medicaid/trends98.htm>). The Balanced Budget Act of 1997 allowed states to mandate enrollment in managed care and catalyzed application of managed care to Medicaid plans.⁵⁹ States vary substantially in the use of integrated and carve-out arrangements, and even within a state, beneficiaries may have a choice of different models.

In 1993, Massachusetts implemented the nation's first statewide carve-out for Medicaid mental health and substance abuse benefits.²⁸ The managed behavioral health care program included a risk-sharing arrangement between the state and the carve-out vendor, the implementation of a provider network, and use of case managers. Because it was among the earliest Medicaid carve-outs, the Massachusetts initiative has been tracked closely and many facets have been examined in published investigations. A pre-post comparison used claims data from 1992–1994 to assess expenditures and utilization the year before and the year after the carve-out for 375,000 Medicaid enrollees.²⁸ The analysis estimated that, in the absence of the carve-out, Medicaid expenditures for mental health and substance abuse treatment would have approached \$210 million. As a result of the carve-out total expenditures declined from \$186 million in 1992 to \$163 million in 1993—a 22% reduction in anticipated expenditures and a 12% reduction from the prior year. Most of the savings (78%) were due to reductions in the use of inpatient services and reductions in the prices paid. The number of enrollees receiving any behavioral health care increased (5%) but use of inpatient mental health care decreased (–2 percent) and hospital-based detoxification services also decreased (–61%). Increases were observed in utilization rates for methadone services (20%) and detoxification in freestanding clinics (45%). An assessment of contract incentives suggested that the managed care organization had greater incentives to reduce administrative expenditures rather than access to care.⁶⁰ Subsequent analyses note that the utilization and expenditure patterns were maintained.⁶¹ The restrictions in access to inpatient care, however, may have had more impact on disabled beneficiaries than on nondisabled,^{61,62} and inhibited access to inpatient care for children and adolescents may lead to short-term cost savings but long-term negative effects.⁶³ The Massachusetts Medicaid behavioral health carve-out is generally perceived as a success and an illustration of the use of contract performance standards and financial incentives to manage managed care.⁶⁴

Other states have struggled with the implementation of Medicaid managed behavioral health care. An assessment of TennCare Partners (Tennessee's behavioral health program) stated that the "experiment started chaotically and soon deteriorated into a crisis."⁶⁵ Capitation rates did not differentiate disabled and nondisabled populations, and programs were not reimbursed sufficiently to serve the most seriously ill participants. As a result, access to care declined 15% and treatment programs and the managed care organizations struggle to survive. Data on substance abuse services was not reported, but the results from other behavioral health carve-outs suggest that declines in utilization of services may have been even greater for the treatment of alcohol and drug dependence.

6. Concluding Comments

Managed care is affecting the organization, delivery and financing of treatment services for alcohol and drug dependence. A service system built on grassroots not-for-profit organizations and public funding is changing rapidly. Our review of managed care's influences on alcohol and drug abuse treatment systems finds evidence of systemic reductions in access to inpatient care and increased reliance on outpatient services. Moreover, although analyses of behavioral health carve-outs often suggest increases in the use of outpatient care, evaluations of substance abuse claims report reductions in ambulatory utilization for the treatment of alcohol and drug dependence.

The picture is complex and small numbers may contribute to variations in utilization rates. A lack of consistency in how data are reported also complicates interpretation. Rates can be presented as members per thousand, covered lives per thousand or ten thousand (members plus beneficiaries), or other metrics. Cost calculations are inconsistent across investigations. Comparisons among studies, therefore, are challenging. Standardization in reporting of the results of health plan analyses will improve comparability.

Nonetheless, the emerging pattern of reductions in access to alcohol and drug abuse services in commercial health plans and public plans for state employees and Medicaid enrollees is disturbing and is a clear indicator that much more attention must be directed toward the analysis of substance abuse treatment. Behavioral health organizations, however, usually focus on managing mental health services because service utilization is primarily for the treatment of mental illness. Substance abuse treatment is a small part of the business and is easily overlooked.⁶⁶ Continued advocacy and analysis is required to maintain appropriate access to services for alcohol and drug disorders.

The shift from inpatient to outpatient care for the delivery of behavioral health services requires programs to invest in building capacity to offer ambulatory services. Initial reports suggest that as managed care becomes more prevalent services may become more standardized through greater reliance on medical necessity criteria, treatment guidelines, and patient placement criteria. Managed care organizations and treatment programs vary in the use of clinical protocols, but programs

with greater managed care participation appear to be more likely to use psychiatric assessment tools. Active involvement in managed care appears to increase administrative burdens; there are increases in paperwork, phone calls, and negotiations about client length of stay. Investments in data and information systems may be necessary to reduce administrative costs. Most substance abuse treatment programs, however, do not appear to fully utilize their current information system capacities.

There are substantial opportunities for services research on relationships between managed care and patients, practitioners, programs, and policies associated with the prevention and treatment of abuse and addiction. The National Institute on Alcohol Abuse and Alcoholism identified investigations of managed care's influence on alcohol treatment services as one of eight priority areas.⁶⁷ Two research issues specific to managed care were identified: (a) monitor and describe managed care plans for alcohol treatment and (b) assess the effects of managed care on access, utilization, cost, quality, and outcomes of care. These recommendations remain valid. Descriptive and analytic studies are still required. Too often, alcohol and drug abuse services are analyzed simply as part of a behavioral health care program and the unique effects associated with these services are obscured.

Finally, the variety of public and private sector approaches to managed behavioral health care reflects the complexity of contemporary systems of care and suggests that multiple effects and influences may be evident. On the one hand, the presence of multiple models challenges investigators to identify generalizable elements and effects. Heterogeneity, on the other hand, offers opportunities to compare and contrast approaches to policy development and program implementation. Public and private health care systems, therefore, have become a large policy laboratory for investigations that may help determine which variables are most likely to influence programmatic and systemic change.

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Linking Clients to Clinical and Social Services

**Michael Calloway, Joseph Morrissey,
Sharon Topping, and Bruce Fried**

1. Introduction

This chapter provides an overview of the issues and research findings around linking and coordinating community-based services for persons with serious multidimensional clinical and social needs. As an area of interest, the dynamics and mechanisms around organizational linkage behavior remain among the more understudied issues in health services research.^{1,2,3} We refer specifically to the inter- and intraorganizational relationships involved in coordinating and providing a broad range of community-based services to multineed clients. The multineed population referred to in this chapter are those with co-occurring disorders of alcohol and other substance misuse and severe mental illness (the term “co-occurring” is used throughout the text to reference this group). This population is seen as being large and growing in terms of its impact on the local systems of clinical and supportive services.⁴

Providers of treatment for persons with co-occurring disorders are increasingly frustrated and concerned with revolving door clients who are treated, then relapse, only to return to treatment. This problem is seen as growing in recent years with a fundamental shift in the type of clients community-based providers are serving. With an increased emphasis on outpatient and after-care services, a result due in part to an increase in managed behavioral health care, the client base now in-

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volves many persons with multiple disorders including substance abuse, serious mental illness, *and* chronic health problems including HIV/AIDS, and homelessness. One current hypothesis about why service recidivism is high is that there is a lack of provider service coordination and integration around the co-occurring population. Given the complex nature of co-occurring disorders, these clients are not well suited for a single service strategy. As a result, coordinating and linking care to ensure these cases do not become revolving door clients is a priority topic among policy makers and service providers.

Some researchers postulate that in order to decrease recidivism among persons with co-occurring disorders in community settings, treatment must be integrated with services provided concurrently.^{5,6} In addition to ensuring that services are provided in a concurrent and integrated fashion, the breath of services—such as supportive services including housing, entitlements, domestic violence intervention, primary health care, etc—should be available and accessible in the community. One recent study revealed that, when persons with co-occurring disorders received both mental health and transitional housing concurrently, they were less likely to be readmitted for additional substance abuse or mental health services after 6, 12, and 48 months.⁷ Further, Joe and colleagues found that methadone clients had fewer relapses to opiate use when they had concurrent ancillary services, particularly mental health,⁸ and McLellan and colleagues found similar results in a study of 649 opiate, alcohol, and cocaine users.⁹ Also, a recent evaluation of a combined substance abuse and mental health case management program found the program reduced number of days homeless by 31% for dually diagnosed persons as compared to 6% for a typical service control group (*Mental Health News Alert*).¹⁰ The results notwithstanding, integrated and concurrent treatment involving services from many sectors remains a coordination challenge requiring attention, expertise, and resources.

The first part of this chapter provides the scope or prevalence of co-occurring disorders of alcohol or other substances and mental health disorders in community-based settings to facilitate a better understanding of the magnitude of the consequences. Following this discussion, a general overview of the issues involved in linking and integrating community-based care is provided. Finally, the chapter will focus on a set of factors identified within the organizational and health services literature that are hypothesized to be associated with effective organizational or program linkages necessary to provide a full array of integrated services to a population with multidimensional problems. Directions for further research in this area are considered.

2. Scope of the Problem

Before addressing the major issues around linking persons with serious co-occurring disorders, it is important to understand the prevalence and impact of behavioral disorders such as substance abuse or alcoholism, or both, in local communities and the nation. The prevalence is striking and its costs, both economical and social, are enormous.

In 1996, an estimated \$79.3 billion in *direct* costs was spent for the treatment of behavioral health disorders. Of this figure, five billion was specifically used in the treatment of alcohol abuse.¹¹ This does not include the costs associated with lost productivity or with drug-related crimes. Approximately 51% of the total population in the United States in 1997 were current alcohol users and of these 111 million, 11.2 million, or 5.4% of the U.S. population, were heavy drinkers. In addition, it has been estimated that about 25 million Americans are illicit drug users.¹² It has been estimated that nearly one in five medical outpatient visits are alcohol related,¹³ and one in four adult beds in general care hospitals are occupied as the result of alcohol related disease or accidents.¹⁴ The treatment of mental health problems is also commonplace in primary care settings, with the prevalence of psychiatric disorder reported to be 19–35% of those seeking care.^{15,16}

In terms of those with co-occurring disorders, about 50% of individuals with severe mental illnesses will develop a substance use disorder at some point in their lives and half will have both a substance abuse and mental health disorder concurrently.¹⁷ Studies have shown that many mentally disabled adults had abused drugs for several years prior to developing psychiatric disorders.^{18,19} International studies have shown surprisingly similar conclusions: persons with serious mental illness are more likely to abuse alcohol, cannabis, and amphetamines.²⁰

Understanding the treatment needs of this population in community-based settings is critical. One national study has shown that the prevalence rates for co-occurring psychiatric disorders in persons entering treatment for substance abuse is 60%²¹ and that the rates are higher for co-occurring psychiatric and substance abuse disorders for persons presenting at hospital emergency rooms. Evidence is also showing that this population is at increased risk for a litany of negative outcomes such as relapse,^{22,23} rehospitalization,^{24,25,26} more psychotic symptoms,^{27,28} depression and suicidality,²⁹ violence,^{30,31} incarceration,³² financial problems,³³ housing problems and homelessness,^{34, 28} non-compliance,²⁸ HIV,^{35, 36} family burden,³⁷ and service utilization in general.²⁵ As a result, they are a very costly population for service providers in the United States³⁸ and elsewhere.³⁹

Lastly, not only are adults at increased risk, but the children of parents (particularly the mother) who abuse substances are also at risk for negative life events such as delays in appropriate language and social skills development.⁴⁰ This makes the costs associated with substance misuse a long-term as well as a near-term problem.

Not surprisingly then, individuals having serious co-occurring disorders incur higher service use and costs than do single diagnosis individuals.^{41,42,23,43} It has been suspected that part of the cause for both higher service utilization and higher costs for this population is the fragmentation of community service systems providing treatment to persons with co-occurring disorders.⁴⁴ For example, a proportion of the higher costs for this population is due to the fact that they typically receive services within both the public psychiatric and substance abuse arenas and to differing ideologies about treatment, and duplicated services, such as case management, medication support, etc.⁴⁴ More telling is the evidence that when both substance abuse and psychiatric services are delivered in an integrated fashion, such

by as assertive community treatment teams, the long-term costs associated with the case management are lower with standard case management.⁴⁵

The literature also indicates that the co-occurrence of disorders is associated with higher risks of poor treatment compliance, including acceptance of diagnosis and medication adherence.⁴⁶ In the end, this scenario leads to more costly care. This mixing of addictive and psychiatric disorders has created problems of accountability for community-based providers as is evident in the absence of a consistent protocol to help providers determine who is responsible for treatment when a client does not match traditional intake criteria.⁴⁷ This confusion over client responsibility hinders plans to ensure treatment compliance.

A major problem however, is the availability and accessibility of supportive services in the community.⁴⁸ For example, one national study has shown that 50–70% of clients three months after treatment for substance abuse reported unmet needs in six service areas: psychological, medical, family, legal, financial, and employment.⁴⁹ Another national study of intensive inpatient and traditional inpatient substance abuse treatment programs found that, regardless of whether the client received services in the traditional or intensive treatment setting, 80% did not report receiving services other than substance abuse counseling.⁵⁰ Protecting and maintaining vital service linkages, and therefore the availability of supportive services for clients with co-occurring disorders, is critical. As Etheridge and colleagues⁵¹ so cogently wrote after finding a relationship between reduced cocaine relapse and predatory crime with increased levels of counseling services during posttreatment: “This finding highlights the importance of *connecting* patients with some form of after-care self-help treatment as a critical ingredient of the treatment process to increase...gains made during treatment” (p. 108, italics ours).

3. Overview: Services Integration: A Proposed Solution

Both the frequency of occurrence and costs associated with co-occurrence of substance misuse and mental disorders have prompted service providers and policy makers to seriously consider the issues around integrating services for this population. However, two fundamental barriers impede progress. The first is that at present there is little consensus about how to best organize a “system” of care that is comprehensive and responsive in the types of services linked. Secondly, alcoholism and other addictive disorders co-occurring with psychiatric illness impact all areas of a person’s life, requiring a response from many actors representing medical, family, social, employment, finances and housing areas. Many of these actors are unaccustomed to operating within a “system” of care. As a result, few models exist that focus on and ensure continuity of care in a community setting. In sum, models for the organization of treatment that includes a broad range of services, that are timely and staged and provide favorable conditions for treatment success and follow-up, are still being refined.^{6,52,53,54} Effective services coordination and linkages are at least a necessary condition to ensure that the treatment delivered is warranted, not duplicative, and timely.

The fragmentation of community-based service systems has been well documented since the 1980s when the plight of persons disabled with serious co-occurring disorders was becoming recognized as a burgeoning social problem. Researchers began to demonstrate that many of the negative outcomes for this population were in fact due to the fragmentation of the service networks.⁵⁵ Even today, turf protection is an often cited service barrier for this population.⁴⁸ Given these findings, it is curious that, for substance abuse providers particularly, the *process* of providing care remains understudied.^{56,2,3}

Reducing service fragmentation in communities, especially important for relapse prevention, is essentially carried out through multiple organizational relationships, each requiring some minimal level of coordination. This coordination can be difficult. Even case managers who coordinate services for clients face daily service barriers due to pre-existing program arrangements, changes in reimbursement of services, and other problems which make services unavailable or inaccessible.⁵⁷ Both theory and experience say that providing services for the co-occurring population is more likely to be effective, less costly, and more beneficial when delivered in a coordinated fashion.

A simple diagram in Figure 1 illustrates the point. In the community, there are few service programs that work exclusively with individuals with co-occurring disorders. When clients with serious substance abuse and also with other serious social and medical needs enter treatment through a substance abuse program, the theory is that any treatment is enhanced if the program is linked and integrated with other service providers. When a linkage is disrupted or eliminated prematurely, or if other factors hinder programs from establishing effective service linkage, outcomes can suffer. In Figure 1, the relationships connecting the service providers are considered to be problematic and are not certain.

What is clear is that the typical community-based system of care for the co-occurring population is overwhelmed and is often viewed as fragmented and uncoordinated. It is no surprise then, that system integration (SI), the term that has been

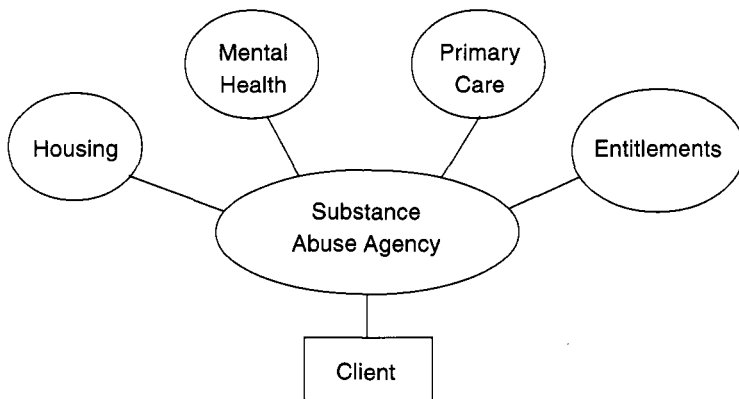


Figure 1. Hypothetical Service System

used to describe these efforts, has been championed as a strategy to improve service effectiveness and efficiency. The guiding assumption behind these efforts is that cajoling service providers to work collaboratively on providing services to multineed clients will produce positive client outcomes through increased efficiency and effectiveness.⁵⁸

To accomplish the logistics of integration as set out above, SI strategies have taken many forms,⁵⁹ and there are currently several initiatives aimed at coordinating care for the co-occurring population (to be discussed below). However, none to date have had clear success at improving long-term clinical outcomes. It is known that treatment for substance abuse and alcoholism is effective (at least in the short run),⁶⁰ but acquiring and continuing treatment is often problematic and when absent leads to relapse or crisis. This is particularly frustrating since service retention is so important for positive outcomes.¹ In fact, the community service system, as a comprehensive system of care, has itself been seen as a barrier to entering and continuing treatment for multineed populations.⁶¹ This results in part from the fact that service sectors, including substance abuse, primary healthcare, and mental health, have historically provided discrete services, each having their own clientele, sources of payments, and authority structures. This has led to a lack of case planning and coordination between sectors.⁶² Understanding how to facilitate this type of service delivery to ensure that clients receive and remain in treatment for as long as intended is of growing importance.

In summary, substance misuse including alcoholism has monumental negative economic and social impacts on society and, when coupled with other severe mental disorder, has huge consequences for local service systems overwhelmed with clients ill-suited for discrete service provision. Providing a comprehensive set of services that are appropriate, timely, matched with diagnosis and demographics, and that have adequate follow-up to ensure compliance with treatment, is both a humane and efficient use of community resources. However, the devil is in the details, and to date service linkages and coordination are typically lacking among service providers and their representative staff to provide appropriate and continuous community-treatment. One large study, based on data collected in 15 cities, showed a surprising lack of mutual service relationships within cities around the co-occurring population.⁶³ Relationship factors are important regardless of how services are integrated, whether clients are brokered to several different providers or whether they are handled within a single large multipurpose agency.

4. Extent of Service Linkages and Integration Efforts

Public and private policy makers have followed the lead of research findings and the voices of local service providers over the past few decades by emphasizing “service system integration” when funding initiatives supporting services to persons with co-occurring disorders.⁶⁴ SI has been central to a variety of government-sponsored initiatives, including but not limited to the Community Mental Health Centers program,⁶⁵ the Community Support program,⁶⁶ the Child and Adolescent

Service System program,⁶⁷ and the Access to Community Care and Effective Services and Supports program.⁶⁸ It has also been a key element in recent private-foundation-sponsored efforts, such as the Robert Wood Johnson Foundation's Program on Chronic Mental Illness^{69,70} and Mental Health Program for Youth.^{71,72} While many of these programs were not necessarily focused on co-occurring disorders, the guiding policies behind all the programs featured integrating community-based services for adults and children with behavioral disorders.

Despite the policy concerns, the history of community-based service provision being categoric and uncoordinated creates policy difficulties.⁷³ In fact, Osher and colleagues pointed to the initial federal responses to mental and addictive disorders as reinforcing, rather than eliminating, the fragmentation of service systems.⁷⁴ Bachrach, being more direct, called it "externally imposed disability."⁶¹ As a result, the delivery of care is confronted with barriers arising from a bad fit between current needs for coordinated and continuous care and the systems that are still based on uncoordinated organizational structures of yesteryear. In the face of these policy difficulties, communities continue to wrestle with ways to better provide services for persons with co-occurring disorders.

These coordination and integration difficulties have profound effects both at the system and client levels. Once substance abuse clients are lost to services, interventions delivered by any of the community programs are placed in jeopardy, as witnessed by revolving-door clients. Some research has shown that persons with co-occurring disorders have poor treatment retention even when the program is designed for them.⁷⁵ Ending this scenario requires different service arrangements. Importantly, there may not be a single *most* appropriate structure for service coordination. Some may work better than others. And, in fact, there has been a range of models proposed and implemented over the past decade, including case management models of intensive integrated teams or integration within a specialized organization, and variations on the traditional brokered model of linking stand-alone organizations in the local community.

These concerns of integration and coordination summarize one of the major issues in the delivery of clinical and supportive services to persons with serious co-occurring disorders. How can and should service integration and linkage be implemented and sustained within a rapidly changing environment? This question matters greatly in terms of outcomes at both the client and organizational level.

5. Approaches to Service and System Integration

Over the past several decades, most communities have initiated numerous attempts to deal with the service provision problems associated with co-occurring disorders. Some of these are in response to federal or private funding initiatives that are intended to devise and test different strategies of linking and coordinating services for this population. However, it is fair to say that most are initiated in response to the local pressures created by a population not quite suited to any of the traditional service agencies. Whether the initiative was in response to outside fund-

ing and research interests or in response to concerns over underserved clients, almost all have been a variant of three overarching approaches, as outlined by Morrissey and colleagues.⁶⁴ As for serving persons with co-occurring disorders, three different models of integrating services can be distinguished: (a) *brokered* (multiple agencies), (b) *integrated agency* (single agency/separate units), and (c) *integrated team* (single treatment team). These will now be briefly discussed.

The brokered model is based on arrangements whereby clients typically seen by a case manager are brokered to other independent provider agency(s) outside the referring agency. These agencies in turn provide supportive services to the client.⁷⁶ Brokering follows from the U.S. tradition of organizing human services at the community level into categoric sectors (e.g., mental health, substance abuse, social welfare) that often do not have much joint case planning. When faced with multi-problem clients whose needs cut across service sectors, efforts are made to link (i.e., “broker”) agencies in different sectors into joint treatment. But the parent agencies remain distinct and autonomous. So, in practice, the brokered service model is more consistent with the organizational ecology of the typical American service system. This arrangement has seen various adjustments intended to facilitate the referral of clients between free-standing agencies. The model is used when a community is seeking to better coordinate systems of care, such as those serving co-occurring populations via a joint program, and diffuses the responsibility of care across the community of service providers.

Another approach to integrate services for this population that is gaining popularity is to develop an integrated team which blends or “integrates” service specialists, including substance abuse and mental health experts, into a treatment-oriented case management team.⁷⁷ This model incorporates many of the principles associated with assertive community treatment (ACT) which has shown considerable success for persons with a serious mental illness in a variety of community care settings.^{78,79,80,81} This model, unlike the brokered models, centralizes responsibility for care within a specific team.

Yet another response to services integration has come in the form of the integrated agency model. This model is a hybrid of the two previously discussed. This is an attempt to make or use clinical and supportive services within one “integrated” agency. Here, specific services, like case management or substance abuse treatment, are provided in separately staffed units; clients with cooccurring disorders are then referred between the programs to obtain needed services. This arrangement is often found in large community mental health centers which are typically organized along functional lines so that groups of clients that present in relatively large numbers can be treated in specialized services (e.g., dual diagnosis, housing, case management) rather than contracted to outside service units. The responsibility for care rests primarily within the organization but is shared among the different programs.

From a provider’s perspective the choice of which model to implement is often guided by a transaction-cost, or “make/buy,” framework.^{82,83} Brokered models are consistent with “buy” decisions and a willingness of the participating agencies to cope with the uncertainty and costs of the marketplace, which govern these alliances. On the other hand, the single agency and single team models are consistent

with “make” choices. Making services helps to reduce the uncertainty and cost by bringing the service under the purview of the agency with client responsibility and producing it exclusively with agency resources.

Almost all community service systems are multiorganizational since few single agencies can provide the full range of services typical in today’s environment. Given this multiagency environment, newer organizational forms such as the “network organization” have emerged to reduce some of the uncertainty of the marketplace and still allow for interagency collaboration.^{84,85,86} Network organizations transcend the traditional transaction-cost dichotomy between markets and hierarchies.⁸⁷ They represent strategic alliances—loosely coupled arrangements among existing organizations—designed to achieve some long-term strategy not possible by any single organization.⁸⁸ Effective management of these newer forms, which mirror the reality of contemporary service communities, may produce results that are superior to single organization efforts.

Further research and evaluation is needed to answer the questions about service delivery within these models and is warranted for a number of policy and programmatic reasons. For example, fully integrated teams may be more costly to organize than either of the integrated-agency or brokered models, given that staff has to be hired, or retrained, or both, but if integrated teams are no more effective than the other models, integrated-agency or brokered models may be preferred. Remembering that brokered models may well be the most common approach, it might well be more feasible and cost-efficient to mount modified brokered models on a widespread basis than to mount either the integrated-team or agency models. If brokered models can be redesigned to overcome relationship barriers identified in the literature,⁴⁷ then they might provide a more viable model to serve clients with co-occurring disorders, given that the expertise of each provider is utilized. But this course of action is suspect since typical interagency relationships are not associated with smooth service delivery and continuity. On the other hand, integrated teams may outperform the other two models from an effectiveness vantage point. By sorting out the marginal costs and marginal utilities of the various models—or better yet, determining for which groups of clients with co-occurring disorders and under what set of circumstances the alternative integration models work are cost-effective—a more clear direction for guiding program managers in service delivery for multiple needs clients is provided.

6. Does System Integration Work?

The results of integration efforts to date are mixed. On the other hand, in terms of systems integration, there is little evidence that increased system integration results in improved client outcome.⁸⁹ Several studies have concluded that integrated services outperform linked or brokered services for persons with co-occurring disorders. This has been reported specifically for vocational and dual diagnosis services involving persons with serious co-occurring substance abuse and mental health disorders. Drake, Mueser, and colleagues⁹⁰ (p. 46–47) have summarized their find-

ings about the performance advantages of integrated treatment for the co-occurring population in the following way: (a) decreased hospitalization and service use, (b) better engagement in outpatient settings, (c) mixed results concerning decreased substance abuse, and (d) initial indications of global improvements in client functioning (when integrated services are provided as part of intensive case management). However, Drake and colleagues' expressed caution concerning the validity of their findings, citing concern over a number of study design weaknesses. In fact, the *Cochran Review*⁹¹ noted that there is no supportive evidence that these integrated approaches are effective for this population.

While it is clear that systems can show significant increases in services integration when provided financial incentives targeted for service integration work,^{92,93,94} these successes have little clinical impact on the targeted population (however, Rosenheck and colleagues found positive outcomes associated with high levels of system integration).⁹⁵ Success has also been reported in nonclinical outcomes, such as the identification of need, perceived performance, continuum of care, consumer satisfaction,⁸⁹ and housing.⁹⁶

There have been several promising variants of system integration, such as assertive community treatment case management models⁹⁷ or comprehensive integrated service settings,⁹⁸ but again they have had modest outcome improvements⁹¹ when targeted to persons with multiple clinical disorders. One community service intervention model, more commonly used and reported on in the substance abuse field—Modified Therapeutic Community⁹⁹—does appear promising for the co-occurring population, but is waiting more long-term outcome studies.

Lastly, unpublished analyses carried out on data from a recent evaluation of the Access to Community Care and Effective Services and Supports (ACCESS) demonstration, one of the more comprehensive research demonstrations designed to address the effectiveness of service system integration strategies,¹⁰⁰ raise questions about the presumed superiority of integrated teams for this client population. Substance abuse outcomes (using client self-reports of alcohol severity, number of days intoxicated, drug severity, and number of days drug-free) were assessed at baseline and at 12-month follow-ups for 5400 clients enrolled by the ACT teams at the 18 ACCESS sites (300 clients per site).¹⁰¹ It was found that ACT teams were not consistently the best performing model when compared to other integration approaches. This suggests that (a) there is no simple correlation between services integration model and client outcomes for this set of programs and (b) that both brokered (multiagency) and integrated (single) agency models can be as effective the single team model. It should be kept in mind that the ACCESS projects were enrolling homeless persons with serious psychiatric disorders and who may have had additional substance abuse disorders. Homelessness was not the focus of Drake and colleagues' studies.

7. The Importance of Service Linkages and Coordination

Lack of outcome findings associated with SI has not diminished the push for more attempts. Fueled by the clear message that longer stays in treatment increase

the likelihood of a reduction or elimination of abuse of substances, at least in the short run,^{1,102} and that treatment coupled with supportive social networks such as family, religious affiliations, and other support networks appears to facilitate long-term outcomes; there is a continued push for more integration efforts. This association of service receipt and outcomes is particularly important when dealing with younger alcoholic males who live alone or with nonrelatives and who, studies have shown, are more likely not to receive aftercare and thereby benefit from treatment,^{103,104}

What then might be the key to understanding which integration efforts enhance client outcomes? In this vein, D'Aunno and colleagues have shown that organizational factors (e.g., size, staffing, funding, and ownership) do account for significant variations in practices and service provision, even when controlling for client-level attributes.^{105,56,2,106} In particular, substance abuse agencies are very dependent upon linkages with other community service providers for their survival,¹⁰⁷ prompting them to be susceptible to an ever-changing environment.¹⁰⁸ For example, if resources are guarded and closed to other providers in the community and are without external impetus to share, service linkages are threatened and the survival of particular providers is challenged. In highly cost conscious environments, like those imposed by managed care or fiscally conservative governments, this is of paramount interest and can draw critical resources away from service linkage efforts and shift them to ensure fiscal survival.

We agree with D'Aunno and colleagues' assessment that, in addition to knowing how to integrate services at a macro-level like the system, there is also an important prerequisite in knowing how to develop and sustain effective service relationships between providers. It should be noted that these factors are present in any attempt to link clients, regardless of the model chosen or population targeted. We will now review the organizational literature to describe the factors hypothesized to be important in organizational resource and service linkages. Differentiation of a service system into specialized sectors—which is an overriding feature of community-based substance abuse and mental health services—requires coordination, and the more complex a client base the more coordination becomes necessary. Therefore, knowing that system and service integration seems at best to have mixed results, we take the lead of D'Aunno and colleagues and turn to the organizational literature to explore factors important for building integration at the more basic level of interaction. Indeed, integration efforts may be compromised by the success of these more elemental relationships.

8. Organizational Theory and Interorganizational Linkages

In this final section of the chapter, the dyadic relationships among service providers will be explored. The primary exchanges between community-based providers of care, which form the basis for interactions, are interorganizational relationships (IORs), for example, those dealing with client exchanges or case information and planning. Since dyads or pair-wise relationships are the basic building block of IORs, we will focus on relational theories of interaction¹⁰⁹ between agencies in pro-

viding comprehensive and appropriate services. Thus, this discussion will identify those factors identified in this literature that may influence the creation and maintenance of service linkages between organizations that provide services to persons with co-occurring disorders.

In the first instance, IORs like service systems are assumed to be consistently in flux. The basic notion is that linkage behaviors are shaped and restructured by both the service environment and changes internal to the organizations themselves.¹¹⁰ In short, service relationships are not a given but are dependent upon many factors. Inherent in this assumption are two implications. The first is historical; IORs grow and maintain themselves within a context influenced by past behaviors.¹¹¹ That is, the stability of service systems and attempts to institute changes through integration strategies is a function of the over-time linkages among the organizations within the service network.¹¹² Remembering the history between substance abuse and mental health service sectors highlights the barriers presented by history. Second, the composition of the service network, for example, the number and quality of coalitions, working groups or consortiums, would also be important in shaping opportunities for interaction. These a priori historical conditions are more and more being viewed as social capital that communities can create and employ to ensure good health care delivery.¹¹³

In a second instance, the assumption of dynamic service relationships implies a developmental perspective. However, it has been the factors that affect the stability of relationships over time, rather than those contributing to the processes of linkage development, that have received the most attention in the literature. Both the creation and maintenance of linkages are important issues in their own right, needing increased research, since stable-over-time relations play a vital role in reducing uncertainty, enhancing organizational legitimacy, and determining operational efficiency.^{114,115}

In the case of persons with co-occurring disorders, and maybe particularly for alcoholics, the maintenance of relationships is critical to timely services that could ensure continuity. Time lost trying to unlock the front door of another service provider can be critical in terms of treatment outcomes. Service fragmentation can be a serious threat to the availability and accessibility of services for persons with co-occurring disorders and is a particular problem when those clients are also homeless. Homelessness carries with it additional barriers and service needs that must be considered and acted on. As a result, the linkages between programs providing care to multineed populations are critical, and the maintenance of ties takes on an added significance.

At least eight dimensions have been discussed that attempt to explain successful service relationships, both their creation and maintenance overtime. These are: (a) bases of interaction, (b) goal compatibility, (c) complementary treatment ideology, (d) domain similarity, (e) domain consensus, (f) interorganizational support capacities, (g) network structure, and (h) existence of managed behavioral health care. The specific factors, their supporting arguments, and research hypotheses follow.

8.1. Bases of Interaction

One approach to understanding dyadic interorganizational relationships over time is to examine the type of interaction and its influence on linkage behavior among care providers.^{116,117,118} Research findings have supported the premise that the pattern of interaction is dependent on the specific base of contact: (a) contact mandated by law or regulation; (b) voluntary contact; and (c) contact based on formal agreement, such as a contract to share facilities or personnel.^{116,117} For instance, Aldrich¹¹⁶ found that mandated interactions tend to be more intense and associated with lower perceived cooperation. Hall and colleagues,¹¹⁷ on the other hand, found that the strongest predictor of coordination was the existence of a formal agreement. Van de Ven and Ferry¹¹⁹ likewise found that increased linkages were correlated with increasing degrees of formalization from verbalized to mandatory-by-law. This leads to the following hypothesis:

The more formal the base of interaction between two organizations (from voluntary to formal agreement to mandated), the greater the likelihood that linkages (client referral and information) will remain stable or improve over time.

8.2. Goal Compatibility

Interorganizational partners attempt to decrease the costs of coordination by decreasing the differences between the organizations.¹²⁰ This can be done by linking with organizations with similar goals.^{121,122} This provides an explanation as to why organizations will want to buy rather than make services since the goals of the organization are compatible. However, when treatment goals are shared by two organizations, that increases the probability they will pool resources and coordinate activities in order to meet common and shared goals.¹²³ A related hypothesis, therefore, is the following:

The greater the similarity between two organization's goals, the greater the likelihood that linkages will remain stable or improve over time.

8.3. Complementary Treatment Ideology

According to D'Aunno, Sutton, and Price,¹⁰⁵ when treating persons with substance abuse and mental health problems, providers may hold substantially different beliefs about the causes and treatment of clients' problems. In mental health, a medical model predominates. Thus, many serious mental diagnoses are believed to result from maladies in the brain which effect a person's ability to cope. Maladaptive responses, including substance abuse, will occur. Treatment is thus guided by psychological tests and classification systems which are carried out by health professionals and clinicians, such as psychiatrists, psychologists, and social workers. On the other hand, Alcoholics Anonymous (AA) or other substance anonymous models are more likely to be advocated by those serving or treating substance abusers. The basic model is based on a "twelve steps to recovery" program and relies

more on exaddicts and exalcoholics as counselors rather than professionals or clinicians.¹⁰⁵ Those advocating this model believe that alcohol and drug abuse are disorders that can be treated only by abstinence.

The sharing of a similar treatment ideology plays an important role in the establishment of IORs.^{122,114,120} Lincoln and McBride¹²² and research have found that the more compatible agencies are in terms of treatment ideologies, the more likely they will exchange information and resources. This implies, of course, that agencies involved in providing services to persons with co-occurring disorders are more likely to refer clients and transfer care information to other organizations with a similar treatment ideology. Treatment and hiring practices can be altered to overcome ideological differences. The hypothesis generated by this reasoning follows:

The greater the similarity between two organization's treatment ideologies, or the greater the similarity between two organization's professional staffs, or the greater the similarity between two organization's treatment practices, the greater the likelihood that service linkages will remain stable or improve over time.

8.4. Domain Similarity

In trying to understand facilitators of service linkages between community-based organizations, two perspectives predominate. The first is the exchange or resource dependence perspective which is based on the supposition that organizations are highly dependent and influenced by their environment for resources. This dependency creates a strong impetus to participate in IORs, not because they are wanted but because they are necessary.^{124,107,118,125} Often this implies that one organization possesses a resource while another needs it. Following this scenario, organizations with dissimilar types of resources (i.e., they each need what the other has) should be more likely to build and sustain linkages.¹²² Unfortunately, persons with serious co-occurring disorders are not likely to be viewed as a valuable resource by providers. Attempts to make this population more attractive to providers would be welcomed.

A second perspective for understanding IOR behavior is based on similarity or homophily between organizational members.^{121,126,122,118,125} That is, organizations with similar structures or resource profiles tend to link. Extending the argument to agencies providing services to the co-occurring population, domain overlap or similarity can be defined as the degree to which they provide comparable services, or serve the same clients, or have like funding sources.^{127,125} Thus, the homophily argument says that organizations with overlapping or similar domains are more likely to engage in interorganizational linkages.

Although recent findings are supportive of the homophily perspective,^{126,122,125} there may very well be limits to the impact of domain similarity. A curvilinear effect may best describe the effects of domain similarity on relationship formation and maintenance.¹¹⁸ That is, if domain similarity is moderate, complementary resources and domains exist and encourage the establishment of linkages. On the other hand, if domain similarity is extremely low, organizations have little in common and, therefore, little basis for interaction. And it follows that, if domain similarity is extremely

high, competition between the two organizations may likely lead to reducing interaction. The resulting hypotheses from domain similarity follow:

As domain similarity between two organizations increases, the likelihood that linkages will remain stable or improve over time. However, similarity can only increase to a point at which point incentives to link decreases.

As the similarity between two organization's funding sources increases, or as the similarity between the services provided by two organizations increases, or as the similarity between two organization's clients increases; the likelihood that linkages will remain stable or improve over time to a point and then declines.

8.5. Domain Consensus

Another way of determining organizational domain is through the use of a perceptual measure: domain consensus.^{128,120} Domain consensus can be defined as the degree to which the organizations accept each other's claim to specific goals, populations, and services.^{124,119} Paulson¹²⁷ hypothesized that the greater the perceived domain consensus between two organizations, the greater the perceived cooperative interaction. The hypothesis that is generated from domain consensus follows:

The greater the domain consensus between two organizations, the greater the likelihood that linkages will remain stable or improve over time.

8.6. Interorganizational Support Capacities

The level of support for interorganizational activity within an organization has been found to influence linkage behavior.¹²⁸ This has been operationalized by measuring the extent that resources are used to support coordination activities, the number of boundary-spanning positions, or the use of incentives to maintain interorganizational linkages.¹²³ Recently, Dennis and colleagues have found that, when organizations staff these positions, the number and intensity of integration strategies increases.¹²⁹ A hypothesis from support capacity would be the following:

The greater the resources committed by the organizations for linkage activity, the greater the likelihood that linkages will remain stable or improve over time.

8.7. Organizational Structure

Several structural responses have been developed to deal with the problems of coordinating and integrating care for the co-occurring population. First, the traditional approach has been the separation of mental health agencies and substance abuse providers into freestanding, autonomous organizations.⁴⁷ In this case, care to this population, if provided, is mainly through interorganizational coordination. A second approach is for mental health organizations to diversify by making substance abuse programs, either by adding a new unit or by adding the service to an existing unit.^{130,105} In this way, integration is essentially program integration and becomes an intraorganizational management task. The following hypothesis is about

linkages between organizations providing services to persons with co-occurring disorders:

Linkages between mental health and substance abuse treatment providers are more likely to remain stable or improve over time in the MH/SA integrated model than in the MH/SA autonomous model.

8.8. Existence of Managed Care

Much has been written about the potential impact of managed care on client access to services. The traditional view operates under the assumption that HMOs promote prevention and appropriate care because the HMO will eventually bear the consequences of poor care and access.¹³¹ The high costs associated with poor outcomes, it is thought, outweigh the costs of providing access to appropriate services. Under this scenario, it would be expected that managed care organizations would promote access and referral to appropriate community-based services and would support the development of strong linkages among community-based organizations.

An alternative view, however, suggests that the dependence on managed care entities substantially increases the administrative and financial burden of provider organizations because of increased and different reporting requirements (e.g., documenting the need for service) and decreased financial resources available to the organization due in part from discounted fee structures.¹³² The effect of managed care is thus to reduce multiple sources of resources available to the organization. In many cases, according to this view, managed care leads to a substantial decrease in internal support needed to carry out or participate in interorganizational activities.

Further, while the traditional view is of HMOs as being prevention oriented and long-term client outcome oriented, the alternative view suggests that managed care organizations focus on short-term cost containment and suppress the availability of resources. That is, for a number of reasons (for example, clients shifting from plan to plan), managed care organizations do not see themselves as accountable for long-term client outcomes. As a result, there is a greater interest in reducing access to services as a short-term strategy to reduce their costs. This leads to competing hypotheses:

Appropriateness of Care Hypothesis. The existence of managed care in a network will lead to stability or increased linkages among organizations because of the long-term interests of managed care organizations in quality and client outcomes.

Suppression of Services Hypothesis. The existence of managed care in a network will lead to decreased linkages among organizations because of the decrease in resources available to organizations to participate in linkage-related activities and because of the short-term concern of managed care organizations about cost reduction.

Research has shown that the existence of managed care arrangements in a community can potentially have a substantial impact on the linkages among organizations.^{133,134,135} The development of provider networks represents a relatively new, externally imposed impetus for the development of linkages. Because managed care

organizations, through their case management and referral protocols, tend to refer clients to programs and services under the umbrella of their provider network, the existence of managed care may facilitate linkages between organizations within the same provider network. Conversely, clients are typically discouraged from obtaining services from programs and services outside of the managed care provider network. Thus, it is hypothesized that the impact of managed care on the growth and maintenance of linkages will vary depending upon whether the particular organizations under examination are allied with the same managed care organization and members of the same provider network.

Common Provider Network Hypothesis. When two organizations are members of the same managed care provider network, the likelihood is greater that their linkages will develop stable or strengthen over time.

Common Provider Network Hypothesis. When two organizations are members of different managed care provider networks, the likelihood is greater that their linkages will decrease or cease over time.

8.9. Other Important Domains

Organization size is also important in understanding relationships because large organizations tend to have more funds, larger and more diversified staffs, more clients, and greater visibility.¹²⁵ This puts them in a position of power from which they will be sought after by other less influential organizations. In addition, large organizations tend to have more resource slack to invest in IORs. Three dimensions of size that may have an influence on network ties are staff size, amount of operating budget, and number of clients.¹²² The existence of coordinating/advocacy bodies in the local service system is also important given that they serve as good sources for information about other agencies and opportunities for interaction. The lack of one authority to which organizations are responsible is viewed as a barrier to developing systems of care for individuals with comorbid conditions.^{62,120} In addition, environmental jolts or events in the external environment of the organizations could create resource scarcity to such an extent that IOR activity has to cease.¹³⁶

Currently, there is a need for future research in the area of interorganizational linkages and assessments of integration strategies involving community-based services for populations at risk but especially for persons with co-occurring substance abuse and mental health disorders. The research should focus on the service relationships within a community of providers and assess the impact of organizational and environmental impacts on them¹³⁷ in order to gain an understanding of which variables increase the probability of a long-term working relationship. In this section, we have provided a list of some of the relational variables that should be seriously considered in explanatory models, but there are others not specifically mentioned here (e.g., trust). At the present time, there is little information that could guide policy makers in developing guidelines for integration efforts around multineed populations.

9. Discussion

The prevalence of persons with co-occurring disorders and the extent to which they impacts local service systems has become a major focus of researchers, community service providers, and policy makers. This population, which has been growing over the past decade, is confronted with navigating and receiving services in treatment systems ill prepared for the issues that the dual disorders of substance misuse and mental illness bring. If other issues are also involved such as homelessness, HIV, AIDS, or domestic or sexual violence, the linkage issues confronting service providers are compounded. The problems of service system fragmentation and systems where services are rarely coordinated or integrated have been identified as contributing to recidivism among persons with co-occurring disorders, which in turn overburdens systems already struggling with scarce resources. As a result, initiatives designed to engineer more responsive systems of care for this population by using system integration mechanisms have been growing.

While service and system-level integration has intuitive appeal, its implementation can take different forms and it is not at all clear whether one model is more effective than another for this population. Indeed, to date there is little indication that services or system-level integration strategies meant to improve the linking of clients to needed services translate into improved long-term client outcomes. However, as long as research continues to find evidence that the longer a person with substance and mental disorders stays in treatment, or the more services are provided concurrently, or the more contact with a broad range of formal and informal supports, the more likely that person is to have positive treatment outcomes, service integration initiatives will remain popular with policy makers and service providers. Communities contemplating efforts to design better systems of care for this population are faced with major decisions about the form the integration effort will take: whether it should be within an organization or within a team comprised of specialized staff from other organizations, or whether a case manager should broker the client to free-standing organizations. The decision made in this regard is bounded by factors related to existing resources and the previous history of linkages. Unfortunately, there is little guidance in the literature as to which of these scenarios would more likely be efficacious or efficient.

Because service systems, at their most fundamental level, consist of the routine individual service relationships between two service providers, the successful implementation of integration strategies may rest on which factors facilitate day-to-day interorganizational linkages. Indeed, these service relationships are present regardless of which integration model is used. In this regard, a list of factors from the organizational and health services literature that hold promise for facilitating interorganizational linkages was identified. Based on these factors, research hypotheses were provided that could guide future evaluations of efforts to make communities more responsive to and successful with the co-occurring population. For example, cross-training and building an agreement on a treatment ideology among providers could be critical. In addition, other factors, such as domain consensus, organizational structure, the formalization of service linkages, managed care, etc.,

should be given increased attention by those contemplating integration strategies. As the area of interorganizational linkages among community-based health care organizations is one of the least studied areas, more research is needed. This is particularly true for the population with co-occurring disorders, as integration of service or systems to ensure continuity, follow-up, treatment compliance, and transition to supporting services is critical to successful linkage made to help clients to avoid crises or relapse.

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Access to Alcohol Treatment in the 21st Century Old Worries and New Optimism

Constance Weisner, Section Editor

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Overview

Constance Weisner

A little less than ten years ago, *Recent Developments in Alcoholism* addressed alcohol treatment systems and access. In a section overview in Volume 11, Ed Gottheil wrote, “Ten years is a short time and a long time. Small, apparently minor adjustments over time can become major changes often without our full awareness or recognition.”¹ He argued that the organization of treatment had changed more radically than the mechanisms and process of treatment. The 1980’s saw state-mandated third-party coverage for alcohol and drug treatment, institutionalization of employee assistance programs in the workplace, outpatient services as the major setting for treatment with day hospitals replacing inpatient care, and the merging of the alcohol and drug treatment systems. New resources became available for treatment, particularly for special populations. Developments in treatment of alcohol were also influenced by the “drug war” and growing public concern about substance abuse.^{2,3}

The past decade, however, requires no similar caveat. With the 1990’s came dramatic and substantive changes in treatment systems—large steps forward, but significant backsliding as well. What actually occurred, what are the new issues faced by the field, and how do they affect access?

Several positive developments have had far-reaching implications for access. First, a critical mass of research has provided substantial evidence that treatment works. Clinical trials and large health services studies set in “real world” public and private agencies have demonstrated not only that treatment is effective, but that it can be cost-effective. Researchers have also found that the benefits of treatment are not limited to abstinence or reduction in alcohol and drug use, but include improvements in other health condition and in social functioning. Alcohol and drug treatment works as well as treatment of other health conditions, such as diabetes, adult asthma, and hypertension. Patients with those conditions do not have better compliance records than substance abuse patients.⁴ Further, new clinical and natu-

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realistic studies have bolstered the earlier findings of Holder and colleagues that treatment can offset pretreatment medical Costs.⁵⁻⁷ Large public sector systems in Washington, California, Oklahoma, and other states have examined social indicator data from health and social service settings and found that treatment decreases criminal justice and welfare involvement.⁸ Second, there are more “new” treatments than ever before, including medications and manualized psychosocial treatments. In addition, National Institute of Health study sections and the National Institute on Alcohol Abuse and Alcoholism’s National Plan have recognized that some traditional treatments (such as twelve step-based programs) have merit and warrant further research.⁹ It is also evident that mutual help groups and other community supports can be effective and mediate the effectiveness of treatment.^{10,11} In the NIH in general (and federal alcohol agencies in particular) a new focus on the transfer of research to practice is gaining ground. This is illustrated by initiatives coming from many of the NIH institutes and other federal agencies, including NIAAA’s Research to Practice forums and its Researcher in Residence program; the National Institute on Drug Abuse’s Clinical Trial Network and research initiatives; the Center for Substance Abuse Treatment’s (CSAT) and the Association for Health Research and Quality’s (AHRQ) initiatives, CSAT’s National Plan’s inclusion of Connecting Research and Practice; and the Institute of Medicine’s study, *Bridging the Gap between Practice and Research : Forging Partnerships with Community-Based Drug and Alcohol Treatment*.¹² These are all geared toward implementing evidence-based treatment practices in public, as well as private, programs—thus facilitating increased access to appropriate services.

Third, interest in mainstreaming treatment is growing. Large numbers of individuals with alcohol disorders are found in criminal justice, welfare, and medical clinics. Mainstreaming services within such institutions, rather than relying on referrals to specialty alcohol programs, could provide more direct access to treatment, and for a much broader population base.¹³ NIAAA and CSAT and medical associations such as the American Society of Addiction Medicine (ASAM) have invested resources in developing instruments and training for screening, brief interventions, and referrals. Interest in this approach is growing within welfare and criminal justice agencies as well.

Fourth, as the chapters in this section describe, although managed care raises a host of serious concerns about access, it has brought with it an increased emphasis on accountability.¹⁴ Policy-makers and insurers must at least address access. At the same time, the field is overwhelmed with performance indicators developed by the National Committee for Quality Assurance (NCQA), the Rehabilitation Accreditation Commission (CARF), the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), and other accrediting organizations, many of which focus on access. Thus far, examples of these include waiting time, penetration rates, and proportions of individuals entering rehabilitation after detoxification services. Although some non-population-based indicators, such as “call time” or “waiting time,” seem misguided, they are a response to the medical “demand” indicator model prevalent in general health care and are used when other data are lacking. The CSAT-sponsored Washington Circle group has brought together a wide group of

treatment, research, and insurer stakeholders to develop process indicators based on population-based measures of access and outcome to improve the next generation of indicators.

Finally, a whole raft of data systems and studies provides a national description of the treatment population and of organizational characteristics, and national surveys (such as the National Alcohol Survey, the National Longitudinal Alcohol Epidemiology Survey, and National Household Drug Survey) provide population bases of treatment need and description of who gets to treatment.^{15,16} Among other things, these studies show that access has increased for special population groups, particularly women. The increased representation of women in treatment is clearly one of the most visible and significant social policy successes of the past fifteen years.

In the wake of these developments, critical questions remain. Access means not only access to *any* treatment, but to appropriate treatment services and settings. Are the people who need treatment accessing it, and are they accessing the full range of services, particularly ones shown to be effective? How widespread and available are the new treatments? Are they found across both public and private programs? Have managed care organizations implemented them? The chapters in this section address some of these questions.

As we enter a new decade (and a new century), what developments in treatment will affect access? The trend toward behavioral health models in health plans, parity of substance abuse and mental health treatment benefits, the push to mainstream treatment, attribution of welfare dependency to alcohol and drug use, and organizational change within and across managed care organizations could have far-reaching influences on access.

“Behavioral health” is becoming a commonly accepted concept in both public and private treatment systems. The rationale for a behavioral health approach is that alcohol, drug, and mental health services can and should be better coordinated. At its best, it offers the opportunity for integrating care along a continuum of alcohol, drug, mental health and other health conditions which are often related to alcohol and drug use.^{17,18} The behavioral health model broadens the base of treatment to address the impact of alcohol and drug use on medical conditions, increasing access to brief interventions, and education of physicians and other health professionals. However, at its worst, behavioral health connotes for many working in the addictions field a return to a time when alcohol and drug treatment was embedded within mental health agencies and when individuals with such disorders were not given adequate attention. Thus, while the benefits of this approach are theoretically inviting, it has not been tested in the real world of health care organizations.

Substance abuse and mental health “parity,” i.e., providing the same benefits for alcohol, drug, and mental health treatment as for other health conditions, is also becoming more acceptable in many quarters. In a carefully observed and evaluated context, federal employees will have “parity” coverage by 2001. In addition, over thirty states have now passed legislation mandating parity (although some states, such as California, do not include substance abuse within mental health parity). It is evident that this is not a clear-cut solution to the historical problems of insurance

coverage for substance abuse. The field has for some time demanded parity as critical to improving access, but even in this ground-breaking legislation, because of many restrictions on how parity is defined and implemented, there is also a danger of actually reducing access (Robert Wood Johnson Foundation-sponsored conference on “Assessing Parity in the Federal Employees Health Benefit Program,” April 3, 2001). This experiment deserves close research attention.

As the papers reviewed by Gottheil ten years ago noted, a two-tiered treatment system had developed by the late 1980s in which people with insurance often received different treatments in different types of settings than those without.² Today, the organization of treatment is frequently even more complex. Within the private sector, fee-for-service and the various managed care financing streams each have their own implications for access and types of services received.^{19,20}

Finally, in recent years a plethora of social problems have been attributed to alcohol and drug abuse. Already linked with the criminal justice, workplace, and health care systems, social policy attention is now directed to developing networks between substance abuse problems and welfare dependency. As a result, a new population has access (benefits are often linked to mandated treatment), while access for other population groups may have decreased.

The following chapters address many of these key issues in the field. In “Rethinking Access to Alcohol Treatment,” Weisner and Schmidt’s paper provides an updated framework for studying access in view of previous literature and new epidemiologic and organizational developments. There is by now a large and fairly robust literature on access to and utilization of substance abuse treatment which has drawn from the medical utilization literature but has been adapted to account for the particular characteristics of treatment entry in this field. One different dynamic in addiction treatment is that most individuals seek treatment only after receiving pressure from family, friends, work colleagues, or a health care provider. The “push” may also take the form of formal institutional pressure from criminal justice, welfare, or work settings. The authors address the differences between needs-based and demand-based approaches to understanding access. The chapter also argues the importance of using a conceptual perspective that encompasses individual, organizational, and broad societal factors to capture multidimensional aspects of entering treatment. Such an approach makes it possible to go beyond specific questions from one period of time to encompass a broad understanding that will help predict and understand change.

The Fortney and Booth chapter, “Access to Substance Abuse Services in Rural Areas,” considers a group that usually receives only lip-service as part of a long list of special populations in need of attention. Also presenting treatment utilization as a multidimensional process, it discusses the relationship between individual factors, such as perceived need of treatment, and organizational factors, such as distance and isolation. Based on population-based survey data, Fortney and Booth argue that in rural populations the perceived need for treatment is lower because of overall isolation and fewer contacts with other institutions. This reduces the likelihood that alcohol and drug problems will be identified. When perceived need is lower, individuals are less willing to travel great distances to explore treatment pos-

sibilities or to comply with treatment protocols. An interesting point made in the chapter is that many public systems are organized on a county or state level; their location may not be practical for outlying rural residents living close to a border, who are not eligible for closer out-of-county or out-of-state programs.

Two chapters look at access from the perspective of type of treatment. The Rubin and Gastfriend paper, "Patient Placement Criteria and Their Relation to Access to Appropriate Level of Care and Engagement in Alcoholism Treatment," describes the evolution of assessment criteria for treatment and their acceptance by the field. It makes a strong case that access issues pertain not only to global access (accessing *any* treatment) but to *level* of treatment as well. The topic has seldom been considered in the past, and this chapter helps us think about how it can be addressed conceptually. The authors use the patient placement criteria developed through the American Society of Addiction Medicine (ASAM) to illustrate how systematic use of assessment criteria could facilitate access to appropriate treatment. They describe how such criteria result in patient-based treatment decisions ("what treatment setting is most appropriate for the patient and which is the patient willing to attend") rather than program-based decisions. The chapter makes a strong case that addressing the individual placement needs of clients will increase treatment engagement. Although thus far the focus on placement criteria in ASAM's structured assessment has been on *level of care* rather than services provided, the authors identify the fit with service types to be the direction of future work most needed.

In "Access to Services in the Substance Abuse Treatment System: Variations by Facility Characteristics," Lee and colleagues address the actual services available across public and private systems. The chapter describes the reduction of adjunctive services in alcohol and drug treatment in recent years; studies of client reports as well as treatment facility characteristics show that nonalcohol specific services, such as employment, psychiatric, and legal, are not offered in treatment programs as frequently as in the past. The national study conducted by Brandeis replicated the findings of recent small studies. However, they also found that during the first half of the 1990s, more medical services and the same number of mental health services were provided as before. It will be necessary to disentangle the organizational and financing factors related to this difference and to examine these questions with other methods. They found that provider characteristics (staffing, funding, facility ownership, and parent organization) influenced the availability of particular services. Perhaps of most concern, as the treatment system becomes more privatized, is that private for-profit programs provided fewer adjunctive services (i.e., HIV/AIDS counseling, transportation, TB screening, employment counseling, smoking cessation, education, child care, and prenatal care) than either private nonprofit or public programs. Residential-based programs offered more of those services than did other facility types. The chapter makes a strong argument for the importance of taking organizational factors into account in studying access.

When Gottheil summarized the treatment field a decade ago, he wrote about psychosocial, medications, and organizational issues. He found increased commonalities in the psychosocial approaches being developed—approaches based on very

different theoretical underpinnings. He also pointed out that new medications had been on the horizon and had not lived up to their expectations, and though there were promising developments we still did not have a treatment population with access to them. He ended by saying that despite advances in the treatment of alcohol problems, there were “real difficulties regarding who decides what type and level of assistance are needed, who is best able to provide it, and who should pay for it (p. 368).”¹ As we stop and take stock, we find that many of these questions remain unanswered and new concerns are on the horizon. But promising influences and trends have also emerged, suggesting that the next decade may lead to new levels of access for more population groups.

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Rethinking Access to Alcohol Treatment

Constance Weisner and Laura A. Schmidt

1. Introduction

Alcohol treatment systems are part of a vast, chaotic world of changing health care organizations, professions, and financing streams. As the changes unfold, we need to continually update our understanding of how people get to treatment and of the barriers along the way. Medical and health services research has traditionally viewed treatment-seeking as an individual, voluntary process. Studies have focused on the individual's beliefs about whether treatment works, family support for obtaining help, and the role of personal characteristics in predisposing people to seek help. In doing so, the research has often neglected to pay attention to the individual's relationships to organizations that play increasingly important roles in treatment entry and to a society with ever-shifting views on the importance of a strong medical response to alcohol problems.

Today, large organizations—insurance companies, employee assistance programs, the medical, criminal justice, and welfare systems—dominate pathways to alcohol treatment. Getting help for a drinking problem typically involves coercion by the police or courts, or the workplace or welfare office, as well as pressure from family and friends. Alcohol treatment systems have grown closer to, and more interdependent with, criminal justice and welfare systems, in part, due to exogenous developments such as prison overcrowding and welfare reform. Under managed care, physicians, insurance companies, and health plans play new critical gatekeeping roles by determining who does and does not get treatment. While these changes began in private insurance plans, they are spreading rapidly to public ones such as Medicaid. The spread of managed care promises cost containment and better integration of services, but clearly, can also limit and encumber the individual's ability to get help for a drinking problem and can affect what type of services he or she

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receives.¹ By addressing alcohol, drug, and mental health problems together as part of a continuum of health issues, managed care is bringing about a shift towards thinking in terms of “behavioral health care.” This has further implications for where and how treatment for an alcohol problem is obtained.

Our models of help-seeking for alcohol problems should be broadened to better understand how treatment-seeking populations are embedded in larger systems of organizations and in a society with continually changing views on, and commitments to, underwriting the costs of care. Old questions need to be reopened: How do we define need and access in this changing context, and what are the significant barriers to treatment individually and organizationally? This chapter raises these issues and considers what we have learned, and have yet to learn, about them. First we point to how need and access definitions are changing in response to the new organization and goals of alcohol treatment. Then we examine our current models of the treatment-seeking process. We review what we have learned from past research on treatment-seeking at the individual level and consider how future work can be broadened to address the changing organizational and social pressures that shape pathways to care.

2. Redefining Need and Access

2.1. Changing Definitions of Need

How one defines the need for alcohol treatment is influenced by one’s perspective as a researcher, clinician, client, administrator, or purchaser of services.^{1,2} Which definition of treatment need actually gets used in practice often depends on how different constituencies voice their concerns politically. For clients or consumers, need may simply equate to demand: those who want alcohol treatment should have access to it. However, the researcher or clinician will point out that not everybody who needs treatment actually gets it and that there are at least some people in treatment programs who do not meet professional criteria for an alcoholism diagnosis. Health plan administrators and the institutional purchasers of treatment services have increasingly emphasized the importance of basing treatment access on objective criteria of need and appropriateness. In their perspective, defining need is about rationalizing and justifying treatment so as to control the excessive, “medically unnecessary” use of scarce clinical resources.

Definitions of the need for treatment have significant consequences regarding who gets served, how serious a drinking problem must be before it is treated, and even where the treatment is provided. A clinical diagnosis of alcohol dependence implies that a person must have considerable help to stop drinking because of serious physical and psychological symptoms. A diagnosis of alcohol abuse or problem drinking implies a lower level of treatment is required because, although social functioning is impaired, serious physical and psychological symptoms are not yet present. If treatment need is defined by a diagnosis of alcohol dependence, then a fairly small number will be eligible for treatment. According to the National Alcohol Sur-

vey, about 3.9 percent of the U.S. adult general population is clinically in need of treatment (6% of men versus 2% of women), based on 12-month estimates of *DSM-IV* alcohol dependence.^{3,4} In contrast, measures of heavy drinking and problem drinking suggest that many more individuals need treatment.^{5,6} In some studies, upwards of 11.3% of the general population has been characterized as having drinking problems or abusing alcohol.^{7,8}

Measures of need also have implications for how the boundaries around alcohol treatment systems and their target populations are drawn. Alcohol dependence rates tell us something about the need for intensive treatment services. Separate indicators of alcohol-related problems, such as alcohol-related crime and underage drinking rates, are particularly conducive to harm reduction and prevention approaches, such as drunk-driving programs, community-level interventions, and educational campaigns. Problem drinking and alcohol abuse rates more likely call for screening, referral, and early intervention programs. In recent years, there has been a major push to promote this definition of need and to encourage the development of programs that intervene in alcohol abuse and problems early-on, before significant harms have accrued.^{8,9} The National Institute on Alcohol Abuse and Alcoholism and the Center for Substance Abuse Treatment are focusing on research, training, and dissemination of screening and intervention strategies, particularly in primary medical clinics; that is, placing alcohol services within broader medical and social services rather than confining them to freestanding specialty programs. A much larger proportion of the population is then viewed as in need of services and new subpopulations of clients will be brought into treatment.¹⁰

Managed behavioral health care plans are a significant force in changing perceptions of treatment need and access. These plans emerged alongside HMOs and other managed health plans in the late 1980s and early 90s, as provider groups, insurers, and entrepreneurs carved out a specialty niche in managing the costs and quality of addiction and mental health services.¹¹ Today, the largely for-profit managed behavioral health care industry controls 78% of the insured market for substance abuse and mental health care in America.¹² Virtually every large corporate employer, most mid-size ones, and a growing percentage of state and local governments contract with managed behavioral health plans. These companies focus on specialized alcohol, drug, and mental health services apart from general medical care. The largest managed behavioral health care firm, Magellan Health Services, has 64.6 million enrollees and obtains almost one-third of its revenues from publicly funded programs such as Medicaid.¹³ Its size is daunting when compared to health plans that provide the full complement of medical care coverage: compare Magellan's 64.6 million enrollees to the largest integrated HMO in the United States, Kaiser Permanente, which has a membership of 8.4 million.

Because of their size and broad coverage of the insured population, managed behavioral health care firms are an increasingly influential voice in defining treatment need and access. Like the larger managed care industry, these firms emphasize "appropriate" and "prudent" health care use. They argue that, while there are certainly problems with providing too little access to services, there are equally difficult, but different, problems with providing too much. The need for services

should be defined in terms of demonstrated “medical necessity,” proven cost-effectiveness, and careful trade-offs between cost and quality.¹⁴ The goal of specialty firms is to purchase and manage care according to these principles.

To managed care executives and corporate buyers, substance abuse treatment has, in the past, been one of the more egregious examples of medically unnecessary, inappropriate service use. Some of the most popular and costly inpatient alcohol treatment modalities, such as fixed-stay inpatient programs, have failed to demonstrate cost-effectiveness in clinical trials and outcome studies.¹⁵⁻¹⁷ Ongoing concerns about the iatrogenic, or unintended, negative effects of psychiatric treatments have fueled concerns about their overuse. The stigmatization of ex-clients is a clear reason to avoid unnecessary treatment episodes. Fueled by these arguments, managed care firms have achieved disproportionately large reductions in mental health and substance abuse treatment utilization and costs. Over the period 1986–1996, the average annual growth in substance abuse and mental health expenditures was 7.2%, as compared with 8.3% for all other personal health care.¹⁸ The lower rate is attributable to aggregate declines in the use of all types of mental health and substance abuse services, but especially to large declines in inpatient services and in the average length of stay during treatment.¹⁹

By addressing alcohol, drug, and mental health problems as part of a continuum of health issues, managed care has, perhaps inadvertently, encouraged a conceptual shift to the concept of behavioral health care. The term “behavioral health” was itself a creation of the managed care industry; it evolved as firms moved to define new health care markets during the intense competition of the late 80s and early 90s.¹ Combining the administration of mental health, drug, and alcohol services required a radical shift in treatment systems. For many decades, providers and payers had managed these services independently and had seen them as distinct.^{20,21} Conceptualizing alcohol problems as behavioral health problems mainstreams them as health factors and potentially reduces stigma. It encourages health providers to focus on alcohol abuse and dependence as primary problems, but also to address the impact of drinking patterns on other health conditions, such as hypertension, diabetes, and asthma. Removing psychiatric labels eases communication between the health care provider and patient. This, of course, affects the definition of need and the kinds of services provided, as well as where the services might optimally be located.

Need is a dynamic concept that varies according to different understandings of alcohol problems. A definition can look at hazardous drinking, at episodic risk, or at alcohol problems as a chronic, relapsing condition. Each definition has implications for how and where alcohol problems are treated: in specialty programs as a primary disorder, in broader medical settings as contributors to other health conditions, or throughout communities as broader social problems. Which definition dominates depends on the constellation of political constituencies that have an interest in responding to the problem. Today, definitions of need are increasingly influenced by advocates for early intervention, by the managed behavioral health care industry, and by proponents of evidence-based clinical practice.

2.2. Access to Which Services?

Recent studies of how society handles alcohol problems raise further questions about the meaning of access to services. They show that the vast majority of people with alcohol problems are served by professionals and mutual aid organizations that are not part of the professional alcohol treatment system, comprised of inpatient and outpatient programs, detoxification centers, and recovery homes. We could even say that mutual aid groups, along with health and welfare services, form a *de facto* system for treating alcohol problems.^{22,23} If this is true, then the crucial questions about access change: They have to address how alcohol problems are handled by professionals in the medical, criminal justice, and welfare systems and about the relative effectiveness of professional and mutual aid strategies for intervening on substance abuse.²⁴ Such questions have indeed been recognized as central by policy-forming bodies in alcohol services and research.^{8,25,26}

Alcoholics Anonymous (AA) and other forms of mutual aid are essential forms of intervention for alcohol problems that take place mainly outside specialty treatment programs. In the most recent national alcohol surveys, in 1990 and 1995, larger proportions of the U.S. adult population seeking help reported having gone to AA than to professional alcohol treatment agencies. This was consistent for both men and women and across all age groups.²⁷⁻²⁹ Although heavily used, AA and other self-help groups may not actually reduce the demand for professional treatment services. AA often augments professional and medical treatment modalities and increasingly is used as after-care, often with the explicit goal of providing the problem drinker with an ongoing nondrinking community.^{8,30,31} AA has indeed been shown to contribute to the success of professional interventions.³²⁻³⁶

While AA and mutual help programs are significant adjuncts to professional care, not all clients in treatment also participate in AA. In one study of people entering alcohol treatment, those with higher-severity alcohol problems were more than twice as likely to have already sought help from AA. AA involvement was also associated with more prior utilization of formal and informal helping resources, having a low income, being divorced or separated, and having serious employment and psychiatric problems.³² AA involvement also varies across ethnic minority groups. A national longitudinal survey found that Hispanics, but not African Americans, were more likely than Whites to become actively involved in AA over an eight-year period.²⁹ Another local area study reported that Hispanics were more than twice as likely as Whites to become active in AA within a one-year time frame,³⁷ and African Americans were more likely than Whites to report having attended AA as part of treatment.³⁸

Like mutual aid groups, general health, criminal justice and welfare institutions are important for screening and intervention on alcohol problems that are identified outside programs designed to treat alcoholism. To describe where in communities people with alcohol problems go for services, our own research has mapped variation in the prevalence and patterning of alcohol problems in the caseloads of a wide range of health and human services, as compared to the general population, in a single northern California county.^{39,40} These studies show that health and hu-

man service agencies have widely different levels of investment in intervening on alcohol problems and play different roles in responding to them in the community. The prevalence of alcohol problems in the caseloads of different county agencies varies substantially. The 12-month rates of problem drinking in caseloads entering primary health agencies were comparable to those in the general population, while rates of those entering other institutional settings, such as the criminal justice system, approached the magnitude of rates in the county's specialty treatment programs for addiction. The prevalence of alcohol problems ranged from a low of 7% in HMO primary health care clinics, to a high of 53% in the drug treatment system. In other service systems, rates of problem drinking fell somewhere between HMO emergency rooms at 11%, public primary health clinics at 15%, public emergency rooms at 22%, welfare system at 24%, the mental health system at 33%, criminal justice system at 50%.⁴¹

We also found that alcohol treatment programs in the study county, such as detox programs and alcohol recovery homes, serve only a small segment of the service-seeking population with alcohol problems. We illustrated this by statistically weighting our data on health and social service caseloads to represent the overall burden of alcohol problems across agency systems throughout the county. The analysis revealed that only 4.3% of the county's problem drinkers entering public services during a one-year time period could be found in specialty substance abuse treatment agencies. The vast majority were in the large systems of public services: 42.1% in primary health agencies and 41.0% in the county jails. Moreover, as compared with other public agency clients, people with alcohol problems reported histories of using a wider variety of health and human services in the past.⁴² The time-ordering of the service contacts showed that the people in substance abuse agencies had extensive previous involvement with criminal justice and welfare agencies, but did not have many prior contacts with substance abuse treatment programs.^{40,42}

While people with alcohol problems are much more likely to be found in general human service agencies than in specialized alcohol treatment programs, it is not clear what services for alcohol problems they receive in the *de facto* system. Studies do suggest that health and human service providers rarely screen and identify clients with alcohol problems, although as we mentioned, current efforts are directed at increasing awareness and willingness to intervene.⁴³⁻⁵¹ The willingness to intervene directly on alcohol problems varies considerably by type of professional, which may be because health and welfare professionals have very different definitions of alcohol problems, which impacts whether they recognize and respond to them.⁵² In some organizations, drinking problems may not figure into workers' conceptions of "appropriate" clients, and this may inhibit providers from offering much help for an alcohol problem.^{20,53,54} Criminal justice, welfare, and medical professionals make referrals to alcohol treatment programs at vastly different rates⁴⁰ and make different assumptions about the salience of alcohol problems in their caseloads.⁵⁵ Researchers have found many differences not only in how often health care, criminal justice, welfare, and mental health agencies screen for and intervene on alcohol problems, but also in their effectiveness.⁵⁶⁻⁶¹

A broader view of access to alcohol services—one that includes access to mutual help programs like AA, as well as to alcohol-related services in broader health and human services—is critical for several reasons. First, a broader perspective can help us to better evaluate the appropriateness of available services. Since assessments of need vary greatly by how alcohol problems are defined, we can assume that the same type and level of care is not needed by all individuals. Community agencies that do not specialize in treating addiction clearly serve a range of important functions which may include on-site services for alcohol problems. These settings may actually be more appropriate and effective than addiction treatment programs for people with lower-severity symptoms and for those whose problems are related to other health or social problems. Receiving such services reduces the burden of being stigmatized as an alcoholic or addict.

Studies in a range of human service agencies can help us better estimate levels of the overall need for alcohol treatment in the United States. Presumably, some clients seeking help from health and social service agencies might be better suited to professional alcohol treatment services, if such services were more available. To estimate the outer limits of need, we should include not only untreated problem drinkers in the general population, but also people with alcohol problems who are housed in health and human service organizations. One study found that 17% of the people entering alcohol, drug, mental health, welfare, and criminal justice agencies did not live in settings typically covered in general population sampling frames; the prevalence of problem drinking in this group was 43.8%, as compared with 11.3% in the general population.⁶²⁻⁶⁴ Of course, these estimates can be exaggerated by overcounting people with multiple problems and people who use multiple agencies.

Finally, different subgroups of people with alcohol problems may seek help from particular kinds of agencies. Sensitivity to these differences is important for understanding the accessibility of services to potentially underserved groups, such as women and ethnic minorities. For example, women with alcohol problems are more likely to seek help from mental health and counseling agencies than from addiction programs.⁶⁵ This kind of subgroup variation may be due to numerous individual and organizational factors. Some client groups lack interest or view services as inappropriate for their problems. Providers, on the other hand, may discriminate against women and minority clients, and lower levels of insurance coverage may automatically exclude some groups of clients.

3. Access in a Changing Health Care System

In the remainder of this chapter, we review what we have learned from research on alcohol treatment access and utilization and consider how future studies could better account for organizational and social pressures now affecting pathways to care. The literature has identified individual- or micro-level variables, organization-level variables, and variables related to the sociocultural environment.⁶⁶⁻⁶⁹ Individual-level factors in help-seeking have been emphasized in research up to now. While researchers have studied organizational and sociocultural influences on

access, they have not typically looked at how they interact with individual, and sociocultural factors. Yet treatment-seeking individuals are embedded in, and increasingly influenced by, the larger organizational and social systems around them.

3.1. *Treatment-Seeking Individuals*

Individual- or micro-level studies of treatment utilization and help-seeking have emphasized how sociodemographic characteristics, illness behaviors, and health beliefs predispose people to seek services. They study the individual's perceptions of the severity of his or her own symptoms and his or her beliefs about the appropriateness and efficacy of treatment. These studies have established which demographic or "predisposing" factors contribute significantly to the demand for services and willingness to seek help, independent of the severity and nature of symptoms.^{1,67,70,71} Several large national surveys have examined treatment use by comparing pools of treated and untreated problem drinkers within large general population surveys of the nation.^{27,67} Others have also looked at attributes of the face-to-face social networks of problem drinkers, and some have specifically tested competing hypotheses about the roles of family members, friends, and community in facilitating help-seeking. Others have studied social network characteristics as barriers to entering treatment.^{69,72}

Theories of help-seeking for alcohol problems have drawn liberally on models from the medical literature.⁷³⁻⁷⁸ They have often incorporated components of the "health belief model," which highlights social-psychological factors that precipitate help-seeking, such as patients' perceptions of symptom severity and social cues to action that both stimulate and inhibit service seeking.⁷⁹ The first studies of this kind also emphasized demographic factors—such as age, marital and employment status—that can increase the demand for alcohol treatment independently of the individual's drinking patterns and problems.^{68,71,80} Following the medical care utilization literature, researchers have often grouped determinants of treatment entry into clusters, including sociodemographic characteristics, perceptions and beliefs, personal enabling traits (eg., drinking and treatment history), social enabling characteristics (e.g., support networks, health insurance, access, and availability), and need (e.g., severity) factors.^{66-68,70}

A general finding of the help-seeking literature is that demographic factors explain much of the variance in alcohol treatment use independently of clinical measures, such as alcohol consumption.^{27,67,71} One of the best-researched factors is *gender*. For many years, men were heavily overrepresented in specialty addiction treatment settings. But a notable accomplishment of health policy in the past several years has been to narrow the gender gap in who receives alcohol treatment.^{27,28} The literature has shown that factors influencing entry and retention vary greatly by gender.^{69,81-94} As compared with men, women in treatment often have drinking problems coupled with psychiatric problems.^{65,84} Women are less likely to define drinking as their main problem.⁶⁹ Alcohol problems also seem to bear a different relationship to employment characteristics, such as type of occupation, for women and men.^{92,95} This may reflect differences in barriers to treatment, such as health

insurance coverage. Pathways to care outside professional alcohol treatment programs, in general health and welfare programs, also vary for women and men with alcohol problems, suggesting that systematic gender differences may drive service-seeking of all types.^{65,68} Delays in help-seeking and concealment of problems are far more common in the families of women with alcohol problems than men.^{82,83,89}

Service use and access differs by *ethnicity* as well. National and local data show that Hispanics are not overrepresented in treatment programs, except in drinking-driving programs.^{7,10} The same data show that African Americans are overrepresented in public alcohol programs as compared to their numbers in the general population, even after controlling for socioeconomic status. Other recent studies report ethnic differences in the use of specialty substance abuse treatment and AA by Hispanics, as compared to non-Hispanic Whites.⁹⁶ An often overlooked fact is that social class is an important predictor of problem drinking that correlates with ethnicity.⁹⁷ The failure to statistically control for socioeconomic status may explain the variation in problem drinking rates among African Americans in some settings.

Ethnic minorities typically do not have access to the same range of private- and public-sector treatment and prevention services available to other groups, and larger proportions may be committed to treatment through legal coercion.^{8,98-102} There may also be ethnic differences in the “health beliefs” that trigger treatment seeking,⁷⁹ although research on this issue is quite limited. Studies of ethnic differences are limited by small sample sizes that make it impossible to explore ethnic groups independently of one another. Information on race is often not available in private insurance claims data because some states have barred its collection, fearing discrimination in enrollment, again limiting the possibilities for research.

Another area that remains to be examined is gender differences within ethnic groups. Most research focuses on gender or ethnicity, even though findings suggest that more refined comparisons are called for. One study¹⁰³ found different utilization patterns by gender within an American Indian population: Women with substance abuse problems were more likely to use mental health services while comparable men used specialty addiction programs. Differences were also found by ethnicity in a study of substance-abusing pregnant women, where African American women were more likely than other groups to accept treatment.¹⁰⁴

Severity of addiction and psychiatric comorbidity are other individual-level factors that clearly predict treatment entry, even though they have not been extensively used in the treatment entry literature. Earlier research from the Epidemiology Catchment Area (ECA) studies¹⁰⁵⁻¹⁰⁷ and later analysis by the National Comorbidity Study¹⁰⁸⁻¹¹⁰ found high rates of psychiatric comorbidity in the general population. Epidemiological reports of high comorbidity rates among drug, alcohol, and mental health diagnoses have been found across a variety of treatment population studies as well.¹¹¹⁻¹²⁰ McLellan et al.^{115,121} reported increasing rates of multiple problems in alcohol treatment populations over time. And several studies have shown that people with multiple disorders have greater incentives to seek treatment.^{107,108,122}

The role of *social networks* in triggering treatment entry is a final area of study at the micro level. Evidence on the association between social network characteristics and treatment entry has been consistently mixed.⁸⁰ Some studies report that

family and friendship pressure to get help, following the detection of a drinking problem, were major factors in entering treatment.¹²³⁻¹²⁶ Others argue that the family's own efforts to solve the problem delay help-seeking, at least until family resources are exhausted.^{82,86,87,93} Recent studies show that family and friends do play important roles in influencing problem drinkers to do something about their drinking: People in treatment have twice as many close friends and family members who are supportive of their not drinking than comparable groups of problem drinkers not receiving treatment. But even so, pressures to enter treatment from family and friends are not as significant in predicting treatment entry as are ultimatums by employers or legal authorities.¹²⁷

Social pressures to enter treatment also vary by the personal characteristics of drinkers and the people in their networks. Men, for example, experience more social pressure to stop drinking than women.¹²⁷⁻¹²⁹ The National Alcohol Survey found that male and female family members differ greatly in how they respond to alcohol problems: Women are more likely to comment on men's drinking than men on women's. Also, women drinkers are less likely to act on complaints about their drinking, for example, by seeking treatment.¹³⁰ Research on clients in treatment has found that family and friends' reactions, on the whole, are more sympathetic than angry, at least from the perspective of the drinker in treatment.⁸⁰ On the other hand, studies of problem drinkers not in treatment find lower levels of tolerance for the negative aspects of drinking behavior.^{128,130} Finally, national surveys suggest that, over time, social network pressures have intensified. Over the 1980s and 90s, there has been a steady upwards trend in the US. population's willingness to pressure others to stop drinking, and in heavy drinkers' reports of being pressured by relatives, and younger people report higher rates of social pressure about drinking than people in earlier generations.¹²⁸

Recent studies have done more to address social network size and structure in efforts to disentangle their complex effects. But it may be even more important to measure the extent that face-to-face interactions within networks support a particular style of drinking—one that promotes or inhibits changes in drinking over time.^{35,123,131,132} In addition to understanding how the structure of networks impacts help seeking, we need to know more about drinking norms in smaller networks, or their “wetness” and “dryness.”

Variables measured at the individual or micro level—health beliefs and attitudes, severity of problems, sociodemographic characteristics, and social network characteristics—are often grouped by the functions they are believed to play in the help-seeking process. They may be partitioned into sociodemographic characteristics, factors that indicate the “need” for treatment (e.g., alcohol problems severity, comorbidity), and factors that “enable” treatment entry (e.g., health beliefs, insurance coverage). What we must remember is that there are important interactions among these factors. Sociodemographic characteristics, such as social class and ethnicity, are highly correlated with enabling factors, such as health insurance coverage, various types of coercion, and social network effects. And these interactions may really reflect larger realities in the organizational and social context of people seeking help for an alcohol problem. Ethnicity and socioeconomic status, measured

as characteristics of individuals, may really be markers for the broader, structural effects of uneven insurance coverage and coercive organizations. Low-income and minority groups are, after all, often singled out for criminal justice interventions and mandated treatment because they are socially viewed as “at-risk,” while other groups may have more discretion.¹²⁷

Here and there, individual-level studies have addressed these broader issues by situating treatment entry in an organizational and social context. Thus Beckman and Kocel⁸¹ developed a model of alcohol treatment among women that incorporated individual-level factors, as well as characteristics of the treatment organizations from which they sought help, including whether the programs were private- or public-sector ones, and the attitudes, gender, and type of training of program staff. Related studies have examined social policy factors by comparing pools of people entering public-sector treatment programs, health maintenance organizations, and other private programs.¹²⁷ These studies have found important relationships between characteristics of organizations and the people seeking care that merit further investigation. The remainder of the chapter addresses how including these organizational and broader social factors can extend and deepen existing research on treatment-seeking populations.

3.2. *Gatekeeping Organizations*

Factors in treatment access and entry at the organizational level hinge on professional gatekeeping practices, that is, on the screening and case selection routines of human service providers working within organizations. Gatekeeping practices are, in turn, shaped by broader funding pressures, politics, and institutional incentives in the environments of organizations, as well as by the attitudes and views of individual providers about which kinds of clients they should admit. The spread of managed behavioral health care is a funding development of unparalleled importance. Organizational research has only begun to examine its impact on access to alcohol services, where efforts to contain costs can compete with efforts to keep services accessible.^{17,133-138}

Research on gatekeeping grew out of “societal reaction” research in sociology, which documented the effects of professionals and public institutions—police officers, social workers, mental hospitals, and the courts—in client selection. Initially, studies documented how help-seeking is conditioned by the social visibility of illness symptoms, by the attitudes of providers towards their clients, and by the degree of surveillance in communities.^{54,139-142} Studies of gatekeeping in agencies that serve alcohol and drug users have repeatedly shown that professional attitudes towards clients with alcohol problems impact access to services.^{20,43,52,53,143-146} Alcoholics are not typically viewed as “appropriate” clients by mental health and welfare workers.^{20,44,54}

Studies of gatekeeping have often failed to integrate individual- and organizational-level variables associated with help-seeking. There is a tendency to view the individual receiving services as rather passive in the hands of organizational gatekeepers—or to hold individual-level factors “constant.”¹⁴⁷ But the client's de-

meanor, personal characteristics, and reputation inevitably play roles in social handling by health and human service workers. This has been shown in studies of police discretion, where clients with proper demeanor, and with family members willing to take responsibility for them wind up with lower rates of incarceration.^{139,148} Providers offer different things to people with alcohol and drug problems based upon their personal characteristics, depending on whether they are men, women, or pregnant women.¹⁴⁹

Gatekeeping is affected both by official management policies in organizations, and by unofficial routines that evolve out of the interplay between bureaucratic rules and the attitudes, beliefs, and strategies of individual providers. Thus Lipsky¹⁵⁰ showed that informal client selection rules spread quickly in agencies where official rules are arbitrary and conflicting. Unofficial gatekeeping practices may even provide solutions to day-to-day problems created by the system itself. Typically, workers in public-sector agencies are expected to adhere to official policy for allocating services fairly and without discrimination. Yet the reality is that agency budgets are limited and some form of *de facto* rationing is often necessary. As a result, workers may focus rehabilitation services on individuals who seem more motivated to change and push less hopeful cases towards custodial care.^{151,152} They may use waiting lists and admission criteria to ration care.¹³⁵ Today, numerous organizational developments are impacting access by changing gatekeeping practices. The administrative merger of alcohol and drug treatment services in state and local governments has not only affected who goes to treatment, but what kinds of services those admitted receive.¹⁵³ The widespread adoption of employee assistance programs has increased access for middle-class working people,^{90,129,154} and the growing drug and alcohol focus of criminal justice and welfare services has done the same for low-income people.^{10,100}

Changes in the drug treatment, criminal justice, and welfare systems have had significant repercussions for the kinds of people who are referred and admitted to alcohol treatment agencies. But the preeminent development in organizational gatekeeping is the rise of managed behavioral health care. To manage behavioral health care, firms have implemented utilization review, selective contracting, and financial mechanisms such as prospective payment, that are designed to lower costs and improve quality at the same time.^{134,155-158} On a national basis, managed care has substantially penetrated the private insurance business, as well as the public-sector Medicare, Medicaid, and block-grant-funded programs.^{159,160} Seventy-eight percent of the private insurance market is controlled by managed behavioral health care firms, and over 50% of Medicaid beneficiaries are enrolled in managed care plans.^{13,161-163}

Managed care has perhaps impacted the overall utilization of behavioral health services to a greater degree than it has impacted the utilization of general medical care. There have been large reductions in inpatient care for behavioral health problems coinciding with the introduction of managed care.^{164,165} The average number of outpatient visits per user has also declined under managed behavioral health care.^{166,167} As a result, the costs of mental health and substance abuse services, both to public and private insurance plans, have fallen at a faster pace than general medical care costs.¹⁹ One might argue that these disproportionate declines in utilization

and spending are merely making up for indiscriminate growth in these services in previous decades. But, to the extent that managed care is rearranging access to particular kinds of services by particular kinds of people, the drive to moderate costs is having a substantial effect on access and utilization.

Currently, managed behavioral health care is a \$4.4 billion industry, covering 196.8 million Americans with private health insurance.¹³ About \$9.5 billion is spent annually on behavioral health benefits by the Medicaid program alone,¹⁶⁸ making the Medicaid market a big attraction for managed care firms seeking to expand their market shares. Some states are consolidating their Medicaid programs with state block grant funds into a single stream organized under a managed care program.^{169,170} This has the potential to improve access and continuity of care for the Medicaid population and for the poor not on Medicaid. Some evidence suggests that it is possible to reduce Medicaid costs with little overall impairment of the quality of services.¹⁷¹ Some states have creatively rebudgeted public resources through managed care to preserve special services, such as those needed by HIV-infected individuals, women, and minorities.¹⁷²

But the penetration of managed care into public insurance programs such as Medicaid raises many concerns.¹⁷³ After all, people seeking help in the public sector are particularly vulnerable to changes in services because of limited alternative treatment options. On the whole, public-sector populations bring more severe, chronic problems to treatment and require a wider variety of services than people in the private-sector (see the chapter by Lee et al., this volume).^{11,169,174} Most managed behavioral health care organizations do not have extensive experience in treating people with chronic illnesses and multiple problems.^{175,176} Risk adjustment practices are not well developed to factor in this kind of complexity.¹ In attempts to rationalize the distribution of services, managed care plans tend to level the amount of care delivered by providing coverage in standard packages. All individuals, however ill, tend to receive a similar level of treatment, making it more difficult for severely affected individuals to obtain the kind of help they need.¹⁹ Studies monitoring utilization show that denials of behavioral health services do not vary by the seriousness of the diagnosis.^{177,178}

Managed care also affects treatment access by altering the nature of the services offered. For instance, patients are being rerouted from inpatient to outpatient services,¹⁷⁹⁻¹⁸¹ though recently this appears to be happening less often.^{138,182-185} There is also evidence of shorter stays under managed care,¹⁸⁶ and there are concerns that funding pressures will lead public facilities to provide a narrower range of social and rehabilitation services.^{1,187,188}

Managed care may also limit the range of available treatment modalities by selecting for services that have documented effectiveness, standard licensing, and quality assessment in place. Some have argued that the financial incentives inherent in managed care select for medical practitioners in medically oriented settings, such as brief-stay detoxification and outpatient rehabilitation services.¹⁸⁹ When managed behavioral health care organizations were relatively new, they were controversial and readily critiqued. Health care purchasers tried to assure quality by maintaining strict requirements around licensing and professional hiring^{1,11} and by

favoring contracts with psychiatrists over other mental health professionals.^{190,191} However, as managed care evolves, these practices seem to be falling away. Managed care plans differ widely in their hiring policies: some emphasize medications management without counseling and psychotherapy, while others rely on nonphysician practitioners and use psychiatrists only when prescription medications or hospitalization is needed.¹⁹² And increasingly, managed care firms are beginning to contract with social model and other nonmedical residential or recovery programs.^{1,193}

Managed care is also variously impacting the level of integration of addiction services with other health care, which can affect access by increasing or decreasing the continuity of care. Most of our discussion of managed behavioral health care has referred to “carved-out” services, where the financing and management of alcoholism and mental health services is handled separately from the administration of medical care services. Alternatively, mental health and substance abuse services can be managed and delivered within the organization providing general medical care. The “carved-in” approach is most often found in group model or staff model health maintenance organizations and in some public systems. In today’s market, carved-out services cover almost 80% of people with private coverage for behavioral health care, while the situation in the public sector is more mixed.^{13,194}

The appeal of carved-out service is its flexibility in providing a larger range of provider agencies and specialty services to patients and purchasers.¹⁹⁵ Carve-outs may also reduce problems associated with adverse selection: individuals who use mental health and substance abuse treatment tend to have higher levels of health care spending, and health plans may discourage their enrollment.^{171,196} On the other hand, “carved in” programs, being embedded within larger health care organizations, may provide greater continuity between primary and specialty care, which can improve access. These integrated organizations also make it more possible to systematically screen for substance abuse problems and to provide brief interventions through primary care providers.

There are ongoing political tensions about the ways that managed care is impacting access to services. Today, consumers and providers are concerned that managed care gatekeepers are too attuned to the payer’s bottom line and do not systematically evaluate and refer people to treatment. This has given rise to a growing public backlash against managed care in general.^{1,138,175,197-201} At least for now, there are very few uniform, compulsory controls on managed behavioral health plans to ensure that efforts to control costs will not adversely affect the accessibility and quality of services.^{17,201,202} The main governmental means of regulating access are state HMO and insurance laws, and federal HMO qualification laws.^{203,204} But state insurance laws are notoriously weak and uneven, and the largest payers can easily opt out of them altogether under federal guidelines for self-insured companies.

This leaves the implementation of most consumer protections up to the managed care firms themselves, which are often under pressure from consumers, payers, and providers to do so.¹ Accreditation organizations promoting voluntary guidelines for quality and access are proliferating fast, such as the American Managed

Behavioral Healthcare Association (AMBHA), the Rehabilitation Accreditation Commission (CARF), the Council on Accreditation of Services for Families and Children (COA), and the Joint Commission on Accreditation of Health Care Organizations (JCAHO). A whole industry focused on developing performance indicators has sprung up around the National Committee for Quality Assurance (NCQA). These groups argue that the most feasible way to evaluate access is through “process” measures—such as call waiting time, waiting time to appointment, nonurgent and urgent office visits, and hours of operation—although they recognize that this only captures the demand for treatment. Population-based measures, such as surveys of alcohol problems in the membership of health plans, would more accurately reflect actual need, but they are clearly the more costly and difficult to use.²⁰⁵

As managed care has replaced traditional medical reimbursement, there has been a disturbing trend towards increased numbers of Americans who are completely uninsured. For the uninsured, alcohol treatment services are available only through local funding and federal block-grant funds administered by the Center for Substance Abuse Treatment. The problem of the uninsured, who have no guarantee of any access at all, seems intrinsic to the way new systems of reimbursement work.¹⁴ The logic of managed care and cost containment pushes health plans to continually root out the hidden cross-subsidies that traditionally have been a critical source of funding for uncompensated care of the uninsured. Meanwhile, there are very few government controls on insurers’ selection of low-risk people, or “cherry picking,” which leaves the sickest people without any health coverage at all.²⁰⁶ While the “bottom tier” of the health insurance system—the uninsured—is growing, there are also growing income-based divisions within the “upper tier,” that is, among people with private coverage. Many insured people find themselves with few choices other than HMOs, which limit access by constraining choice, and particularly access to speciality services, including treatment for substance abuse. Only the uppermost tier of the system, the fully insured with liberal health benefits, fee-for-service plans, medical savings accounts, and enough disposal income to cover out-of-plan costs, has unencumbered access to care in America’s emerging, “three-tiered” system of health care reimbursement.²⁰⁷

On the whole, managed care is a countervailing force that is pushing against treatment expansion and provider discretion. Over the past decade or so, providers have expanded their treatment approaches to address a wider spectrum of alcohol problems, ranging from problematic drinking linked to other health conditions to abuse and dependence. It is ironic that, at the very time that treatment options are expanding, we are left with a gatekeeping system that is increasingly sophisticated about limiting services and about narrowing the selection. Patterns of gatekeeping are partly influenced by the characteristics of individuals seeking treatment and by provider attitudes and views about who is and isn’t an “appropriate” client. But, under the spread of managed care, gatekeeping is increasingly driven by standard protocols and definitions of “medical necessity” that are impersonal and nondiscretionary and that bundle services into standard packages in the interests of cost-effectiveness and accountability to the institutional purchasers of services.

3.3. *The Larger Society*

The broader society directly affects treatment utilization by shaping the attitudes and behavior of people seeking help. Broad cultural changes in conceptions of alcohol problems can influence individual readiness to seek help by altering awareness of alcohol problems in social networks.^{128,141,208} Secular changes in the governing images of alcohol problems also influence the stigmatization and social costs of admitting to a drinking problem and the extent that coercion characterizes pathways to care.^{27,79,100} The larger society also indirectly shapes access by affecting the organizational and financing environments of treatment programs. Changes in public opinion about alcohol problems can influence the supply of alcohol services by affecting political commitments to providing accessible, well-funded services.^{130,141,209,210} Public regulatory and economic policies can create incentives for treatment organizations to open their doors to new pools of clients. And factors not necessarily under government control—such as treatment provider supply, prevailing clinical paradigms of alcohol intervention, and levels of health insurance coverage in the public at large—also shape the market for alcohol services and the availability of resources. In short, alcohol treatment programs are shaped by forces in their institutional environments: the state, the professions, and the market.²¹¹

Changing public perceptions of alcohol problems and their seriousness can directly influence individual readiness to seek help for alcohol problems by altering awareness of alcohol problems within families, workplaces, and communities.¹²⁸ But also, during periods of heightened concern about alcohol and drugs, admitting to a problem may carry more stigma, thus raising new barriers to treatment.^{1,173} Take the case during the 1980s, when America underwent a major drug crusade and public assault on drunk driving. Clearly, these events brought about a significant shift in the cultural position of alcohol and illicit drugs in America. The changes manifested in more conservative views on drinking and drug use and in decreased alcohol and drug consumption, thus reducing aggregate need for alcohol treatment.²¹²⁻²¹⁴ But even though aggregate levels of drinking declined, the demand for, and supply of, treatment slots increased nationally. Heightened awareness of alcohol and drug problems coincided with an overall increase in the numbers of people in treatment and with increases in the government's commitments to funding alcohol services which, in turn, led to dramatic expansion in addiction treatment programs.^{10,27} It is notable that these broad changes had an uneven impact on different cultural groups in America. While rates of heavy drinking decreased significantly for White men and women (from 20 to 12% and from 5 to 2%, respectively) between 1984 and 1995, they did not change for African American and Hispanic men or women.²¹⁵ Meanwhile, trends in rates of treatment utilization did not vary across ethnic groups.^{27,28}

Broad trends in the culture and in public opinion also influence the public demand for action on alcohol problems, thereby affecting financing policies and legal restrictions affecting access. Government policies directly influence treatment use by legally mandating treatment for particular populations and by establishing rules for involuntary commitment.^{98,216-218} In this way, government directly creates

demand for addiction treatment programs. Today, two of the most important sources of referrals to public-sector alcohol treatment are the criminal justice and welfare systems for precisely these reasons.^{8,219,220} Tightening legal sanctions for alcohol and drug-related offenses during the 1980's led to a disproportionate increase in substance abusers in many criminal justice settings.^{221,222} Alcohol and drug treatment programs have since helped prison systems relieve some of the pressure of overcrowding.^{98,100}

Changes in case referrals from the welfare system are so recent that they haven't been studied much and are poorly understood.²²³ But a key goal of the 1996 federal welfare reform package was to target problems of substance abuse among Temporary Assistance to Needy Families (TANF) recipients as barriers to employment and self-sufficiency. By creating economic incentives to get women off the welfare rolls and into the workforce, welfare reform has put more pressure on agency workers to intervene in recipients' alcohol problems and to impose economic sanctions on welfare recipients where substance use becomes viewed as a barrier to employment. State welfare administrations have grown fearful that substance-abusing clients will prove difficult to place in stable jobs within federal time restrictions.²²⁴ Consequently, welfare referrals to alcohol treatment have rapidly increased in many places.^{225,226} Forty percent of states in the United States have allocated TANF funds to enrich access to substance abuse treatment,²²⁶ and alcohol and drug screening and intervention programs have become an integral part of efforts to move clients from welfare to work.²²⁷⁻²²⁹ The success in implementing and sustaining these policies remains unknown.

Finally, alcohol treatment is also affected by a political context in which different stakeholders compete to influence policies around access. Past and current debates over government requirements on insurance coverage for alcohol treatment have been some of the most important, and changeable, of the political debates affecting access. Changing insurance policies reflect the ebb and flow of different stakeholders' interests who, on this issue, include the institutional purchasers of treatment services, managed care firms, accreditation organizations, practitioners, and consumers.^{1,230}

Beginning in the late 1970s, provider and consumer constituencies began to put pressure on private insurers to increase coverage for behavioral health services.²³¹ The movement to liberalize private coverage was spearheaded by alcoholism treatment constituencies promoting model benefit packages for state laws that mandated minimum coverage by private insurers and was largely successful.^{232,233} Whereas in 1978, 19 states had legislated minimum insurance coverage for alcohol treatment, by 1988, 37 states were requiring employers to at least offer the option of such coverage.²³⁴ But by the early 90s, this trend began to reverse once again. Rising treatment costs led a dozen states to pass "bare-bones" legislation that gave insurance companies the right to sell minimum benefit policies that excluded mental health and substance-abuse coverage.²³⁵ This time, the push for changes in insurance policy was promoted by the institutional purchasers of health care.

Today, the debate over mandated coverage is once again pushing the tide back towards liberalizing coverage. Today's debate is reframed around the goal of *parity*

in insurance coverage, or equalizing insurance coverage for behavioral health care with coverage for other health care, as a government-assured right. The parity movement has been largely driven by mental health interests, including consumers, professionals, and their trade associations. It has achieved success at both the national and state levels in improving government assurances of broader benefits. Advocates have done so by pointing to evidence of a growing deficit in coverage for alcohol, drug, and mental health services over the past decade²³⁶ and to studies showing that managed care can contain costs even while expanding basic benefits and that parity yields only modest increases in Costs.²³⁷⁻²³⁹ For their part, managed behavioral health care executives have few objections to these arguments: Full parity would be a boost for the industry because it would induce even more employers to turn to existing firms for help in controlling costs. It would also present an opportunity to raise rates for the additional coverage.¹³

The parity movement has made both tangible and intangible progress towards its goals in recent years. In 1996, the Mental Health Parity Act for federal employees ratified the movement's goals, although the law's actual impact was so limited in scope that its role has been largely symbolic.²⁴⁰ In another gesture towards parity advocates, in June 1999, President Clinton ordered full parity in the Federal Employees Health Benefits Program (FEHBP), which is increasingly setting the standard for large private managed health plans. Currently, a large federal evaluation of this policy is underway with support from the Robert Wood Johnson Foundation, national consumer groups, and others. What has made the more tangible differences in access are state-level parity laws. As of June 1999, 24 states had passed parity laws, although many of these states, such as California, have not included substance abuse services in their statutes.^{13,240}

Much of the legislation for parity, however, may be missing a crucial point. Parity refers to maintaining the same benefits for alcohol, drug, and mental health services that apply to general medical conditions. But this goal fails to take into account the critical importance of how benefits are defined and the fact that, even with formal parity in benefits, managed care gatekeepers may still define behavioral health services as "medically unnecessary."¹⁹ Parity in benefits covered means little if behavioral health services are managed more aggressively for costs than are other types of health care. So far, the all-important day-to-day workings of managed care plans have proven difficult to wrestle through across-the-board government regulation to protect consumers.

Individuals and treatment organizations are situated within a larger environment that continuously impacts pathways to care directly and indirectly. Shifting cultural attitudes towards drinking affect both whether individuals will seek treatment and whether governments and private insurers will underwrite the costs once they do. The ebb and flow of temperance sentiment over time and the debates over treatment for criminal offenders, welfare reform, and insurance parity show just how changeable this broader policy context can be and just how much these changes can impact the individual's access to alcohol treatment.

4. Conclusion

To understand who needs treatment and what that implies for access, we must make sense of organizational and societal changes that are rapidly changing pathways to care. We must consider how the very definitions of who needs treatment and who provides it are changing. Researchers have found that the individual characteristics that impact access are very robust. These factors have been important in the past and will continue to matter despite the broad changes in organizations and policies that we have discussed. Factors such as the severity of alcohol problems, the presence of a psychiatric comorbidity, and the belief that treatment works explain a lot of the variance in who does and does not enter treatment. And despite the changing world of health insurance, it has been, and continues to be, true that people who are more socially marginal are more likely to enter public treatment. On the whole, the individual characteristics associated with treatment entry have remained quite stable over time, perhaps with the exception of gender, which seems to be changing as treatment programs deliberately try to narrow the gender gap in access.

Getting into treatment involves an interplay among a whole variety of players: individuals who have idiosyncratic attitudes and beliefs about treatment, families and employers who have an interest in seeing a drinking problem controlled, professionals who can either inhibit or promote a person's prospects for receiving help, and health-care payers interested in controlling the bottom line. Research focused on the individual characteristics in treatment entry ignores how these factors operate together. Take the important case of research on coercion in alcohol treatment. We know that coercion from the workplace is a far more common pathway to treatment for higher-income people in the private sector, whereas criminal justice referrals predominate among the lower-income people who wind up in the public system.^{8,10,41,90,241} Yet so far, no studies have examined how public- and private-sector agency case selection criteria are used to sort people into different sorts of treatment institutions on the basis of income. Nor have they specifically investigated how help-seeking by high- and low-income people contributes to this sorting or how recent welfare reform policies are differentially affecting patterns of individual and agency selection among low-income people. Rather, studies of coercion in treatment entry have largely focused on civil commitments and court mandates to treatment, as compared with "softer" forms of coercion such as family pressure.¹⁰⁰

While individual characteristics affecting treatment entry may be robust and fairly stable, the organizations that provide treatment, the outside systems that refer clients to them, and the political constituencies that fund treatment seem to be in constant flux. The issues surrounding managed care's impact on access are perhaps the most uncertain and changeable. Cost containment has, so far, been more stringent in mental health and substance abuse services than in general medical care, but we are now entering a period in which it will become even more difficult to reduce expenditures without doing harm. Most of the easy reductions have been made, purchasers have learned how to bargain aggressively with health plans, and

there is a continuing perception that substance abuse services need financial checks not necessary to other medical care.^{13,237} Managed care is also quickly spreading to social safety net programs, such as Medicaid, where clients generally have fewer alternatives and more severe problems. As the competition increases, firms will be driven to assume more insurance risk and to pass on the risk to providers with whom they contract, with unknown consequences for the accessibility of treatment and the viability of contracting provider groups. Finally, managed care is pushing addiction treatment towards a broad “behavioral health” model that combines the administration of substance abuse services with those for mental health treatment. The implications of this conceptual shift for treatment are hard to predict.

We have some studies that examine these social policy and organizational changes and have others that examine the individual dynamics of seeking care. What we need are studies that examine the interrelationships among these factors at multiple levels and that test competing hypotheses about their effects. Perhaps this means going back to some of the original statements in the medical help-seeking literature that emphasized the broader social context, such as Anderson and Newman’s²⁴² model of societal, health system, and individual-level determinants of treatment entry and Aday and Anderson’s⁷⁷ work on the roles of social policy, delivery systems, and populations at risk in health care access. It certainly means that we should interpret work on treatment-seeking populations within the “big picture” of organizational and societal changes going on today, and that we should think further about how these changes are affecting the very ways we define and understand concepts like access and need.

NOTE. An earlier version of this chapter, “Access and Need for Alcohol Treatment Services” (Weisner, C., and Schmidt, L.), was prepared for the National Institute on Alcohol Abuse and Alcoholism, National Advisory Council’s Subcommittee for Health Services Research. Portions draw from and update “Public Health Perspective on Access and Need for Alcohol Treatment” (Schmidt, L., and Weisner, C., in *Changing Addictive Behavior: Moving Beyond Therapy Assisted Change*, eds. Tucker, J.A., Donovan, D.M., and Marlatt, G.A., New York: Guilford Press, 1999). Helen Matzger provided valuable assistance in the literature review, and Mike Hilton provided helpful comments. Work on this chapter was supported by the National Institute on Alcohol Abuse and Alcoholism (R37AA10359 and AA05595).

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Access to Services in the Substance Abuse Treatment System

Variations by Facility Characteristics

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Abstract. In view of the importance of type and intensity of services during substance abuse treatment, this chapter looks at treatment and support services that substance abuse clients have access to during treatment. Trends in services over recent years are described. Services available to clients in the current treatment system are reviewed. Several facility characteristics affecting access to services are examined. Different ways of defining access to services are discussed. Findings from the Alcohol and Drug Services Study are used to illustrate service patterns in the national substance abuse treatment system. Variations in service patterns by facility characteristics such as type of care, treatment setting, ownership, percent of facility dependence on public revenue, and level of affiliation are analyzed. The implication is that clients who enter into treatment at different types of facilities are likely to have access to certain types of services.

1. Introduction

Effective quality of care is dependent upon making services accessible to clients who need them. Substance abusers often suffer from a variety of social and health problems, including unemployment, poor family relations, mental health problems, and legal problems, in addition to being chemically dependent. Therefore, a network of services is needed during treatment, including treatment services that are directly oriented toward treating alcohol or drug abuse, or both, and wraparound or support services that are directed toward concomitant problems. Treatment out-

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come is more than the mere elimination or reduction of substance abuse. It generally includes measures of improvement in various aspects of the client's life. Consequently, various services are needed in addition to drug and alcohol treatment. Although treatment programs recognize the multiple needs of clients and have attempted to increase the diversity of services offered, most programs do not offer services to meet all the needs of clients. Some offer certain services on site while others may be provided off site on a contractual basis. Substance abuse treatment programs tend to offer basic services and some may supplement these with wrap-around or support services.

There is accumulating research that supports the relationship between the range and quality of services made accessible to clients during treatment and treatment outcomes.^{1,2,3} Abbott et al.⁴ found that a sample of drug clients who received a variety of services improved in all of the ASI problem areas at 6-month follow-up, with the exception of medical and family/social areas. Clients showed decreased alcohol and drug use and improvement in the psychological, employment, and legal areas.

Furthermore, the number of services received in the areas of medical, employment, family, and psychiatric care has been significantly and positively related to better posttreatment social adjustment. There have been findings indicating that certain types of services may help in one outcome area, while not having impact on another outcome area. Data from 22 treatment programs in the Philadelphia area showed that the quantity of services received during treatment was positively associated with posttreatment social adjustment, while a greater number of services was only slightly associated with a reduction in posttreatment substance use. It appeared that drug use severity at admission was the most significant predictor of recurrent substance use posttreatment.⁵

In view of the importance of type and intensity of services during substance abuse treatment, this chapter looks at treatment and support services that substance abuse clients have access to during treatment. Trends in services over recent years and services available to clients in the current treatment system are described. Several facility characteristics affecting access to services are examined. Different ways of defining access are discussed. Findings from the Alcohol and Drug Services Study, funded by contract #283-92-8331 from the Substance Abuse and Mental Health Services Administration (SAMHSA), are used to illustrate service patterns in the national substance abuse treatment system. Variations in service patterns by facility characteristics are discussed. The implication is that clients who enter into treatment at different types of facilities are likely to have access to certain types of services.

2. Trends in Declining Services

Despite the importance of the number and intensity of services for positive treatment outcomes, there is evidence that the extent of substance abuse services has declined over the years.^{6,7} Generally, wraparound services or support services such as employment and legal services are not offered as often as treatment services such as individual therapy, group therapy, and alcohol and drug services. This

finding is supported both in studies that focus on the client as the unit of analysis, and in studies that focus on the treatment facility as the unit of analysis.^{2,8,9}

Two national studies, conducted a decade apart, document a decline in treatment services. The Treatment Outcome Prospective Study (TOPS) was a study of clients admitted to substance abuse treatment during 1979–1981, and the Drug Abuse Treatment Outcome Study (DATOS) was a study of clients admitted during 1991–1993. Both were prospective longitudinal client-level studies that conducted face-to-face client interviews in major metropolitan areas across the United States. The sampling designs were such that programs were selected purposively, rather than randomly, but did include the major modalities that existed in community based programs in the early 1980s and 1990s. Clients in the TOPS and DATOS studies were interviewed three months after entry into treatment and asked if they received services in specific domains: medical, psychological, family, legal, educational, vocational, and financial services. A comparison of the TOPS and DATOS data indicated a decline in services in all these domains from the early 1980's to the early 1990's. For the seven services queried in the TOPS and DATOS studies, the number of clients who received each of these services declined from 1979 to 1993. This was true of all modalities common to both studies (methadone, long-term residential, and outpatient drug-free). The only exception was an increase in the number of long-term residential clients who received financial services in DATOS compared to TOPS.⁶

In addition, the percent of clients who reported receiving no services other than substance abuse counseling in the first three months of treatment was 65% of the DATOS methadone clients compared to 49% of the TOPS methadone clients; 23% of the DATOS long-term residential clients compared to 7% of the TOPS long-term residential clients; and 60% of the DATOS drug-free outpatient clients compared to 18% of the TOPS drug-free outpatient clients. These two national studies reported that the most commonly received services were medical and psychological services. Of the different types of care included in the studies, methadone and outpatient drug-free care appeared to have a lower percentage of clients receiving the different services, with methadone programs generally having the lowest level of counseling, family, and wraparound services.

In a panel design study of outpatient drug treatment units, the Drug Abuse Treatment System Survey (DATSS), there is further evidence that the level of services offered in treatment has declined over the years. The DATSS was a nationally representative study of a stratified random sample of outpatient drug treatment units. The survey was conducted in three waves: 1988, 1990, and 1995. Information about services was collected through a telephone survey with clinical supervisors. In 1988, physical exams, medical and mental health services, employment, financial, and legal services were not routinely provided in outpatient programs. D'Aunno and Vaughn⁷ examined services offered to clients in the outpatient treatment system and found that from 1988 to 1990 there was further decrease in all types of services. From 1988 to 1990 there was a decrease in the percentage of clients who received physical exams, medical care, mental health services, multiple drug treatment, employment counseling, financial counseling, and legal counseling. How-

ever, comparing data from the 1990 wave of the DATSS to those of the 1995 wave, the percentage of clients who received physical examinations increased from 33% to 43%, and routine medical care increased from 25% to 30%. In contrast, the percent of clients who received mental health care stayed the same from 1990 to 1995 at about 25%.¹⁰ Services were linked to organizational factors such as staffing, funding, facility ownership, and parent organization characteristics. Clients were more likely to receive the services that they needed when they received treatment at units that had adequate resources and when client's needs were consistent with the program's organizational goals. For example, a client who had many medical problems would more likely have received the services needed if the client were treated at a hospital inpatient facility.

In some methadone clinics, provision of services is very low. One study reported the average clinic visit time to be 12.7 minutes per day.¹¹ This is far below the amount of time needed to provide methadone and related services. Even for those clients who reported receiving group and family therapy, counseling occurred less than once per week with each session lasting on average only 37 minutes.

3. Types of Services Offered in the Treatment System

The 1996 Uniform Facility Data Set (UFDS), conducted by the Substance Abuse and Mental Health Services Administration (SAMHSA), is a national census of specialty substance abuse treatment facilities. It collects, among other information, services offered at all State-recognized free-standing facilities that provide substance abuse treatment. The data on services were collected for a point prevalence date of October 1, 1996. Individual counseling was the service offered at most facilities, followed by comprehensive substance abuse assessment and diagnosis and group therapy. Discharge planning, aftercare counseling, and family counseling were services offered at about three-quarters of the facilities surveyed. Wraparound services such as medical care, TB screening, HIV testing, prenatal care, employment counseling, housing assistance, academic classes, child care, and transportation were offered at less than half the facilities.¹²

Findings from the 1988 wave of the DATSS indicated that most outpatient units provided individual therapy, group therapy, and substance abuse education. In comparison to the number of clients who were provided therapy, far fewer clients received medical care, mental health treatment, and wraparound services such as employment, financial, and legal counseling.⁹ The 1995 wave of the DATSS reported that tuberculosis treatment and HIV/AIDS treatment were provided to clients at very few programs.¹⁰

4. Facility Characteristics Related to Variations in Access to Services

Factors in addition to clinical need may determine the amount of services provided. Organizational factors, such as the number of medical personnel on staff or

the stability of the program's financial support, may determine amount or type of services provided more than does client need.⁶ Facility characteristics, such as type of care, facility ownership, treatment setting, and level of facility affiliation, play a role in services to which clients have access.

4.1. Variations by Type of Care

A survey of a drug treatment system in a large metropolitan area in the United States revealed variations in access to services by type of care or modality.¹³ The following type of care variations were found:

- Hospital inpatient type of care provided physical exams, medical detoxification, and substance abuse counseling at all of the programs. HIV/AIDS testing, primary care, individual and group therapy, after-care, and tuberculosis testing were services provided at a great majority of the hospital inpatient programs.
- Residential type of care provided support services, such as academic education, job training, and job placement, more than did other types of care. The DATOS study offered further support that access to vocational services occurs more often in residential treatment than other types of care.¹⁴ Individual therapy was provided at fewer residential programs than any other type of care.
- Methadone type of care provided substance abuse counseling, tuberculosis testing, physical exams, HIV/AIDS testing, AIDS counseling, and individual therapy at almost all facilities. Data from the 1995 wave of the DATSS study also found that a great majority of methadone units offered physical examinations, TB screening, and HIV/AIDS treatment.¹⁰ While individual therapy was provided at almost all methadone programs, group therapy was provided at only half of the programs. Support services or wraparound services such as academic education, vocational, and legal services were rarely provided in the methadone type of care. A study of six methadone maintenance programs by Ball and Ross¹⁵ also found that, although individual therapy was offered at almost all methadone programs, services such as group therapy, vocational counseling, and educational services were not routinely received by clients at these programs.
- Outpatient drug-free type of care provided substance abuse counseling, individual therapy, and group therapy at almost all programs. Aftercare is offered at a moderate percentage of outpatient drug-free programs as reported by Polinsky and her colleague¹³ and the 1988 wave of the DATSS study.¹⁶

Generally, Polinsky and her colleagues found that more medically oriented programs, such as hospital inpatient and methadone programs, offered more medical services than less medically oriented modalities (residential and outpatient drug-free). Individual counseling was offered by almost all programs in all modalities, but was least offered in residential programs. However, residential programs offered better access to support services, such as academic and employment services.

Wraparound or support services, such as transportation, prenatal care, employment services, and academic services, were provided at fewer programs than treatment services.¹³

4.2. Variations by Facility Ownership

Facility ownership is another variable that has been shown to have impact on access to services. Analysis of the 1988 DATSS showed that private for-profit outpatient units were more likely than public or private nonprofit units to provide physical exams and medical tests to their clients during the assessment process; however, they were less likely to provide mental health assessment.⁸

There is some evidence that public facilities offer more services than do private-for-profit facilities. Specifically, private for-profit units provide less TB treatment, HN/AIDS treatment, and mental health services than do public units. In addition, the access to wraparound or support services is lower at private for-profit facilities compared to publicly owned facilities.¹⁰ The mission of public facilities, being nonprofit and more committed to public welfare, would lead them to offer more services. In addition, clients in public facilities tend to be more impaired than clients in for-profit facilities and therefore may need more services. Clients served in public facilities tend to have many deficits, including poor health, low education, and an unstable family situation. Compared to clients in private facilities, public clients have longer histories of substance abuse, are more likely to have used more types of substances, are less likely to be employed, and have more involvement with the criminal justice system. Therefore, a variety of services and higher staff requirements are needed to support the clients in treatment at public facilities.¹⁷ As suggested by Friedmann and colleagues,¹⁰ it cannot be determined if the reduction in access to services is due to “cutting corners” or due to reasonable cuts in services due to lack of need by clients in private facilities.

4.3. Variations by Treatment Setting

Treatment setting is another facility-level characteristic that has impact on access to services. The 1996 UFDS¹² reported that most substance abuse facilities that were in mental health settings offered individual therapy, comprehensive substance abuse assessment/diagnosis, group therapy, family counseling, and comprehensive mental health assessment/diagnosis. Services that were not very accessible at facilities in mental health settings were medical services such as medical care, tuberculosis treatment, and prenatal care.

Substance abuse treatment facilities in physical health settings offered high access to individual therapy, comprehensive substance abuse assessment/diagnosis, group therapy, and drug/alcohol screens. In addition, tuberculosis screening was most accessible in substance abuse facilities in physical health settings, as was blood alcohol testing and HIV testing.¹²

Most freestanding substance abuse treatment facilities offered individual therapy, comprehensive assessment/diagnosis, and group therapy. Detoxification,

tuberculosis treatment, prenatal care, childcare, and family planning were services rarely offered in free-standing treatment settings.¹²

4.4. Variations by Facility Affiliation Level

Affiliation level refers to whether a facility is an independent entity or an integral part of a larger organization. Little is known about the effect of organizational affiliation of substance abuse facilities on access to services. However, a study by Alexander and his colleagues¹⁸ offers some evidence that hospitals owned by another organization tend to offer more inpatient and outpatient services and have more professionalized staff. That is, they have more RNs per nursing staff and more physicians per total staff. Integration of units allows for more resources to be made available to the client as the resources that each of the units provides are shared throughout.¹⁹ There are few findings specific to the substance abuse field as to whether services differ in substance abuse treatment facilities that are independent entities compared to facilities that are affiliated with other organizations. One exception is a study by Friedmann and his colleagues¹⁰ that found that substance abuse facilities affiliated with mental health centers did not provide on-site mental health services to a greater degree than those not affiliated with a mental health center; however, these facilities tended to provide less routine medical care. Hospital-affiliated units provide more physical examinations, but tend to offer fewer mental health services. Such findings imply that facilities tend to offer services to clients in a manner that is consistent with the mission or treatment orientation of their affiliates.

5. Defining Access to Services

There is more than one way to define access to services. Access to services may be measured by asking the facility for a list of services that they offer to clients. This is simply looking at the presence or absence of specific services at the facility. Access can also mean that the service is available to the client at the time when the client requests the service. Sometimes the facility may report that they routinely offer a particular service but it may not be available at a certain time because of staffing constraints or some other constraints on facility resources. Therefore, the number or percent of clients receiving the service would be another way of looking at access. Whether a particular service is offered on-site or off-site may also be a factor in accessibility. Facilities may report that services are offered, but it is important to determine whether they are actually provided at the facility. Referring a client off-site often creates a barrier to service accessibility.^{20,21}

It is clear that treatment and support services are key to recovery and rehabilitation. Most studies on substance abuse service patterns use small limited samples of facilities or look at limited types of care, and therefore it has been difficult to get a good sense of what services are accessible to clients across the national treatment system. The next section of this chapter examines the Alcohol and Drug Services

Study (ADSS), a nationally representative study of a sample of substance abuse facilities across the nation to determine what services are offered in the substance abuse treatment system and whether access to service patterns differs by type of care and other key facility characteristics. Access to services is determined by whether the facility director reports that the facility offers the service to clients in treatment.

6. Overview of the Alcohol and Drug Services Study

This section reports facility-level findings on services from the Alcohol and Drug Services Study. Phase I of ADSS consisted of a telephone interview with facility directors at a stratified random sample of 2,395 alcohol and drug treatment facilities across the nation (which represent 12,387 facilities nationwide). Treatment facilities excluded from the sampling frame were halfway houses without paid counselors, solo practitioners, jails/prisons, military/Department of Defense (DOD), Indian Health Service, and facilities that perform intake and referral only. The questionnaire was mailed out in advance so that the director had a chance to gather information to fill out the questionnaire. The responses were then collected by telephone. Sample strata were selected to reflect the different types of care within the substance abuse treatment system. The primary analytic strata are hospital inpatient, residential, outpatient methadone, outpatient nonmethadone, and combination. The sample frame was SAMHSA's 1995 National Master Facility Inventory augmented to yield the universe of treatment facilities known to SAMHSA. The Phase I ADSS Facility Survey was conducted from December of 1996 to June of 1997, with data collected for a point prevalence date of October 1, 1996, and for the most recent 12-month reporting period of the facility. The point prevalence date was chosen to be the same as the 1996 Uniform Facility Data Set (UFDS)¹² in order to allow comparison with UFDS. The Phase I response rate was 91.4% of 2,621 facilities eligible for ADSS. Since the Phase I sampling design incorporates a stratified random probability sample, weights were developed to produce national estimates of facilities. The sampling weights adjust for facility nonresponse and for differential response rates within strata. The data in this report were imputed to account for missing values. Overall, item nonresponse was very low; generally less than 10%. More details about the ADSS methodology are presented in the Methodology Report for ADSS Phase I Facility Questionnaire which can be requested from SAMHSA.

7. Access to Services in the National Substance Abuse Treatment System

There are two main types of services that clients have access to during substance abuse treatment: treatment services and support services (see Table I). As mentioned earlier, support services are services that are directed toward problems that are associated with alcohol and drug abuse; however, they may also be services that help keep the substance abuser in treatment, e.g., transportation services. The Institute of Medicine defines treatment as "the broad range of services, including the identification, brief intervention, assessment, diagnosis, counseling, medical

Table I. National Estimates of Percent of Facilities Offering Treatment and Support Services^a

Services	Percent of Facilities Offering Service ^b
Treatment Services	
Individual therapy	96.9 (0.41) ^c
Comprehensive assessment/diagnosis	93.8 (0.60)
Group therapy, not including relapse prevention	92.6 (1.27)
Family counseling	85.6 (0.95)
Aftercare	82.6 (1.04)
Relapse prevention groups	78.8 (1.26)
Self-help or mutual-help groups	71.4 (1.63)
Outcome follow-up	66.7 (1.67)
Combined substance abuse and mental health treatment	66.7 (1.40)
Detoxification	26.5 (1.03)
Acupuncture	4.8 (0.43)
Support Services	
HIV/AIDS education/counseling/support	76.5 (1.27)
Transportation	49.6 (1.33)
TB Screening	43.2 (1.31)
Employment counseling/training	40.2 (1.45)
Smoking cessation	24.2 (1.12)
Academic education/GED classes	17.1 (0.97)
Child care	13.3 (0.90)
Prenatal care	12.0 (0.79)

^a Source: 1997 Alcohol and Drug Services Study, Phase I facilities data (weighted). Office of Applied Studies, Substance Abuse and Mental Health Services Administration.

^b More than 99% of facilities responded to each service question.

^c Standard errors in parentheses.

services, psychiatric services, psychological services, social services, and follow-up.”²² The goal of treatment is the reduction or elimination of substance abuse and the problems often associated with substance abuse, such as unemployment, psychological dysfunction, poor medical health, poor family and social relationships, and involvement in criminal activity. Clients entering treatment need access to various treatment and support services in order to eliminate or reduce drug and alcohol abuse and become rehabilitated.

Some form of treatment service is offered almost universally at treatment facilities while support services are offered less frequently. Table I shows that 97% of facilities offered individual therapy and more than 90% of facilities offered comprehensive assessment/diagnosis and group therapy. In contrast, most support services were offered at fewer than 50% of facilities with the exception being HIV/AIDS education/counseling/support which was offered at 76% of all facilities. Thus, services directly treating alcohol and drug abuse are predominant, with support services offered at a lower proportion of facilities. These findings were similar to the findings of the DATSS study. Support services, such as employment, financial, and legal counseling, were offered at less than 40% of DATSS facilities, while treatment services, such as individual therapy, group therapy, and alcohol/drug education were offered at 90% or more of facilities.⁹ The 1996 UFDS also reported that

individual therapy, group therapy, and comprehensive assessment/diagnosis were offered at 90% or more of facilities, while support services were generally offered at less than 50% of facilities with the exception of HIV/AIDS services.¹²

Comprehensive assessment/diagnosis was offered at most substance abuse treatment facilities, 94% of all facilities in the treatment system. Facilities that offered hospital inpatient, outpatient nonmethadone, and combination types of care were equally likely to offer comprehensive assessment/diagnosis to their clients (about 96% of facilities). Comprehensive assessment/diagnosis was somewhat less accessible to clients who enter treatment at residential (85%) or outpatient methadone facilities (87%). All comparisons reported are significant, except where noted otherwise, using the Bonferroni correction to $p=.05$ based on the number of comparisons.

7.1. Access to Various Types of Therapy and Detoxification by Type of Care

Access to different types of therapy and detoxification is shown in Table II. Individual therapy was most likely offered in combination facilities (99%) and outpatient nonmethadone facilities (97%) and least likely in hospital facilities (87%) compared to other types of care. Group therapy was offered most at combination facilities (99%) and least in methadone facilities (76%). Similarly to group therapy, family counseling was offered most at combination facilities (94%) and least in methadone facilities (67%).

It appeared that all three types of therapy were highly accessible at combination facilities. Since these facilities offered more than one type of care, they may treat a broader range of clients and thus provide access to a wider range of services to treat a variety of client needs. As far as therapy was concerned, methadone facilities tended to focus more on individual therapy than on group and family therapies. This was likely due to the influence of methadone regulations and the require-

Table II. National Estimates of Percent of Facilities Offering Different Types of Therapy and Detoxification by Type of Care^a

Type of Therapy and Detoxification ^b	Type of Care				
	Hospital Inpatient	Residential	Methadone	Outpatient Non-methadone	Combination
Individual therapy	87.0 (2.89) ^c	95.5 (1.24)	96.3 (0.70)	97.2 (0.53)	98.9 (0.51)
Group therapy	86.9 (2.73)	95.0 (1.42)	76.5 (2.30)	91.4 (2.00)	99.1 (0.09)
Family counseling	80.4 (2.41)	78.6 (2.36)	66.6 (2.67)	86.9 (1.30)	94.0 (1.88)
Detoxification	88.5 (1.33)	24.6 (2.19)	74.7 (2.96)	9.3 (1.15)	71.7 (3.48)

^a Source: 1997 Alcohol and Drug Services Study, Phase I facilities data (weighted). Office of Applied Studies, Substance Abuse and Mental Health Services Administration.

^b More than 99% of facilities responded to each service question.

^c Standard errors in parentheses.

ment for providing one-to-one therapy during treatment, although there is variation from state to state.

As mentioned above, individual therapy was least accessible at hospital inpatient facilities. Detoxification was offered at hospital inpatient facilities significantly more than at any other type of care, and prenatal care was offered at hospital inpatient facilities more than any other type of care with the exception of combination facilities. Combination facilities (which may include a hospital unit) offered prenatal care at the same rate as hospital facilities. Therefore, those two services were more accessible at hospital inpatient facilities than in other types of care. Thus, services accessible in substance abuse treatment were often related to the treatment orientation of the facility.

7.2. Access to Self-Help, Relapse Prevention, and After Treatment Services

The goal of residential facilities is one of rehabilitation and recovery through self-help and mutual support.^{23,24,25} In addition, a “global change in lifestyle”²⁴ is the focus of residential treatment. Therefore, one would expect services such as self-help/mutual-help groups and relapse prevention to be highly accessible in residential facilities. Table III shows findings for these services.

Self-help/mutual-help groups were more accessible at residential facilities (92%) than at outpatient facilities (methadone and nonmethadone). However, self-help/mutual-help groups were equally accessible in residential, combination, and hospital inpatient types of care. The variations in self-help/mutual-help services among these three types of care were not significant. Relapse prevention was more accessible at residential facilities (88%) than at any other type of facility except combination facilities (96%). In view of these findings, there seemed to be a reasonable amount of support that residential facilities made self-help/mutual-help and relapse prevention services accessible to clients. Residential facilities have a clear philoso-

Table III. National Estimates of Percent of Facilities Offering Self-help, Relapse Prevention and After Treatment Services by Type of Care^a

Services ^b	Type of Care				
	Hospital Inpatient	Residential	Methadone	Outpatient Non-methadone	Combination
Self-help/mutual help groups	85.9 (3.04) ^c	92.3 (1.41)	62.7 (3.19)	61.0 (2.49)	87.9 (2.34)
Relapse prevention	77.6 (2.73)	88.0 (1.80)	66.0 (2.65)	72.6 (2.01)	95.9 (1.08)
Aftercare	68.0 (2.68)	76.4 (2.44)	64.4 (2.51)	83.1 (1.41)	94.4 (1.34)
Outcome follow-up	60.3 (3.55)	74.4 (1.81)	43.8 (3.07)	61.4 (2.45)	85.0 (2.39)

^a Source: 1997 Alcohol and Drug Services Study, Phase I facilities data (weighted). Office of Applied Studies, Substance Abuse and Mental Health Services Administration.

^b More than 99% of facilities responded to each service question.

^c Standard errors in parentheses.

phy of treatment, and services offered in this type of care support the philosophy of recovery and rehabilitation through self-help and relapse prevention.

Aftercare and outcome follow-up were features of treatment that were offered to the client after discharge. Clients generally had less access to these services than to comprehensive assessment/diagnosis and the various forms of therapy (see Table I). Table III indicates that outpatient nonmethadone and combination facilities offered aftercare most frequently, while hospital inpatient and methadone facilities offered aftercare the least. Outcome follow-up was reported most frequently by residential facilities and by combination facilities, and it was reported least by methadone facilities. This finding, coupled with the above findings on aftercare, indicated that clients at methadone facilities had lower access to services once they left treatment.

7.3. Access to Support Services by Type of Care

Table IV shows that HIV/AIDS education, counseling, and support were similarly accessible at methadone, residential, and combination facilities; 94, 90, and 87% of facilities, respectively. That is, the variations in HIV/AIDS services among these three types of care were not significantly different. Fewer hospital inpatient

Table IV. National Estimates of Percent of Facilities Offering Support Services by Type of Care^a

Support Services ^b	Type of Care				
	Hospital Inpatient	Residential	Methadone	Outpatient Non-methadone	Combination
HIV/AIDS education/ counseling/support	75.8 (3.83) ^c	90.2 (1.70)	93.8 (1.93)	68.7 (1.89)	87.4 (2.51)
Transportation	54.3 (3.26)	86.2 (1.91)	28.9 (2.60)	34.9 (1.83)	69.1 (3.59)
TB screening	85.1 (2.41)	62.4 (2.99)	92.9 (0.67)	21.8 (1.69)	84.1 (2.45)
Employment counseling/training	23.3 (2.96)	65.5 (2.37)	57.5 (2.72)	30.3 (1.93)	48.7 (4.16)
Smoking cessation	40.8 (3.78)	30.5 (2.44)	12.8 (1.35)	19.3 (1.57)	35.2 (3.29)
Academic education/GED	13.7 (1.83)	41.4 (2.54)	19.8 (2.32)	7.4 (1.03)	27.5 (2.68)
Child care	0.9 ^d (0.46) ^d	15.4 (1.96)	7.8 (0.76)	12.7 (1.22)	17.0 (2.40)
Prenatal care	32.6 (3.15)	19.1 (1.87)	19.0 (2.18)	5.6 (0.71)	22.8 (3.48)

^a Source: 1997 Alcohol and Drug Services Study, Phase I facilities data (weighted). Office of Applied Studies, Substance Abuse and Mental Health Services Administration.

^b More than 99% of facilities responded to each service question.

^c Standard errors in parentheses.

^d Coefficient of variation (CV) for this estimate is greater than or equal to 0.3 indicating that this number should be interpreted with caution.

(76%) and outpatient nonmethadone facilities (69%) made HIV/AIDS services accessible to clients. In recent years, residential facilities have started to give more attention to the treatment of HIV/AIDS clients and have attempted to provide more support and care to those clients.²⁶ This is reflected by the estimated 90% of residential facilities nationwide that offered HIV/AIDS services, a level similar to the 94% of methadone facilities that offered these services.

In addition to HIV/AIDS services, TB screening was also highly accessible at methadone facilities (93% of facilities had TB screening). In fact, TB screening was offered at a larger proportion of methadone facilities than at any other type of care; no doubt this related to the high risk behavior and health problems associated with that client population.

Table IV indicates that a higher proportion of residential facilities (86%) offered transportation services to their clients than did any other type of care. Transportation was accessible at more inpatient and combination types of care than at outpatient types of care. This could include transportation to get to treatment or to get to services that were delivered off-site.

In addition, more residential facilities offered employment counseling/training and academic classes than did other types of care. These are services that are important to rehabilitation and to helping the client to lead a more productive life while recovering from alcohol and drug abuse. Therefore, these findings lend support that services offered are related to the treatment goals of the facility.

7.4. Access to Services by Treatment Settings

Substance abuse treatment can be conducted in various treatment settings. Setting refers to the physical treatment environment. For example, outpatient treatment can be offered either in a free-standing outpatient facility, a community mental health center, or in a unit within a hospital. Similarly, a methadone clinic can be situated within an outpatient unit, a hospital unit, or a community mental health center. Different settings are associated with access to different services. Often, treatment settings mirror the service patterns in types of care. For example, facilities that were in residential settings were more likely to offer self-help/mutual support (90%) and relapse prevention (92%) services compared to those that were not in residential settings (65% and 75% respectively). These services were also highly accessible in residential type of care. Outcome follow-up was also more accessible in residential settings (78%) than in nonresidential settings (63%). Outcome follow-up was significantly more accessible in residential type of care (74%) than outpatient nonmethadone type of care (61%), hospital inpatient type of care (60%), or methadone type of care (44%). In addition, it was noted that transportation, employment, and academic services were offered in more residential settings (84%, 64%, and 40% respectively) than in nonresidential settings (39%, 32%, and 10% respectively). Thus, access to services in a particular treatment setting will often parallel that of the corresponding type of care.

Other service patterns that were similar in type of care and setting were access to detoxification and prenatal care. Access to detoxification services was greatest in

hospital type of care; it was offered at 88% of hospital facilities. Facilities in hospital settings also offered detoxification (73%) more often than facilities that were not in hospital settings (17%). Prenatal care was offered at 33% of hospital inpatient facilities, which was more than any other type of care except for combination type of care. Similarly, facilities in hospital inpatient settings (20%) also offered prenatal care more than facilities not in hospital inpatient settings (10%).

Furthermore, combined substance abuse and mental health treatment was most likely offered in community mental health settings (88%) than in noncommunity mental health settings (62%). This is further evidence that services accessible at a facility were often related to the orientation of the facility as determined by type of care or treatment setting.

7.5. Access to Services by Facility Ownership

Table V shows that there were different service patterns for support services by facility ownership. Treatment services did not vary much by ownership. The various treatment services surveyed in ADSS were equally accessible in all types of facility ownership with a few exceptions. One notable exception was that group therapy was somewhat less accessible in private for-profit facilities (86.7%) than in private nonprofit (94.1%) and public facilities (94.3%). Other exceptions were that self-help/mutual help groups, individual therapy, and outcome follow-up were more accessible in private nonprofit than private for-profit facilities. In contrast, support services were more accessible in private nonprofit and public facilities than in private for-profit-facilities. This was true of all the support services surveyed in ADSS except for smoking cessation services. For TB screening and prenatal care, all pairwise comparisons by ownership were significant. These services were most accessible in public facilities and least in private for-profit facilities.

Table V. National Estimates of Percent of Facilities Offering Various Kinds of Support Services by Facility Ownership^a

Support Services ^b	Facility Ownership		
	Private-for-profit	Private-non-profit	Public
HIV/AIDS education/counseling/support	67.3 (3.12) ^c	78.5 (1.51)	81.8 (2.67)
Transportation	29.3 (3.57)	55.2 (1.86)	55.4 (3.49)
TB screening	32.2 (2.99)	43.4 (1.69)	58.1 (3.47)
Employment counseling/training	26.0 (2.30)	45.1 (1.86)	39.6 (3.45)
Smoking cessation	21.8 (2.64)	23.4 (1.56)	30.8 (3.35)
Academic education/GED	6.6 (1.32)	20.5 (1.30)	17.6 (2.87)
Child care	4.2 (1.21)	15.1 (1.23)	19.5 (3.26)
Prenatal care	6.9 (1.56)	12.0 (0.81)	19.5 (2.83)

^a Source: 1997 Alcohol and Drug Services Study, Phase I facilities data (weighted). Office of Applied Studies, Substance Abuse and Mental Health Services Administration.

^b More than 99% of facilities responded to each service question.

^c Standard errors in parentheses.

7.6. Access to Services by Facility Percent of Public Revenue

In addition to facility ownership, it is important to consider the facility's funding stream. The percentage of public revenue, an indication of how much a facility is dependent upon public funding, is another facility-level characteristic that may play a role in determining access to services. Medicaid, Medicare, and other federal funding, as well as state and local block grants, are among the sources of revenue included in public revenues that the ADSS study examined.

Although individual therapy was highly accessible at all facilities regardless of level of dependence on public revenue, facilities with no public revenue were less likely to offer individual therapy than were facilities with some public revenue. There was also a tendency for detoxification to be more accessible in facilities with some public revenue compared to facilities with no public revenue. Self-help/mutual-help groups tended to be more accessible in facilities with greater than 50% public revenue compared to facilities with 50% or less. Relapse prevention groups were more accessible at facilities with more than 90% public revenue. Thus, for a number of treatment services, facilities with some public funding or a higher percentage of public revenue were more likely to offer the service than were facilities with a lower percentage of public revenue or none at all.

A similar pattern existed among support services. Employment counseling/training, academic education/GED classes, prenatal care, and childcare were more accessible at facilities with more than 50% public revenue. As the percentage of public revenue increased, the likelihood that a facility would offer transportation services increased for up to 90% public revenue. Increases beyond 90% public revenue did not further increase the likelihood of access to transportation services. HIV/AIDS education/counseling/support and TB screening were least accessible in facilities with no public revenue. Thus, public revenue was associated with better access to many support services.

7.7. Access to Services by Facility Level of Affiliation

Level of affiliation refers to whether a facility is an independent entity or an integrated part of another organization. There is some evidence from the literature^{10,19} that being affiliated with another entity may increase the resources at a facility and therefore increase access to services. There was some support for this in the ADSS study, although not consistently across all kinds of services. ADSS categorized facilities into three levels of affiliation: facilities that were parent facilities to other facilities, facilities that were affiliated with another organization but were not parents to them, and facilities that were independent entities with no organizational affiliations. In terms of treatment services surveyed in ADSS, Table VI indicates that group therapy and self-help/mutual-help groups were offered at fewer facilities that were not affiliated with any other organization. Relapse prevention, aftercare, and outcome follow-up were offered to clients in more parent facilities than in affiliate or nonaffiliate facilities.

Examining support service patterns by level of affiliation reveals that there

Table VI. National Estimates of Percent of Facilities Offering Various Treatment Services by Level of Affiliation^a

Services ^c	Level of Affiliation ^b		
	Parent	Affiliate	Non-affiliate
Group therapy	94.6 (1.47) ^d	93.9 (1.21)	88.7 (2.07)
Self help/mutual help group	74.7 (2.62)	73.4 (2.10)	65.4 (2.92)
Relapse prevention	84.6 (2.07)	78.6 (1.75)	74.6 (2.29)
Aftercare	87.5 (1.74)	81.6 (1.33)	80.2 (2.39)
Outcome follow-up	73.8 (2.37)	63.9 (2.57)	65.7 (2.61)

^a Source: 1997 Alcohol and Drug Services Study, Phase I facilities data (weighted). Office of Applied Studies, Substance Abuse and Mental Health Services Administration.

^b More than 99% of facilities provided affiliation information.

^c More than 99% of facilities responded to each service question.

^d Standard errors in parentheses.

was little impact on access to support services. The only notable exceptions were that childcare and prenatal care were more accessible in parent facilities than in facilities with no affiliation with another organization. Also, HIV/AIDS services were more accessible at parent and affiliate facilities than at nonaffiliates.

8. Conclusions

The substance abuse treatment system offers a variety of treatment and support services to clients. Access to various services varies by facility characteristics. Generally, treatment services, which are directly oriented toward the treatment of alcohol or drug abuse, are more accessible to clients than support services, which are oriented toward problems associated with alcohol or drug abuse. Overall, individual therapy, group therapy, and comprehensive assessment/diagnosis are services most accessible to clients in the treatment system. All treatment services surveyed in the ADSS study are offered at two-thirds or more of the nation's substance abuse treatment facilities, with the exception of detoxification and acupuncture. Support services are accessible at less than half the facilities with the exception of HIV/AIDS services.

Various types of therapy are offered at most facilities, however, there are variations in service patterns depending on the treatment orientation of the facility. Individual therapy is less accessible in hospital inpatient type of care than any other type of care. On the other hand, services that are more accessible in hospital inpatient facilities than in other types of care are detoxification and prenatal care. Services accessible in substance abuse treatment are often related to the treatment orientation of the type of care.

Some facilities have specific goals or a philosophy of treatment and this too can have an impact on access to services. Residential facilities have a goal of rehabilitation and recovery through self-help and mutual support^{23,24,25} The service patterns at residential facilities seem to support that treatment goal and philosophy. Self-help and mutual support groups are more accessible at residential facilities than at outpatient facilities. Relapse prevention is important to rehabilitation, and the ADSS data indicate that relapse prevention is more accessible at residential facilities than at any other type of care except combination facilities. In order for the clients to achieve rehabilitation, they need to improve upon skills that will help them lead more productive lives after treatment, and they need to have a means to attend treatment. Transportation, employment counseling/training, and academic education/GED classes are services that are also more accessible in residential type of care compared to other types of care. Thus, there seems to be a fair amount of support that residential facilities, compared to other types of care, offer more access to services that are important for rehabilitation and this is in line with the goals and treatment philosophy of residential type of care.

Facility client base is another variable that is related to services patterns. Injection drug use and health problems are prevalent among methadone clients;²⁷ therefore, services such as HIV/AIDS and TB screening services are much needed services for this population. In order to address the need, TB screening is offered in methadone facilities more than in other types of care. HIV/AIDS education, counseling, and support are offered in more methadone facilities than in hospital inpatient and outpatient non-methadone facilities.

The impact of facility ownership on services is seen in the variation in access to support services. Treatment services do not vary significantly due to facility ownership. The only exception to this is that group therapy is offered in fewer private for-profit facilities than other ownership types. Support services, on the other hand, are more accessible in private nonprofit and public facilities than private for-profit facilities. This is true of all support services surveyed in ADSS except for smoking cessation. This may indicate a service deficit in the private for-profit sector or it may simply reflect the different clients who enter treatment at private for-profit facilities. DATSS data indicate that private for-profit outpatient facilities serve a different clientele than private nonprofit and public facilities. A smaller percentage of clients in treatment in for-profit units are under age 20, unemployed, unable to pay for treatment, or have multiple drug problems.⁸ It is likely that clients in private for-profit treatment tend to have less severe problems and be less in need of support services compared to clients in treatment in private nonprofit and public facilities.

Thus, it appears that for support services, the for-profit status is the key distinguishing variable that differentiates facilities along ownership lines. Burke and Rafferty⁸ also found that ownership-related differences were most evident between private for-profit versus private nonprofit and public facilities. Private for-profit facilities are more likely to depend on private funding, such as client self-pay fees and private insurance. At the same time, these facilities are less likely to depend on the criminal justice system and social service agencies for referrals; therefore, a different client base is in treatment at private for-profit facilities compared to other facilities.

HIV education/counseling/support and TB screening are offered in more publicly owned facilities and private nonprofit facilities than private for-profit facilities. In addition, HIV education/counseling/support is offered at fewer facilities that have no dependence on public revenue than it is at facilities with some public revenue. Furthermore, fewer facilities that have 50% or less dependence on public revenue offer HIV/AIDS services compared to facilities that depend on public funds for more than 50% of their revenue. TB screening is offered in fewer facilities with no dependence on public revenue than facilities with some public revenue. This concurs with other research¹⁰ that attributed these findings to facility ownership. ADSS data suggest that it is not simply ownership that is important, but that facility funding streams also need to be considered. Facilities with greater dependence on public revenue tend to offer more support services than facilities with less dependence on public revenue. This is likely because the former tend to treat clients who enter treatment with more problems, and therefore, there is greater need for more support services in facilities with higher dependence on public revenue.

Ownership and funding stream are important facility characteristics that are related to access to services. The mission of public facilities, and perhaps private nonprofit facilities as well, is to serve clients with a range of problems and who have fewer resources available to them.^{28,29,30} Therefore, services in public and private nonprofit facilities are likely driven by the client base, and many of these facilities receive block grants to serve special populations, such as HIV/AIDS clients, TB clients, injection drug users, and pregnant women. In terms of funding stream, fewer facilities with no dependence or low dependence upon public revenue offered treatment and support services. Because of block grants directed toward special populations, it is not surprising that facilities with more public revenue are more likely to offer client access to services such as HIV/AIDS services, TB screening, child care, and prenatal care.

ADSS data indicate that there is some evidence that parent or affiliated facilities are associated with more services than unaffiliated facilities. Treatment services are more affected by level of affiliation than are support services. Facilities that are not affiliated may have fewer resources compared to parent and affiliate facilities that may share resources, and this may have negative impact on their ability to offer services to clients. This supports findings by Alexander and his colleagues¹⁸ that affiliated units offered more services.

In conclusion, facility characteristics have impact on access to services during alcohol and drug treatment. Degrees of access to specific types of services depend on facility characteristics. Treatment services directly oriented toward treating alcohol or drug abuse tend to be offered at the majority of facilities. Support services, on the other hand, are far less common. The substance abuse treatment system continues to evolve in an era of managed care with increasing pressure to reduce costs. Past trends indicate a decline in services offered which might be expected to continue if there are continued cost pressures. It is therefore critically important to continue to track services offered at substance abuse treatment facilities and to study how the different mix of types and intensity of services impacts on client outcomes so that services are provided in the most cost-effective manner.

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Patient Placement Criteria and Their Relation to Access to Appropriate Level of Care and Engagement in Alcoholism Treatment

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Abstract. Patient placement criteria (PPC) facilitate treatment matching through detailed, standardized assessment of patients' needs. This process affords the alcoholism treatment field an opportunity to address issues that influence access to appropriate level of care by highlighting these issues during the assessment.

The American Society of Addiction Medicine Patient Placement Criteria can integrate assessment of social and environmental, institutional and patient issues that affect access to appropriate care and treatment engagement. They can ultimately improve access through an iterative approach: developing a broad consensus on guidelines based on research evidence and expert clinical opinion, making criteria clear and easy to use both for assessment and for teaching purposes, addressing the needs of special populations, and testing and improving the validity of decision rules to achieve optimal access and treatment engagement. Early evidence suggests that PPC are promising but there is much about them that remains to be tested and improved.

Alcohol dependence and abuse show the highest lifetime prevalence of all mental disorders according to the Epidemiological Catchment Area study (13.5%),¹ but the proportion of people with alcohol problems who remain untreated versus those who are treated can range from 3:1 to 13:1.² The problem is compounded by premature dropout from treatment when patients fail to engage, which for psychotherapy in general can range from 20% to 75%.³ Thus it becomes extremely important to engage those who request treatment by matching them to the most appropriate setting for their needs, helping them to transition to the next level of care, and supporting them through the entire treatment process. While other papers in this

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volume focus on the first step in the process, i.e., gaining access to any treatment, this paper examines how patient placement criteria have the potential to facilitate access to appropriate treatment, thereby improving the chances that the patient will engage in the treatment process. (For other models of treatment entry and engagement, see Moos, King, et al. (1997)⁴ and Finney and Moos (1995)⁵.) In this scenario, appropriate treatment is one which best meets the patient's needs and which the patient is willing to enter.

The definition of access to appropriate treatment or appropriate level of care refers to patient-based decisions rather than program-based decisions, i.e., what treatment setting is most appropriate for the patient and which the patient is willing to attend. As of this writing, there is very little research available on exactly which level of care is most appropriate for which patient. At one time, clinicians assumed that patients with alcohol problems needed inpatient care of at least thirty days. Nowadays insurers assume that very few patients need any inpatient treatment. As treatment-matching approaches continue to be investigated, a more sophisticated blend of these views will emerge.

Treatment engagement generally means that the patient has entered into and begun participating in treatment, although this concept has been operationalized as anything from showing up for intake to finishing an initial course of treatment or demonstrating efforts to change. Neither research nor philosophy have established the optimal definition of treatment engagement, although much of treatment-matching research speaks to how to engage patients.

This review examines how the American Society of Addiction Medicine (ASAM)'s Patient Placement Criteria (PPC) can improve access to appropriate treatment through a thorough assessment of the patient's needs, thereby improving engagement in treatment by addressing factors that may hinder engagement, including social/environmental, institutional, and patient factors, and by incorporating this knowledge into the placement process. This paper describes the ASAM PPC, distinguishing their function from practice guidelines, and discusses the pros and cons of each for treatment engagement. The ways in which PPC already facilitate appropriate placement and treatment engagement are examined and recommendations on how PPC may improve access to appropriate treatment and therefore engagement are offered.

1. Patient Placement Criteria¹ and Practice Guidelines: Effects on Access to Appropriate Treatment and Engagement

The ASAM PPC provide a method of assessing what is appropriate treatment by providing detailed descriptions of different levels of care as well as criteria along six dimensions for assessing the level of care needed by the patient. Criteria for

¹It should be noted that although there are many versions of PPC in use, most of these are based on the ASAM PPC, and none of the others are in as widespread use as the ASAM PPC. Therefore, references to PPC and ASAM PPC in this review can be considered interchangeable.

continuing care or discharge to another level of care are also specified. The PPC address all substances of abuse. Alcohol, heroin and cocaine are addressed specifically only under Dimensions 1 and 2. The six dimensions of symptom severity⁶ specify criteria for each level of care, with signs and symptoms increasing in severity as the level of care increases in intensity and restrictiveness of setting:

- Dimension 1, Acute Intoxication or Withdrawal Potential—assesses the risk of hazardous consequences during withdrawal. Questions to be considered by the clinician include, “What risk is associated with the patient’s current level of acute intoxication?”⁶ (p. 14)
- Dimension 2, Medical Conditions and Complications—assesses the patient’s physical condition and how chronic medical illness may complicate treatment. Questions to be considered by the clinician include, “Are there other physical illnesses, other than withdrawal, that need to be addressed or that may complicate treatment?”⁶ (p. 14)
- Dimension 3, Emotional/Behavioral Conditions and Complications—assesses the patient for other psychiatric disorders or current emotional problems that may affect the course of treatment as well as addiction-related emotional problems that may need additional treatment. Questions include, “Are there current psychiatric illnesses or psychological, behavioral or emotional problems that need to be addressed or which complicate treatment?”⁶ (p.14)
- Dimension 4, Treatment Acceptance/Resistance—assesses motivation for treatment by considering external pressures, expressed internalized understanding of the need for treatment, and the patient’s level of involvement in preparing for treatment and recovery. Questions include, “Does the patient appear to be compliant only to avoid a negative consequence? How ready is the patient to change?”⁶ (p. 14)
- Dimension 5, Relapse/Continued Use Potential—examines relapse potential or the likelihood of ongoing substance use by evaluating the patient’s coping skills, expectancies, and severity of dependence. Clinicians might ask, “How aware is the patient of relapse triggers, ways to cope with cravings to use, and skills to control impulses to use?”⁶ (p. 14)
- Dimension 6, Recovery Environment—examines the environment in which the patient lives to evaluate the presence of both concrete and emotional supports and impediments. Clinicians might ask, “Are there any dangerous family members, significant others, living situations, or school/working situations that pose a threat to treatment engagement and success?”⁶ (p. 14)

The four major levels of care enumerated by the first version of the ASAM PPC include: outpatient services (Level I), intensive outpatient services (Level II), residential services (Level III), and inpatient services (Level IV).⁷ Within each level, the ASAM PPC state the hours of supervision and the presence of medical and other specialty services that should characterize that treatment modality. The second edition of the PPC (PPC-2) adds early intervention (Level 0.5) and opioid maintenance therapy (OMT) to the levels, and also describes multiple sublevels of care provided in each setting⁶ For instance, Level II separately describes both intensive outpa-

tient care (Level II.1) and partial hospitalization (Level II.5). PPC-2 describes a total of ten different types of treatment programs within these levels. For each program type within each level of care, placement criteria based on each of the six dimensions are specified.

In contrast to PPC, practice guidelines often include information on the etiology, symptoms, and specific therapies for different manifestations of these disorders as well as some description of levels of care and patient-treatment matching information. Three of the best examples are the American Psychiatric Association's Practice Guidelines for Substance Use Disorders,⁸ the Center for Substance Abuse Treatment's (CSAT) Treatment Improvement Protocols⁹ series, and the Veterans Health Administration (VHA) Clinical Practice Guideline for Substance Use Disorders (working draft).¹⁰ Practice guidelines may be comprehensive in scope, describing appropriate treatments that have been shown to be effective, but they tend to be less specific in detailing how individual decisions should be made using their criteria. They tend to be most relevant once the level of care has been chosen. The ASAM PPC are more specific in purpose than most practice guidelines and are also more detailed in delineating decision rules about placement in different levels of care.^{6,7} PPC are potentially more effective in helping clinicians determine the appropriate level of care because they provide a concrete methodology for making these decisions. Both PPC and practice guidelines document what is known about appropriate treatment and provide a common framework for clinicians, payors, and program personnel to communicate with each other. Both are increasingly used by insurers and managed care organizations to decide what treatment to pay for, by providers to justify the types of treatments they provide, and by professional organizations to improve the quality of treatment through education of professionals both within and outside their area of expertise.¹¹⁻¹⁴

In choosing to focus on placement into levels of care, ASAM created guidelines that fit well with alcohol and other drug treatment as currently provided in this country. It should be noted, however, that in their focus on settings rather than the services delivered within settings, PPC do not address the "one size fits all" approach to treatment still prevalent in which every individual who enters a particular program gets virtually the same treatment at the same level of care.^{6,14,15} Thus, even getting to the right level of care does not ensure access to the most needed and preferred services. Because the ASAM PPC are so widely used, ASAM can eventually lead the field into structuring treatment based on an individualized analysis of each patient's needs. One way of approaching this task is to find a way to link PPC with one of the sets of practice guidelines mentioned above.

2. Assessment of Appropriate Level of Care and Engagement Issues in PPC

Barriers to accessing appropriate treatment may be grouped into three factors: patient-specific, social/environmental, and institutional (i.e., health care systems, government, agency). To the extent that PPC identify, assess, and base place-

ment recommendations on the factors outlined below, patients' access to appropriate level of care will be enhanced. Table I summarizes the organization of access-related factors according to the ASAM PPC. As indicated by the table, each of the three factors (patient, social/environmental, and institutional) that influence access receives consideration by one or more of the dimensions of the ASAM PPC. The following are some examples of important domains that are assessed by the ASAM PPC that relate to access to different levels of care.

2.1. Patient-Specific Factors

Patient factors that are important considerations for effective access to care fall under three of the six PPC dimensions and include cognitive impairment, the pres-

Table I. Factors Affecting Access to Appropriate Care as Assessed by ASAM PPC

ASAM PPC Dimension	Social/Environmental Factors	Institutional Factors	Patient Factors
1: Acute Intoxication and Withdrawal	Supportive monitoring at home can facilitate safety of ambulatory detoxification	System access is optimized with flexible medical management or monitoring on PRN basis	Symptom severity and/or history dictates level of care
2: Biomedical Conditions and/or Complications	Supportive monitoring at home can facilitate ambulatory medical contacts	System access is optimized with flexible medical management or monitoring on PRN basis	Symptom severity dictates level of care
3: Psychiatric Conditions and/or Complications	Supportive environment or treatments already being received	Availability of appropriate mental health services, either integrated or via coordinated care	Need for precautions due to suicide risk, impulsivity, or self-care impairments
4: Treatment Acceptance & Resistance	Willingness of significant others to be involved, mandated treatment or employee assistance program	Availability of appropriate services, including wraparound services, either integrated or via referral	Level of patient behavioral motivation and preferences
5: Relapse/Continued Use Potential	Social network supports for abstinence and insulation from drug dealing and stressors in community	Degree of stimulus control/exposure on site and resources for coping skills training and social support	Recent period of abstinence, knowledge and self-awareness of relapse risks and coping skills
6: Recovery Environment	Transportation, family responsibilities, work/school obligations, social support	Degree of security in settings (e.g., locked ward vs. outpatient treatment)	Ability to structure activities and contacts to sustain recovery effort and minimize exposure

ence of other mental disorders, lack of knowledge about treatment, inadequate motivation for treatment, and preferences for placement.

2.1.1. Dimension 3. Cognitive impairment. Cognitively impaired patients may need a supportive environment while they “dry out,” and psychosocial treatment may need to be deferred until they can comprehend the psycho-educational, behavioral, and dynamic components of treatment. The ASAM PPC address the individual's cognitive function in Dimension 3. For instance, Level III.3 (clinically managed medium-intensity residential treatment) is indicated if “The resident’s cognitive functioning is sufficiently impaired that the individual is unable to participate in a more intensive level of care.”⁶ (p. 91) However, missing from this and other formulations is the evidence that chronic heavy drinking causes cognitive deficits and disorganization that may often be subtle. It may be difficult or impossible to distinguish these from motivational problems without the benefit of some formal neuropsychological screening. This may be a widespread barrier to engagement in alcoholism treatment.

Dual diagnosis. Dual diagnosis, i.e., the presence of both a substance use disorder and another mental disorder, is a strong determinant of both the patient's ability to engage in treatment and the outcome of that treatment. The functional implication of other mental disorders is assessed in Dimension 3. The ASAM PPC separate placement decisions regarding concomitant Axis I disorders (i.e., acute psychiatric illness) from Axis II disorders (i.e., personality disorder). If a severe psychiatric safety risk such as suicidality is deemed present, the ASAM PPC justify admission to a medically managed, e.g., locked psychiatric hospital unit. If a moderately severe psychiatric condition coexists with a moderately severe substance use disorder, the ASAM PPC warrant medically monitored inpatient placement (i.e., just short of a hospital unit)—unless adequate social supports may be put into place through family supports or low intensity residential placement. Level III.5, i.e., a therapeutic community, is usually recommended for patients with diagnosed Axis II disorders of low to moderate severity or with moderate to severe impulse control problems or antisocial behavior.

Few studies have been conducted on the best treatment and setting for patients with a dual diagnosis. Swindle et al. (1995)¹⁶ found that dually diagnosed veterans stayed in treatment longer and were less likely to be readmitted if they were placed in programs that specialized in the needs of dual diagnosis patients. Drake and colleagues (1997)¹⁷ had similar findings with dually diagnosed homeless adults. The ASAM PPC recommend that patients with a “diagnosed emotional/behavioral disorder” be considered for Level II.1 (intensive outpatient treatment) or higher (p. 69).⁶ Level I (outpatient services) is considered adequate for patients whose emotional problems are due only to a substance-related condition; otherwise, patients with a dual diagnosis require concurrent access to psychiatric services (p. 57).⁶

The ASAM PPC do not overtly address dual diagnosis concerns that may disproportionately affect women. Women are more likely to abuse substances to relieve negative affect and have a higher overall rate of co-morbid psychiatric disor-

ders, such as clinical depression and PTSD.¹⁸⁻²⁴ Women are more likely to report seeking treatment due to intrapsychic difficulties while men report more social/environmental problems.^{21,25} Women are more likely than men to experience, or at least express, negative affect in general and psychological symptoms, in particular when drinking heavily.²⁶ Given these circumstances, women may be referred more often than men to higher levels of care because their psychological symptoms are better expressed and therefore more adequately assessed, but women may find it more difficult to engage in treatment because of social/environmental issues, such as the disapproval of family or the need for childcare. Conversely, women (or men) whose psychiatric problems are not assessed may have difficulty engaging in lower levels of care that do not meet their needs.⁴

2.1.2. Dimensions 4 and 5. Dimension 4 of the PPC focuses on motivation and acceptance of a personal addiction while Dimension 5 focuses on relapse risk. In these two dimensions, the PPC seek to protect highly ambivalent and relapse prone patients from exposure to substances during acute treatment by assigning them to restricted settings such as halfway house or partial hospital. The complex branching structure of the PPC sometimes permits two settings to be combined to allow greater flexibility in resource configuration at possibly lower cost, when neither one alone would suffice. For example, one of the criteria on Dimension 5 for the low-intensity extended residential level of care (Level III.1) states, "The resident is at high risk of substance use without close 24-hour monitoring and structured support (as evidenced, for example, by lack of awareness of relapse triggers . . . or ambivalence/resistance to treatment), and these issues are being addressed concurrently in a Level II program."⁶ (p. 93) Therefore, appropriate treatment can be accessed for such a patient either through a more treatment-intensive Level-III.3 or III.5 program alone, or through a combination of III.1 with II.1 (e.g., day treatment) or II.5 (e.g., partial hospital).

Patient preferences. Patient preferences for level of care play an important role in placement. Patients do not always accept a referral to the recommended level of care. For instance, in the ASAM Criteria Validity study, although participants agreed in advance to randomization, significantly fewer participants followed through on entering Level II placements than Level III placements (38% versus 62%, $p=.013$). Similarly, Plough et al²⁷ and McLellan et al.²⁸ found that patients were more likely to cooperate with a referral when it matched their preferences. The Boston Target Cities study²⁷ found that patients who were evaluated using a brief adaptation of the ASAM Criteria consistently requested lower levels of care than the evaluation recommended. The actual placements were more likely to be made to lower levels of care because patients were willing to attend those placements.

Lack of knowledge about treatment. Many people come in to treatment with only a vague understanding of what to expect and what will be expected of them, even if cognitively intact.²⁹ Others will not engage in treatment because they have negative expectations of treatment that prevent them from seeking help.^{30,31} General population surveys, as well as studies of patients engaged in treatment, report that the reasons most often endorsed for not seeking substance abuse treatment

include "thinking the problem was not serious enough for treatment, wanting to handle the problem on (their) own, . . . thinking the problem will resolve itself, . . . concern about the stigma of alcohol treatment, . . . [and] fear of embarrassment if others find out."³⁰⁻³² Once people get to treatment, it is important to allay their fears as well as educate them about treatment to facilitate acceptance of the appropriate level of care.

One advantage of the standardized PPC approach is that it necessitates an in-depth, multidimensional interview. This in itself may be instructive for patients who might otherwise reject appropriate treatment settings due to lack of appreciation of their risks and vulnerabilities. In the Boston Target Cities Project, intakes had an average duration of 2.5 to 3 hours, yet over 80% of patients indicated that the duration of assessment was "just about right."²⁷ There is a clinical benefit from a comprehensive assessment of a patient's personal needs and resources in that the process highlights barriers to engagement that may be addressed. This may explain why an evaluation of 5,463 detoxification referrals found better initial treatment retention among patients who underwent the ASAM PPC-based evaluation at Central Intakes compared to those who appeared directly at detoxification units without the standardized assessment (odds ratio =1.18, $p < .02$). Also, patients evaluated by Central Intakes were less likely to return for detoxification within the next 90 days (odds ratio=.57, $p < .005$). Patients often state that they found a research interview helpful, that they learned from it, and that they often call the research assistant for referrals and questions about treatment.^{33,34} To enhance patient acceptance of objective placement assignments, it may be helpful to assess the patient's response to information offered by the clinician about alcohol problem severity. Patient response can potentially be used as an in-session indicator of acceptance and motivation in establishing appropriate placement.

2.2. Social/Environmental Factors

The social and environmental factors that need to be taken into account in engaging patients in appropriate treatment are considered in Dimension 6. Factors include lack of perceived social support and network support from family, significant others, or friends. Lack of concrete supports for entering and engaging in a particular level of care include the unavailability of childcare, transportation problems, financial problems, inability to take time off from work, and fear of an employer's discovery of an alcohol problem. Although these factors may affect any access to treatment, they also have differential effects on access to particular levels of care as well as on engagement in treatment. In the absence of factors that are commonly believed to be conducive to successful treatment access and engagement, the ASAM PPC require that a patient be matched upward in intensity of setting, e.g., from outpatient to day treatment, or from day treatment to residential care.

2.2.1. Perceived Social Support and Network Supportive of Abstinence. Clinical experience teaches that one of the most powerful influences in a patient's decision to seek treatment is social, and particularly family, pressure. The PPC, in Dimen-

sion 6, assess recovery environment issues such as environmental exposure to substances, or to friends and family who use substances or who demonstrate passive opposition to recovery. The decision rules are sufficiently sophisticated as to recognize that emotional support is a complex issue that may depend on the quality of the support. Isolation and social withdrawal are recognized as factors necessitating more-than-once-weekly (i.e., Level I) outpatient care. Significant relationships are recognized as sometimes taking the form of critical rather than empathic pressures that may even be counterproductive or "sabotaging"—in which case level II.5 (partial hospitalization) is preferred. One of the early findings from the NIDA-funded ASAM Criteria Validity study was that 700 subjects enrolled in the study but only 366 attended the first day of the randomized treatment.³⁵ Analysis of predictors of failure to engage showed that the more days of family conflict a subject experienced in the month prior to enrollment, the less likely she or he was to engage in treatment.³⁶ Family conflict was defined as conflicts with any family member in the last thirty days. This finding points to the need to study the effect of family-related negative pressures on treatment access and engagement.

Emotional support from one's spouse has been associated with abstinence from alcohol,³⁷ and support from family and friends was associated with a decreased likelihood of readmission to treatment.³⁸ In addition to perceived social or emotional support, the number of people in the patient's network who are supportive of abstinence has been shown to be a significant factor in achieving and maintaining abstinence.^{39,40} Although PPC do not address modalities, several modalities may work as interventions for placement, helping social systems influence a resistant patient to accept an appropriate level of care: behavioral marital therapy,⁴¹ network therap⁴² and the community reinforcement approach.⁴³ Such modalities may have the further role of fostering engagement and compliance, once an appropriate setting is negotiated.

Access to appropriate placement may be particularly impeded by the social support constraints that affect women. Women who have a drug or alcohol problem often seem to have a general shortage of social support available to them,^{44,45} possibly as a result of the stigma attached to female substance abusers. Family responsibilities may disproportionately cause women to engage in treatment at a lower rate than men. Family and friends may be more likely to oppose a woman's entry into treatment, both for fear of the stigma attached and for concerns about who will care for her children or how to make up for her loss of pay.²⁹ There is evidence that substance-abusing women are initiated into use by their partners, and this relationship also can contribute to relapse or to resistance to treatment engagement.^{25,46-48} Gender differences in the rates of engagement were notable in the ASAM Criteria Validity study. In this study, significantly more men than women engaged in treatment (54% versus 44%; $p=.015$). In both Levels III and II (residential and day treatment, respectively) to which subjects were randomly assigned, a greater percentage of men than women engaged in treatment, and the lower engagement rate for women was statistically significant for Level III residential care ($p=.003$). Therefore, it may be of paramount importance to consider the effect of treatment engagement on disruption of support networks that maintain substance use.³⁹ Current PPC and

treatment guidelines offer no specific approaches to measuring family or social conflict as yet, although the ASAM PPC do require clinicians to perform a qualitative evaluation of family support for treatment and for continued substance use.

2.2.2. Concrete Supports. Age is another factor that may interact with social and environmental access issues. Those over 65 are more likely to cite transportation issues as a problem in seeking treatment,³⁰ whereas those under 65 cite fear of an employer discovering their problem as an obstacle to entering treatment.³ In Dimension 6, ASAM's PPC would justify residential rehabilitation as an appropriate level of care for individuals without adequate transportation. Although PPC do not specifically indicate alternatives, van transportation or in-home treatment may be as efficacious and perhaps less costly. In general, the range of social and environmental considerations of the PPC seems broad, and numerous branching points are available to guide patients to settings with the restrictiveness and supports that are necessary to initiate recovery.

2.3. Institutional Factors

Institutional issues that promote access to appropriate treatment and engagement include a coordinated system of care, i.e., organized referral processes, immediate treatment availability, and adequate capacity, including programs for dually diagnosed patients,⁴⁹ adolescents, and women who are pregnant or with resident children.⁵⁰ These issues are highlighted by the ASAM PPC descriptions of various services that should be offered within each level of care. The PPC clearly delineate a continuum of levels and are predicated on the assumption that every community must possess this continuum in order to provide for the needs of a clinical population. Theoretically, implementation of PPC should also provide a sound basis for a coordinated system of care. Clear guidelines should aid in communication between providers at different agencies in the referral process. Finally, placement criteria serve to inform other health care professionals about impartial criteria for referral for care. The potential benefits of PPC in clarity and objectivity are crucial at this stage of health economics in the United States, as cost factors are rapidly impinging on two issues: access to higher levels of care and length of stay for acute services.

2.3.1. Access to higher levels of care. PPC may ultimately improve a key resource problem: that restrictions on access to higher levels of care due to cost containment measures contribute to a system that both patients and clinicians often experience as disjointed and unresponsive. Insurers have often restricted access to inpatient and residential care and decreased length of stay in these settings, based in part on evidence that partial hospitalization and day treatment programs have not shown significant differences in outcomes for people with alcohol problems compared to inpatient treatment.⁵¹⁻⁵³ The ASAM PPC should promote rational allocation of intensive treatment to those who need medical management or supervision, as assessed in Dimensions 1 (Acute Intoxication or Withdrawal Potential), 2 (Medical Conditions or Complications), or 3 (Emotional/Behavioral Conditions or Complications). The PPC decision rules specify that severe problems on any one of these

three dimensions warrant admission to hospital level care. In point of fact, the concordance between ASAM PPC-recommended placements and insurer-recommended placements has mostly not been empirically tested. Gondolf, Coleman, and Roman (1996) reported that in their region of the country insurer and ASAM-recommended placements agreed 85% of the time.⁵⁴

Another consideration in allowing access to higher levels of care is evidence that, in some cases, patients are more willing to engage in treatment if it takes place in a more restrictive environment. In the ASAM Criteria Validity Study, more participants engaged in treatment if assigned to Level III (i.e., residential rehabilitation; 62%) than to Level II (i.e., day treatment; 38%; $p=.013$). This disparity was thought to reflect issues in the institutional setting, since it occurred among patients who were randomly assigned to either treatment. Some of the detoxification facilities from which patients were recruited housed their Level III residential program in the same building, so those patients did not have to enter a new facility where everything was unknown. Also, many of these public-sector patients entered detoxification from shelters or from the streets. Although shelters are considered to be housing in the context of the ASAM Criteria, it is likely that patients who were already engaged in treatment might prefer the treatment facility to a homeless shelter. Although alcohol treatment facilities are not in the business of providing housing, the long-term cost efficiencies and benefits to patients of successful treatment should be factored in for those high-risk patients who are only willing to engage in treatment if they can be housed in a secure environment.

Although more patients engaged in Level III than in Level II in the ASAM Criteria Validity study, women still were less likely to engage in Level III treatment compared to men ($p=.003$). This suggests that residential rehabilitation may pose obstacles for women that are not as salient for men. Another issue of particular concern for women is the fear that children will be removed by social agencies if maternal substance abuse is discovered. This is particularly true among pregnant women,⁵⁵ low-income women, single parents, and women in a divorce.^{50,56} These concerns may lead women to choose a lower level of care even if a higher level is clearly warranted by PPC. Another research need suggested by these concerns is to compare treatments for pregnant women that are equivalent except for provision of overnight facilities. There is also evidence that women are more likely to enter and stay longer in all-female program, and in programs that allow children to live in.^{50,57-60}

In contrast to other ethnic groups, African Americans indicate that institutional factors, such as waiting lists for treatment and lack of childcare, are important barriers to treatment ($p<.01$).³⁰ Programs available to low-income and African American women often do not have the resources to help their patients deal with their lack of financial resources and childcare issues.⁵⁶ Also, cultural relevance is a meaningful need for a number of racial and ethnic groups in treatment programs and programs in geographic proximity to large urban minority populations often are staffed with low proportions of treatment providers who are professionally trained.^{29,56} Cultural competence in combination with empathy is in short supply across the health care spectrum and is a problem in alcohol treatment as well.⁶¹ Thus, level of care, services offered within a level of care, and motivation to engage in treatment interact to prevent women, and particularly minority women, from

gaining access to effective treatment. The ASAM PPC do not address cultural competence. Issues specific to women are generally not addressed either, with the exception of rules regarding detoxification during pregnancy that justify a hospital-level of care.

Adolescents are another unique population that appear to need treatment dedicated to their needs. Public concern about alcohol and other drug use by youth is frequently voiced, yet there is a dearth of dedicated treatment programs that specialize in addressing the developmental, self-esteem, identity, and coping issues that need to be dealt with for effective treatment engagement.⁶²⁻⁶⁴ The relatively few programs that are available tend to utilize only the extremes of levels of care, i.e., Level I or Level III.⁷ Adolescent placement criteria were included in the ASAM PPC and expand the adult criteria along needs that are specific to adolescents. Evaluation of the access and engagement benefits or problems of PPC for adolescents has not been performed to date, however.

2.3.2. Length of stay. Many clinicians believe that recent trends have increasingly resulted in patients being inadequately detoxified, with continuing discomfort contributing to dropout before a transition to the next level of care can be completed. This possibility needs to be carefully studied. On the other hand, some patients who have traditionally been referred to inpatient care may be able to undergo ambulatory or social setting detoxification.⁶⁵ These issues are addressed in PPC, both in Dimension 1 (Intoxication/Withdrawal) and in Dimension 6. Length of stay is not specified because it is dependent on the patient's needs. However, Dimension 1 specifies objective criteria for assessing withdrawal symptomatology with structured rating scales, including the Clinical Institute Withdrawal Assessment for Alcohol. Dimension 6 requires assessment of environmental resources that may facilitate detoxification in an ambulatory setting or the availability of help to obtain emergency care if needed. Whether the specific thresholds defined by PPC decision rules that impact length of stay are accurate is not yet entirely clear, but as validation studies proceed, it is clear that formal criteria such as these can be analyzed and improved.

3. The Potential of Placement Criteria to Improve Access to Treatment

Given the growing interest in placement criteria, it is important to consider in what ways these standards can improve access. Criteria such as the ASAM PPC may improve access to the appropriate level of care by addressing the patient-specific, social/environmental, and institutional factors that may interfere with the patient's efforts to engage in treatment.

There are five mechanisms by which PPC may accomplish this task (a) establishing an evidence-based multistakeholder consensus on effective placements; (b) highlighting deficits in existing treatment systems that may guide facility expansion; (c) helping those less skilled make informed treatment decisions and communicate better with patients; (d) incorporating knowledge of and sensitivity to spe-

cific subgroups of patients; and (e) applying standardized criteria flexibly to meet the needs of individual patients.

3.1. Establishing an Evidence-Based Multistakeholder Consensus on Effective Placements

By addressing social and environmental barriers to appropriate treatment that have been demonstrated to result in lack of engagement, payers can justify the level of care based on cost–benefit ratios, treatment providers can help the patient access needed services, and patients can feel respected and cared for, facilitating engagement. PPC provide a rationale based on concern for the patient and the best treatment approach in the least restrictive setting. Ultimately, with validation, this will allow responsible health insurance companies to pay for care that has been documented to be effective. At the same time, institutional issues, such as the coordination of care, can be facilitated because all stakeholders will understand what is needed and why. Other health care professionals who are not addictions specialists can feel more comfortable in evaluating and referring a patient for care because the practice guidelines are currently based on consensus information and will eventually be data-driven.

PPC may actually impair access to treatment if decision rules are not developed through a process of incorporating scientific evidence and consensus among stakeholders. To the extent that PPC reflect a singular viewpoint of specialists or are not accepted by other stakeholders, PPC may result in raising barriers rather than improving access to treatment.¹⁴ Reaching out to as many constituencies as possible, while difficult, reduces the likelihood of bias or the appearance of bias towards one viewpoint or one type of treatment.^{6,8,14,66} It is vital to avoid the trend stated, as put by Walker, for “guideline development and evaluation strongly influenced by the value orientation of their creators.”¹¹ For example, the initial publication of the ASAM PPC came under criticism for inadequate inclusion of nurses.⁹ Managed care organizations and third-party payors prefer guidelines that strongly consider cost-effectiveness, particularly in the case of treatments that have not been shown to demonstrate differential clinical efficacy.

3.2. Highlighting Deficits in Existing Treatment Systems that May Drive Improvements

To the extent that PPC are applied impartially (i.e., without bias toward a particular program or philosophy), the rigorous application of PPC can potentially benefit systems in that data from their routine use may highlight gaps in the continuum of care in a particular locality. With the routine use of an automated system, it is possible to detect access problems due to the unavailability of particular levels of care. If placements are recommended on the basis of valid criteria, then it becomes most valuable to establish real-time monitoring of wait lists and nonconforming placements across a system. For instance, a PPC data-gathering system in a given region might detect that patients in need of ambulatory detoxification are instead referred

to more restrictive residential detoxification, with high rates of failure to engage due to patients' unwillingness to leave home. Other examples of these gaps may include lack of (a) holding/screening beds, (b) integrated primary care services, (c) psychiatric evaluation and coordinated care, (d) 24-hour motivational reinforcement, e.g., mutual-help connection, (e) safe "dry" shelter as needed to deal with urges to relapse, (f) access to low-threat social/environmental conditions and supports, e.g., halfway houses and partial hospital facilities, and (g) wrap-around services such as vocational training and case management.

Pending definitive validation of placement criteria, a critique of the ASAM PPC by some managed care organizations is that PPC recommend higher levels of care than are needed.⁶⁷ At the same time, provider groups believe that insurance companies recommend lower levels of care than needed or unnecessarily restrict LOS.¹⁴ PPC can help counteract inappropriate medical decisions made by insurance companies if the evidence for determination of appropriate treatment exists. If there is any concern that higher levels of care than needed are being recommended, PPC will undercut their ability to improve access to appropriate treatment.

3.3. Helping Practitioners in and outside the Field of Addictions to Make Informed Treatment Decisions and Communicate Them to Patients

It has been demonstrated that the ASAM PPC can achieve good interrater reliability using a computerized algorithm devised by Gastfriend et al.³⁵ Research assistants and counselors can rate target videos with a 77% chance of agreement on a particular level (intraclass correlation), which means raters with assessment skills at the level of a counselor can perform a reliable assessment of the patient's needs, using a common language and format. If PPC are written so that enlightened lay people and professionals in other specialty areas can follow the guidelines, it is much more likely that patients will have improved access to appropriate treatment.⁶⁸ The stigma of alcohol problems and lack of knowledge about them still tends to limit other professionals' involvement in addressing these issues,⁶⁹ but clear guidelines may help to minimize the impact of these attitudes. Also, if the level-of-care determination is communicated clearly and with empathy, improved communication with the patient may increase the patient's knowledge base and motivation. PPC can even be used as an educational tool to help the patient understand and reflect on alcohol-related problems. The assessment process also highlights the need for motivational enhancement with patients who seem unlikely to take an active role in their treatment.³ Motivational enhancement is appearing to be an essential key to successful engagement and retention.^{70,71}

3.4. Incorporating Knowledge of and Sensitivity to Specific Subgroups of Patients

There is some evidence that application of PPC may improve equity of access to all patients. In the Boston Target Cities Project, African American and Hispanic

patients made substantially greater use of Central Intakes using the ASAM PPC to gain access to treatment,²⁷ although it could not be determined to what extent PPC played a role in this improvement in access.

As noted earlier, treatment engagement analyzed by gender in the ASAM Criteria Validity study revealed that men were more likely to engage in treatment than women (attend at least their first treatment appointment; 54% versus 44%; $p=.015$). This observation highlights the need to learn what are the obstacles being faced by women and how systems can help women overcome barriers to treatment entry. The American Psychological Association's Guidelines for Providers of Psychological Services to Ethnic, Linguistic, and Culturally Diverse Populations⁷² sets out recommendations for the knowledge and skills needed by practitioners and the kinds of information that should be gathered from patients to better serve them. Relevant guidelines include assessment of the patient's level of acculturation, the extent to which family support and community understanding are available and can be helpful or hurtful to the patient's treatment, and consideration of the impact of social, environmental, and political factors on the patient's problems and on the type of treatment that will be most relevant. There is some overlap between these guidelines and the decision rules of the ASAM PPC; however, implementation of comprehensive cultural factors at the level of decision rules is intricate and more work may be needed.

3.5. Applying Standardized Criteria Flexibly to Meet the Needs of Individual Patients

To the extent that PPC (or any guidelines) are used inflexibly in meeting patient needs, they will impair access to treatment.⁷³ For instance, in the Boston Target Cities Project and in the ASAM Criteria Validity study, patients referred to Level II care (i.e., day treatment) were less likely to attend than those referred to Level III (residential rehabilitation)—regardless of appropriateness of placement according to PPC.³⁵ Patient preferences and limitations need to be accounted for if the patient is to successfully access treatment.⁷⁴ There is a danger that PPC can become so formulaic that people will not be able to try creative new approaches. This was formally addressed in ASAM's revision of its PPC, with specifications that, in some instances, a patient requiring Level III care (e.g., residential rehabilitation) could be assigned to Level II (e.g., partial hospital) if dormitory or other housing arrangements could be made.

4. Conclusions

Patient Placement Criteria (PPC) are still in the early stages of development, offering the opportunity to influence their formulation in order to improve access to appropriate care. Placement criteria cannot change the underlying structure of the family, the community, or the institutions in which patients live, but they can recommend assessment factors that strongly influence treatment engagement in

the interests of alerting clinicians, payors, and patients themselves to the importance of resolving these issues to allow treatment to occur. Assessing social/environmental issues, such as family conflict, family support for abstinence, and spouse or partner's substance use, may allow clinicians and patients to collaborate in devising creative solutions. Needed institutional resources, such as childcare (particularly care that does not involve state child protective services) or the need for a more intense level of care for a patient with few social supports for abstinence, can be objectively documented and brought to the attention of program administrators and funding agencies. When PPC require assessment for other psychiatric problems, the results may influence programs to train their personnel in this area. Assessment of patients' knowledge about treatment may help remind clinicians to inform and motivate the patients they are evaluating. The level and type of training that addictions professionals possess varies so widely that one cannot assume that all of these issues will be covered if they are not specifically and comprehensively structured into the assessment process. Based on these early considerations of placement criteria, it appears that future work with the ASAM PPC has a substantial potential for ensuring better access to treatment.

In addition, the PPC need to improve in three areas: documentation of efficacy, specification of measurement, and diversity of other professionals and consumer advocates in guideline development. A further potential improvement for a subsequent edition of the PPC might be to rate the level of confidence of each decision rule based on available scientific evidence, as do the practice guidelines of the American Psychiatric Association⁸ and the Veterans Health Administration.¹⁰ The lack of specificity of measures, i.e. the absence of behavioral descriptive "anchors" for the dimensions, leads to wide variability in operationalizing them. A national survey of treatment providers found that a common problem with implementation of the ASAM PPC was the use of many lengthy, ambiguous explanations of the criteria.⁷⁵ Single state agencies, insurers, and treatment programs that have adopted the ASAM PPC have developed widely different ways of helping clinicians to apply these criteria. The few controlled studies on the validity of these criteria have operationalized them in such different ways that they are not directly comparable.⁷⁶⁻⁷⁸ Finally, health care professionals with different philosophies and from all segments of the field need to be consulted (e.g., prevention and early intervention specialists).

5. Future Research

PPC that are developed using an evidence-based, consensus approach can lead to new areas of research. As the results of this research emerge, such data can be iteratively channeled into revised guidelines. A caveat is that criteria are primarily instructional in nature and formal decision rules do not always apply to every individual. "Unbundling" of care is an urgent area of research because managed care guidelines are forcing treatment modalities to separate from levels of care without the benefit of understanding the consequences of this action. Unbundling also pre-

sents an opportunity to redesign care that focuses more on matching patients to needed services within levels of care. Separating social services from clinical services may be one mechanism by which this process can proceed,^{28,79} although this approach runs the risk of disallowing payment for social services that patients may need.

Similarly, optimal lengths of stay have not been established for any type of treatment to date. Length of stay is often arbitrarily set by either the treatment agency or the insurer. Other program rules within a level of care, such as the “administrative discharge” for patients caught using substances during treatment, have not been subjected to rigorous testing either.

Future research should also include analyses of cost effectiveness and cost offset whenever feasible. Good clinical care will most often result in cost savings if a long enough time frame is used and if contrasted with the costs incurred in alternative medical care and to society.

Finally, research is needed on how best to achieve adequate comprehension and reliability of PPC by clinicians. The health education field can be helpful in this regard, but first the criteria need to be distilled in a way that makes it possible for a clinician to follow a page or two of instructions and still conclude with a placement that is reliable and valid. Early evidence shows that automation with computer-assisted structured interviewing and algorithm scoring may be a powerful aid toward this objective. Assessment of changes in practitioner’s behaviors and any possible impact on patient acceptance will also need to be examined as technology is applied in the use of placement criteria.

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Access to Substance Abuse Services in Rural Areas

John Fortney and Brenda M. Booth

1. Introduction

Access to effective treatments for substance use disorders is a critical public health issue, especially in rural areas. Difficulties in access to care may account for the large proportion of individuals with alcohol and/or drug use disorders who do not receive any care for their disorder and the low proportion who engage in, or achieve sustained involvement with, treatment. The large untreated population results from the high prevalence of substance use disorders in the community in conjunction with a low propensity to seek care for these disorders. The National Comorbidity Study reports that the prevalence of a substance use disorders in community residents (age 15–54) is 11.3%, with the majority involved in alcohol abuse or dependence (9.7%),¹ Yet community-based studies of treatment-seeking behavior find that only 4% to 9% of individuals with a current substance use disorder seek formal or informal addiction treatment over the course of a year.^{1–3} In fact, over the course of a lifetime, only about 15% of individuals with alcohol problems in The National Longitudinal Alcohol Epidemiologic Survey (NLAES) sought care for their disorder.^{4,5} The prevalence of substance use disorders does not appear to vary across rural and urban areas^{1,6} and recent research has found little evidence of rural–urban differences in treatment-seeking behavior.^{3,7}

Even when individuals with substance use disorders do enter treatment programs, relatively few complete all phases of treatments^{8–11} Sustained involvement with substance abuse treatment is critical to the provision/receipt of high quality care and improved outcomes. Engagement or sustained involvement requires the patient to attend all appointments, take all prescribed medications, and actively

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participate in behavioral therapies. Access problems facing rural residents are likely to hinder the sustained involvement of rural patients entering treatment. Although there is little that clinicians and administrators can do to encourage community residents with substance use disorders to enter treatment, there are considerable opportunities for promoting sustained involvement once treatment has been initiated. To provide high quality substance abuse treatment, it is critical for providers, administrators, and researchers to identify access problems and to develop clinical interventions and organizational innovations to minimize the impact of these barriers on sustained involvement. Specifically, it is necessary for researchers to design studies which test hypotheses about how access to services affects the process and quality of care received.¹²⁻¹⁴ Studies should focus on determining how policy-mutable characteristics of the service delivery system impact access, process, and outcomes. As the financing and delivery of health care become more and more integrated, studies should also determine how health plans interact with service delivery systems to create access problems for enrollees that result in poor quality care and poor outcomes.

2. Past Research

There are numerous alternative definitions of rurality currently used in the research literature.¹⁵⁻¹⁷ There has been considerable effort devoted towards classifying individuals according to the rurality of their predefined geographic area of residence. However, we propose that rurality should not be defined by locations within arbitrarily defined geographic boundaries (e.g., zip code, county, Metropolitan Statistical Area, etc.). Although useful for hypothesis-generating pilot studies, it is clear that even improved methods for classifying individuals as either rural or urban (or specifying their position along the rural-urban continuum) will not advance rural services research. Researchers reporting significant differences in utilization, processes, or outcomes across rural and urban areas, no matter how they are defined, are not able to determine what has caused the observed differences. Consequently, the discussion surrounding observed rural-urban differences typically involves a substantial amount of conjecture and thus does not provide information that can be used to shape policy. Rurality is not a uni-dimensional concept, but instead comprises a constellation of underlying factors that may affect help-seeking and illness behavior. Rather than trying to devise better definitions of rurality, we propose that services researchers should attempt to identify the underlying dimensions of access which combine to create treatment barriers for rural residents. Access to care is one possible factor contributing to observed rural-urban differences in service use. However, access represents just one of the many factors influencing service use patterns in rural areas.

It is important for researchers focusing on rural issues to identify those dimensions of rurality which may affect help-seeking and illness behavior. Unfortunately, there is very little substance abuse services research which has gone beyond simple rural-urban comparisons to examine specific dimensions of rurality. Therefore, we

draw from the broader rural mental health services research literature and in some cases report our own unpublished findings. Potential dimensions of rurality which are likely to impact service use include travel barriers, stigma, and insurance coverage. Longer travel distances have been shown to reduce the probability of engaging in alcoholism aftercare treatment following discharge from inpatient alcohol treatment.^{11,18} Likewise, use of Alcoholics Anonymous (AA) following discharge from inpatient substance abuse treatment has been found to be associated with the availability of an AA meeting in the patient's town of residence.¹⁹ Perceived availability of services has been shown to reduce the probability of seeking care for depression in rural areas.²⁰ Likewise, perceived stigma has been found to be a significant predictor of service use for depression in rural areas, but not urban areas.²¹ Rural individuals are somewhat less likely to be insured than urban individuals,^{22,23} and insurance coverage has been shown to significantly affect the probability of seeking care for depression.²⁰

We have recently completed a four-wave longitudinal community-based study (the Rural Alcohol Study) of 733 at-risk drinkers identified by a screening interview for at-risk drinking administered to over 12,000 rural and urban community residents in six southern states.²⁴ Follow-back data were also collected from the subjects' health care providers and health plans for the two-year study period. Half of the sample was rural, defined as living outside a standard metropolitan statistical area. The purpose of this study was to understand the relationship between access, utilization, and outcomes for rural residents. Aggregate comparisons found significantly lower incomes and longer perceived travel times to services in rural as compared to urban areas.³ There were no significant differences in perceived waiting times for addiction treatment or perceived acceptability of formal substance abuse treatment.³ Nevertheless, among rural residents there was a substantial variation in these measures of access, in that standard deviations were large (relative to the means) for perceived travel times, waiting times, and acceptability.³ In addition, rural residents had greater illness severity (as measured by *DSM-IV* diagnostic criteria), which may indicate delayed treatment-seeking as a result of access problems.³

3. Proposed Conceptual Model

To identify barriers and improve access in rural areas, services researchers must adopt a conceptual model for help-seeking and illness behavior. In Figure 1, we propose a model of how the characteristics of the individual, the attributes of their health plan, and the structure of the service delivery system interact to determine who receives care, the quality of care they receive, and their outcomes. Note that the policy-mutable inputs to the behavioral model are the attributes of the health plan and the structure of the service delivery system. Figure 1 is particularly useful for conceptualizing how access to care may affect an individual's decision to enter treatment and remain involved in the treatment process. Engagement or sustained involvement can be thought of as a process or quality of care measure that is im-

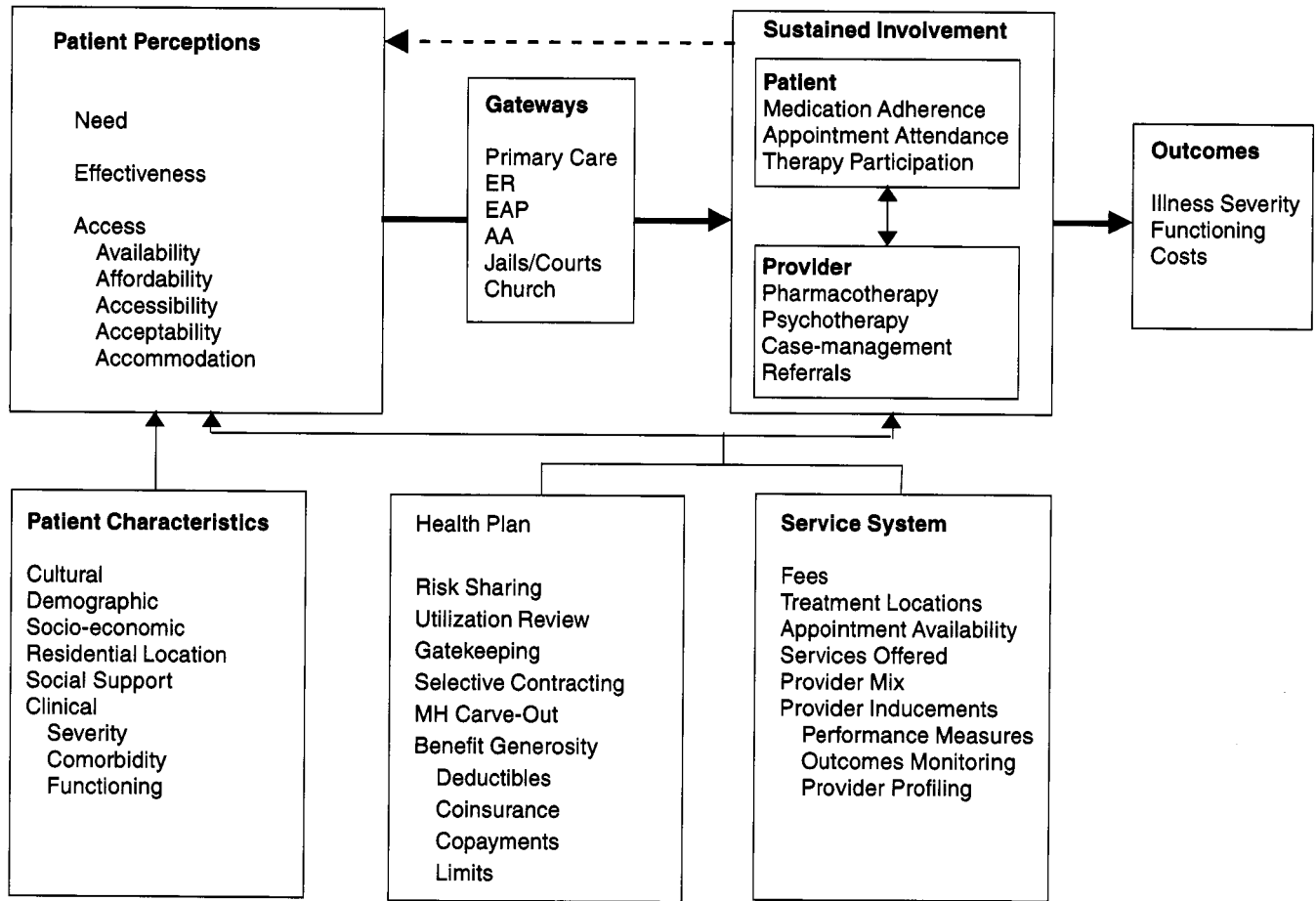


Figure 1. Conceptual model of access, process and outcomes.

pacted by access. More specifically, sustained involvement represents that dimension of quality that depends on patient illness behavior (medication adherence, appointment attendance, and participation in behavioral treatment protocols). Of course, quality of care is also a function of provider behavior. Both patient and provider behavior are influenced by the health plan and the service system. Theoretically, entry and completion of efficacious treatment programs should result in improved clinical and functional outcomes. Although the relationship between access and outcomes is difficult to establish empirically, the Institute of Medicine has strongly advocated measuring access to quality care according to the outcomes that are generated.¹⁴

The remainder of this chapter is organized according to the conceptual model displayed in Figure 1. First, we focus on individual perceptions about need, effectiveness, and access and how these perceptions influence treatment-seeking and illness behavior. This section also includes a detailed discussion of how to measure actual geographic access to services in rural areas. Second, we discuss treatment-seeking cues and access to important gateways to addiction treatment. Third, the impact of access on sustained involvement and quality of care is discussed. Fourth, we focus on the policy mutable attributes of health plans and service delivery systems which affect access, entry, and sustained involvement. Finally, we present some conclusions and directions for future research.

4. Patient Perceptions

An individual's treatment decisions are determined by the perceived utility or satisfaction generated by the available treatment options. An individual's characteristics (e.g., age, gender, ethnicity, etc.) determine their preferences used for ranking treatment options. The interaction of the individual's health plan and the service delivery system determine what treatment options are available to the individual as well as the utility/satisfaction associated with each option. As described by the Health Belief Model,^{25,26} the evaluation of treatment options has three foci: (1) need, (2) treatment effectiveness and (3) access. Perceptions concerning these three choice dimensions combine to determine whether an individual chooses to enter and engage in care.

Because perceptions about need, treatment effectiveness, and access are modified as individuals gain more experience with the service delivery system, there are methodological difficulties associated with using perceptions to "explain" or predict service utilization over the course of a treatment episode. Specifically, because perceptions are updated during encounters with the service system, the direction of causation between perception and utilization is circular in nature. Therefore, it is important to collect both perceived and actual measures of need, treatment effectiveness, and access in order to determine the relationship between perceptions and reality during different stages of the treatment-seeking process. For example, in the Rural Alcohol Study, it was common for respondents (93% nonusers) to be unable to answer questions about perceived access to specialty services. Even when

respondents can answer such questions, nonusers' perceptions will often be incongruent with actual measures of treatment effectiveness and access. Consequently, actual measures of treatment effectiveness and access will not necessarily be significant predictors of treatment entry. However, as patients gain experience with the service delivery system, perceptions and reality should converge. Thus, baseline measures of actual access may be better predictors of sustained involvement for those entering treatment than baseline measures of perceived access (which will not reflect patients' updated perceptions).

4.1. *Perceived Need*

A large proportion of individuals with a substance use disorder do not believe that the symptoms and consequences associated with their addiction are severe enough to warrant treatment. The National Longitudinal Alcohol Epidemiologic Survey (NLAES) found that only 12.7% of respondents with an alcohol use disorder felt a need for treatment at some point during their life.⁴ Moreover, a substantial proportion of those with a perceived need for care reported that they “thought it was something you should be strong enough to handle” (28.9%), “didn't think drinking problem was serious enough (23.4%), or “thought the problem would get better by itself” (20.1%).⁴ Similarly, a rural community-based survey found that, on average, access to alcohol/drug counseling services was “not very important” and was ranked near the bottom of a list of health services (including transportation services).²⁷ Unpublished data from the Rural Alcohol Study also found that rural at-risk drinkers have a lower readiness to change (as measured by the SOCRATES²⁸) than urban at-risk drinkers, which suggests that the perceived need for care may be lower in rural areas.

Perceived need is likely to vary temporally as well as geographically. The perception of need is likely to peak following negative consequences of substance abuse. For many individuals with substance use disorders, these raised levels of perceived need may constitute relatively brief and infrequent windows of opportunity during which the likelihood of entering treatment is at its maximum. Moreover, the perceived need for treatment may also be most modifiable or malleable immediately following a negative consequence of substance use. As a result, interventions designed to increase the perceived need for treatment will probably be most effective if implemented immediately following a negative consequence, when perceived need is modifiable and already close to the threshold needed to motivate treatment entry.

When the perceived need for treatment is low, barriers become a larger impediment to initiating and engaging in treatment. Therefore, access problems may create greater barriers for individuals with substance use disorders than for individuals with physical health disorders. For example, while an access barrier may not stop renal patients from attending their dialysis appointment, the same barrier may be enough to dissuade substance abuse patients from attending their group session. In a rural veteran population, outpatients have been found to be substantially less willing to travel for the treatment of substance use disorders than they are for general medical disorders.²⁹ Among the 100 most common outpatient diagnos-

tic groups treated at the Central Arkansas Health Care System, the two diagnostic groups with the smallest 75th quartiles of distances traveled were drug dependence/abuse (25.7 miles) and alcohol dependence/abuse (47.3 miles). In comparison, the 75th quartile of travel distances for all psychiatric disorders together was 62.2 miles while the 75th quartile for all medical disorders together was 90.6 miles. The results clearly indicate that patients are not willing to travel as far for substance abuse outpatient treatment as they are for general medical outpatient treatment. These results may also indicate that the frequent visits required for sustained involvement in outpatient substance abuse treatment pose a greater travel barrier compared to the relatively infrequent visits required for the treatment of general medical disorders.

4.2. Perceived Effectiveness

A second potential factor contributing to the low propensity to initiate and engage in substance abuse treatment may be a low perceived effectiveness of treatment. Perceived effectiveness of addiction treatment can depend on many factors, including the individual's cultural background, social network, and prior knowledge or experience with substance abuse treatment. For those entering treatment for the first time or for those undergoing a new type of treatment, their perceived effectiveness of treatment may be modified by the quality of care they receive and their own treatment response. Therefore, the quality of the interaction between the patient and provider can feed back to change the patient's perceptions about treatment effectiveness. Because not all treatment programs are effective for all types of patients, the illness behavior of the patients may depend primarily on how well the treatment program matches their needs. Because there are fewer treatment options in rural as compared to urban areas (i.e., less availability of services), rural substance abuse patients may find it more difficult to find a treatment program that matches their needs, which in turn could lower their perceived effectiveness of care. On the other hand, almost all individuals with alcohol use disorders in the NLAES believed that addiction treatment would help their drinking problem.^{4,5} Therefore, perceived treatment effectiveness is not likely to be a major impediment to treatment entry in rural or urban areas.

4.3. Perceived Access

The third factor contributing to the low rates of entry and engagement in addiction treatment is poor access. Residents of rural areas are likely to face a vastly different constellation of barriers than residents of urban areas. Despite the fact that relatively few of the respondents of the NLAES identified access problems as reasons for not seeking treatment,⁴ it is still important for service researchers to identify potentially modifiable barriers to care. First, when the level of perceived need for care does cross the threshold required to motivate treatment seeking, even minor access barriers can impede treatment entry during this window of opportunity. Second, access problems contribute to the low rates of sustained involvement for patients entering substance abuse treatment programs.

It is important to conceptualize perceived access as multidimensional. Using confirmatory factor analysis, Penchansky and Thomas have identified five independent dimensions of access to health services (availability, affordability, accessibility, accommodation, and acceptability).³⁰ Perceived access depends first on the availability of efficacious addiction treatment programs, which are fewer and farther between in rural areas. Only 18.7% of hospitals in rural areas offer substance abuse treatment services.⁶ Unpublished data from the Rural Alcohol Study found that the perceived availability of drug and alcohol treatment services was significantly lower for rural residents compared to urban residents. Given the availability of efficacious services, there are still a number of barriers to initiating treatment and achieving sustained involvement with care over time. Barriers can be divided into four main groups: affordability, geographic accessibility, accommodation, and acceptability.³⁰ These dimensions of access are influenced by both the characteristics of the individual, the attributes of their health plan, and the structure of the service system. *Affordability* is a function of an individual's income, the benefit generosity of their health plan, and the fees charged by the substance abuse treatment program. Affordability is likely to be lower in rural areas because of the lower income level^{3,31} and lower rates of insurance coverage,^{22,32} especially employer-based insurance coverage.^{22,33} *Accessibility* is a function of the residential (or employment) location of the individual relative to locations of treatment programs contracting with their health plan. Accessibility also depends on having a valid driver's license, automobile ownership or availability, and the adequacy of the public transportation system. Rural residents have been found to live significantly farther from both general medical and specialty mental health services than do urban residents.^{34,35} Thus, rural residents have less accessibility to health services in general and specialty mental services in particular. *Accommodation* represents the convenience of seeking treatment and depends on factors like child care services, appointment waiting times, and how well the clinic hours of the substance abuse treatment program coincide with the times the individual is free to receive care. However, the perceived waiting times for addiction treatment have not been found to vary across rural and urban areas.³ *Acceptability* depends on how well treatment programs fit the clients' beliefs and attitudes about substance abuse treatment. Acceptability depends on factors such as the linguistic, religious, and cultural compatibility between the patient and the treatment program as well as the individual's beliefs about treatment anonymity and the stigma of addiction treatment. The more concentrated patterns of social networks in rural areas have led to much different values and beliefs concerning self-reliance, family autonomy, conservatism, and religion,³⁶ and thus the acceptability of addiction treatment is likely to differ significantly across rural and urban areas. On the other hand, the stigma associated with alcohol problems and alcohol treatment has not been found to differ across rural and urban areas (unpublished data from the Rural Alcohol Study). Likewise, another study reported that rural residents have similar levels of stigma associated with depression treatment compared to urban subjects.³⁷ However, that same study found that stigma was a significant predictor of seeking depression treatment for the subsample of subjects living in rural areas.³⁷ This finding supports our conten-

tion that it is important to focus on variation in access within rural areas rather than making simple rural–urban comparisons. Because of the tighter social fabric in rural communities, it is also harder to protect the anonymity of patients. A community-based study of depression found that urban residents with depression perceived the anonymity associated with depression treatment to be greater than rural residents with depression.³⁴ In addition, treatment programs in rural areas are smaller in size and scope, and thus they are less likely offer a wide range of services. Because rural individuals must choose from a smaller array of services, they may find it more difficult to find a treatment option that meets their particular needs.

It is important to realize that measuring access requires collecting information about the individual, their health plan, and the service delivery system. For example, the residential location of the individual and the treatment locations of program contracting with the health plan are all needed to calculate geographical accessibility to care. Likewise, to specify a measure of linguistic acceptability, the language spoken by the patient and the providers of the treatment program must both be known. Past survey research has often focused only on the characteristics of the individual, and in some cases, on the respondent's perceived characterization of the service delivery system.¹² To avoid this limitation of survey-based research, every attempt should be made to collect concurrent information about the study subject's health plan along with data about the service delivery system.¹² The Rural Alcohol Study is an example of a study design that collects concurrent data from study subjects' health care providers and health plans to obtain more complete measures of access, process, and outcomes. Likewise, similar community-based studies of rural residents with depression^{35,38} and cognitive impairment³⁹ have identified the practice locations of all providers in the study area in order to measure rural residents' geographic access to the health care system.

5. A Further Note on Measuring Geographic Accessibility

In the health services research literature, rural–urban residence and provider–to–population ratios have been the most commonly used proxies for geographic access.^{40–48} There are two main problems with measuring an individual's geographic access to health services using aggregate proxies based on ecological data. These two problems have been labeled aggregation bias and errors-in-variables bias.⁴⁹ Aggregation bias occurs when the proxy is correlated with other unobserved variables that are associated with the dependent variable under investigation. Errors-in-variables bias occurs when the aggregate proxy based on ecological data explains only a small proportion of the variance in the variable of interest measured at the micro-level of the individual. For geographic access, errors-in-variables occurs because aggregate proxies do not capture all the variation in an individual's spatial proximity to health services. Because people live in different locations within the area of aggregation (e.g., census tract, zip code, county or state), there will necessarily be unmeasured variation in geographic access to providers. This problem cannot be satisfactorily remedied by using smaller geographic units. While the use

of smaller geographic units reduces the spatial variation within the area of aggregation, it increases the problem with “border-crossing.” Border-crossing occurs when individuals have poor access to services within the defined geographic area, but have excellent geographic access to services in adjacent areas. Even at the county level, border-crossing is an important problem. For example, Kleinman and Makuc (1983) found that 45.1% of Medicare recipients from rural counties traveled across a county line to receive primary care.⁵⁰ In general, there is a tradeoff between the degree of variation in geographic access within the area of aggregation and the amount of travel across the spatial boundaries of the area.

We have found that rural–urban residence, as defined by the Census Bureau’s definition of a standard metropolitan statistical area, explains less than 5% of the variation in travel time to the closest health care provider measured using a geographic information system (GIS).³⁵ Likewise, the number of providers per capita in the county explains only a tenth of the variation in time to the nearest provider.³⁵ This unmeasured variation in accessibility will reduce the strength of the observed relationship between geographic access and service utilization by biasing regression parameter estimates towards zero.⁴⁹ Thus, services researchers using aggregate proxies of geographic access to predict utilization are more likely to commit Type-II errors (i.e., incorrectly accepting the null hypothesis that geographic access does not affect utilization). Because of the methodological difficulty of developing accurate aggregate proxies of geographic access to care, we argue that measures of geographic access (like all measures of access) should be measured at the microlevel of the individual. Individual-specific measures of geographic access can be calculated using a GIS,³⁵ which involves two basic steps. The first step involves using physical addresses to determine the residential locations of study subjects and the practice locations of all the relevant health care providers in the study area. The second step involves determining the distance or time individuals must travel along the road network to visit relevant health care providers.

6. Access to Treatment Gateways

Important cues for seeking addiction treatment include negative consequences of drinking^{36,51,52} and encounters with service systems. Consequences include social consequences, employment consequences and legal consequences. Perceptions about the need for clinical intervention are most modifiable shortly after experiencing negative consequences from substance use. In some cases, the consequences will be associated with contacts with the service system (including health services, social services, and criminal justice services) that can potentially function as “gateways” or points of entry to addiction treatment. Substance abusers’ perceived need for addiction treatment is likely to be particularly subject to modification during these contacts with the service system. As discussed by Weisner and Schmidt in this volume, individuals with substance use disorders tend to have frequent contact across multiple service systems. These gateways along the service use trajectory represent a significant opportunity for detection and referral.

Because contacts with the service system serve as important cues to seeking treatment, it is crucial that access to addiction treatment be maximized during these contacts because that is precisely when individuals are most likely to be ready to engage in addiction treatment. Probably the most effective method of increasing the treatment rate for substance use disorders will be to identify these gateways along common service use trajectories and to implement intervention programs for detection, brief counseling, and referral services. However, it is likely that completely different mechanisms will be needed to disseminate information about detection, counseling, and referral to rural as compared to urban providers. For example, because referral to addiction treatment programs is less of an option for rural patients because of lower availability and decreased accessibility, rural primary care providers may need to rely more heavily on brief counseling than do urban primary care providers. Thus, education programs designed for rural primary care providers will need to focus more on detection and brief counseling than detection and referral.

The most fruitful settings for modifying patients' perceptions about the need for and effectiveness of addiction treatment are primary care clinics, hospitals, emergency rooms, and prenatal clinics. Rural and urban individuals with substance use disorders are likely to have very different patterns of service utilization and thus to have different points of access to important addiction treatment gateways. Community-based studies have found that rural residents are less likely to visit a health professional over the course of a year than are urban residents⁵³ and are less likely to have a regular source of care.⁵⁴ Other studies have found that rural residents with mental health problems are more likely to use inpatient care than specialty outpatient care.^{55,56} Prenatal treatment contacts also represent an important gateway to addiction treatment, given the high prevalence of substance abuse among rural pregnant women⁵⁷ and the detrimental effects drug and alcohol use have on fetal outcomes. Pregnant women have been found to receive significantly more intensive addiction treatment services than nonpregnant women.⁵⁸ If rural, substance abusing, pregnant women make fewer prenatal visits than their urban counterparts, they will be less likely to benefit from this critical gateway. Emergency rooms are another important point of entry to addiction treatment since the consequences of substance use often result in injury or trauma.⁵⁹ The prevalence of substance abuse in emergency department patients is high (15%–24.4%), especially among injury patients (22.5%).^{60,61} Unfortunately, emergency department clinicians only detect a small percentage (12%–39%) of substance use disorders in routine practice settings and refer even fewer for treatment.^{62,63} Because there are fewer emergency departments in rural areas, rural residents may be less likely to use emergency room services for minor injuries and illnesses and thus may be less likely to be detected, referred, and treated for substance use disorders. These important rural–urban differences in patterns of service suggest that rural residents have less access to these important gateways to addiction treatment. It also suggests that treatment-based detection and referral interventions targeted at urban individuals with substance use disorders will not necessarily be effective in rural areas.

The worksite can be an important gateway to addiction treatment, but not all

employers offer assistance programs.⁶⁴ Because rural residents are more likely to be self-employed than urban residents, a relatively higher proportion of urban, as compared to rural residents, experiencing consequences of their substance use may have encounters with employee assistance programs (EAPs). Those rural residents who are employed are more likely to work for smaller and less unionized firms.³³ Because the probability of a worksite having an EAP has been found to increase with the number of employees and percent unionized workers,⁶⁴ even employed rural residents have less access to this gateway to addiction treatment. On the other hand, rural residents may have greater access to churches as a gateway to treatment. Because religious institutions play such a prominent role in rural communities, the church is an important part of the *de facto* service system in rural areas.⁶⁵ Alcoholics Anonymous and Narcotics Anonymous may also represent a first point of contact potentially leading to informal referrals for formal addiction treatment. Again, those individuals with poor geographic accessibility to peer support groups will have a lower likelihood of using them as gateways to formal treatment (or as an informal treatment program).

Other important gateways are jails, courts, and to a lesser extent prisons, because individuals with substance use disorders are relatively more likely to have contact with the criminal justice system. For those individuals experiencing legal consequences of their substance abuse, contacts with the criminal justice systems should be considered an opportunity for emphasizing the importance of seeking addiction treatment. There is a high prevalence of substance abuse and other mental health disorders in jails,⁶⁶ especially rural jails.³⁶ However, only 18% of larger jails have diversion programs for prisoners with mental health problems.⁶⁷ The criminal justice system operates very differently in rural compared to urban areas. Specifically, sheriffs working in rural areas are more likely to be called upon to deal with troublesome individuals with mental health disorders. For example, rural individuals with schizophrenia have been found to be significantly more likely to be jailed than urban individuals with schizophrenia.⁶⁸ Similarly, rural individuals with alcohol use disorders may be more likely to be charged with driving under the influence because of longer travel distances between destinations. In fact, rural areas have higher arrest rates involving illegal use of alcohol than urban areas.^{36,69} Likewise, counties with lower population densities have higher rates of motor vehicle crash fatalities than counties with higher population densities.⁶⁹ In the Rural Alcohol Study (unpublished data), rural residents were significantly more likely to have experienced a traffic accident while they were drinking during the past year (5.2% versus 1.9%). Likewise, rural residents were significantly more likely to have experienced other legal problems attributed to their drinking (3.3% versus 1.4%). The differences in rural and urban crime patterns and criminal justice systems suggest that this particular gateway may function very differently in rural and urban areas.

7. Access and Sustained Involvement

Treatments proven to be efficacious in controlled settings may not necessary be effective in routine care settings, especially if access barriers impede individuals

from completing the acute, aftercare, and maintenance phases of treatment.⁹ Therefore, to determine why otherwise efficacious treatments are not always effective in routine care settings, it is important to examine the relationship between access, process, and outcomes. Improving the effectiveness of addiction treatment involves both increasing its efficacy and increasing patient adherence to efficacious regimens, including completion of the three phases of substance abuse treatment. The high dropout rates frequently experienced in substance abuse treatment programs⁸ suggest that patient adherence is a fundamental problem in the provision of high quality care. In our proposed conceptual model, adherence depends on how patients and their health plans interact with the service system to promote or impede sustained involvement. Access can strongly influence patient adherence and hence the effectiveness of care received. Because rural individuals generally have worse access to substance abuse treatment services, they are hypothesized to be less likely to adhere to treatment regimens and are therefore less likely to receive effective care. For patients entering addiction treatment, it is critical for treatment programs to identify and minimize barriers to adherence and to promote sustained involvement.

Although we know little about the relationship between access to and process of care for substance abuse in rural areas, we can make some useful inferences from what we know about rural depressed individuals. Empirical evidence strongly suggests that the actual number of depression visits made in urban routine care settings are insufficient for treatment to be effective.⁷⁰⁻⁷² For rural residents, longer travel times are likely to further reduce the frequency of provider contact and subsequently the likelihood of receiving guideline-concordant care. Using road travel times (hours) calculated using a GIS, we have shown that geographic accessibility significantly and substantially predicts fewer visits ($p < 0.01$) over a six-month period and a lower likelihood of receiving guideline-concordant care ($p < 0.05$, $OR = 0.29$).³⁸ The causal nature of the observed relationship between geographic accessibility and quality of care revolves around issues of continuity of care and frequency of contact with the provider. For both pharmacotherapy and psychotherapy, the depression treatment guidelines recommend frequent (i.e., weekly) visits during the acute phase of treatment.⁷³ Contact frequency is critical to receipt of high-quality care as is evidenced by the fact that the average number of visits for those receiving guideline-concordant treatment was 4.3, compared to 2.1 for those not receiving guideline-concordant treatment ($t = 7.74$, $p < 0.01$).³⁸ The finding that patients with worse geographic accessibility to services have less frequent contact with their provider raises serious concerns about the continuity and quality of care received by rural patients.

The Substance Abuse and Mental Health Services Administration's (SAMHSA) Center for Substance Abuse Treatment (CSAT) has recently begun releasing treatment improvement protocols (TIPs) which reflect the current consensus about best practices for addiction treatment. Nevertheless, the definition of guideline-concordant care for substance abuse treatment is less well defined than for depression. Therefore, at this time, we propose a more modest hypothesis regarding process of care in rural areas: that rural individuals initiating treatment for substance abuse are likely to experience greater problems with continuity of care and sustained involvement. Due to the lack of effective pharmacological treatments for addictions

(at least in routine practice settings), access problems are likely to be greater for substance abuse patients than for depression patients. Whereas depression patients can often be effectively treated with medication management alone and a few follow-up clinic visits, substance abuse outpatients generally require frequent visits before most, but not all, psychosocial interventions can be effective. Therefore, the relationship between access and sustained involvement is likely to be stronger for substance abuse treatment than for depression treatment.

8. Policy-Mutable Factors Affecting Access: The Health Plan and the Service System

Health plans and service systems represent external and potentially policy-mutable factors influencing patient and provider behavior. Therefore, it is important for researchers to link survey data with appropriate data collected from health plans and service systems.¹² Health plan coverage and service systems represent those dimensions of access that can be potentially modified by organizational innovations and public policies. Theoretically, strategic innovations in health coverage and service delivery should lead to improved access to care, thereby promoting the initiation of and sustained involvement in treatment and ultimately resulting in improved clinical outcomes. Because of the recent integration in the financing and delivery of health care services, it has become necessary to determine how health plans and service systems interact to delineate barriers to care. This is especially true for managed care plan enrollees with mental health and substance abuse problems who many consider to be more vulnerable in systems of managed care.^{74,75}

The structure of the service system is a potentially modifiable predictor of treatment-seeking and illness behavior. The acceptability of treatment will depend on the range of treatment regimens offered, as well as on the procedures the treatment program puts into place to protect the anonymity of its patients. The fees charged by the treatment program will affect the affordability of treatment through higher copayments and coinsurance. The office hours of the treatment program and the number of patients on the waiting lists will affect accommodation. The locations of treatment programs will affect geographical accessibility. Note that the recent shift in substance abuse treatment modalities from the inpatient to the outpatient setting is likely to have had a substantial impact on rural residents, because it potentially increases the amount of travel that is required. While treatment initiation and completion were less than optimal under older systems of inpatient treatment, newer systems of outpatient treatment (that have even lower completion rates⁸) pose even greater threats to sustained involvement for rural residents.

Entry into and engagement with care can also be impeded by lack of insurance coverage with a health plan offering generous behavioral health benefits. Managed care has been slower to penetrate rural markets, and nearly all managed care organizations serving rural populations are headquartered in urban areas.⁷⁶ Likewise, health networks have been slower to form in rural areas⁷⁷ and tend to be uncappeditated.⁷⁸ Because managed care cost containment strategies may operate dif-

ferently in rural markets, the managed care experience may be very different for rural as compared to urban enrollees. There are two basic types of managed care cost containment strategies: supply-side and demand-side. Demand-side, or cost sharing strategies involve patients paying for health care out-of-pocket through coinsurance, copayments and deductibles. Supply-side strategies (e.g., risk sharing, utilization review, gatekeeping, selective contracting, etc.) attempt to create incentives for clinicians to provide less costly services. Both demand-side and supply-side cost containment strategies can affect the probability of entering treatment and the level of sustained involvement with treatment.⁷⁹ With the emergence of managed care, there has been a major shift from demand-side to supply-side cost containment strategies. Given the variety and rapidly changing structure of managed care organizations, it is critical to design studies which closely investigate the black box of managed care by focusing on the specific strategies that health plans use to lower costs and improve efficiency.⁷⁵

Cost sharing has been shown to reduce the probability of any mental health service use.⁸⁰⁻⁸² Moreover, the RAND Health Insurance Experiment demonstrated that individuals are more sensitive to out-of-pocket costs for mental health problems than they are for physical problems.⁸² Cost sharing together with the limits on service use define the health plan's benefit generosity for mental health and substance abuse treatment. Over the last decade, cost sharing has increased more substantially for mental health care than for general medical care.⁸³ In fact, health plans have increased their cost sharing and service use limitations to such a degree that substance abuse treatment costs have decreased from 9% of total health plan expenditures in 1989 to 4% in 1995.⁸⁴ The increase in cost sharing and service use limits is likely to directly impact enrollees ability to afford addiction treatment.

Many health plans have gatekeeping policies, which require enrollees to receive a referral from their primary care provider before seeing an addiction specialist. This practice has been criticized on the grounds that primary care providers are poor at diagnosing psychiatric disorders and thus obstruct the delivery of needed care.⁸⁵ Furthermore, if gatekeeping delays entry into treatment (i.e., lowering accommodation), such a barrier may contribute to patients changing their minds about seeking care, especially care for substance abuse problems.⁷⁴

Selective contracting with providers is perhaps the single most important dimension distinguishing managed care from indemnity plans.⁸⁶ Selective contracting restricts enrollees' choice of addiction treatment programs. Restrictions on provider choice vary considerably across plans, with indemnity plans providing full coverage for all providers to HMOs, which have no coverage for nonemergent treatment by out-of-plan providers.⁸⁷ In between are preferred provider organizations and point of service plans, which provide partial coverage for treatment by noncontracted providers. Limiting enrollees' choice of providers necessarily reduces the availability of and geographical accessibility to addiction treatment programs. A simulation analysis of selective contracting for depression treatment found that provider choice restrictions have a more negative impact on the geographic accessibility of rural residents compared to urban residents.⁸⁸ There may be similar consequences of provider choice restrictions for substance abuse providers.

To reduce mental health expenditures, many payers and health plans are increasingly likely to carve out their mental health and substance abuse benefits to a managed behavioral health company. Observational data indicate that carving out mental health benefits can substantially reduce costs. For example, the Massachusetts Medicaid mental health carve-out⁸⁹ reduced substance abuse costs by 48%.⁹⁰ Inpatient costs dropped by 67% for substance abuse while outpatient costs increased 8% for substance abuse.⁹¹ In addition, the proportion of enrollees receiving any outpatient care for mental health grew by 10.6%.⁹¹ Thus, managed behavioral health companies may simultaneously improve access to substance abuse treatment services while reducing expenditures. Enrollees of behavioral health carve-outs may have better access to mental health specialists because there are no primary care gatekeepers to restrict access to the specialty sector. In addition, managed behavioral health companies can offer more generous benefits because they generally compete for exclusive contracts, which minimizes the costs associated with adverse selection.⁹²

9. Conclusions and Future Directions

Only a small proportion of community residents with substance use disorders initiate addiction treatment during their lifetime and even fewer achieve sustained involvement with care. From the public health perspective, the high prevalence of substance abuse and the low propensity for treatment-seeking clearly point to the need for effective community-based prevention and educational programs. For substance abusing individuals with a low perceived need for addiction treatment, a range of barriers represent a potentially substantial impediment to entering and engaging in care. This highlighted role of barriers in the help-seeking and illness behaviors of individuals with substance use disorders (as compared to those with general medical disorders) underlies the importance for health services researchers to identify barriers to care and to develop clinical interventions and organizational innovations to minimize their impact. A potentially effective method for promoting entry into substance abuse treatment programs is to improve access to specialty services at gateways along the common service trajectories of individuals with substance use disorders. Contacts with the service system represent a unique opportunity for detection and referral. From the treatment setting perspective, the low propensity to engage in substance use treatment represents a considerable opportunity for improvement and highlights the need for developing and implementing organizational innovations and clinical interventions designed to improve access, especially for rural clients. Implementing access interventions/innovations within treatment programs should promote sustained involvement, facilitate the provision of high quality care, and improve outcomes.

There are three types of research designs that can be used to identify important access barriers in rural populations. First, community-based studies can determine what barriers prevent individuals from seeking help for their substance use disorder. However, because of low rates of treatment-seeking, community samples

will generally not have enough treatment users to make more detailed inferences regarding the processes, quality, or outcomes of care. Second, referral-based studies focusing on gateways to treatment are needed to determine what access barriers prevent "detected individuals from adhering to advice about entering a treatment program. Third, treatment-based studies are needed to determine what access barriers prevent substance abuse treatment patients from achieving sustained involvement in care. In particular, treatment-based studies that collect data from patients with different health plans and different treatment sites will be more effective at identifying access problems and solutions than will single-plan/site studies. Multi-site/plan studies provide observable variation in the potentially policy-mutable factors that may affect sustained involvement.

Although the low propensity to engage in substance abuse treatment in both rural and urban areas indicates that access needs to be improved across the board, it is unlikely that policies designed to improve access in urban areas will necessarily be effective in rural areas. An important challenge will be to design and implement interventions/innovations specifically to improve access for residents in rural areas. Research attempting to improve access in rural areas would be more effective if less time was spent defining who is and who is not rural and if more time was spent identifying the relevant dimensions of access and developing accurate individual-specific measurements for those dimensions of access. Knowledge about which barriers drive rural-urban differences in service use is required to design interventions/innovations to improve access for rural residents.

Access interventions/innovations targeted at rural residents should focus on the gateways that are mostly likely to be encountered along rural service use trajectories. The design of rural access interventions/innovations should also consider the changing nature of the service delivery system and its continued integration with managed care organizations. Future research needs to focus on all aspects of rural enrollees' experience with managed behavioral health care, including detection, referral, entry, and engagement. Concurrent with the adoption of managed care has been the shift in treatment modality from the inpatient to the outpatient setting. This shift is likely to have caused rural individuals to experience greater problems with geographic accessibility. Specifically, the long travel times faced by rural residents, in combination with the large number of visits required by acute outpatient treatment, undoubtedly make it more difficult for rural patients to achieve sustained involvement and to complete outpatient treatment programs. Potential solutions to geographical accessibility include lodging programs at outpatient treatment sites, outreach clinics, and telepsychiatry. These and other innovations need to be developed and tested to examine whether increasing access to treatment services in rural areas promotes sustained involvement and, ultimately, treatment outcomes.

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**The Role of Health Economics
in Substance Abuse Research**
Recent Advances and Future Opportunities

Michael T. French, Section Editor

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Overview

Michael T. French

1. Introduction

The conventional approach for introducing a thematic set of papers in an edited book or a special issue of a professional journal is to summarize the papers that follow while highlighting important findings and contributions. I decided to pursue a different path with this brief overview since three of the five papers that follow are themselves reviews or summaries of an aspect of the literature, and the other two papers emerge from a strong empirical foundation established by the authors in previous work. Thus, I present a personal perspective on the broader issue of health economics in substance abuse research, which I hope will prove to be more engaging and informative than a conventional summary. Nevertheless, readers are cautioned in advanced that the material presented herein is probably somewhat biased given my research interests and training.

Section 2 of the overview briefly defines health economics and discusses the emerging field of substance abuse economics. Section 3 highlights some of the advances in substance abuse research that health economists have achieved over the past decade. Finally, Section 4 discusses the increasing prominence of health economics research, offers a prediction about the future growth of substance abuse economics, and suggests research opportunities for health economists during the coming decade and beyond.

2. What is Health Economics?

For most professions, it is difficult to offer a short, descriptive, and nontechnical occupational definition. This characterization applies to health economics as

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well. It is important to note, however, that health economics is grounded in the broader field of microeconomics, which studies the allocation of society's scarce resources among competing demands. Drawing on this microeconomics foundation, health economists study the allocation of society's medical care resources and services among consumers (e.g., patients), producers (e.g., medical professionals, hospitals), payers (e.g., insurance companies, managed care organizations, taxpayers), and other groups (e.g., intermediaries).^{1,2,3}

Although health economists are involved in a broad range of research projects, many health economists devote a considerable amount of time to studying the economic costs and benefits of competing health care services or programs.^{4,5,6,7} Indeed, the estimation of economic costs and benefits is one aspect of substance abuse economics that distinguishes it from other social sciences. Specifically, health economists typically view costs and benefits from a societal perspective rather than from a patient, provider, or payer perspective. The economic (opportunity) cost of substance abuse services is equivalent to the social value of all resources that were used to produce those services.^{8,9} Similarly, the economic benefit that is derived from substance abuse services is equated to society's willingness to pay for the outcomes that are generated by those services.^{10,11,12,13} For various reasons, the calculation of economic costs and benefits can be quite complex. Nevertheless, the policy importance of comparing costs and outcomes in a single monetary unit (e.g., dollars) has led to increasing demand for benefit–cost analyses.

3. How Have Health Economists Contributed to Substance Abuse Research?

Health economists have experienced wider acceptance during the last decade of the twentieth century. Although some of this acceptance can be attributed to the “necessary evil” complex, whereby funding agencies, legislatures, or other organizations mandate a study of program costs and benefits, the vast majority of the increasing interest in health economics research can be explained by a greater appreciation of the unique tools that health economists employ in their research. In his plenary address to the International Health Economics Association in June 1999, Victor Fuchs, one of the most accomplished health economists worldwide, proclaimed that “The greatest strengths of economics and economists are a framework of systematic theory, an array of concepts and questions that are particularly relevant to the choices facing policy makers, and skill in drawing inferences from imperfect data.”¹⁴ Fuchs described health economists as uniquely trained behavioral scientists with a niche role in health policy and health services research. Indeed, health economists are increasingly joining multidisciplinary research and evaluation teams and making new and important contributions to healthcare research.

Before formulating any predictions regarding the future of health economics in substance abuse research, some important contributions of health economists to current research projects deserve attention. Until recently, it would have been diffi-

cult to name a handful of health economists who regularly conducted substance abuse research and even harder to find one available for collaboration. Some health economists dabbled in substance abuse research, but their efforts were rarely recognized by other disciplines and invitations to collaborate on grant applications or research manuscripts were infrequent. The majority of health economists worked in traditional research areas such as insurance markets, primary medical care, gerontology, and general health policy. Substance abuse research was often viewed by economists as lacking quality data, dominated by other social sciences, and relatively difficult to publish in economics journals.

Substance abuse research generally, and the connection with health economics particularly, have changed dramatically in recent years as evidenced by numerous informal surveys, panel discussions at multidisciplinary conferences, and tangible achievements, such as those listed below:

1. Presently, health economists often collaborate with other scientists on grant applications to the National Institute on Drug Abuse (NIDA), National Institute on Alcoholism and Alcohol Abuse (NIAAA), National Institute of Mental Health (NIMH), Agency for Health Care Research and Quality (AHRQ, formally AHCPR), Centers for Disease Control (CDC), and other government agencies, and many health economists are principal investigators (PIs) on funded research projects (e.g., see <http://grants.nih.gov/grants/award/award.htm>, <http://www.ahcpr.gov/fund>, and <http://www.cdc.gov/od/pgo/finding/grantmain.htm>).^{15,16,17}
2. NIDA, NIAAA, and NIMH recently established permanent health services research initial review Groups (IRGs) to review grant applications and assign priority scores. Several health economists serve on these IRGs (see <http://www.nida.nih.gov/IRGCouncil/IRGRosterF.html>, <http://silk.nih.gov/silk/niaaa1/grants/subroste.htm>, and <http://www.nimh.nih.gov/peer/srv.htm>).^{18,19,20}
3. The Robert Wood Johnson Foundation (RWJF) created the Substance Abuse Policy Research Program (SAPRP) in 1996. Since that program started, more than 1,418 grant applications have been submitted (including letters of intent and full applications) and 121 have been funded. Although RWJF encourages a variety of different topics with multidisciplinary foci, the greatest percentage of PIs and co-PIs list health economics as their profession (see <http://www.phs.wfubmc.edu/sshp/rwj/funded.htm>).²¹
4. Two of the leading health economics journals, *Journal of Health Economics* and *Health Economics*, are highly competitive with low acceptance rates among submitted manuscripts. Nevertheless, numerous manuscripts pertaining to substance abuse research have been published in these journals and most issues contain at least one article in this area.^{22,23,24,25,26,27,28,29}
5. Recent issues of the leading journals in economics and medicine (e.g., *American Economic Review*, *Journal of the American Medical Association*, *New England Journal of Medicine*) contain substance abuse research papers by health economists.^{30,31,32,33,34}

6. An increasing number of doctoral students at major universities and economics departments in the United States are studying health economics and writing dissertations on substance abuse research topics.
7. Many sessions at economics, health services research, and public health conferences are now devoted to the economics of substance abuse. Some of these conferences include annual meetings of the American Economic Association, Western Economic Association, Association for Health Services Research, and American Public Health Association.
8. The International Health Economics Association (IHEA) was established in the early 1990s and the second world conference was held in Rotterdam in June 1999. Over 800 health economists and other scientists from 55 countries attended this conference and several papers were presented on the economics of addiction.

This brief review of substance abuse economics research highlights the growth that has occurred over the last decade. Health economists now study a wide range of important issues in substance abuse research, including: (a) the demand for cigarettes, alcohol, and illicit drugs;^{23,27,35} (b) the responsiveness of the demand for cigarettes, alcohol, and illicit drugs to changes in prices, income, and policies (elasticity in economics jargon);^{26,30,36,37,38,39} (c) the economic costs and benefits of substance abuse interventions, such as prevention and treatment;^{10,11,28,40,41,42,43,44} (d) the effects of substance use on workplace measures, such as employment status, hours or weeks worked, absenteeism, earnings, and accidents;^{22,25,45,46,47,48,49} (e) the effects of substance use on health services utilization and cost;^{50,51} and (f) the costs and financing of substance abuse benefits in public and private insurance policies.^{52,53,54,55,56,57}

Many of the publications noted above were accomplished because health economists followed the fundamentals and principles of microeconomic and often adapted these fundamentals and principles to a multidisciplinary research environment. Well-trained health economists offer a valuable perspective to substance abuse research that goes beyond the application of mathematical models and advanced econometric techniques. The most effective health economists usually present the results of rigorous economic analyses in terms that can be understood and appreciated by a broad audience of researchers, clinicians, and politicians.

Multidisciplinary collaboration enables health economists to learn from other scientists (e.g., epidemiologists, psychologists, sociologists, criminologists, biostatisticians), which can enhance their research and professional growth. Naturally, other scientists can benefit from this professional exchange as well. Promoting richer collaborations will take time, however, because health economists sometimes practice their craft in isolation without fully integrating with investigative teams or carefully explaining their models, assumptions, and analysis techniques. Achieving the proper balance between multidisciplinary collaboration and traditional economics research will be a recurring challenge for health economists. Stated differently, health economists may work effectively within a multidisciplinary environment to assist other investigators, but they should also develop original ideas and lead economics research projects.^{58,59,60,61,62,63}

4. Looking to the Future

It appears that the future prospects for health economists are encouraging and broad. Managed care and other significant changes in the financing and delivery of substance abuse services will dictate an important role for health economists. Funding agencies in private and public sectors are requiring quantitative evidence that program benefits exceed program costs. Furthermore, policy officials will increasingly seek current information on the economic effects of policy changes, such as increasing the tax on cigarettes or placing bans on alcohol advertising. Finally, understudied areas of substance abuse research (e.g., adolescent addiction, treatment financing, HIV/AIDS policies and services, criminal justice programs, workplace alcohol and drug testing policies) will also require more attention from health economists.

Health economists will continue to have interesting research opportunities and gain respect among their collaborators if they appreciate the advantages they possess and the limitations that constrain them. For the same reasons that most psychiatrists would not be able to conduct a rigorous economic evaluation of a substance abuse intervention without prior economics training and practice, most economists are ill equipped to conduct a comprehensive psychological assessment of a schizophrenic alcoholic. The allurements of cross-discipline research is that a group of serious researchers with different paradigms and methods can share ideas and talents to maximize the combined value of a research project. If health economists can avoid the temptation to drift scientifically or advise in areas for which they are not well trained, then the prospects for health economists to practice their science in ways that are appreciated by other scientists and favored by policy officials will lead to even greater growth over the coming years.

Most economists like to brag that economics pervades every aspect of society because all choices involve scarcity. This proposition is certainly true in health care markets because virtually every person in society will require some amount of health care during his or her lifetime and individuals differ widely in their ability to pay for medical procedures. Substance abuse policy also involves scarcity, but it extends beyond the health care arena due to the negative externalities often caused by smokers, alcoholics, and addicts (e.g., inconveniences associated with public smoking, impaired driving, criminal activity, workplace problems, family disruption and violence). Again, health economists can apply established models that measure and quantify a wide range of costs, consequences, and outcomes, thus enhancing a multidisciplinary evaluation effort.

In summary, the future demand for health economists will probably remain strong because there will always be a gap between what medical care can do and what is economically feasible and efficient to do.¹⁴ Health economists are specifically trained to examine tradeoffs and formulate policy decisions in the face of scarcity and uncertainty. Indeed, a basic paradigm in economics predicts that unusual economic opportunities in any market will lead to entry and increased competition. It follows, therefore, that we are likely to see more health economists being trained

in the coming decade, and some of the newer investigators will likely conduct substance abuse economics research. If true, this prediction will be extremely beneficial to the broader field of substance abuse research by introducing health economics expertise to more research projects and raising the quality of health economics research overall.

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Economic Evaluation of Alcohol Treatment Services

Michael T. French

ABSTRACT. The objective of this paper is to summarize and critically review the most recent literature on economic evaluation of alcohol treatment services, identify information gaps, and suggest a research agenda for the future. The focus of the review is research published after 1995, although some of the earlier economic studies are also included. Research findings in the literature provide evidence for the following. First, for many alcoholics, day hospital treatment or even less intensive outpatient services are cost-effective alternatives to inpatient treatment. Second, alcoholism treatment often results in declining health care costs for alcoholics who are covered by private health insurance. Third, though the use of alcoholics anonymous (AA) as an alternative to more structured alcohol treatment services may be cost-effective, substance abuse outcomes from AA are sometimes less favorable and the risk of relapse is higher. Fourth, methods have recently been developed to estimate the dollar value of alcohol treatment outcomes such as avoided absenteeism, increased productivity, improved health, and avoided crime. Based on these findings and developments, new treatment approaches and changes in service delivery systems require a fresh perspective on the costs and benefits of alternative treatment services. The findings from economic evaluation studies must be reported in clear and nontechnical terms to an audience of clinicians and politicians so that they can be used in the process of decision making.

1. Introduction

Managed behavioral health care is a relatively new phenomenon, but its popularity has increased rapidly in recent years. Resulting changes in the financing and reimbursement of alcohol treatment services have led to many unanswered questions regarding the relative costs and benefits of alternative delivery systems. Managed care delivery systems tend to emphasize shorter episodes of care and streamlined services compared with the more traditional fee-for-service reimbursement system. These cost containment practices will probably drive down the total and average

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(per patient) cost of alcohol treatment services. The two essential policy questions that need to be addressed are whether the new “packages” of services are effective and whether they are cost-effective relative to a more generous array of services.

To answer these questions, analysts should learn from existing economic evaluation studies and employ current techniques to estimate the costs and benefits of alcohol treatment services. The purpose of this review, therefore, is to highlight recent developments in the economic evaluation of alcohol treatment services, especially since the advent of managed behavioral health care in the 1990s. Some of the earlier economic evaluation studies are identified, but the focus of this review is research published since 1995. Since the literature is still rather sparse in this area, the paper also includes some important studies focusing on illicit drugs rather than alcohol. Methodological as well as empirical contributions are summarized. The overall goals of this review are (a) to inform readers about current economic evaluation studies, (b) to identify information gaps, and (c) to propose a future research agenda.

2. Overview of Economic Evaluation Methods

Before reviewing the methodological and empirical studies, it will be helpful to establish definitions for important terms and techniques used throughout the document. Economic evaluation methods in health care include techniques used primarily by health economists to evaluate a program, service, or intervention (hereafter referred to generically as a “program”). The first technique, and one that is incorporated into all others, is *economic cost analysis*. Economic cost analysis estimates the opportunity cost of a program from a societal perspective. *Opportunity cost* refers to the market value (i.e., the value of the next best alternative) of all resources used in the delivery of a program.¹ *Societal perspective* implies that opportunity costs are included for all participants or stakeholders in the program (without double counting) such as organizations, individuals, taxpayers, and insurance companies.² For program evaluation, the societal perspective is advocated over a private perspective (e.g., insurance company) because the former is neutral across stakeholders and more comparable across programs.³

When two or more programs generate the same outcome, *cost-minimization analysis* can be used to guide resource allocation decisions. By estimating and comparing the costs of alternative programs, the analyst can identify which program costs least to achieve a given outcome. Cost minimization is a handy technique, but it is rarely used to evaluate alcohol treatment services because most services involve multiple outcomes with varying levels of success.

Though cost-effectiveness analysis is the most popular economic evaluation method employed in health care, it is also the most commonly misunderstood. Simply stated, *cost-effectiveness analysis* compares ratios of incremental (opportunity) cost and incremental outcome of two or more alternative programs when outcome is measured along a single scale. Incremental analysis relates to the additional cost or outcome that would arise if a program is implemented. For example, the incre-

mental cost of an enhanced services intervention is the cost of *adding* this component to standard or baseline services, not the cost of standard plus enhanced services. This technique is not intended for evaluating a single program or two or more programs involving multiple types of outcomes.³

The most powerful economic evaluation method is *benefit–cost analysis*. With this technique, the opportunity cost of a program is compared to its economic benefits (measured in monetary terms, such as dollars). Results are expressed as a benefit–cost ratio or net benefits (benefits minus costs). The difficulty associated with estimating the dollar value of program outcomes such as sobriety and improved family life has resulted in few benefit–cost studies in the alcohol treatment literature.⁴

The health care evaluation literature sometimes refers to two other types of economic evaluation methods. *Cost–utility analysis* compares the incremental cost and the incremental change in utility (quality of life) for two or more programs. This technique is becoming increasingly popular for evaluating pharmaceutical products,¹ but is rarely used in alcohol treatment evaluations. Alternatively, *cost–offset analysis* is often referred to in the alcohol treatment literature as a distinct method of economic evaluation.^{5,6} In reality, cost–offset analysis is a partial benefit–cost analysis because it compares the cost of a program with the dollar value of one outcome (e.g., avoided future health care costs). In the review that follows, cost–offset studies are discussed within the context of benefit–cost studies.

To promote the consistency and uniformity of cost-effectiveness analysis of health care programs, the United States Public Health Service recently commissioned a group of leading experts to reach consensus on a number of methods and principles. The sessions generated a comprehensive book³ as well as several professional articles.^{7–9} A variety of topics, such as analysis perspective, designing a cost-effectiveness study, estimating costs, discounting, addressing multiple outcomes, and uncertainty, are carefully presented, and recommendations are advanced. Although a careful summary of these issues is not possible in the present paper, they are contained in the assessment of recent studies and in the proposed research agenda. Readers with further interest can consult several excellent reference books published on economic evaluation methods in health care, such as Tolley, Kenkel, and Fabian,¹⁰ Sloan,¹¹ Drummond et al., and Hargreaves.¹²

3. Brief Historical Perspective

As noted earlier, this review focuses on economic evaluation studies of alcohol treatment services *published in the peer-reviewed literature* from 1995 through 1997. Some studies forthcoming in the peer-reviewed literature and papers focusing on illicit drug use are also included. Working papers, government reports, project reports, policy papers, and similar materials are not discussed because the rigor and quality of these sources are uneven and many of these documents are hard to access. Although the review disregards some respectable studies, the papers summarized below have at least passed the test of peer review and attained a measure of quality.

Table I. Summary of Selective Economic Evaluation Studies Through 1994

Author(s)/ Type of Study	Objective(s)	Principal Findings
Alterman et al. ¹³ Cost-Effectiveness	Measure cost-effectiveness of day hospital treatment relative to inpatient treatment for cocaine dependence	Day hospital treatment amounts to 40–60% of the cost of inpatient treatment for cocaine dependence; little difference in outcomes between groups at 7-month follow-up
Annis ¹⁴ Literature Review	Examine alternatives to traditional inpatient hospitalization for alcoholism	Inpatient alcoholism programs show no higher success rates than brief hospitalization; day treatment programs have equal or superior results to inpatient hospitalization and the former costs less
Elixhauser et al. ⁴⁶ Literature Review	Review C-E and B-C literature of personal health services from 1979 through 1990	Over 3,000 eligible publications were located, a volume and diversity which demonstrated different levels of rigor and findings
Goodman et al. ¹⁹ Benefit-Cost	Investigate the extent to which initiation of alcoholism treatment affects the total cost of health care	Overall, a 10% increase in alcoholism treatment leads to a 9.2% increase in health care costs; implications for alcoholism treatment cost offsets
Goodman et al. ²⁴ cost	Model the determinants of alcoholism treatment costs including location, type of alcohol problem, and comorbidities	Comorbidities have significant impact on treatment location, but not on treatment costs conditional on location; cost functions are estimated separately for inpatient and outpatient care
Heien and Pittman ²⁵ Methodological	Review methods and assumptions used in social cost studies of alcoholism	Current estimates are inaccurate and overstate actual costs
Holder ⁵ Literature Review	Review research findings and methods related to health care cost savings that can be attributed to alcoholism treatment	Many studies have methodological problems and serious data limitations; almost all studies examine privately insured alcoholics; cost offsets do not vary much by type of alcoholism treatment; it is difficult to attribute causality without a randomly assigned control group; there should be no more studies with only 1-year pre- and post-treatment data
Holder and Blöse ²⁰ Benefit-Cost	Examine the effect of alcoholism treatment on total health care costs for 1,697 treated alcoholics (and family members)	Costs continue to decline during several years following treatment; it is difficult to control for treatment dosage, so the intervention group is really an intent-to-treat group; biggest spike in health care costs occurs just prior to treatment

Holder and Blöse ²¹ Benefit-Cost	Review claims filed from 1974 to 1987 by employees (and dependents) at a large Midwestern manufacturing corporation	Total health care costs of treated alcoholics decline 23-55% from their pretreatment levels; posttreatment costs of treated alcoholics are 24% lower than posttreatment costs for untreated alcoholics; significant group differences between treated and untreated samples raise concern
Holder et al. ⁶ Literature Review Methodological	Review alcohol treatment cost and effectiveness studies to form conclusions about certain modalities	There is little clinical agreement about the best measure of effectiveness (abstinence or reduced use, and over what time frame); consider 33 different treatment modalities and rank modalities in a matrix of cost (low-high) and effectiveness (low-high); many effective modalities (brief motivational counseling) tend to be low cost and many less effective modalities (residential) tend to be high cost; surprisingly, the study shows that a negative relationship between cost and effectiveness is possible
Holder and Blöse ²² Benefit-Cost	Compare alcoholism treatment utilization patterns and charges for three groups of insurance enrollees	Total alcoholism treatment cost was \$4,665 per patient over the period of study, and \$1,287 per year; average costs are described by gender and by age
Howard ¹⁸ Methodological	Critical review of Holder et al. ⁵	Disagrees with earlier conclusions about relative cost effectiveness of different modalities when some modalities treat alcoholics of differing severity; also objects to selection of studies and interpretation of results
Jones and Vischi ²³ Literature Review	Review cost-offset studies for alcohol treatment services	Findings and recommendations are somewhat redundant in light of results of more recent studies and literature reviews
Longabaugh et al. ¹⁵ Cost-Effectiveness	Compare the cost and effectiveness of extended inpatient hospitalization (EIH) with partial hospitalization (PH) for alcoholism	Short-term (six months) outcomes show PH is as clinically effective as EIH; PH can be delivered at much lower cost than EIH; analysis does not control for patient severity and patient-treatment matching; concerned about "regression to the mean"
McCrary et al. ¹⁶ Cost-Effectiveness	Follows the treatment groups from Longabaugh et al. ¹⁵ through 12-month outcomes	Clinical effectiveness is very similar for PH and EIH, but cost is much lower for PH; results are the same as for the 6-month outcomes

Continued

Table I. *Continued*

Author(s)/ Type of Study	Objective(s)	Principal Findings
Richman ²⁶ Methodological	Propose methodological recommendations for cost-effectiveness studies of drug and alcohol treatments	Recidivism and resource absorption are important factors to consider; readmissions account for about 50% of total admissions to substance abuse treatment programs, but many analyses are confined to the initial treatment episode; a minority of the patients use a disproportionately large share of clinical services (resource absorption); argues for case-mix adjustment in calculation of treatment costs; short follow-up periods may exaggerate treatment effectiveness
Walsh et al. ¹⁷ Cost-Effectiveness	Randomly assign 227 alcoholic workers to mandatory inpatient treatment, mandatory AA, or choice of options	All three groups improved, and there were no differences in job performance measures; hospital group did best on substance use outcomes, where AA group did least well; AA group and choice group required more subsequent hospitalization than the hospital group; concluded that referral to AA alone or choice of programs requires intense monitoring due to higher risk of relapse; cost-effectiveness implications

To appreciate the contributions and recognize the gaps in the recent literature, it is best to begin with a brief historical review of the period preceding 1995. Table I summarizes most of the economic evaluation literature for alcohol treatment services through 1994. The annotations are organized alphabetically by author, with information on type of study, objective(s), and principal findings. Methodological qualifications and study limitations are presented in the concluding section of this paper.

Several themes can be detected. A few studies examine the relative cost-effectiveness of traditional inpatient treatment for substance abuse versus less intensive treatment such as day hospital care or periodic outpatient services.¹³⁻¹⁷ The general conclusion from these efforts is that inpatient and ambulatory care generate roughly equivalent outcomes at follow-up. Given the lower cost of ambulatory services compared with inpatient services, the former should be considered a more cost-effective treatment option. However, some studies rightly point out that inpatient clients are often more difficult to treat than outpatient clients, which may explain (partly or entirely) why inpatient programs do not show better outcomes.¹⁸ In addition, alcoholics in outpatient programs may have a higher risk of relapse than alcoholics in hospital-based programs.^{16,17} The heterogeneous (and sometimes unobserved) characteristics of individuals who enter different types of programs pose statistical challenges for program evaluators, commonly referred to as “selectivity bias.”

Holder and colleagues pioneered a series of studies investigating whether alcoholics who receive services for their abuse or dependence encounter lower health care costs after initiation of these services, compared with an equivalent period before service delivery.^{5,6,19-23} Most of these studies involve alcoholics with private health insurance and health care costs are measured through large insurance claims databases. Most studies find that health care costs begin to decline at the time of service delivery, but some of the findings require additional investigation due to numerous methodological challenges and data limitations (e.g., selectivity bias, regression to the mean, censored samples). These issues are explicitly discussed later in this report.

Several studies have contributed to the methodological literature on economic evaluation techniques for alcohol treatment services. Goodman et al.²⁴ developed an econometric model to estimate the effects of treatment location (e.g., inpatient versus outpatient), type of alcohol problem, and comorbidities on alcoholism treatment costs. Heien and Pittman²⁵ discuss several methodological problems with national cost-of-illness studies for alcoholism and outline improved techniques. Howard¹⁸ offers a critical review of Holder et al.⁶ and suggests some corrections to the cost-effectiveness findings. Two important factors that Richman²⁶ advocates for in the context of cost-effectiveness studies of drug and alcohol treatments are recidivism and resource absorption (a small number of clients affecting a relatively large portion of treatment resources).

4. Review of Recent Studies

Several notable additions to the economic evaluation literature between 1995 and 1997 span the full range of topics, including methodological studies and empirical benefit-cost studies (see Table II). The quality of the science also improves during this period, with many advances in both the ways that economic evaluation techniques are applied and the type of data collected. As noted earlier, the following discussion is organized by type of study (i.e., methodological, cost, etc.), and ample space is devoted to specific findings.

It should first be noted that much of the methodological research represents groundbreaking ventures, naturally accompanied by associated risks and shortcomings. However, methodological studies are needed to advance the credibility of economic evaluation findings. The final assessment of these methods and techniques will depend on their acceptability in future economic evaluation research.

French and colleagues contributed to the methodological literature by developing a data collection instrument to assemble the appropriate information on resource use and expenditures, information which can then be used to estimate the economic costs of treatment services for a particular program.²⁷⁻²⁹ The Drug Abuse Treatment Cost Analysis Program (DATCAP) can be completed by treatment program staff with the assistance of a user's manual, telephone consultation, and/or on-site assistance. The cost estimation procedures follow standard economic principles so that the analyst can calculate both the opportunity cost and accounting cost of treatment services. In addition, the cost estimates can be presented in a variety of formats, such as per year for the entire program or per week for a typical client.

The DATCAP instrument can be completed by any type of substance abuse treatment provider, including alcohol treatment programs. Recent applications include employee assistance programs^{30,31} and all types of substance abuse treatment programs, ranging from outpatient methadone maintenance clinics to therapeutic communities.^{29,32} The instrument is currently being expanded to estimate the patient costs of substance abuse treatment, including travel expenses, daycare costs, and lost wages.

There have also been methodological developments in the estimation of the dollar benefits resulting from effective substance abuse interventions. French et al.³ introduced a method to estimate the full dollar value of health-related outcomes. Based on principles in economics, medicine, and epidemiology, the proposed method captures the tangible and intangible benefits of health improvements or avoided health consequences. Following the benefit estimation theme, Rajkumar and French³⁴ demonstrated a method to estimate the tangible and intangible benefits of avoided crime that can result from successful substance abuse interventions. As demonstrated by the authors, the intangible benefits can be quite large, even though some areas are not investigated. The method was applied to actual pre- and posttreatment data for 2,420 drug abusers to compare the costs of treatment with the dollar benefits associated with crime reduction.

Table II. Summary of Economic Evaluation Studies Since 1995

Author (s)/ Type of Study	Objective(s)	Principal Findings
Barnett and Swindle ³⁷ Cost-Effectiveness	Seek to identify the characteristics of cost-effective inpatient substance abuse treatment programs; survey of program directors and records of 98 VA treatment programs; principal outcome considered is readmission within 6 months	Program size (negative), intended LOS (positive), and ratio of staff to patients (positive) are significantly related to treatment cost; same relationships with regards to effectiveness, with the exception of ratio of staff to patients; patient characteristics (history of prior treatment) are related to cost and readmission; 28-day program is more costly and slightly more effective than a 21-day program, resulting in incremental cost effectiveness of \$26,450 per successful treatment; moving from a 21- to 28-day program may not be cost effective; consolidation of small programs would reduce costs but also reduce access and effectiveness
Blum and Roman ⁴⁷ Literature Review	Review cost and outcome studies of EAPs	Many EAP evaluations have design limitations; no definitive evidence that EAPs are cost effective relative to other programs or that one type of EAP is more cost effective than another type; however, most EAP evaluations show effectiveness, having positive implications for cost effectiveness
Booth et al. ³⁶ cost	Evaluate changes in health services utilization and costs for lower socio-economic male veterans who received inpatient alcoholism treatment at VA medical centers	Both total inpatient days and outpatient visits increased for all groups completing treatment; increases in health care utilization and costs were greatest for the group who completed inpatient treatment; alcoholism treatment in the VA system may be associated with higher short-term medical costs because ability to pay is not a deciding factor in the provision of care
Bray et al. ³⁰ cost	Analyze cost of EAPs at seven worksites	EAPs exhibit some economies of scale; labor is the most costly resource; EAPs with similar costs per eligible employee may use a substantially different mix of resources; annual cost per eligible employee ranges from \$10.56 to \$181.47
Callahan et al. ⁴³ Cost-Minimization	Complete cost-minimization analysis of managed care program for mental health/substance abuse treatment	Treatment expenditures are reduced by 22% below predicted levels in the absence of managed care, without any overall reduction in access or quality of services; one population segment (children and adolescents) may be the exception; implications for cost minimization under managed care
Dunlap and French ²⁷ Methodological	Discuss the methodological differences in the accounting and economic approaches to treatment cost estimation	Economic (opportunity) cost is based on resources used and will always be greater than or equal to accounting costs; methodological differences are explained through actual case studies

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Table II. Continued

Author(s)/ Type of Study	Objective(s)	Principal Findings
French et al. ³¹ cost	Estimate cost of standard EAP services and incremental cost of enhanced services at a large Midwestern EAP	Total developmental cost is \$44,000 and implementation cost for the first year of the intervention is \$140,000; annual cost per eligible employee for standard EAP services was \$22.92, and the incremental annual cost per eligible employee for enhanced services was \$5.01 under full implementation; findings provide benchmark cost estimates for other EAPs considering enhanced services
French and McGeary ²⁶ Cost/ Methodological	Present cost estimation method for substance abuse programs with specific reference to the Drug Abuse Treatment Cost Analysis Program (DATCAP)	Technique is outlined and applications to actual treatment programs are presented
French et al. ²⁹ cost/ Methodological	Present data collection methods, analysis, and reporting for cost estimation of substance abuse programs	Paper is written as a user's guide for data collection and cost estimation; case study results are presented
French et al. ³³ Methodological	Introduce methodology for estimating the full cost (benefit) of health consequences (outcomes) associated with substance abuse interventions	Methodology is based on medical, economic, and social welfare principles; example calculations are presented for six health consequences including acute hepatitis B, HIV/AIDS, hypertension, bacterial pneumonia, sexually transmitted diseases, and tuberculosis; methodology offers evaluators a framework for performing benefit-cost analyses of substance abuse interventions
French et al. ⁴⁸ cost	Estimate the per-employee annual cost of operating an EAP across worksites included in a national probability sample; present cost findings by type of EAP, worksite characteristics, and other factors	The mean (median) annual cost of EAP services per eligible employee is \$26.59 (\$21.84) for internal programs and \$21.47 (\$18.09) for external programs; internal EAPs provide significantly more services than external EAPs, which may explain the higher mean and median costs
Finney and Monahan ³⁸ Cost-Effectiveness	Extend method and findings of Holder et al., ⁵ who examined the cost effectiveness of alcoholism treatment; determine effectiveness by creating an alternative effectiveness index	Conclude that findings reviewed in Holder et al. show weak relationship between cost and effectiveness; point to many limitations of the study and caution against using the results for resource allocation or policy purposes

Goodman et al. ³⁵ cost	Estimate alcoholism treatment cost functions using insurance claims data; predictors include decision to seek treatment, treatment setting (inpatient vs. outpatient), and individual characteristics	Diagnosis for alcohol abuse or alcohol dependence and comorbidity has important influence on the probability of additional treatment; claims data present several limitations; bivariate probit analysis with sample selection; translog cost function to detect interactions and nonlinearities
Goodman et al. ⁴² Benefit-Cost	Examine additional issues related to health care cost-offset effects of substance abuse treatment	Policymakers should distinguish between cost and utilization effects; total effects differ from individual offsets; results support the substitution of one type of care for another; study is limited by data only on treated substance abusers; selection effects are also a concern; actual cost-offset effects are modest
Humphreys and Moos ³⁹ Cost-Effectiveness	Compare differences in 1- and 3-year treatment costs between alcoholics who attend AA versus those who seek help from a professional provider of outpatient alcoholism treatment	Treatment costs are lower for the AA group over the course of the study, but outcomes are similar; voluntary AA participation may significantly reduce treatment costs without compromising outcomes; selection effects, cross-over effects, and small sample size (201) are concerns
O'Farrell et al. ⁴⁰ Cost-Effectiveness/ Benefit-Cost	Randomly assign 36 married male alcoholics who initiated individual alcoholism counseling to counseling/behavioral marital therapy (BMT) or counseling/interactional couples group (IRG); C-E and B-C analysis of adding BMT or IRG to individual counseling	From a net benefit perspective, BMT and individual counseling alone both show higher benefits than costs; analyzing the data presented, it appears that BMT is not cost-effective relative to individual counseling alone; BMT is better than IRG, but both are more expensive and not as effective as individual counseling alone; sample size, representativeness, and short period before baseline are limitations
O'Farrell et al. ⁴¹ Cost-Effectiveness/ Benefit-Cost	Randomly assign 59 couples to counseling/BMT only or to counseling/BMT plus relapse prevention (RP); similar design and analysis as O'Farrell et al. ⁴⁰	Both conditions show positive net benefits, but cost-effectiveness results are mixed; authors do not estimate incremental costs and outcomes of RP, but data seem to imply higher incremental costs of RP compared to incremental outcomes; examination of individual cases suggests that patient treatment matching may be appropriate to achieve maximum benefits; limitations include small sample sizes, absence of control group to compare to BMT, short pretreatment period, and some methodological inconsistencies

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Table II. *Continued*

Author(s)/ Type of Study	Objective(s)	Principal Findings
Rajkumar and French ³⁴ Methodological/ Benefit-Cost	Propose a method to estimate the tangible (e.g., criminal justice system) and intangible (e.g., pain and suffering of crime victims) costs of particular types of crime; demonstrate the feasibility of this method by estimating the pre- and posttreatment costs of criminal activity for a sample of 2,420 drug abusers	The estimated crime-related costs incurred during the period prior to treatment admission and the period after treatment discharge are significantly higher when calculated using the proposed method compared to traditional methods considering tangible costs only; a simple benefit-cost comparison of criminal activity outcomes indicates that drug abuse treatment has the potential to return net benefits to society through crime reduction; quantitative evidence shows that including victims' intangible losses can substantially raise the estimated dollar benefits of avoided criminal activity
Sindelar and Manning ² Methodological	Discuss issues related to the economic evaluation of treatment of illicit drug abuse; most issues are applicable to alcoholism treatment as well	Suggest that current evidence about the cost-effectiveness or cost-benefits of treatment is insufficient to direct public policies on funding; discuss types of economic questions, perspective, causality, multiple goals and outcomes, and appropriate methodology; attribute the small, "first generation" literature to the numerous difficulties of applying appropriate methods in this area; outline directions for future economic research

Goodman and colleagues³⁵ (1996) continued their econometric research on treatment cost functions using insurance claims data for 879 employees or retirees of a large midwestern manufacturing company. Study participants had at least one treatment episode for alcohol dependence, alcohol abuse, or alcohol psychoses between 1980 and 1987. By using a flexible form cost function to detect interactions and nonlinearities, they predict alcohol treatment cost as a function of (1) prior treatment episodes, (2) the treatment location (i.e., inpatient or outpatient), and (3) individual characteristics. The most significant explanatory variables for additional treatment include diagnosis for alcohol abuse and drug abuse comorbidity. This study highlights the sophistication and power of econometric modeling, while acknowledging the limitations of insurance claims data.

Booth and colleagues³⁶ analyzed changes in health care utilization for 85,000 male alcoholics who received inpatient care through Department of Veterans Affairs (VA) medical centers in 1987. The impressive size of the data set, the length of the pretreatment and follow-up period (three years), and the provision of substance abuse and medical services in the VA on the basis of need rather than ability to pay represent notable features of this study. Unlike several previous studies on cost offset effects of alcoholism treatment, Booth et al.³⁶ found a significant increase in the number of inpatient days and outpatient visits for all types of medical care and for all groups of alcoholics who received treatment services, even for individuals who completed inpatient treatment. This result is somewhat surprising because one would expect inpatient care, especially for those completing treatment, to be associated with lower health care utilization and costs. The authors suggest several explanations for this result, but the most compelling reason may derive from the fact that relapse is common even for those who complete treatment and the VA system is more apt to provide follow-up services compared to other public and private clinics. Determining whether the increases in short-term costs persist for longer periods is an ideal topic for future analyses.

One of the most creative and influential papers from this period is a study by Barnett and Swindle.³⁷ Using program administrators' surveys and record abstraction from 98 VA inpatient treatment programs, Barnett and Swindle try to identify the characteristics of the most cost-effective clinics. They find that program size, intended length of completed treatment as reported by program directors, the ratio of staff to patients, and a client's history of prior treatment are all related to both treatment cost and outcome (readmission within six months of initial treatment). In addition, they find that a 28-day program is more costly and only slightly more effective than a 21-day program, resulting in an incremental cost-effectiveness estimate of \$26,450 per treatment "success." Treatment "success" is defined as no hospitalization for psychiatric or substance abuse treatment within 180 days of discharge from the index treatment. The authors claim that moving from a 21-day program to a 28-day program may not be cost-effective. Furthermore, they argue that consolidation of small programs would probably reduce costs, but might also lower treatment effectiveness and limit treatment access for some clients.

A different type of cost-effectiveness study was published recently by Finney and Monahan.³⁸ Building on the work of Holder et al.,⁶ these authors suggest alter-

native ways to rank the relative effectiveness and cost-effectiveness of alcoholism treatment modalities. Since alcoholism treatment involves multiple outcomes, only one of these outcomes can be used in a cost-effectiveness analysis, or the analyst must specify an index of effectiveness that captures a range of outcomes. The features of any effectiveness index will be the subject of considerable debate. Nevertheless, using the same cost estimates from Holder et al.,⁶ Finney and Monahan define an alternative effectiveness index and reinterpret some of the findings from the literature. With these changes, comparing all 26 modalities in their review, the authors find only a weak relationship between cost and effectiveness (correlation is -0.01). While the absence of a standardized measure of effectiveness limits the applicability of these findings for resource allocation and policy purposes, the review does highlight the consistent evidence on the effectiveness of some modalities (e.g., social skills training, community reinforcement approach, behavioral marital therapy, and stress management training).

Humphreys and Moos³⁹ compare differences in one- and three-year treatment costs between alcoholics who choose to attend Alcoholic Anonymous versus those who seek help from a professional outpatient alcoholism treatment provider. As expected, treatment costs are lower for the AA group than for the outpatient group over the course of the study. However, outcomes are similar for both groups, indicating that voluntary AA participation may significantly reduce treatment costs without compromising outcomes. The authors caution that although AA is not a substitute for outpatient treatment in all cases, it should be encouraged for some types of alcoholics. In addition, allowing subjects to self-select a treatment option rather than using random assignment is a process that potentially introduces selection bias.

O'Farrell and colleagues examine both cost-effectiveness and benefit-cost issues in their companion studies published in 1996. O'Farrell et al.⁴⁰ randomly assigned 36 married male alcoholics who started individual alcoholism counseling to either (a) counseling alone, (b) counseling complemented with behavioral marital therapy (BMT), or (c) counseling complemented with an interactional couples group (ICG). Looking first at individual counseling alone, they show that the dollar benefits at follow-up (compared with the baseline value) were significantly greater than the cost of treatment.* The same can be said for counseling plus BMT, but not for counseling and ICG. The natural inclination is to recommend the virtues of individual counseling and endorse the addition of BMT to individual counseling as economically prudent. However, a closer examination of the data will reveal that the incremental benefit of adding BMT is very small, and possibly even negative.† Thus, individual counseling plus BMT can be justified overall from a net benefit perspective, but individual counseling alone may achieve similar outcomes at a lower cost. These results should be considered preliminary, however, especially give the small number of subjects who are randomized to three conditions.

The design and analysis in O'Farrell et al.⁴¹ are identical to O'Farrell et al.,⁴⁰

*Although randomization placed individuals into different treatment conditions, the study did not randomize subjects to a no-treatment control group. Thus, when the outcome findings are interpreted, regression to the mean is still a potential problem.

†The information necessary to make these calculations is not explicitly provided in O'Farrell et al.⁴⁰

with the exception that 59 married male alcoholics are randomly assigned to individual counseling and BMT or to the package consisting of counseling, BMT, and relapse prevention (RP). Both BMT and BMT plus RP show dollar benefits at follow-up that are higher than the cost of treatment. However, as before, the incremental benefits of BMT plus RP are small and possibly negative relative to BMT without RP. Thus, the higher cost of adding RP to individual counseling and BMT may not be economically justified.

Another example of a recent benefit-cost study is Goodman et al.⁴² The objective here is to examine additional issues related to health care cost-offset effects of substance abuse treatment. Similarly to the earlier studies by Holder and others,^{5,20,21} Goodman and colleagues find that health care costs decline for substance abusers after treatment initiation, but the differences compared to pretreatment levels are relatively modest. The authors suggest that future studies should distinguish between health care cost and health care utilization. In addition, they emphasize the fact that cost differences before and after service delivery can vary widely for individual substance abusers. Thus, including relevant covariates and increasing sample sizes can mitigate the effects of these individual differences.

5. Summary and Recommendations

The economic evaluation literature has recently developed into a well-defined collection of studies that apply advanced techniques to the study of alcohol treatment services. This literature is especially noteworthy given the fact that the “first generation” of economic evaluation studies only started to appear in professional journals in the early 1980s. Findings in the literature are not always consistent and interpretation requires some degree of subjectivity. Nevertheless, the most important findings and evidence in the literature can be summarized as follows:

1. For many alcoholics, day hospital treatment or even less intensive outpatient services (e.g., AA or individual counseling) are cost-effective alternatives to inpatient treatment.
2. Though national and individual program estimates are available for the cost of employee assistance programs (EAPs), no study has rigorously examined the incremental cost-effectiveness of EAPs as a source of diagnosis, brief counseling, and referral for alcoholic employees.
3. The initiation of alcohol treatment services often relates to declining health care costs for alcoholics who are covered by private health insurance.
4. Personal characteristics, such as severity of diagnosis, comorbidities, and participation in prior treatment, affect the costs and outcomes of alcohol treatment services; adjusting the mix of cases in treatment planning may be necessary to account for these factors.
5. Although the use of AA as an alternative to more structured alcohol treatment services may be cost-effective for some alcoholics, substance abuse outcomes are sometimes lower, and the risk of relapse is usually higher.

6. Data collection forms and standardized techniques are now available to estimate the economic and accounting cost of alcohol treatment services.
7. Methods have recently been developed allowing the estimation of the dollar value of alcohol treatment outcomes, such as avoided absenteeism, increased productivity, improved health, and avoided crime.

While the methodological developments and empirical findings summarized above are significant, each of the studies reviewed earlier was challenged by significant obstacles, such as the multi-outcome nature of alcohol treatment services, the inability to randomize to a no-treatment control group, and limitations associated with secondary data sources. Listed below is a brief summary of the challenges and limitations faced by previous studies, which may be encountered in future studies as well.

1. The optimal and preferred research design (random assignment of alcoholics to an intervention group(s) and a no-treatment control group) is often not feasible for this population due to ethical concerns, but it is difficult to attribute causality without random assignment. Observational field studies with alcoholics covered by managed care policies hold promise as a viable alternative to pure randomization.⁴³
2. Analysis of alcoholics who voluntarily choose treatment introduces selection bias because this sample is a motivated group, and one can not determine if they would have improved even in the absence of treatment services; unobservable personal characteristics may be correlated with treatment success.
3. Economic evaluation techniques in the literature are sometimes inconsistent (e.g., definition of terms, analysis perspective, execution of methods) and improperly used, making it difficult to compare findings across studies.
4. Measures of effectiveness are not uniform across studies, and sometimes outcomes move in different directions, further compounding comparison difficulties across studies. Indexes of effectiveness have been suggested, but so far consensus has not been established.
5. Using insurance claims data to model health care costs has many desirable features, but limitations exist because health care claims are not a true measure of economic cost; type of treatment and dosage (e.g., quality and quantity of services received) is difficult to determine; pretreatment and post-treatment periods are generally short; eligibility gaps and missing data are common; and alcoholics without insurance or on public assistance can not be included in the study.
6. Most studies consider 6-month or 12-month outcomes, but very little research investigates long-term treatment outcomes.
7. Sample sizes are very small for some study groups that are compared in a cost-effectiveness analysis or benefit-cost analysis; small sample sizes increase the influence of outliers and reduce the power of the analysis.
8. Few studies estimate the opportunity costs of alcohol treatment services or the full range of treatment benefits from a societal perspective; partial economic evaluations may formulate incorrect conclusions.

Drawing from the strengths and limitations of the current literature, the following recommendations are advanced to guide future economic evaluation studies of alcohol treatment services:

1. Although random assignment to an intervention and a no-treatment control group may not be feasible for many studies, random assignment to standard and enhanced treatments should be considered in future research designs. Nonrandomized studies should employ statistical corrections to address potential limitations, such as sample selection bias.
2. Future studies should achieve an adequate sample size to ensure statistical power and enhance generalizability.
3. Cost-effectiveness analysis and benefit-cost analysis of alcohol treatment services should not be pursued until treatment effectiveness has been established.
4. Whenever possible, benefit-cost analysis should be selected over cost-effectiveness analysis, especially when a program or intervention involves multiple outcomes. Benefit-cost analysis strives for maximum inclusion of multiple outcomes from alcohol treatment services, which results in a more precise and comparable (i.e., dollars) contrast of treatment costs and outcomes.
5. The effectiveness of recent treatment is influenced by the number and duration of previous treatment episodes.^{44,45} Therefore, researchers should include measures of prior treatment in multivariate models that estimate the effectiveness of the most recent treatment episode.
6. Estimation of long-term alcohol treatment costs and outcomes should be pursued in all future economic evaluation studies if the research design and budget will accommodate this extension. As suggested by Holder,⁵ future studies of treatment cost-offsets should extend the baseline and follow-up period beyond one-year pre- and posttreatment initiation.
7. Methods are now available that allow estimation of the dollar value of most alcohol treatment outcomes. Future benefit-cost studies should attempt to consider the full range of outcomes (beyond health services utilization) in estimates of economic benefits.
8. Standardization in design, methods, analysis, and reporting of economic evaluation research is one of the primary recommendations advanced by a recent NIH expert panel³ and health economists in general.^{1,2} Economic evaluation research of alcohol treatment services should follow these guidelines (e.g., estimate opportunity cost, use societal perspective) to maintain internal consistency and to facilitate comparisons with other health care services and programs.
9. While the economic evaluation literature is well represented by studies on the relative costs and outcomes of inpatient and outpatient services, more economic studies are needed to evaluate contemporary and innovative treatment services. These innovations include EAPs, AA coupled with outpatient counseling, medications such as naltrexone, programs that link alco-

hol treatment services with primary medical care, brief intervention models, and social treatment models.

10. Previous studies have urged analysts to recognize the wide continuum of alcoholism and alcohol dependence, and the unique treatment needs of many alcoholics. Protocols matching patients and treatments provide an excellent opportunity for future economic evaluation research. Research objectives for patient–treatment matching studies should include an economic evaluation component whenever feasible.

In summary, though economic evaluation research of alcohol treatment services has advanced rapidly during the 1990s, many improvements can still be made in methodology, data collection, analysis, and reporting. New technologies and changes in service delivery systems require a fresh look at the costs and benefits of alternative treatment programs. Economic evaluation research has the potential to apply rigorous techniques to the study of alcohol treatment services. The findings from these analyses must then be reported clearly to a nontechnical audience so that the results can rapidly influence policy decisions. Given the strong interest in economic evaluation studies during the current decade and the continuing support for this type of research from public and private sources, the literature is almost certain to become more sophisticated and voluminous during the first part of the twenty-first century.

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Financing of Substance Abuse Treatment Services

Constance M. Horgan and Elizabeth Levy Merrick

Abstract. The financing of treatment for substance abuse problems has differed from the rest of financing of health care in part because of the dominant role of the public sector as the payer of services. Nonetheless, the rise of managed care has affected substance abuse treatment services as well as the rest of the health care system. Alternative payment mechanisms are one important component of some managed care approaches. Behavioral health carve-outs are another managed care development that has affected substance abuse services. In this chapter, salient features of financing for substance abuse treatment are reviewed within the conceptual framework of payers (purchasers and intermediaries), providers, and consumers. Existing literature on substance abuse treatment financing is summarized, while recognizing that much remains to be researched.

1. Introduction

The complexity of the financing of substance abuse (alcohol and other drug) treatment services underscores the importance of understanding the implications for individuals in need of treatment. The complexity arises in part because it has differed from financing of general medical care. Importance relates to the effect that financing arrangements can have on availability, type, quality, and cost of substance abuse treatment services. The rise of managed care, with its range of new financial incentives, has contributed to increased complexity, more rapid change, and ultimately a greater need to understand the implications for patients, providers, and funders.

The financing of treatment for substance abuse problems, as well as mental illness, has differed from financing of the rest of health care because of the dominant role of the public sector as the payer of services.¹ In particular, public funding from noninsurance sources, such as the federal block grant and state and local sub-

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sities, remains the mainstay of the substance abuse treatment system.^{2,3} However, the importance of funding from both private and public insurance sources has grown as substance abuse treatment benefits under private insurance have expanded in the last decade⁴ and as states use Medicaid more creatively, especially through waiver programs.^{5,6}

Essential to understanding the financing of substance abuse services are the substantial changes by both public and private payers in the methods of paying providers, altering the way substance abuse services are delivered. Key to these changes in the financing of substance abuse services, as well as more generally in the health care system, has been the dramatic growth of managed care. Fundamental to managed care is the inherently different incentive structure in the alternative methods used to pay providers. An important difference in managed care between the broader health care environment, which is moving toward greater integration, and alcohol, drug, and mental health services has been the evolution of specialty carve-out arrangements as part of the managed behavioral health care industry. Whether carve-out or integrated, the importance of managed care for substance abuse services is already well established under private insurance, and the significance of managed care for substance abuse treatment in the public sector is expanding.⁷⁻⁹

This chapter describes the current state of financing of substance abuse treatment services, particularly in light of the changing environment related to managed care. First, an overview of the substance abuse treatment system is provided. Then, a model of the relationships among payer, provider, intermediary, and consumer is used as a framework for discussing financing issues. Recent findings are highlighted, while emphasizing the general lack of knowledge regarding financing and reimbursement issues in substance abuse treatment services.

2. Treatment System

Treatment for substance abuse problems is delivered in a variety of settings which can be categorized into several distinct sectors. These include the specialty mental health and addictive disorders treatment sector, the general medical sector, the human services sector (including criminal justice and education settings), and voluntary support network sector (including self-help groups, family, and friends). Among individuals with a diagnosable alcohol disorder in the past year, 22% received some mental health or substance abuse services in one or more settings with about 11% receiving services in the specialty sector, 10% in the general medical sector, 8% in the voluntary support sector, 4% in the human services sector, while 78% received no treatment. Among individuals with a diagnosable drug disorder, 30% received some mental health or substance abuse services, with 14% receiving services in the specialty sector, 12% in the general medical sector, 9% in the voluntary support sector, 6% in the human services sector, while 70% received no treatment.¹⁰ Much of this chapter focuses on the financing of substance abuse services in the specialty sector. The specialty sector refers to treatment by professionals and

facilities specializing in mental health, alcohol, or drug abuse disorders. The nonspecialty and other sectors are described briefly here and are referred to in other sections as appropriate within the three-party framework of the payer, provider, and consumer.

2.1. Nonspecialty Medical Sector

Many individuals who have a substance abuse problem are encountered in the primary care and/or other medical setting. The primary care setting is important for the treatment of substance abuse problems, particularly from the perspective of screening, early intervention, and referral to specialized services.¹¹ Emergency rooms, mental health settings, and certain medical specialties have a significant number of patients whose medical problems are related to substance abuse.¹² Frequently, the services provided in the nonspecialty setting involve the treatment of other medical conditions concurrently with the substance abuse problem. Also, treatment for substance abuse may be subsumed under another diagnosis, particularly when substance abuse is seen as a secondary condition. From a financing perspective, payers need to be concerned that appropriate incentives exist for necessary linkages between specialty and nonspecialty care and for adequate assessment and early intervention to occur.

2.2. Other Sectors

Other systems and entities are involved with substance abuse treatment services. There are strong connections between the criminal justice system and the substance abuse treatment system. Most treatment of alcohol and other drug-involved offenders occurs in community-based settings, frequently as a condition imposed by the court or criminal justice system.⁹

Although not part of the formal treatment system, self-help groups, such as Alcoholics Anonymous (AA) and Narcotics Anonymous (NA), play an important role in the recovery process for many individuals with substance abuse problems. Self-help groups may be used in different ways: as the only form of help, concurrently with formal treatment, or sequentially with treatment. From a financing perspective, these other systems are important from not only the perspective of interconnections, but also because of the potential that exists for cost shifting.

3. Conceptual Framework

The delivery of health care services, accurately described for many years as a three-party relationship among payers, providers, and consumers, is easily adaptable to the substance abuse treatment system.¹³ We will therefore examine financing issues related to who pays for care, who provides care, and who uses care. This traditional triangular representation can be updated to reflect the more complex managed care environment which frequently introduces an intermediary player

between the payer and the provider, as noted below in Figure 1. Ongoing changes in health care delivery, particularly related to managed care, have created a blurring of the boundaries between payer and provider, as the traditional roles of each merge.

Payers include private insurance; public insurance, including Medicaid and Medicare; and other largely governmental funding sources, not linked to individual entitlements, such as federal block grants. *Providers* represent the system that delivers substance abuse treatment. Services are delivered through a myriad of components, including both specialty substance abuse providers and other treatment settings as noted above. *Consumers* refer to persons who have received services. They are a subset of the population in need of treatment. The relationship between need for treatment and actual use of services is described in terms of ability to pay through either insurance or some other mechanism paying for services.

The relationship among payers, providers, and consumers has a major impact on the delivery of substance abuse treatment services. How providers are reimbursed and how much they are paid affect how services are provided to consumers. For example, providers may be less willing to offer services which are reimbursed at low levels. The scope and generosity of insurance benefits offered by payers affects consumers even more directly, by placing limits and conditions on the amount and types of services that may be used. The relationships have mutual effects on the parties involved; for instance, rising charges or utilization of certain services may lead the payer to institute more stringent controls.

The relationship between payers and providers has become more diverse under managed care. Thus, delineating between the payer as the health plan purchaser and as the health plan intermediary is conceptually useful.^{14,15} Health plan *purchasers* refer to the entity that sponsors the health plan. Within private insurance this is typically an employer, within Medicare it is the federal government, and within Medicaid and other public funding it can be the federal, state, or local government. The purchaser may deal directly with providers or, more commonly, go through a health plan intermediary. These *intermediaries* are frequently managed care organizations which can have a variety of possible arrangements with the purchaser and the provider, ranging from largely an administrative function to direct

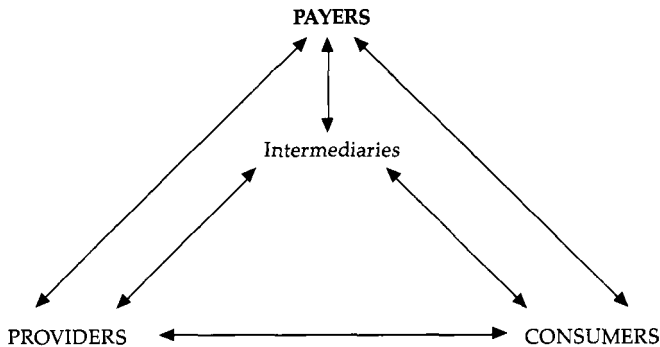


Figure 1. Three-party treatment system.

involvement in the actual delivery of health care services. Arrangements can range from closed, exclusive contracts with a select panel of providers to nonexclusive, “arms-length” arrangements. For example, a group model health maintenance organization (HMO) may contract with an organization of providers who serve only enrollees of that HMO. On the other hand, a preferred provider organization (PPO) may contract with many individual providers who also provide services to enrollees of other health plans. The degree of control that managed care organizations exert in terms of determining the services provided varies as well. Some managed care organizations have practice guidelines and more stringent utilization review procedures, while others do not. Risk sharing between purchaser and intermediary can take on a variety of forms as well, ranging from none, to partial, to full capitation. Some health plan intermediaries are increasingly passing on more of the financial risk by directly capitating providers.¹⁵ Differing payment arrangements among purchaser, intermediary, and provider introduce different incentives as to how services will be delivered.

4. Payers

4.1. Historical Context

There have been significant changes in the financing and organization of substance abuse treatment services in the last three decades. Prior to the 1970s, the majority of individuals admitted for inpatient treatment of substance abuse problems received care in state mental hospitals or emergency care in public hospital emergency rooms, with the responsibility for treatment viewed largely as a state and local issue. Two major shifts have accounted for the development of a specialized treatment sector.¹⁶

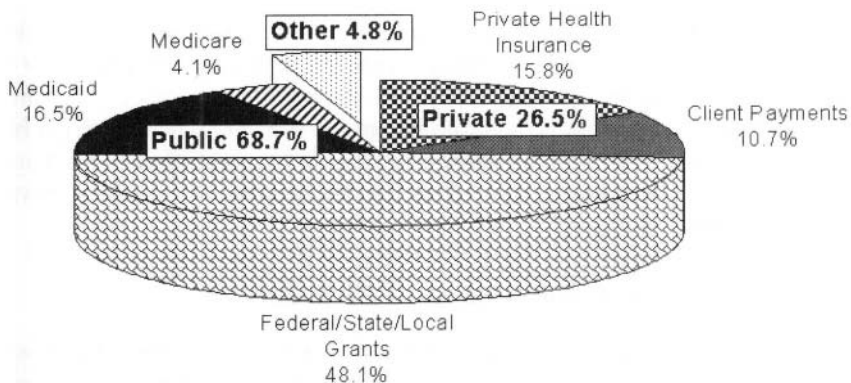


Figure 2. Distribution of sources of funding for substance abuse treatment facilities, 1996. Source: Uniform Facility Data Set (UFDS): data for 1996 and 1980–1996. SAMHSA, Office of Applied Studies, United States Department of Health and Human Services, December, 1997.

The first shift was from state and local undifferentiated funding to the development of federal–state partnerships through federal categorical grants that targeted particular programs and populations. After 1982, these categorical grants were consolidated into block grants which are administered by the states.¹⁷ Public noninsurance funding from the federal block grants, combined with state and local funding, remain the predominant, albeit declining, source of funding for the treatment of alcohol and other drug problems. There is, however, tremendous variation across states in public per capita funding of specialty substance abuse treatment.^{18,19}

The second shift in funding has been the increased coverage of specialized substance abuse treatment as a discrete benefit by private and public insurance.¹⁶ The earliest benefits for substance abuse treatment began to appear in the 1960s.²⁰ Prior to the 1970s, private insurance policies typically had no explicit coverage for substance abuse rehabilitation treatment, although associated medical conditions, such as cirrhosis, were covered.²¹ The 1980s saw a dramatic growth in coverage under private insurance. State mandates, introduced mostly in the 1980s, for substance abuse treatment to be offered by private insurers as a required or optional benefit, also contributed to the availability of minimal benefit packages for substance abuse treatment.²² The late 1980s saw the beginning of a dramatic increase in managed care approaches within private insurance in response to rising medical care expenditures, with mental health and substance abuse treatment a common target.⁷

Since the late 1960s, the public insurance programs of Medicare and Medicaid have provided some coverage for substance abuse treatment; however, these programs also have limitations using features similar to private insurance. Because Medicaid is a combined federal and state effort, coverage varies from state to state, often with substantial restrictions.²³ The mid 1990s are seeing the development of Medicaid managed care approaches for mental health and substance abuse treatment, as states apply to HCFA for waivers which allow more flexibility with respect to managed care arrangements.^{5,24}

The importance of insurance payments has been increasing, particularly private insurance, as the number of enrollees with coverage for substance abuse treatment has grown, and increasingly Medicaid contributes as waiver programs become operational. However, the public noninsurance sector remains the major funder of substance abuse treatment, and it too has begun to experiment with managed care. The relative contributions of various funding sources for specialty treatment are more fully discussed next.

4.2. Funding for Specialty Substance Abuse Treatment

The public sector plays an important role in funding the specialty substance abuse treatment system. In 1996, two-thirds of total funding came from public sources as shown in Figure 2. Federal, state, and local grants accounted for 48% of funding, followed next in importance by Medicaid with 17%. Altogether the private sector accounted for 27% of funding, with about 16% coming from private health insurance. There was variation across states in the relative importance of the public ver-

sus private sectors in funding, although the public sector played a substantial role in all states.⁸

This pattern of funding differs markedly from that for general medical care in which the public noninsurance sector is much less important. Almost three-quarters of public sector funding for general medical care comes from the public insurance programs of Medicare and Medicaid, as contrasted with specialty substance abuse treatment where the contribution of public insurance mechanisms is quite small.²⁵ The large amount of public direct subsidies which include the federal block grant for substance abuse treatment has implications for service delivery. Public subsidies usually provide a fixed amount of dollars to providers, in contrast to an insurance mechanism where reimbursement is tied directly to the enrollee. Public subsidies thus function as limits under which services must be allocated.²⁵ In this type of global budgeting, with largely fixed total expenditure levels, rationing or prioritizing tends to be more explicit.

There is substantial variation in the breakdown between public/private funding depending on the ownership status of the substance abuse treatment facility as shown in Figure 3. In 1996, publicly-owned facilities had a heavy reliance on public funding with over 90% coming from public sources, largely federal, state, and local grants (79.5% of total funding). On the other hand, private for-profit facilities had a significantly less, though still substantial reliance on public sources, with over 42% coming from public sources, most importantly Medicaid (19.7% of total funding).

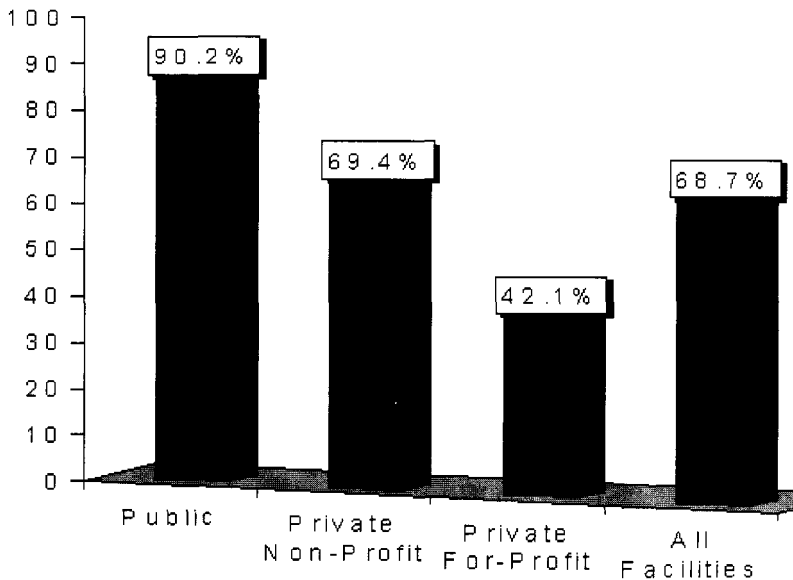


Figure 3. Percent of public funding by ownership of substance abuse facility. Source: Uniform Facility Data Set (UFDS): data for 1996 and 1980–1996. SAMHSA, Office of Applied Studies, U.S. Department of Health and Human Services, December, 1997. Note: Public funding includes Medicaid, Medicare, and federal, state, and local grants.

The latest data suggest that this two-tiered system is becoming less pronounced but public funding still predominates.²⁶

4.3. *Managed Care*

Purchasers of health care are increasingly using managed care as a means of controlling costs. Under managed care, substance abuse services are frequently combined into the broader area of managed behavioral health care, which includes mental health and substance abuse care. All types of payers are turning to managed care arrangements for the provision of substance abuse services. This includes employers purchasing private insurance, as well as state governments purchasing for Medicaid and most recently state substance abuse treatment funds. Almost half of substance abuse treatment facilities have managed care contracts, covering 30% of clients.²⁶

4.3.1. Definition of Managed Care. Managed care refers to a wide range of strategies used to control the utilization, cost, and quality of health care; however, no single definition reflects the range of evolving approaches that are considered managed care.²⁷ Under managed care, the roles of provider and payer become blurred. For example, an HMO may be both the insurer to whom premiums are paid and the provider with specific organizational arrangements for the delivery of direct treatment. Thus, it is increasingly difficult to disentangle organizational from payment issues.

For the purposes of this chapter, a broad definition is used which defines managed care as the use of any of three types of *strategies*. These strategies have been commonly used as defining characteristics,^{4,28} and have been identified as the most important features of managed care plans.²⁹ These managed care strategies may be used singly or in combination and are employed as integral aspects of four types of managed care *plans*.

The three types of managed care *strategies* used for alcohol and other drug benefits include: (1) utilization management, (2) selective contracting, and (3) provider payment. These strategies vary with respect to the level and timing of the review of clinical decision-making, level of patient choice of provider, and the degree of provider financial risk sharing. *Utilization management* is the review of individual cases to assess the appropriateness of care to manage health care costs.³⁰ There are several types of utilization management that are commonly used with traditional indemnity strategies. Four basic utilization management techniques are common: preadmission certification, concurrent review, case management, and gate keepers.³¹ *Selective contracting* gives patients strong incentives to use certain participating providers.³² Providers may be selected by health plans because they agree to some type of capitated payment arrangement or discounted payment schedule, or because they are viewed to have cost-effective practice patterns. *Provider payment* refers to financial mechanisms that are used to encourage a provider to restrain costs.²⁹ These include discounted fee payments, capitation arrangements in which a provider agrees to provide services for a fixed payment per person in exchange

for taking responsibility for providing all covered services for a fixed period of time, and salary withholds and bonuses.

The four types of managed care *plans* which use any or all of the above strategies are: (1) managed indemnity, (2) health maintenance organizations, (3) point of service plans, and (4) preferred provider organizations. The boundaries between each blur and may be thought of as a continuum ranging from less managed to more managed. Frequently, these arrangements choose to provide substance abuse services through a specialty carve-out plan for behavioral health care where a single vendor manages the utilization of mental health and chemical dependency benefits. Another very recent phenomenon is the formation of integrated provider networks which may link together a variety of organizational entities, including managed care plans.¹⁴ Physician/hospital organizations (PHOs) or management services organizations (MSOs) are the names that describe these large integrated networks.²⁹

Managed indemnity refers to traditional insurance arrangements in which there is full choice of provider and payment on a fee-for-service basis; however, utilization management strategies are used to control utilization and costs. *Health maintenance organizations* (HMOs) are prepaid health care plans which provide a defined but comprehensive range of services through a specified group of providers for a fixed annual fee. Providers within HMOs may be salaried or reimbursed on a capitated or other at risk arrangement. *Preferred provider organizations* (PPOs) are provider networks with negotiated fee schedules in which the patients are either required or given financial incentives to use providers within the selected network. *Point of service* (POS) plans are a hybrid arrangement in which patients receive all in-plan services from selected providers for a small or no copayment as in HMOs; however, patients may “opt out” and receive care from out-of-plan providers at significantly higher copayments.

Private insurance and Medicaid programs that use managed care all employ at least one of the three strategies noted above, and the managed care plan can be described as managed indemnity, HMO, PPO, or POS. The use of carve-out managed behavioral health arrangements by both public and private purchasers is quite common.^{6,7,9}

4.4. Managed Behavioral Health Care (MBHC)

4.4.1. Growth of MBHC. Managed care has made the greatest inroads in private insurance plans. In 1997, 86% of workers with employer-sponsored insurance in firms with 200 or more employees were covered through HMO, PPO, or POS plans.³³ HMOs and PPOs each account for about one-third of this population. Managed care enrollment by publicly insured individuals covered by Medicare and Medicaid is not as extensive; however, as states have begun experimenting with revamping Medicaid, beneficiaries are moving into HMOs and other forms of managed care.³⁴ A number of states have applied or plan to apply for waivers to HCFA to enable them to develop managed care programs under Medicaid, and many of these waivers have explicit provision for managed behavioral health care. Medicaid is a major growth area for managed behavioral health care.⁵ In 1997, 28 states were found to

have currently or almost operational managed care programs for Medicaid and/or state alcohol and other drug treatment populations.³⁵ Some states have waiver programs which have been operational for several years now. For example, Massachusetts has included substance abuse services for Medicaid-eligible persons under managed behavioral health carve-out arrangements since 1992.³⁶

4.4.2. Delivery of MBHC Services. The specific arrangements for substance abuse treatment under managed care plans are not well documented for either the privately or publicly insured. These include characteristics such as treatment product offerings; level of integration; payment methods/risk sharing; benefit restrictions; provider selection; patient entry; quality assurance techniques; and utilization management approaches. Few studies of MBHC have focused specifically on substance abuse treatment. Generally, MBHC approaches have usually found reductions in inpatient service use^{24,37–39} as well as lower intensity and/or duration of outpatient service use.^{39–41}

4.4.3. Carve-Outs. In the late 1980s and early 1990s, the MBHC industry grew rapidly both in terms of enrollment and number of carve-out companies. The industry then began to undergo a period of consolidation, as many companies established large national delivery systems through mergers and acquisitions.⁷ From 1990 to 1993, the mean number of clients per managed behavioral health firm nearly doubled to over 800,000 before reversing direction in 1994.⁴² In 1997, the three largest companies accounted for 52% of this market.⁴³ Enrollment continues to grow with an estimated 149 million individuals covered by some type of specialty managed behavioral health program in 1997.⁴³

There are two main paths to managed behavioral health care carve-outs.⁴⁴ Many employers and state Medicaid programs have chosen to separate behavioral health care from their health plans and to contract directly with the MBHC carve-out vendor. Frequently, this type of carve-out is administered in conjunction with employee assistance programs (EAPs). Alternatively, many HMOs and other health plans contract with managed behavioral care vendors for their substance abuse and mental health services.

4.5. Special Issues Related to Payers of Substance Abuse Services

4.5.1. Decision-Making. Payers have several choices when it comes in deciding if and how to pay for the provision of substance abuse and mental health services. They can offer coverage through some kind of indemnity arrangement; through a managed care approach, such as a PPO, HMO, or POS, where substance abuse treatment services are included as part of the plan; through a MBHC carve-out arrangement; or they may opt to not offer coverage at all (depending on state mandates and self-insurance exemptions). Little is known about how payers make decisions among these types of choices. In the private sector, larger employers and those who highly value special behavioral health expertise are more likely to carve out behavioral health.⁴⁵

4.5.2. Adverse Selection. An important factor in health insurance in general is that individuals who know or expect that they will need more of certain services will tend to choose health plans which offer the most generous coverage of those services. This pattern can result in adverse selection, or nonrandom differences in enrollment of high-utilizing individuals across health plans. Implications include the concern that better coverage will result in more high-cost enrollees, which may lead health plans to reduce coverage, avoid enrolling persons perceived as high risk, or encourage disenrollment of such persons. Payers also need to be aware of possible selection bias when comparing the costs of different plans, since apparent savings may result from a lower-cost group of enrollees (favorable selection) rather than greater efficiency or better care management. The selection bias argument is frequently used in support of a payer choosing a carve-out arrangement.^{46,47} If all employees/enrollees are covered under the carve-out arrangement, then the adverse selection problem is eliminated.

4.5.3. Payment Methods and Risk Sharing. Substance abuse service products may be offered to purchasers of managed care programs on an administrative only, risk-sharing, or fully-at-risk basis. The level of risk sharing and the adequacy of the premium payment have important implications for the incentive to undertreat at the level of the managed care plan. Also important is how individual providers within the managed care plan are paid because of the different financial incentives inherent in each method. The issue of provider payment is discussed in greater detail in the next section.

4.5.4. Ongoing Funding Changes. There are other changes that could have important implications for the funding and delivery of substance abuse services to low income populations.⁴⁸ An increasing number of states are seeking to integrate their state mental health and/or substance abuse systems and Medicaid programs. The reduction of the state role in the direct delivery of services continues through privatization, as states contract for the provision of services to private organizations. The Federal SSI and SSDI programs expanded their definition of disability to include various behavioral disorders in the mid 1980s; however, recent public concern that some addicts covered under these programs were spending their SSI and SSDI assistance on alcohol and drugs has led to substance abuse disorders to be excluded once again. Eligibility for public health insurance through the SSI and SSDI programs is severed; however, some individuals may qualify for these programs under another disability category. The impact of these changes has not been fully assessed.

5. Providers

The goal of this section is to describe incentives in traditional and alternative payment systems with a particular emphasis on the consequences for providers of substance abuse services. Under traditional payment systems, physicians and other individual providers have been paid on a fee-for-service basis, and institutional pro-

viders through cost-based retrospective reimbursement. The principal mechanism for controlling costs and unnecessary utilization was cost sharing, e.g., copayments and deductibles by the patient. Although cost sharing is still extensively used, even under managed care arrangements, there is a growing perception that to eliminate unnecessary care, financial incentives must be shifted to the provider. Under alternative systems, providers are increasingly “at risk,” i.e., financially responsible, for the costs of the care of their patients. Examples of alternative systems include DRGs for hospital payment and capitation.

5.1. *Paying the Provider*

In examining how providers are paid, it is useful to examine four aspects of payment: the unit of payment, the method of setting the price, the generosity of payment, and level of payment.⁴⁹ Under traditional systems, the unit of payment is typically the procedure or service. Provider revenue thereby depends on the number of units and the unit price of the procedure or service. To control costs under traditional systems, it is necessary to control either the volume or the price or both. Alternative units of payment reflect higher levels of aggregation. Some systems pay by the case (e.g., payment for an entire hospital stay), by the episode, or for an established time period (e.g., covering all services used by an individual for a year).

Under traditional payment systems, prices typically are either based on providers' costs or set according to the “prevailing” charge in a community. Under alternative systems, prices can be determined by a variety of methods. Some methods base payment on the complexity of the procedure. In others, prices are negotiated or competitively set through a bidding process.⁵⁰

The generosity of the payment level, irrespective of the method of payment, has important implications for whether and how providers participate in a program, which in turn affects beneficiary access and program costs. For example, low rates of physician participation in Medicaid have led to a greater reliance by beneficiaries on more costly hospital outpatient departments and emergency rooms, raising questions about both costs and accessibility.⁵¹ Of course, as health care becomes more competitive, providers may be more inclined to accept lower rates in exchange for more patients.

In discussing a payment system, it is also critical to distinguish between whether the plan is a two-tiered or three-tiered system, i.e., to distinguish between purchaser payment to the plan and plan payment to the individual provider. For example, HMOs are capitated systems; however, within HMOs, providers may be remunerated on a fee-for-service, salary, or capitated basis. The economic incentives facing the provider under the three methods are quite different and may be different from the incentives at the plan level. In this example, the HMO would have every incentive to reduce the costs of care provided because it would keep any cost savings below the capitation payment. Individual providers would face a similar incentive if the HMO paid them on a capitation basis. On the other hand, providers paid by the HMO on a fee-for-service basis would have an incentive to deliver more services as this would increase their income. Providers paid on a salaried basis would not gain or lose income based on services delivered.

Payment systems can not be viewed in isolation from nonfinancial aspects of the delivery system. Different methods of payment are often accompanied by different organizational arrangements. Thus, although the focus of this chapter is on financing and payment, it is important to recognize the interaction between payment and organizational factors, which also may influence provider behavior.

5.2. *Traditional Payment Systems*

Because traditional payment systems compensate providers on the basis of the number of units of service provided, i.e., procedures or days of care, there is an incentive for providers to increase the quantity of services and to offer more expensive services. Individual providers are typically reimbursed on a fee-for-service basis. Hospital payments are based on the actual cost of providing services. These traditional systems lack incentives to provide services in a cost-effective manner. Frequently, traditional payment systems are combined with utilization management techniques to curb utilization. These types of arrangements for hospital services for behavioral health care are very common.³¹

Fixed budgets for providers are frequently used as the mechanism for dispersing funds through state substance abuse agencies directly to provider organizations in the form of a grant or public subsidy. For clients who are not covered by other sources such as insurance or out-of-pocket payments, the grant serves as the budget from which all services must be provided. Mechanic et al.⁵² point out that this functions as a crude form of managed care payment. However, there are two important ingredients lacking that are typically found in managed care: direct link between payment and specific enrollees, and the assumption of risk for expenditures beyond the capitated payment.

5.3. *Alternative Payment Systems*

Per case payment systems for hospitals vary in the detailed techniques to set the rates, but all establish a fixed price prospectively for the hospital stay. Because the hospital is at risk for costs that exceed the payment, per case payment creates financial incentives to curtail resource use by limiting intensity and duration of stay. There is no incentive, however, to control the number of admissions. The biggest concern of per case payment is that it may lead to premature discharge of costly patients or other forms of undertreatment. This is probably of greatest concern regarding the client who is dually diagnosed with both mental illness and substance abuse problems. These clients are known to be more costly to treat and are more likely to require hospitalization.⁵³

Capitation involves the payment of a fixed, prospectively determined rate for a specified range of services for a specified period of time, usually one year. Under capitation, the incentive to provide less service involves two aspects: to reduce the intensity of service and to reduce the volume of care. Thus there is an incentive to shift from higher cost to lower cost services.

When the provider is placed at financial risk, under capitation there is an incentive not only to provide fewer services in the least costly manner but also to seek

healthier enrollees. To the extent that individuals with substance abuse problems have higher health care expenses generally, these types of patients are less desirable to the managed care plan. There is also concern that the financial incentives of capitated payment can result in inadequate referral to substance abuse specialists. Capitated delivery systems may not have a large enough population of persons wanting specialty substance abuse treatment to justify inclusion of specialty services within the plan; thus, the special competence of specialty providers may be unavailable or only available on a referral basis, which may occur late or not at all.

Managed behavioral services are being purchased under a variety of capitated arrangements with a range of risk sharing arrangements. The contracts range from full capitation where the provider or intermediary is fully at risk for financial consequences to partial capitation where there are significant amounts of risk sharing and limits on provider or intermediary profits and losses.⁴⁷ The advantages to “partial” or “soft” capitation approaches include compensating for the difficulty in risk adjustment for a high risk, potentially costly population and limiting the ability of the managed care organization to benefit from excessive profits.⁴⁶

5.4. Carve-Out Approaches to Substance Abuse Treatment

While the broader health care environment has moved toward integrated systems of care, specialty carve-out arrangements for managed behavioral health care (MBHC) have grown tremendously. Carve-out approaches to providing alcohol, drug, and mental health services grew out of employers’ concerns about the cost of services, possible undertreatment in HMOs, and the self-selection into non-HMO plans by employees more likely to need these services.⁷ Carve-outs address the tendency to avoid and/or undertreat enrollees with behavioral health problems by allowing purchasers to specify behavioral health spending and provider incentives.⁴⁷

The numbers and types of enrollees who gain access to substance abuse services is influenced by how they must enter the system (e.g., referral from a primary care gatekeeper, direct access to a specialized provider within an integrated system, direct access to a specialized provider in a carved-out system, or EAP referral). For example, if the enrollee can directly access the substance abuse specialist without going through a primary care gatekeeper, then more patients may receive care. If there are strong linking mechanisms between primary care and specialty care, then it may be more likely that a patient with a problem is identified and encouraged to seek specialized treatment.

Despite the popularity of carve-outs, relatively little is known about their advantages and disadvantages for alcohol and other drug treatment. One evaluation by Callahan and colleagues found that the Massachusetts Medicaid carve-out resulted in substance abuse treatment costs that were 48% lower than expected without managed care.²⁴ Access to some substance abuse services increased, though inpatient care was reduced. Provider survey and readmission information suggested no overall deterioration in quality after the carve-out, though problems were noted for certain subpopulations. A study by Ma and McGuire³⁹ of the Massachusetts State employee carve-out found 30%–40% cost reductions compared to expected

costs. Both substance abuse and mental health outpatient utilization decreased, while facility-based care (including intermediate settings) showed little change. Access decreased as measured by the rate of service users per year. Goldman, McCulloch, and Sturm⁴⁰ similarly found cost reductions in their study of a large private employer carve-out experience. They found no decrease in access, though inpatient admissions, length of stay, and outpatient treatment visits per user decreased. A comparison of substance abuse utilization under a carve-out plan versus HMOs found that moving to a carve-out led to decreased inpatient and outpatient utilization, while intermediate care utilization increased.⁵⁴ Considerably more research is needed in this area before conclusions can be drawn regarding the effects of carve-outs on substance abuse treatment, however.

5.5. *Special Issues in Paying Providers of Substance Abuse Services*

5.5.1. Ethical/Legal Concerns, Changes in financing and reimbursement arrangements raise a variety of ethical concerns. Within a managed care context, providers are faced with new kinds of decisions about their responsibilities. For example, what is the provider's responsibility in terms of divulging information to third party payers/intermediaries that would allow continued coverage for a client versus the rights of privacy of the client? Confidentiality is a major concern because much of this information is maintained in electronic databases which allows the ability to access and link databases for purposes unintended by either the provider or the client. Another type of example relates to denied care. If a provider believes that a client clearly needs services that a managed care plan refuses to pay for, what is the provider's ethical/legal obligation to provide services at that point?

5.5.2. Integration. The mental health and substance abuse treatment delivery system is viewed as fragmented and compartmentalized, with distinct though overlapping subsystems of care. These subsystems have different client populations, ownership, financing, staffing, and therapeutic philosophies.³ Changing approaches in public and private financing, particularly related to managed care, are expected to reduce the ability of providers to operate in isolation. There are a number of dimensions along which greater integration might occur, including public and private sector specialty treatment; alcohol and drug specialty treatment; specialty treatment and primary care; and alcohol/drug and mental health specialty treatment.

6. Consumers

6.1. *Demand for Treatment*

Demand for treatment is defined as wanting and seeking treatment. The demand for substance abuse treatment services is defined by a complex array of factors.² Some are readily observable, such as age or marital status. Others are often unobserved, such as help-seeking attitudes. In the substance abuse treatment area,

not all persons who are in treatment may want treatment. Indeed, it is common that individuals with alcohol and other drug problems resist treatment rather than seek it out.⁵⁵ Many persons with substance abuse problems may deny the need for treatment and may eventually be coerced into treatment in some fashion, either through court order or by threats from family or employers.⁵⁶

One factor that affects demand is financial access to treatment.² Financial access relates to the ability and willingness of someone to pay for treatment. Contrary to much of medical care and despite the growing importance of insurance, most clients in specialty treatment for substance abuse do not have insurance as the expected source of payment for services. For example, nationally in 1990 only 16% of clients in drug and combined drug and alcohol treatment facilities had private insurance as the expected source of payment, and another 14% had the public insurance programs of Medicaid and Medicare as primary sources of payment.⁵⁷

These data suggest that substance abuse treatment clients include a high proportion of individuals who are uninsured, have insurance without a substance abuse benefit for the services they are receiving, have exhausted the benefit, or choose not to use the benefit because of stigma. Thus, in the substance abuse treatment area, there is tremendous reliance by consumers on public, noninsurance-based financing, such as the federal block grant and state and local funding. The reasons for the continued importance of direct public funding relate both to the lack of insurance coverage by many groups who are likely to need substance abuse treatment and the need for services beyond what is covered by insurance.

There is evidence that individuals who have substance abuse problems are more likely to be uninsured. Also, among those who had used alcohol in the past year, those without health insurance were more likely than those with health insurance to report one or more problems associated with use, though this pattern was not evident among past-year users of cocaine or marijuana.⁵⁸

Additionally, certain demographic characteristics are associated with both high substance abuse rates and lack of insurance. First, young adults are more likely to be in need of substance abuse treatment than older adults. Young adults have the highest proportion uninsured of any age grouping; e.g., 29% of persons 18 to 24 years of age are uninsured compared to 16% of the total population.⁵⁹ Second, males are more likely to have problems associated with substance abuse than are females. It is particularly difficult for males to obtain Medicaid coverage because of eligibility criteria.²³ Third, private insurance coverage is linked to the workplace. A disproportionately high number of those with substance abuse problems are unemployed or not in the workforce. Finally, financial access of minority groups to treatment for substance abuse is more limited because of lack of insurance. Of the population between 12 and 64 in 1993, over 20% of non-Hispanic Blacks and Puerto Ricans, over 25% of Cuban Americans, and over 40% of Mexican Americans were uninsured by either public or private insurance, compared to 14% of non-Hispanic Whites.⁶⁰

6.2. Population Covered and Benefit Structure under Insurance

Private insurance and Medicaid are the two main sources of insurance revenue that play a role in the funding of specialty substance abuse treatment. The role of

Medicare is very small. The populations covered and the benefit structure of coverage for substance abuse treatment under private insurance and Medicaid is reviewed in this section. The design of insurance benefits is important because it affects what types of substance abuse services are received and at what point in time. Cost sharing in the form of deductibles and copayments, as well as limits and exclusions, can have an impact both on treatment initiation, as well as level and type of treatment. Increasingly, as discussed previously, benefits for substance abuse treatment are being offered under managed care arrangements.

6.2.1. Private Insurance. Most private insurance is purchased by employers for their employees and their dependents. Insurance can be provided on a conventional basis through an indemnity type plan or, more commonly today, on a managed care basis, such as health maintenance organizations (HMOs), preferred provider organizations (PPOs), and point-of-service plans. In 1996, approximately 71% of non-elderly Americans were covered by private insurance arrangements.⁶¹ Consistent findings across various surveys indicate:

- high levels of some substance abuse coverage in both conventional and managed care plans,
- HMOs and other managed plans are somewhat more likely to have some coverage than conventional plans,
- a substantial proportion of employees in both conventional and managed plans have coverage which is limited to detoxification services, and
- separate benefit limits on the type and quantity of care predominate which are usually more restrictive than medical benefits and sometimes more restrictive than mental health benefits.⁴

According to the Bureau of Labor Statistics 1995 Survey of Employee Benefits in Medium and Large Private Establishments:⁶²

- 97% of non-HMO enrollees and 100% of HMO enrollees had coverage for inpatient alcohol detoxification; 97% of non-HMO enrollees and 98% of HMO enrollees had coverage for inpatient drug detoxification
- 81% of non-HMO enrollees and 66% of HMO enrollees had coverage for inpatient alcohol rehabilitation; 80% of non-HMO enrollees and 65% of HMO enrollees had coverage for inpatient drug rehabilitation
- 81% of non-HMO enrollees and 80% of HMO enrollees had coverage for outpatient alcohol rehabilitation; the same percent of enrollees had coverage for outpatient drug rehabilitation

Most enrollees with coverage for these services faced separate, more-restrictive limits on substance abuse treatment than general medical services. For example:

- 71% of those with inpatient alcohol detoxification coverage and 70% of those with inpatient drug detoxification coverage had separate limits
- 92% of those with inpatient alcohol rehabilitation coverage and the same percent of those with inpatient drug rehabilitation coverage had separate limits

- 93% of those with outpatient alcohol rehabilitation coverage and the same percent of those with outpatient drug rehabilitation coverage had separate limits
- these separate limits were more common in non-HMO plans
- separate day and dollar limits were more frequent than different coinsurance or copayment amounts

6.2.2. Medicaid. The Medicaid program, financed through a combination of Federal and state funds, is operated by the states who determine eligibility and benefits within broad federal guidelines. Eligibility and benefits under Medicaid are extremely complex and vary tremendously from state to state. In general, in order to be eligible a person must be poor (and generally eligible for a federal categorical aid program), as well as aged, blind, disabled, pregnant, or the parent of a dependent child. Medicaid covers most of the 8.5% of the population between 12 and 64 with public insurance.⁶⁰

Medicaid does not have a discrete substance abuse treatment benefit, but rather provides coverage for generic services which are not specifically linked to specific diagnoses or conditions. Under federal guidelines, a wide range of services are covered either on a mandatory basis by the states, or on an optional basis if the state chooses. States do, however, have considerable flexibility with respect to scope, duration, and reimbursement level of both mandatory and optional services. The IMD exclusion is a federal restriction for payment to institutions for mental disease, which applies to most residential treatment for substance abuse problems. Nearly all states restrict the use of mandatory and optional Medicaid services when paying for substance abuse treatment services, and these restrictions can result in very little coverage;^{23,63} however, the expansion of Medicaid waivers (either approved, pending, or planned) to allow states to require that care take place through managed care systems is changing the delivery of substance abuse treatment paid for by Medicaid.

6.3. Special Issues for Consumers in Paying for Substance Abuse Services

6.3.1. Multiple Needs and Multiple Systems. Individuals with substance abuse problems often require supplementary services beyond treatment for these conditions. These may include medical and mental health needs, or other needs such as vocational counseling, financial counseling, housing, parenting training, child care, transportation, etc. Provision of these services, matched to client needs, has been shown to improve treatment outcomes.⁶⁴ These multiple needs can be met either directly in the treatment program or through appropriate linkages to other systems, such as social service or social security agencies.

In particular, given the large proportion of persons with substance abuse problems who also have a co-occurring mental disorder, it is imperative that the special mental health needs of this population be addressed.⁶⁵ Similarly, the linkages with the medical system are important because many alcohol- and/or drug-abusing clients have special needs related to tuberculosis, AIDS, cirrhosis, and other diseases and injuries associated with substance abuse.¹¹

6.3.2. Expanding Insurance Coverage. Many state health reform efforts involve expanding availability of insurance coverage. One way of doing this is through expanding existing employment-based private insurance. Although the majority of persons with substance abuse problems are employed, the substance abusing population is disproportionately unemployed relative to the total population. To the extent that health reform efforts are employment-linked, particular concern must be paid to handling the population with alcohol and other drug problems that do not have a link to the labor force. Beginning in the 1970's, a number of states passed laws mandating coverage for substance abuse treatment services. By 1991, 41 states required that insurers offer or provide coverage.⁶⁶ However, these laws did not necessarily ensure adequate coverage.

The long-standing lower level of coverage for substance abuse treatment has given rise to the move towards "parity" with general medical benefits. The federal Mental Health Parity Act of 1996 specifically excluded alcohol and other drug treatment, raising the question of whether substance abuse benefits may be decoupled from mental health benefits, which have often been covered together with similar limits.⁶⁷ However, legislation is now pending that would require nondiscriminatory application of substance abuse treatment limits and financial requirements under private health plans offering any substance treatment coverage. This legislation would amend the Federal Employee Retirement Income Security Act of 1974, which effectively exempted self-insured health plans from state requirements regarding benefit levels. Furthermore, there has been much activity regarding parity at the state level. By mid 1999, four states had enacted broad parity legislation that included substance abuse.⁶⁸ One additional state had enacted substance abuse parity separately,⁶⁹ and another included substance abuse but the law applied only to state employees.^{68,69}

6.3.3. Adequacy of the Benefit Package. Substance abuse and dependence has been described as a chronic, reoccurring condition. Over the lifetime of a person with these problems, there may be several relapses into dependency and need for treatment. Treatment aims to end abuse or dependence by initiating recovery and preventing relapse. Readmission to treatment may be necessary in order to reach a sustained recovery. To the extent that financing approaches contain a limited private indemnity insurance-like benefit, care must be taken that once the limits are reached, there are provisions that the client in need of further services has access to these services. Certain types of treatment may not be covered as well, particularly residential treatment. Little attention has been paid to designing a benefit package or a managed care arrangement where the full continuum of treatment services might be offered.

6.3.4. Evolution of the Treatment System. The majority of substance abuse clients are now treated in the publicly funded treatment tier. This is largely a system with little experience with either private insurance or managed care approaches, until recently. It is also a system that routinely provides wrap-around services, such as social services and vocational training, as a component of treatment. These are

services that enhance treatment retention and effectiveness, yet are not typically covered under insurance mechanisms. As the distinction between public and private systems blur, mechanisms to retain certain nonmedical aspects of the public system may be necessary to adequately treat subgroups who need these kinds of services for successful outcomes.

6.3.5. Treating the Chronic Client. Managed care organizations do not have extensive experience treating the chronic alcohol or drug abusing client who is more often found in the public sector.⁵² These individuals are typically more expensive to treat, which raises the issue of managing the financial risk associated with their care. One suggestion frequently made for treating persons with chronic disabilities is the use of an enhanced capitation rate. For the chronically ill, treatment patterns are often different because the emphasis is on maintaining, as opposed to curing, an individual. Managed care systems with a greater emphasis on case management may do better in maintaining the client with chronic substance abuse.

7. Conclusion

The area of financing and reimbursement for substance abuse treatment services is marked by a relatively sparse research base. Despite the dearth of information, certain things are clear. The American health care system, including the financing and delivery of substance abuse services, is in the process of rapid transformation. Key to its evolution has been the dramatic growth of managed care resulting in substantial change in the way providers are paid and relate to payers and consumers. The substance abuse treatment system has a heavy reliance on public subsidy financing from federal, state, and other governmental sources. As changes occur, it is important to understand the implications for public payers because of their responsibility for a substantial number of clients who do not have financial access to care through public or private insurance.

Given that alternative payment systems, an inherent aspect of managed care, contain incentives to minimize the amount of care provided, special attention must be given to subgroups of patients who are more likely to be high-cost users of substance abuse treatment services. This is especially important because untreated substance abuse problems affect not only substance-abusing individuals and their families, but also society at large due to the public safety, criminal justice, health expenditure, and other ramifications. These subgroups include individuals with co-occurring substance abuse and psychiatric conditions; adolescents; and individuals with multiple nonmedical needs, such as housing, social services, and family services. The challenge of managed care generally, and these payment systems in particular, is to use cost-minimizing incentives, while retaining incentives that assure adequate access and quality are not compromised, especially for these vulnerable groups.

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Using Cost and Financing Instruments for Economic Evaluation of Substance Abuse Treatment Services

Helena J. Salomé and Michael T. French

Abstract. Standardized economic evaluation instruments are an important tool in the analysis of change and performance of addiction treatment. Nevertheless, compared to other health care sectors, economic evaluation of addiction treatment is still rare. The present paper proposes two comprehensive economic evaluation instruments that are methodologically sound and that meet the objectives of comprehensiveness, standardization, and comparability. The Drug Abuse Treatment Cost Analysis Program (DATCAP) can be used to estimate the economic cost of treatment services; the Drug Abuse Treatment Financing Analysis Program (DATFin) is a companion instrument and analyzes the complexity and change of treatment financing. This paper outlines the contents of each instrument and, for illustrative purposes, presents results from several case studies. Suggestions for updates and enhancements for each instrument are also discussed.

1. Introduction

Payers, consumers, intermediaries, and providers of substance abuse treatment are increasingly concerned about the cost and financing of services provided. At the same time, techniques to perform economic evaluations of health care programs are becoming more sophisticated, and several useful related methodological works have recently been published.¹⁻⁸ Despite considerable methodological and empirical developments in economic assessment of primary health care programs, economic evaluation techniques are not systematically adopted in studies of behavioral health care, especially addiction treatment. Compared to other health care areas, evaluation of addiction treatment is also unusually complex, due in large part to the

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diversity of delivery systems, the complexity of the financing systems, and the wide spectrum of social and economic treatment outcomes.

Nevertheless, for several important reasons, economic evaluation methods should become an integral part of the analysis of the change and performance of the addiction treatment system. First, standardized evaluation methodologies enable equitable comparative analysis of treatment performance across different programs or modalities, geographical regions, and control structures. Second, evaluation instruments permit analysts to document the profound impact of recent health care reforms on addiction treatment, from a longitudinal as well as a cross-sectional perspective. Fundamental changes in the financing, delivery, access, and payment of substance abuse and mental health services have occurred or are presently taking place, especially with the appearance of “managed behavioral health care.” It has, however, remained largely unclear how health care reforms have affected access to care, service delivery, and cost and financing.⁹⁻¹² Third, public and private support is often linked to cost and performance standards. Objective measurement criteria are therefore a prerequisite for an equitable distribution of scarce funding among the best performing treatments in terms of return-on-investment or clinical outcomes.

This paper proposes two comprehensive economic evaluation instruments that are methodologically sound and that meet the objectives of comprehensiveness, standardization, and comparability. The Drug Abuse Treatment Cost Analysis Program (DATCAP) is used to estimate the economic cost of treatment services; the Drug Abuse Treatment Financing Analysis Program (DATFin) is a companion instrument and is used to analyze the complexity and change of treatment financing.^{13,14} The present paper outlines the contents of each instrument, and for illustrative purposes, presents results from several case studies. As the DATCAP has been the principal topic of some previous papers,^{15,16} the primary contribution of this paper will be the discussion of the DATFin. Although largely complementary to the DATCAP, the latter forms a rather recent addition to the literature and has had relatively little empirical exposure. Suggestions for updates and enhancements for each instrument are also discussed.

2. The DATCAP

2.1. Background

Economic evaluation of substance abuse treatment is a relatively new science. Several useful cost analyses have appeared in the substance abuse literature since the early 1980s.^{17,18,19,20,21,22,23} However, findings from economic evaluations that applied dissimilar methodologies or estimation perspectives can be difficult to compare across programs, or from a longitudinal perspective.¹⁵ Furthermore, some studies derived resource costs from program budgets, rather than applying the more equitable principle of opportunity cost.^{15,16} Thus, the DATCAP was developed in the early 1990s to fill the need for a transferable and easy-to-use cost data collection

instrument, enabling uniform and comparative measurement of the opportunity cost of substance abuse treatment.^{15,16}

The instrument was designed according to economic principles, allowing analysts to obtain the more equitable measure of opportunity cost in addition to accounting or financial cost of treatment resources. The collection of resource use data and the subsequent calculation of the opportunity cost is usually also the first step in a full economic evaluation, such as benefit-cost or cost-effectiveness analysis.^{1,2}

Since its inception in 1992, the instrument has been successfully applied at various interventions, such as employee assistance programs, methadone maintenance programs, outpatient drug-free facilities, and short-term and long-term residential programs.^{15,16,24,26,27} The DATCAP has furthermore been applied as part of several full economic evaluations of substance abuse treatment.^{28,29,30,31} A more detailed explanation of the DATCAP methodology as well as a summary of some of its empirical findings can be found in French et al. (1997),¹⁵ and French and McGeary (1997),¹⁶ and at <http://www.datcap.com>.

2.2. *Conceptual Framework*

The DATCAP is an easy-to-use, on-site data collection instrument and involves an interview booklet as well as an interactive spreadsheet.¹⁴ The instrument is preferably administered, processed, and interpreted by a qualified interviewer with advanced training in economics. The average time to complete a DATCAP usually ranges from 8 to 16 person hours, including preparation and face-to-face time. The DATCAP is designed such that the majority of information can be collected from existing financial statements and other documents at the treatment site. Market rates for certain under- or overvalued resources, however, may have to be obtained from external sources. Although primarily administered in substance abuse programs, the DATCAP format and design are adaptable and can be customized for use in a variety of health care settings.¹⁴

An accompanying user's manual was developed to familiarize those employing the DATCAP with its format, design, and administration. Instructions on how to submit information are provided for each question separately and consist of three elements. The "intent" describes the purpose of the question and relates to potential ambiguities or overlaps. "Potential sources" provides the interviewer with the sources containing material to answer the question, such as expenditure reports, accounts receivable, and patient records. The "alternative question" consists of a rephrasing of the question and may be helpful in case the intent is unclear.¹⁴

The essence of the DATCAP is the concept of economic or opportunity cost, which denotes the payment required to keep the resource in its present use, or alternatively, the amount the resource would be worth in its next best application.^{1,2} Accordingly, the opportunity cost approach will value all resources at their market-clearing rate (i.e., the value of the resource in a competitive market). Accounting cost, on the other hand, is based on "out-of-pocket" expenditures and standard depreciation schedules and may be less representative of the "replacement cost" of treatment resources.²⁸ By valuing all resources at market rates, including those that

were subsidized or obtained free of charge, the opportunity cost method eliminates distortions in resource prices across programs. All costs are obtained from the perspective of the treatment provider, which is the most appropriate measure when considering program performance or resource allocation issues.¹⁵ A complementary version of the DATCAP designed explicitly to measure costs incurred by the client attending treatment is currently being pilot tested (see below).^{33,32}

After compiling all the information at a single program or service delivery unit (modality), the DATCAP allows estimation of total annual economic and accounting costs per individual cost category, as well as for the program as a whole.²⁸ Total cost represents the value of all resources consumed throughout the fiscal year. Similarly, average cost estimates (e.g., the opportunity cost of providing uninterrupted treatment services to a single client for a defined period) can be calculated by dividing total program cost by the average program capacity, or static caseload.²⁸ Average cost may be the most suitable unit of measurement in a multiprogram comparative analysis, as it normalizes cost estimates for variations in program size. DATCAP also allows computation of the average cost for a single treatment episode, or alternatively, the cost of a treatment episode for a predetermined length-of-stay.²⁸ Cost components may be further divided into fixed costs, such as capital, rent, office supplies, and equipment, and variable costs, such as personnel and medical supplies, which vary according to the static caseload.^{14,15}

Table I provides an overview of the standard cost categories of the instrument, including personnel, supplies and materials, contracted services, buildings and facilities, equipment, and miscellaneous items.^{14,15} Apart from the paid resources, the respondents are asked to list all resources that were subsidized or provided free of charge, along with a fair estimate of their market rates.^{14,15} All categories have been set up to encompass the typical resources consumed at addiction treatment programs. The instrument furthermore collects and reports information on program revenues, average length-of-stay, static caseload, licensed capacity, control structure, treatment modalities, and range of services provided.^{14,15}

Table I. Resource use and cost categories in the DATCAP instrument^a

Personnel	Supplies and Materials ^b	Contracted Services	Buildings and Facilities	Equipment ^b	Miscellaneous Resources and Costs	Not Recorded Elsewhere ^b
Direct Salaries	Medical	Laboratory	Total space	Rented/leased equipment	Utilities	Supplies and services
Fringe benefits	Office	Repair/maintenance	Space used	Furniture	Insurance	
Overtime cost	Food	Security	Type of use	Computers	Licenses	
Volunteer services	Postage, etc.	Advertising, etc.	Rental rate	Electronic	Federal and State taxes	
			Market rate	Medical, etc.	Telephone, etc.	

^a Sources: French et al.^{14,15}

^b Includes paid resources and resources received free-of-charge.

2.3. *The Client DATCAP*

All costs in the program version of the DATCAP are estimated from the perspective of the program, rather than from the perspective of the client, the payer (such as the private or public insurer), or society. To broaden the measurement perspective, a supplemental version of the DATCAP was recently designed to explicitly measure costs incurred by the patient attending treatment.^{32,33}

The “Client DATCAP” consists of two separate versions. Client Version A was specifically designed to measure costs incurred by patients attending inpatient treatment, including inpatient detoxification, residential, inpatient hospital, and therapeutic community settings. Client Version B was customized particularly to identify costs incurred by patients attending outpatient treatment, including drug-free, methadone, day treatment, and intensive outpatient modalities. A first set of cost-related questions applies to the opportunity cost of time in treatment (e.g., wages). The second category applies to any expenditures incurred as a result of attending treatment, such as childcare, elderly care, and transportation costs. Besides questions related to resources used in attending treatment, both versions contain questions on socio-demographics and treatment length-of-stay. The Client DATCAP is currently being pilot tested at several treatment programs in the Miami area.

2.4. *Practical Applications of the DATCAP*

The DATCAP in its present form, as well as earlier versions of the instrument, have been successfully administered at more than 50 substance abuse treatment programs throughout the United States. Although most applications were administered at drug abuse programs, several alcoholism treatment programs have also completed the DATCAP, including employee assistance programs (EAPs), traditional outpatient, and day hospital facilities.^{26,27} Tables II and III give an overview of statistics obtained through the DATCAP from several case studies throughout the country. The data correspond to operations from fiscal years 1993 to 1998 and are derived from a variety of treatment modalities and control structures. Table II gives an overview of the cost categories, which include total annual economic cost, weekly economic cost per client, and economic cost per treatment episode. Average daily census (column 2) and total economic cost (column 3) are an indication of the size of the programs. Weekly economic cost per client (column 4) differs considerably among programs, ranging from a low of \$81 to a high of \$853. Economic cost per treatment episode (column 5) represents the product of the weekly economic cost per client and the average length of stay, and varies between \$841 and \$27,296. Table III presents the distribution of costs (in percentages) across the various resource categories.¹⁶ On average, labor (column 1) accounts for nearly 60% of the total costs, which can be explained by the labor intensive nature of providing treatment.^{9,16}

Table II. Economic Cost Estimates of a Selected Sample of Addiction Treatment Programs (\$1998)^a

Prog.	State	Financial Structure	Treatment Modality	Year	Average length-of-stay (weeks)	Average daily census	Total annual economic cost (\$)	Weekly economic cost per client (\$)	Economic cost per treatment episode ^b (\$)
					[1]	[2]	[3]	[4]	[1] × [4] = [5]
1	NJ	Public, not-for-profit	Therapeutic community	1993	32	62	2,750,027	853	27,296
2	AR	Public, not-for-profit	Women's day treatment	1996	21	30	1,096,604	703	14,762
3	PA	Public, not-for-profit	Outpatient drug-free	1996	10	170	714,523	81	841
4	PA	Private, not-for-profit	Outpatient drug-free	1996	16	254	1,184,498	90	1,459
5	IL	Private, not-for-profit	Long-term residential	1997	12	28	1,099,617	755	9,252
6	FL	Public, not-for-profit	Long-term residential	1997	28	30	783,178	501	13,949
7	WA	Private, for-profit	Intensive inpatient	1998	3	16	419,158	514	1,450
8	LA	Public, not-for-profit	Short-term residential	1994	5	60	2,062,074	661	2,974
9	OK	Private, not-for-profit	Short-term residential	1998	3	27	864,927	617	1,790
10	PA	Private, not-for-profit	Methadone maintenance	1994	N/A	400	1,881,226	90	N/A ^c

^a Note: All numbers have been rounded to the nearest whole number.

^b Economic cost per treatment episode may not exactly equal the product of weekly cost per client and average length-of-stay due to rounding.

^c N/A = not available.

Table III. Distribution of Costs Across Resource Categories of a Selected Sample of Addiction Treatment Programs^a

Prog.	State	Financial Structure	Treatment Modality	Year	Pers. (%)	Supplies and Materials (%)	Buildings and Facilities (%)	Contracted Services (%)	Equip. (%)	Misc. Items (%)
					[1]	[2]	[3]	[4]	[5]	[6]
1	NJ	Public, not-for-profit	Therapeutic community	1993	23	13	60	0	1	3
2	AR	Public, not-for-profit	Women's day treatment	1996	67	2	5	18	1	7
3	PA	Public, not-for-profit	Outpatient drug-free	1996	56	14	2	26	2	0
4	PA	Private, not-for-profit	Outpatient, drug-free	1996	68	4	9	2	1	15
5	IL	Private, not-for-profit	Long-term residential	1997	44	13	11	2	0	31
6	FL	Public, not-for-profit	Long-term residential	1997	74	4	3	10	2	6
7	WA	Private, for-profit	Intensive inpatient	1998	70	12	6	2	1	10
8	LA	Public, not-for-profit	Short-term residential	1994	56	1	13	2	1	28
9	OK	Private, not-for-profit	Short-term residential	1998	60	9	20	1	0	10
10	PA	Private, not-for-profit	Methadone maintenance	1994	59	15	11	15	0	0

^a Note: All numbers have been rounded to the nearest whole number.

3. The DATFin

3.1. Background

Growing health care costs led to excessive utilization, and inequitable delivery has led to a series of reforms within the health care sector. These reforms pertain to three issues in particular: coverage, financing, and cost control.⁹ The health care system for substance abuse and mental health disorders has also undergone dramatic changes, especially with the appearance of for-profit companies that provide "managed behavioral health care."³⁴

How these reforms have affected access to care, service delivery, and cost and financing, however, has remained largely unexplored in the existing literature.^{9,10,11,35} This situation can partly be explained by the recent nature of most health care reforms, which limits the data available for analysis.³⁶ The research that does study the impact of health care reforms on behavioral health care often relates to clinical outcomes or is conceptual in scope, focusing on descriptive analysis rather than conducting longitudinal empirical research.³⁶⁻⁴⁴ A small but growing category of research consists of some interesting empirical studies of the effect of managed care on addiction treatment.⁴⁵⁻⁴⁹

The DATFin was designed to be a companion tool to the DATCAP and collects data on treatment financing, including funding sources and amounts, managed care practices, and the impact of the health reforms proposed in the early 1990s.¹⁵ The instrument gathers a combination of factual information and perceptions of program directors through quantitative and open-ended questions.¹⁵ Program directors in general are extremely knowledgeable about the effects of managed care and thus serve as a primary and indispensable source of recommendations for systemic changes and improvements. Moreover, the instrument provides a standardized tool to perform uniform research in a health care environment that is characterized by wide variation in health care plans across states and by an extremely fragmented financing environment with varying eligibility requirements and payment mechanisms.^{43,44,50} Although customized to be administered in addiction treatment settings, this stand-alone financing interview guide can be adapted to be used in mental health clinics, or other types of clinical settings.

3.2. Conceptual Framework

The DATFin has a conceptual design that is very similar to that of the DATCAP. The instrument involves an interview booklet as well as an interactive spreadsheet and should be administered, processed, and interpreted by a qualified interviewer with advanced training in economics.¹³ The average time to complete a DATFin usually ranges from 4 to 12 person hours, including preparation and face-to-face time.¹³

The purpose of the instrument is to collect and organize financial and organizational data pertaining to the activities of one program or service delivery unit (modality) for a particular fiscal year. The instrument covers the following informa-

tion categories: (1) funding sources and amounts, and general perceptions, (2) the current and potential impact of managed care practices, and (3) the current and potential impact of behavioral health care reform initiatives at the federal, state, and local levels.¹³

In general, the DATFin instrument attempts to quantify and describe five important aspects of treatment financing:

1. the percentage of total program funding that can be attributed to individual sources;
2. current practices for acquiring and maintaining financing in particular areas;
3. opportunities for initiating or increasing financing in certain areas;
4. recent or expected changes in reimbursement policies; and
5. specific changes that have taken place, are ongoing, or are expected to occur as a result of managed care and health care reforms.¹³

The instrument is divided into two parts. Part One collects information pertaining to current revenue sources and financing methods employed by the program. It furthermore addresses issues related to recent and expected changes in these revenue sources. As shown in Table IV, Part One covers more than 22 funding

Table IV. Organizational Summary of the DATFin^a

<i>Part 1. Funding sources</i>				
Federal	State	Local	Private	Other
CHAMPUS	Correctional facilities	Correctional facilities	Client fees	Fundraising
Correctional facilities	Food stamp programs	Government	Corporations	Vocational rehabilitation programs
Grants	Grants	Single County Authority	Foundations	
Housing and urban development	Medicaid		Private insurance	
Veteran's Administration	Medicare			
	Single State Agency			
	Welfare			
<i>Part 2. Managed care and health care reforms</i>				
Managed Care		Health Care Reforms		
Gate keeping		Federal level		
Utilization review		State level		
Substance abuse carve-outs		Local level		
Substance abuse capitation				

^a Sources: French et al.^{13,15}

sources that can be aggregated into federal, state, local, private, and other categories.¹⁵

The Financing Overview in Part One of the DATFin inquires about the funding sources and the respective amounts received for the particular fiscal year. Sections A through T consist of standard categories of detailed questions for each source separately. A first set of questions inquires about the special requirements for the program to be eligible for the financing source, as well as special efforts made for eligibility for and acquisition of the revenue. A second set relates to difficulties in securing the revenue source, especially in comparison to other sources. A third set relates to recent or expected changes in reimbursement policies and changes in the ability of the program in securing reimbursement. Some final questions are specific to various revenue sources.¹³

Section U is dedicated to private health insurance. Private insurance refers to the basic types of insurers: fee-for-service insurers, preferred provider organizations (PPOs), health maintenance organizations (HMOs), and point-of-service HMOs (POS HMOs). Fee-for-service insurers allow patients to choose any provider without having to obtain a referral. Under an HMO, patients seek medical care through a network of affiliated providers. Some HMOs, called POS HMOs, allow patients to seek help from doctors outside this network.¹³ Many fee-for-service insurers have established PPOs, which encourage patients to visit specific providers for their health care.¹³ Section U asks program directors to list the insurance companies that provided coverage during the fiscal year, as well as the percentage of insurance revenue received per insurer. To ensure consistency in reporting, several sets of questions similar to those asked in Sections A through T are listed per insurance type. A first set of questions inquires about any financial, administrative, legal, or programmatic barriers to the program's use of the particular type of insurance as a source of revenue. The second set asks about eligibility requirements for the particular funding source. The third set of questions inquires about any recent or expected changes in reimbursement policies.

Section V contains questions similar to those in Section U and documents information about remaining funding sources. Section W discusses in-kind sources of revenue or financing linkages. It inquires about resources secured free-of-charge or at reduced rates, and about services received via linkages between the program and local, state, or federal agencies.

Part Two of the DATFin collects general information about the current and future impact of managed care on treatment financing, access, and delivery.¹³ Managed care can be defined as a set of activities that third party payers use to control medical costs, utilization, delivery, and quality of health care.^{9,13} It implies a wide range of programs, financing policies, and regulatory procedures that vary in their impact on health care delivery, access, cost, and financing.^{36,43,44} Managed care can be viewed as a product of the health care reforms of the early 1990s and was primarily created to control the escalating costs of health care by controlling unnecessary utilization and inefficient treatment, increasing access to preventative care, and maintaining or improving the quality of care.^{37,44,50} Adopted first by private insur-

ance companies, it was soon seized upon by state Medicaid programs.^{34,51} Following are some of the primary practices or procedures of managed care: (1) *gate keeping* typically involves the assignment of a patient to a primary care physician who is responsible for providing primary care and for referring the patient to specialized providers; (2) *precertification procedures* involve approval of services before they are delivered; (3) *promotion of general outpatient over intensive outpatient and inpatient care*;⁵² (4) provider selection; (5) *payment limiting mechanisms, or capitation*, which limit the reimbursement amounts for medical care; (6) *concurrent review*, or case *management* which is focused on high utilizers, involving ongoing review of care.³⁶

Although Medicaid HMOs, private HMOs, and PPOs are considered the most common types of managed care organizations associated with substance abuse treatment programs, other forms may be prominent as well, such as employee assistance programs, direct contracts with self-insured firms, and state substance abuse agencies.⁵² Many private health insurance plans put limitations on the coverage of mental health and substance abuse services.^{39,57} In addition, for behavioral health conditions, managed care is often provided by specialty firms, typically referred to as managed behavioral health care organizations.⁴⁰ Increasingly, “carve-out” arrangements are implemented to separate a particular segment of insurance risk, such as mental health and substance abuse.^{53,34}

Part Two of the DATFin was designed to capture and measure the important transformations of the health care industry prompted by managed behavioral health care.¹³ The section includes questions about three primary managed care practices: gatekeeping, utilization review, and payment-limiting mechanisms. In particular, the managed care section inquires if and how managed care practices have affected the financial, administrative, or clinical operations of the substance abuse treatment program. The respondents are also probed about their expectations regarding managed care reforms in the near and longer term.

The final questions in Part Two collect information about health care reforms at the local, state, and federal levels that were originally proposed in the early 1990s.¹³ In particular, it studies how current or proposed health care reform policies might affect addiction treatment or treatment clients in the future.

3.3. Case Studies Using the DATFin

A 1994 study analyzed the financing methods as well as the impact of health care reforms on the cost, financing, and delivery of drug abuse treatment services.⁹ The analysis was based on detailed case studies carried out at 11 treatment programs in Arizona, California, Louisiana, New Jersey, New York, and Texas. The sample consisted of a variety of treatment modalities and control structures. All information pertained to treatment operations in 1994 and was gathered through the DATCAP and DATFin data collection instruments. Lengthy interviews with program directors, as incorporated in the DATFin, generated information on financing concerns, expectations, and recommendations concerning health care reforms.⁹

As described in French et al. (1996), the resulting financing and cost analysis highlighted several key characteristics of addiction treatment.⁹ First, the average (i.e., per client) weekly cost varied considerably across and within modalities. The authors suggested that drug treatment costs may be subject to economies of scale and may be susceptible to regional cost-of-living differences. Second, considerable discrepancies were found for average lengths-of-stay in treatment. Outpatient drug-free programs, on average, appeared to have the shortest average treatment durations, and methadone maintenance programs the longest. Third, labor costs accounted for over 50% of the total program costs, which may be explained by the labor-intensive character of addiction treatment. Fourth, nearly all of the programs, both public and private, received the majority of their financial support from public sources. For most programs, the largest funding source was the state (often accounting for over 60% of the total funding). The study also revealed that client fees and third-party payments (e.g., private insurance, Medicaid) were relatively insignificant sources of revenue, even for the private programs. Fifth, most programs did not receive their funding directly from the funding source but rather from private or public centralized distribution agencies.⁹

All programs analyzed agreed on the need for some type of health care reform.⁹ Long waiting lists and inadequate funding were cited as primary reasons. Nevertheless, several objections were raised. First, most programs expressed the concern that health care reforms would focus on reducing costs and thus reduce available funding for treatment. Second, most treatment directors expressed the fear that gatekeepers would lack sufficient understanding of the special needs of the substance abuse treatment population. Third, many programs expected managed care to unjustly favor brief treatment durations. Fourth, concerns were raised that managed care and health care reforms would increase the administrative demands of program personnel and decrease the provider's role in determining the right treatment. Fifth, treatment directors felt that managed care and health care reforms disregarded the need for aftercare. Finally, treatment directors were concerned that the terms of coverage stipulated in some reform proposals were too limited to provide adequate care. Overall, the majority of the directors predicted that implementation of managed care would result in less comprehensive, less accessible, and less effective treatment, and consequently, that recidivism rates would increase sharply.⁹

Results of the study also included some key provisions that the treatment providers believe must be present in the reform strategies for substance abuse treatment to be successful.⁹ For example, most of the treatment programs expressed a strong need for life skills training and aftercare in substance abuse treatment, greater treatment access, outcomes-based drug treatment funding, and carve-outs for substance abuse treatment.⁹

Findings from these case studies, as described above, were published in a public policy journal and disseminated through numerous conference presentations.^{9,54,55} For more information about this study, please refer to French et al. (1996).⁹

4. Limitations and Amendments

The DATCAP instrument has been submitted to several phases of pilot-testing at a variety of treatment settings. In the course of pilot-testing and actual use, progress has been made in the way data are collected, analyzed, and reported. Consequently, several versions of the DATCAP have been released over time to account for changes in content and design. However, relatively few amendments have been made to the DATFin instrument since its inception.⁵⁶ Due to its short life and infrequent applications, few opportunities for improvement have manifested themselves. More importantly, the DATFin requires updates at regular intervals to ensure it will continue to capture the profound changes that systematically occur in the health care industry. Cost and revenue categories contained in the DATCAP, on the other hand, remain more or less invariable over time.

The currently planned revisions to the DATFin will conform the instrument to the exigencies and intents of the current health care industry. In addition, the DATFin will be modified to address limitations that have become apparent during its application at a variety of settings. To allow measurement of key variables from a longitudinal perspective, all changes will be performed while preserving comparability with the data and results from previous applications. First, the instrument will be revised to account for the adjustments that have occurred in the managed care reform process since 1994, when the instrument was administered for the first time. Managed care is continuously shifting strategies in response to changes in national health policies, plan experiences, and changes in clinical procedures.⁴⁴ Also, questions related to specific health care reforms, such as the Health Security Act, will be eliminated due to their obsolete status. Second, new questions will be added, particularly to serve the retrospective or longitudinal components of future studies involving the DATFin. As an example, some new measures can be added to explicitly capture the differences in impact on treatment modalities, states, and financial structures across time. Third, efforts will be made to make the instrument more user friendly. To this effect, and as the use of the DATFin increases, a detailed user's manual will be developed. The manual will guide the respondent and the interviewer through the instrument as they gather material and answer questions. A properly designed user's manual, similar in concept and design to the one available for the DATCAP, will make the DATFin more accessible to treatment programs and the research community. Equally important, a manual will enhance accuracy and comprehensiveness of the information gathered.

Since the DATCAP has a relatively long history of applications, several amendments and updates have been made throughout its existence. Nevertheless, several remaining limitations should be acknowledged. First, reliable estimates of the opportunity cost of resources consumed, as opposed to the accounting cost, are often hard to obtain (i.e., rental rate of commercial property in a certain geographical region).¹⁵ Second, comparisons of cost results across programs may reflect geographical variation as well as resource utilization. For example, prices of certain standard

goods may vary considerably across geographical regions, or may not necessarily be determined by equal market forces. Third, a program may incur extraordinary one-time expenses during the fiscal year (i.e., construction work), or dedicate funds to investments, raising their average cost compared to other programs. Another challenge relates to the sometimes conflicting perspectives of patients, payers, providers, and intermediaries of addiction treatment. With the DATCAP, costs are measured from the perspective of the treatment program, and as a result, important costs incurred by other stakeholders of treatment may be omitted. Future versions of the DATCAP will include costs for clients and other affected parties.

5. Discussion

Despite the limitations and planned changes discussed in the previous section, the methodologies employed in both the DATFin and DATCAP provide timely, accurate, and comprehensive economic information and serve the previously discussed intents of standardization and comparability. Furthermore, the instruments are particularly user friendly, and results are reported in a comprehensible format. Most importantly, statistics from the DATFin and DATCAP address an important information gap faced by stakeholders of addiction treatment regarding the cost, financing, and transformations of the addiction treatment sector.

Treatment programs can use the DATCAP for internal assessment or for comparison across programs or treatment settings of separate cost and revenue categories. The opportunity cost estimates will represent a valid estimate of the true cost of treatment. The DATFin offers treatment providers critical insights and updates on managed care and health care reforms in the addiction treatment system. Combined with information on financing mechanisms and practices, results from the DATFin will enable program administrators to make strategic decisions on issues such as maintaining or acquiring future funding, selecting the most remunerative funding sources, and clinical planning.

Officials at state and federal agencies may rely on recent findings from DATCAP to assure an efficient disbursement of scarce public funds among best performing treatment programs or modalities. For this purpose, cost estimates obtained through DATCAP will be especially valid when applied in a full economic evaluation, such as a benefit-cost or cost-effectiveness analysis. Finally DATFin forms a means to document and report the concerns surrounding health care reform measures, as well as the effect on program operations after implementation of these measures. The instrument thus will allow policy makers to perform retrospective evaluation of past measures, as well as assist them in future decision making.

Through increased use and exposure, these companion instruments have the potential to be developed into standardized and normalized tools for the economic evaluation of substance abuse treatment. As many European and other nations currently struggle with profound reforms to their health care systems and changes in addiction treatment policies, potential exists for useful applications outside the

United States. Several international organizations and scholars have already shown interest in the instruments. However, it is critically important to keep the contents of the instruments updated, consistent, and functional. Therefore, widespread acceptability and application of the DATCAP and DATFin over the coming years will be closely monitored.

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Alcoholism Treatment in Managed Private Sector Plans

How are Carve-Out Arrangements Affecting Costs and Utilization?

Roland Sturm, Bradley Stein, Weiyang Zhang,
and Peter J. E. Stan

1. Introduction

Many U.S. employers and health plans have “carved out” their mental health and substance abuse benefits from a comprehensive health care plan. Organizations that administer these plans, managed behavioral health organizations (MBHOs), were virtually nonexistent 15 years ago. Today they are responsible for managing the behavioral health care benefits of the majority of Americans. Membership of MBHOs has more than doubled, rising from 78 million persons to more than 162 million between 1992 and 1998.¹

Empirical research on behavioral health carve-outs in the private sector has only recently begun to appear.²⁻¹³ Only three studies have specifically investigated how these new managed care arrangements affect substance abuse care,¹⁴⁻¹⁶ largely with a cost focus. No study has investigated the specific effects of carve-outs on alcohol abuse treatment cost and utilization.

The policy relevance of studying managed substance abuse care stems from the current interest in legislative mandates that require substance abuse treatment to be covered at the same nominal level as medical care (“parity”). In 1999, two bills were introduced in Congress, the Drug and Alcohol Addiction Recovery Act in the Senate¹⁷ and the Substance Abuse Treatment Parity Act in the House.¹⁸ While there

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has been a wave of parity mandates for mental health at the federal and state level,¹⁹ most of the earlier laws excluded substance abuse care. One reason for the exclusion of substance abuse care and the continuing hurdle for pending legislation is uncertainty about costs and lack of reliable new data. One good example of this uncertainty is the October 21, 1999, congressional hearing on substance abuse legislation (transcript available at <http://www.house.gov/reform/cj/hearings/10.21.99/index.htm>). New data are needed because managed care has dramatically changed the delivery of substance abuse care, but most actuarial studies informing policy have yet to incorporate this important factor. The first studies using actual data suggest that there should be little concern that increased benefits lead to dramatic cost increases under managed care.^{3,15}

But cost estimates are not all that is needed. The focus on nominal benefits in proposed legislation ignores the fact that managed care may affect an individual's coverage in other ways.²⁰ Substance abuse treatment may be more affected by managed care as there are fewer empirically based treatment standards or guidelines than in other areas of medicine. The absence of standards makes it more difficult to hold providers and managed care companies accountable and to define or detect inappropriate care. In the past, this caused employers to offer only very limited substance abuse benefits—the target of proposed legislation. In today's managed care environment, the absence of standards could lead to stronger effects of incentives on substance abuse care than for other types of care.²¹ Thus, more information about utilization patterns, including continuity of care and disenrollment rates, is needed.

Information on private sector managed care plans fills an important gap in the literature. Traditionally, most information about behavioral health care has been drawn from the public system, with a focus on the severely mentally ill and substance abusers, few of whom have ever had private insurance. However, managed care was first widely adopted in private insurance plans and the private health care system is the one that has gained the most experience. Thus, even public system administrators and clinicians in the public system who are concerned with populations that are rarely served under private insurance should be interested in learning about the private sector experience, as they are increasingly faced with managed care. The reason for the absence of private sector information is clear: Obtaining proprietary data is a very difficult task because sensitive economic information from competing companies is involved.

In this chapter, we focus on alcohol treatment in 77 carved-out employer-sponsored managed care plans. The chapter provides a profile of carve-out cost and utilization of alcohol-related services in recent years and also measures how various components of the total costs of alcohol abuse treatment services have changed over the past decade. "Costs" throughout this chapter refers to payments, by insurance or patients or both, to providers. This is different from true resource costs or even billing amounts.

Although it is impossible to make firm conclusions about quality of care from claims data, two measures may be indicative of possible problems. It has been suggested that problems of unsatisfactory or inadequate care be assessed by using

disenrollment rates from plans.²² In addition to potentially being a proxy for member satisfaction, disenrollment and change in insurance status are likely to disrupt clinician–patient relationships and therefore have a direct impact on quality. We use data on disenrollment rates and compare individuals who received care for alcohol problems to patients who received care for drug problems and for all members.

A second variable indicative of possible problems is the rate of follow-up after detoxification. Lack of follow-up raises concerns about the continuity of care that patients receive and about poor treatment outcomes. It is worth noting that one of the few behavioral health quality indicators considered by the National Committee for Quality Assurance to measure the performance of health plans is the 30-day follow-up rate after discharge from mental health inpatient care. In 1998, the national average was 67.4%.²³ No similar national measure has been reported for follow-up care for alcohol or substance use disorders, but the rates for mental health care might provide a benchmark for the follow-up numbers reported in this chapter.

2. Methods

To explore cost and utilization patterns in carve-out plans for alcohol abuse treatment, we used administrative records from 77 behavioral health plans administered by United Behavioral Health (UBH), the third largest managed behavioral health organization in the United States. The records, covering the period 1991 to 1997, included information on benefit design, behavioral health service use and costs, type of members (employees and their dependents), and specialty of behavioral health provider. Employers represented in these records came from a wide range of industries and all 50 states.

In 1997, the 77 selected plans covered 339,265 members throughout the full year. Table I provides descriptive statistics for the plans covered. The median plan size was roughly 1,000, although plans varied widely in size. For 18% of the members in our study, the UBH plan was the sole provider of behavioral health insurance coverage for their employer. The remaining employees could choose an insurance package that included behavioral health insurance from UBH or another plan whose benefits were not administered by UBH.

Under all UBH plans, network health care providers are paid on a fee-for-service arrangement based on national rates. While clinicians are most concerned about a shift to risk-sharing arrangements affecting them directly (in contrast to the financial risk that an insurer or managed care organization might bear), by far the most common payment arrangements between MBHOs and providers remains fee-for-service at contracted rates. Facilities sometimes receive case rates, but contracts in which an MBHO puts providers at full risk by paying a fixed amount per member are exceedingly rare in the private sector. An exception is in the public sector in some states. In those cases some providers are in a partnership with a managed care organization and are at risk for the clinical care costs that they provide.¹⁰

Managed care plans often offer unmanaged care as well: 76% of the members

Table I. Characteristics of 77 Carve-out Behavioral Health Plans Operated by UBH

Characteristic	Mean or percent	SD	Median
Mean N of members per plan	4585	8565	1016
Employees	2057	3449	455
Adult dependents	1372	2580	263
Child dependents	1331	2888	178
UBH is the sole provider (%)	18	38	N/A
UBH is at financial risk (%)	22	41	N/A
Carve-out includes an employee assistance program (%)	29	46	N/A
Carve-out includes a point-of-service option (%)	76	43	N/A
Mental Health			
Outpatient coinsurance rate (%)	5	9	0
Inpatient coinsurance rate (%)	6	8	0
Substance Abuse			
Outpatient coinsurance rate (%)	10	19	0
Inpatient coinsurance rate (%)	9	16	0

in our sample were covered by plans that included a point-of-service option, which permitted members to seek care outside the plan's network of health care providers. The nonnetwork option typically requires higher patient coinsurance, at a level typical for traditional indemnity insurance, such as 50% of outpatient costs. (In contrast, managed network services are covered much more generously). However, nonnetwork benefits usually are not available for the most costly services (inpatient care), which require preauthorization.

Out-of-network claims were included in our cost calculations, but they accounted for a small percentage of costs (16%), suggesting that most individuals prefer managed care with lower cost sharing over traditional unmanaged care with higher cost sharing. We did not assess the sensitivity of the relative share of network versus out-of-network care to changes in copayments. The descriptive statistics on utilization are based on 1997, the latest year we had complete data, to provide the most current picture of treatment patterns under managed care plans.

For other analyses, we used several years. Because of the small numbers of patients receiving alcohol inpatient detoxification, we had to pool data on multiple years to reliably calculate the rate of follow-up treatment at 7, 14, and 30 days. This can be a limitation if there are changes in the rates of follow-up over time. For the other analyses, using multiple years is an advantage. For example, we trace how utilization has changed over time from 1991 through 1997, contrasting inpatient, intermediate, and outpatient services. Finally, to explore disenrollment, we computed the number of plan members who disenrolled yearly between 1991 and 1997 and compared these figures with disenrollment rates over the same period by plan members submitting drug or alcohol claims. The statistical method is the standard Kaplan-Meier (or product limit) estimator.

3. Results

Table II presents mean costs and utilization for all alcohol, drug, and mental health (ADM) care and by type of treatment. We examined both insurance payments and patient payments and classified separate costs for alcohol treatment according to the primary *DSM-IV* diagnosis on each individual claim.

The categories in Table II are not mutually exclusive and patients with substance abuse and mental health comorbidity are counted in both columns of the table. The same is true for substance abuse because patients with alcohol and drug comorbidity are counted in both the "Alcohol Abuse" and "Drug Abuse" columns. However, there is no double counting for costs, which are assigned by individual claims.

Approximately 4.2% (14,208 members) of plan members had any behavioral health care claim in 1997; of these, 96% (13,672 members) submitted mental health claims. This is somewhat lower than treated prevalence rates in the general population and substantially lower than the rates in the initial evaluations of managed behavioral health plans in the private sector.^{2,6} A likely reason is that the first employers switching to managed care were the ones with unusually high utilization rates, whereas the plans studied here reflect more typical employers.

Approximately 6.2% (883 members) of the behavioral health service users submitted only substance abuse claims, while around 1.2% (170 members) submitted both substance abuse and mental health claims. This corresponds to 2.6 users per 1000 members per year.

On average, claims for alcohol abuse treatment were twice as high per patient as mental health treatment. The total payments (patients and insurance) per user for alcohol abuse treatment was about \$2,187 (95% confidence interval [1911,2464]). Total payments per user for drug abuse treatment were about \$1,829 (95% confidence interval [1513,2145]); and total payments per user of mental health treatment were \$886 (95% confidence interval [848,925]).

Table III presents alcohol cost and utilization data by type of member and by type of care. While costs per user are higher, the costs for alcohol claims across the

Table II. ADM Cost/Utilization in 1997

	Total ADM	MH	SA	AL	DR
Total cost/member	37.05	32.49	4.57	2.89	1.67
Number of user	14208	13672	883	546	398
Percent of user	4.19	4.03	0.26	0.16	0.12
Total cost/user in the group	974.14	886.44	2163.70	2187.42	1829.23
Patient cost/user in the group	183.46	179.83	183.86	183.86	158.36
Inpatient cost/user in the group	226.71	195.23	695.90	717.52	568.06
Outpatient cost/user in the group	598.23	608.42	216.59	205.31	202.90
Intermediate cost/user in the group	149.22	82.80	1251.49	1265.04	1058.27
Inpatient days/user in the group	0.37	0.29	1.59	1.67	0.54
Outpatient visits/user in the group	8.68	8.81	3.50	2.98	3.78
Intermediate days/user in the group	0.82	0.35	8.75	9.38	6.62

Table III. Alcohol Costs/Utilization in 1997 Among Users

	All Users	Employees	Child Dependents	Adult Dependents
N	546	354	19	173
Percent among AL users		64.84	3.48	31.68
Total cost/yr (\$)	2187.42	2310.34	2422.18	1876.31
Insurance cost/yr (\$)	2003.70	2134.31	1914.75	1701.77
Patient cost/yr (\$)	183.86	176.23	507.44	174.54
Outpatient cost/yr (\$)	205.31	203.91	547.73	179.63
Inpatient cost/yr (\$)	717.52	762.80	0	670.94
Intermediate cost/yr (\$)	1265.04	1344.28	1874.45	1025.74
Outpatient visits/yr	2.98	2.94	7.64	2.67
Inpatient days/yr	1.67	1.72	0	1.67
Intermediate datys/yr	9.38	9.99	14.64	7.48

full population is relatively small, averaging to about \$2.89 (95% CI: [2.44,3.35]) per year per enrolled member. Employees have the highest average cost, with \$5.01/member/year (95% CI: [4.06,5.97] not shown in Table III). With respect to alcohol treatment, employees were more likely than adult dependents or children to have used alcohol benefits and to have incurred higher costs per member (difference significant at 5%). The mean costs per user were somewhat higher for employees (\$2310,95% CI: [1953,2668]) than for adult dependents (\$1876,95% CI: [1457,2296]). The number of child users of alcohol services is too small for meaningful comparisons.

Patient payments for alcohol abuse care accounted for only about \$184 (95% CI: [144,223]) of the costs per user (\$2187), which corresponds to an effective coinsurance rates of about 9%. This compares favorably to typical indemnity insurance benefits for substance abuse that generally have deductibles of several hundred dollars and coinsurance rates of up to 50% afterwards. Nevertheless, these plans studied are not at a “parity” level with medical benefits under managed care. The effective coinsurance rates for alcohol services are also lower than for mental health, even though some plans had more generous mental health benefits. This is a consequence of the higher use among substance abuse patients of more intensive services, which have lower coinsurance rates than standard outpatient care. Among users of authorized network services only, the effective coinsurance is even lower, approximately 8%.²¹

The pie charts of Figure 1 show how the distribution of costs differs by type of disorder. The most important group for substance abuse patients are intermediate services, such as intensive outpatient and residential care. This is very different from mental health care and also a major change from treatment patterns in the past when intermediate services were neither commonly available nor covered by traditional indemnity insurance.

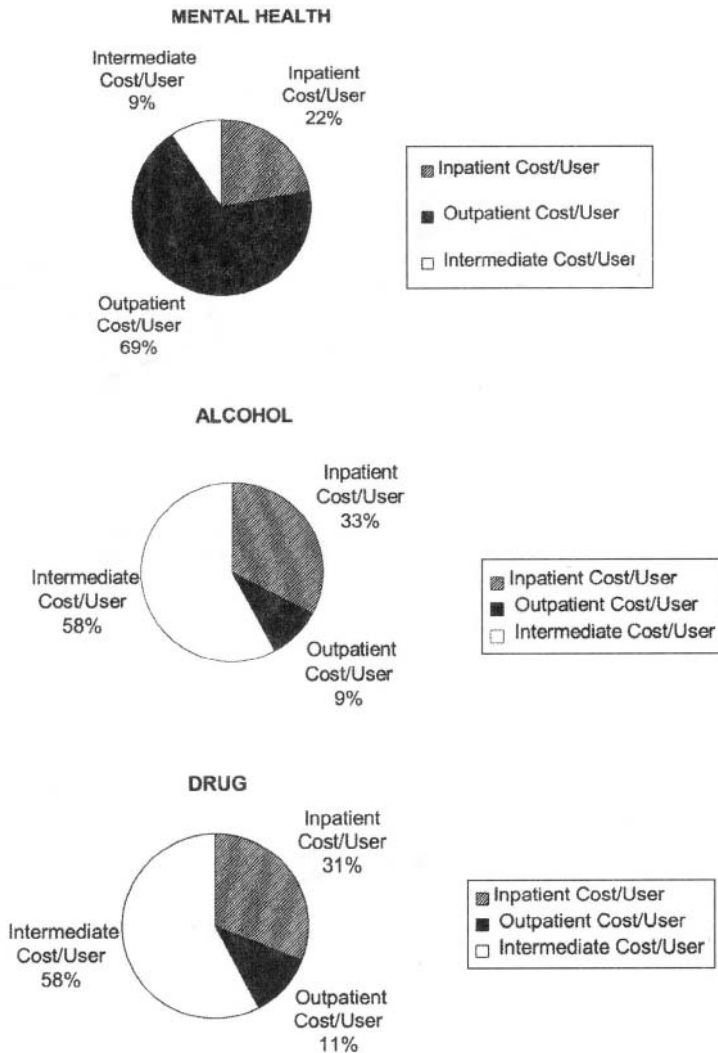


Figure 1. Share of different types of services for mental health, drug abuse, alcohol

Of particular interest are time trends, as there are concerns about a continuing trend towards decreasing costs. Decreasing costs are not a problem if they reflect more efficient treatment patterns, which can include a shift from restrictive settings to intermediate types of care. Figure 2 shows that total costs and insurance payments have substantially declined on a per member and per user basis over time. The gap between total costs and insurance payments and the patient copayments had become somewhat narrower, suggesting that in those plans benefits have not become less generous. Alternatively, it is possible that patients have started to use more network services. A case study of a large point-of-service plan

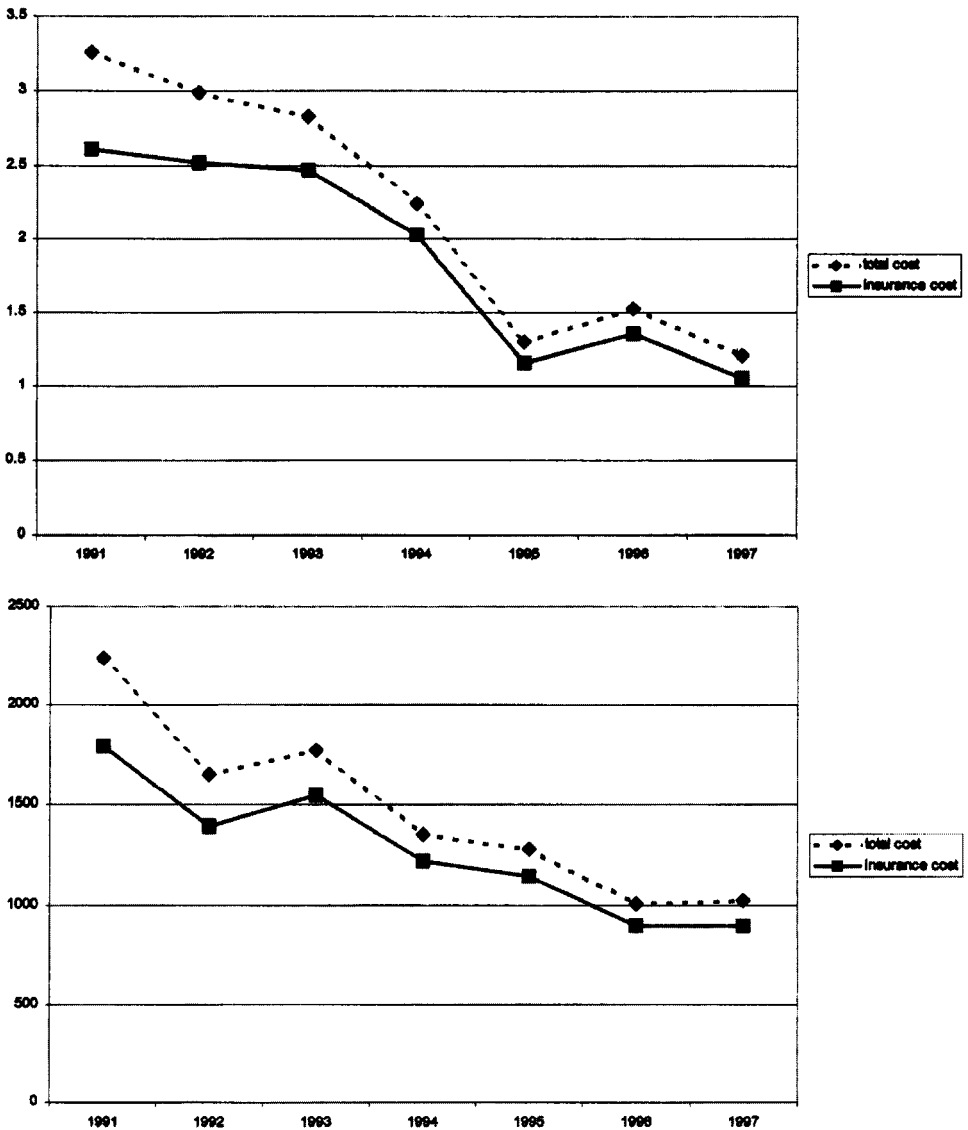


Figure 2. (Top) Mean total cost and insurance payments per year (in current dollars). (Bottom) Mean total cost and insurance payments per used (in current dollars).

previously showed that network use increased from 74% to 93% between 1993 and 1996 without a change in benefits.² Figure 3 shows that payments for inpatient services have substantially fallen and payments for outpatient services have remained relatively constant. Surprisingly, however, payments for intermediate treatment (e.g., residential or intensive outpatient treatment) have fallen with total costs. Thus inpatient and intermediate costs, rather than substituting for each other, have both declined.

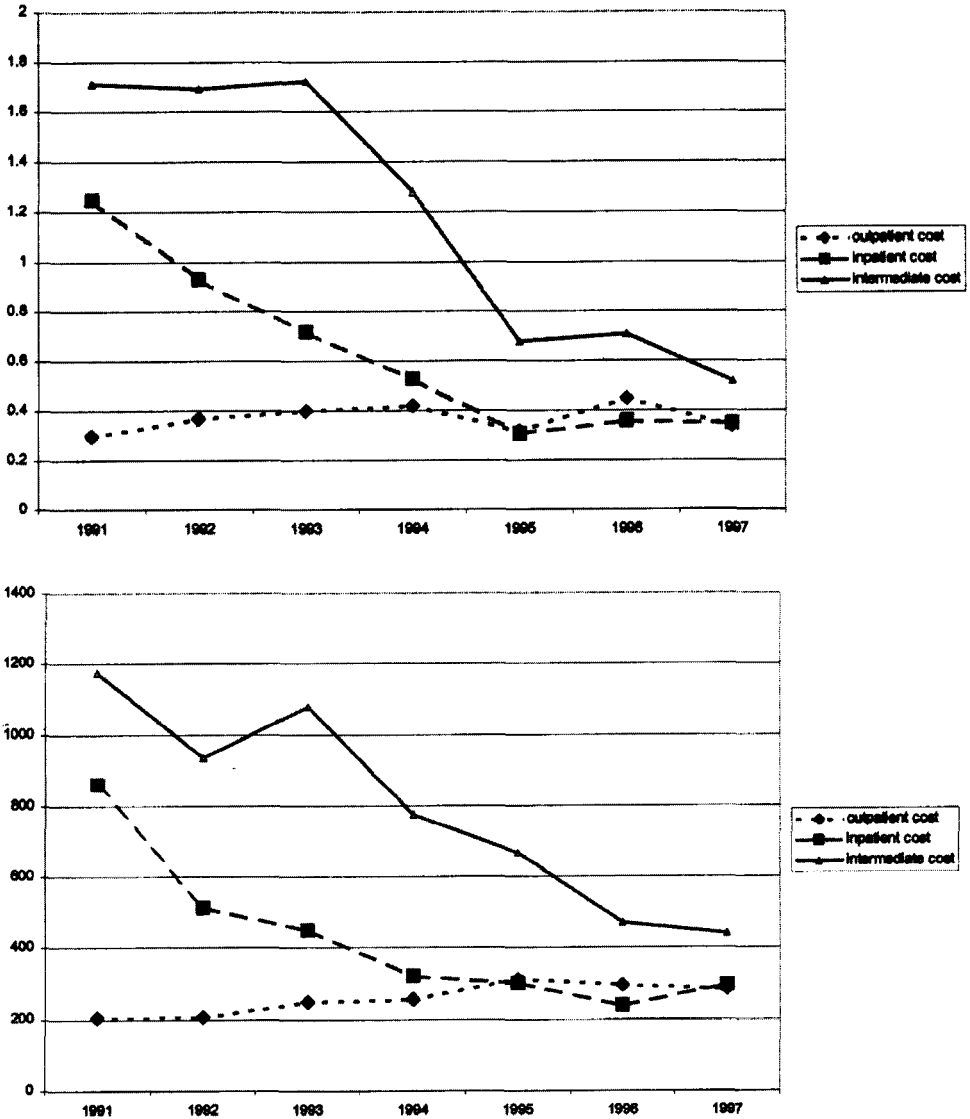


Figure 3. (Top) Intermediate, outpatient, and inpatient cost per year (in current dollars). (Bottom) Intermediate, outpatient, and inpatient per user cost and utilization (in current dollars).

Table IV shows the rates of follow-up after detoxification, The proportion of individuals receiving specialty care within a month following inpatient detoxification was relatively high (80%), and it occurred relatively quickly (63% within 1 week). This is a much higher proportion of individuals receiving follow-up and faster treatment delivery than have been reported in nonprivately insured populations following inpatient detoxification. It also is significantly higher than the national average

Table IV. Follow-up Care After Inpatient Detoxification for Alcohol and Illicit Drugs in Percent

Variables	Alcohol	Drugs	p-value for difference
Follow-up within 7 days	63	52	<.01
Follow-up within 14 days	74	68	.01
Follow-up within 30 days	80	75	.03
Length of inpatient stay (in days)	4.0	5.8	.14
Initial follow-up is outpatient (%)	10	14	.01
Initial follow-up is residential inpatient (%)	21	20	.70
Initial follow-up is intensive outpatient (%)	40	32	<.01

for 30-day follow-up after inpatient discharge for depression, which was 67% in 1998.²³

Compared to patients with inpatient detoxification for other drugs, the alcohol group had significantly higher follow-up rates at all periods in time (significant at 1% for follow-up within 1 and 2 weeks and significant at 5% for follow-up within a month). While the length of stay was longer for patients with detoxification for other drugs, the difference is not statistically significant and the mean was influenced by a small number of very long hospitalizations. The median stay was similar.

Most patients' initial treatment after detoxification was at an intermediate level of care (40% intensive outpatient, 20% residential). This pattern of treatment is consistent with the treatment philosophy of the American Society of Addiction Medicine Patient Placement Criteria, which envisions patients moving along a continuum of care to the least restrictive setting that meets their needs. However, the patterns are significantly different from patients treated for drug problems, which had lower rates of intensive outpatient follow-up, although higher rates of regular outpatient follow-up visits (difference significant at 1%). This could be related to the follow-up rates as one would expect patients going to residential or intensive outpatient care to have contact within a few days and always by the second week.

Our last analysis considers disenrollment over time. Figure 4 shows the percentage of all members remaining in the plan between the first and sixth year after enrollment. In all cases the percentage of continuous enrollment in the same plan for individuals being treated for alcohol abuse closely tracks the function for members as a whole, while individuals with claims for drug treatment disenroll at a higher rate. Thus, among patients receiving treatment for a substance use disorder, continuity in terms of insurance coverage is less a problem among patients with alcohol problems than among patients with illicit drug problems. There were too few child dependents receiving substance abuse care for a comparable analysis.

4. Discussion

Four major findings emerge from our examination of the UBH-administered plans. First, alcohol treatment is relatively rare among those with private insurance,

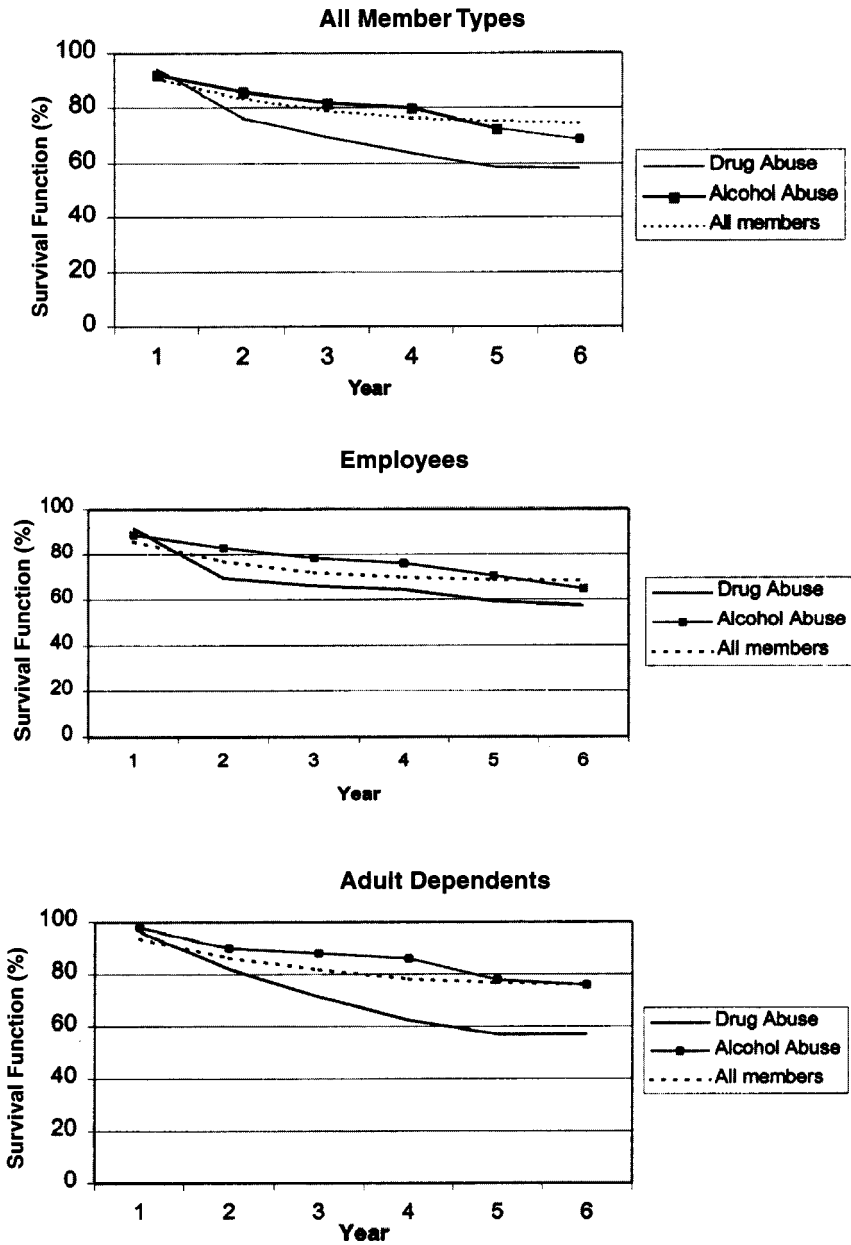


Figure 4. Disenrollment over time: percentage of all members (top), employees (center), and adult dependents (bottom) remaining in the plan between the first and sixth years after enrollment.

but patients receiving this treatment have the highest per user behavioral health costs. Thus, these are the patients most vulnerable to benefit designs that impose limits on coverage or rely on high patient cost-sharing, which could reduce continuity of care and compromise treatment outcomes. Employers should be interested in alcohol treatment outcomes, as most patients receiving care for alcohol problems are employees, and employees rather than insured family account for the majority of treatment costs. Successful treatment outcomes for this group would be likely to lower both other medical costs and employer liability costs, providing a strong argument for offering “parity” type benefits that remove financial barriers for these patients. In contrast, many other health issues have little effect on productivity and employers are understandably wary of claims that better benefits or better care would improve the business bottom line.

Second, total alcohol-related costs and costs for intermediate alcohol-abuse treatment have remained constant. This result suggests that under managed care, inpatient treatment costs have been reduced by both case management and by substituting less expensive care.

Nevertheless, it is important to keep in mind that there has been a rather dramatic shift towards intermediate type of services compared to traditional indemnity plans that typically were limited to either inpatient or standard outpatient services and excluded intermediate types of treatment, such as residential settings or recovery homes. In contrast, in the UBH sample, 33% of alcohol treatment costs were for inpatient care, 58% were for intermediate care, and the remainder were for outpatient care.

Third, alcohol abuse treatment patients have not shown a greater tendency to disenroll than other members. There are two possible interpretations. One could be that patients with alcohol problems are otherwise socially more stable and secure, leading to more continuous insurance and employment arrangements. Some indication of that is that those patients tend to be somewhat older and are more likely to be employees. An alternative interpretation is that patient satisfaction among this group is relatively high, leading to less voluntary disenrollment. In the latter case, despite declining costs in these plans, patients using alcohol services are not “voting with their feet” compared to other members. The data do not allow us to distinguish voluntary versus involuntary disenrollment.

The picture is quite different for other drug users, however. Whether this reflects dissatisfaction with the plan among patients treated for illicit drug use or whether it reflects policies of the employers or managed care plan to push out these individuals cannot be determined. In contrast to patients with other medical conditions or even alcohol problems, the involuntary termination rather than patient choice interpretation appears to be the more likely one for users of illicit substances, especially in the light of drug-free workplace policies.

Finally, alcohol detoxification follow-up figures are substantially better than those seen in nonprivate plans. Of course, the privately insured population is probably very different from the publicly insured population, which could account for a large part of this difference. Follow-up figures are a very crude proxy for quality of care, but it is probably the one most closely related to quality among all the prima-

rily utilization-based measures reported by the National Committee on Quality Assurance. This is a positive result despite the changes that have occurred in the utilization of other services. However, those results are based on pooling the data over several years and the small number of detoxification does not allow us to analyze whether follow-up rates have improved or deteriorated over time.

These results come with several caveats. Generalization is obviously a concern given that all plans were managed by one organization, even if this organization is the third largest MBHO in the country, covering more than 14 million Americans. Despite having data from 77 plans over multiple years, the number of individuals with substance abuse claims was fairly small and results have wide confidence intervals. All the standard limitations of relying on administrative data apply. There are no detailed measures of outcomes or clinical measures of case-mix and we are unable to comment on the quality or appropriateness of the treatment provided. Claims data do not contain information such as rate of relapse, participation in AA/NA, and patient satisfaction. The relationship between how we categorize claims and the actual treatment the patient receives is also not exact. The diagnosis on the claims, which we use to identify alcohol and other drug treatment from mental health treatment, may not always accurately reflect the focus of a treatment session. The most obvious example is in the case of dual diagnosis patients. This could result in clinicians providing drug or alcohol treatment in a session but coding the visit as a mental health visit.

Despite these limitations, new data on utilization and cost patterns in this important and growing sector are valuable to inform policy. There are legislative proposals on mandating increased substance abuse benefits as well as numerous proposals affecting managed care. Unfortunately, virtually all debates are based either on data from before the advent of managed care, which are likely to result in exaggerated cost consequences of substance abuse parity. At the same time, there are many concerns about managed care which are largely based on anecdotal evidence, and there is a shortage of actual information on what is happening in larger populations under managed care. Market changes have happened very fast—maybetoo fast for research to keep up. This chapter demonstrates that even the same managed care organization has experienced major changes in its utilization patterns for alcohol-related care in the 1990s. Thus, the most recent data should be used to evaluate policy proposals.

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Problem Drinking, Health Services Utilization, and the Cost of Medical Care

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Michael T. French, Dale D. Chitwood,
and Clyde B. McCoy**

Abstract. The purpose of this study was to examine the relationships between problem drinking, health services utilization, and the cost of medical care in a community-based setting. In addition to descriptive analyses, these relationships were estimated with multivariate regression models. Data were collected in 1996 and 1997 through a standardized self-administered questionnaire designed to obtain important information on demographics, health status, morbidity, health care utilization, drug and alcohol use, and related lifestyle behaviors. The survey instrument also included the 10-item Michigan Alcoholism Screening Test (MAST-10), which was used to identify problematic alcohol users (PAUs). The empirical findings indicated that PAUs had a significantly higher number of outpatient visits, more emergency room episodes, and more admissions to a hospital than a combined group of non-drinkers and nonproblematic alcohol users (NPAUs). Analyses of total health care cost showed that the estimated differential in total cost for PAUs during the past year, including the interaction effect with problematic drug use, was \$367. The total cost (full effect) for PAUs was composed of a main effect (\$984) and an interaction effect (-\$617). These findings have implications for substance abuse interventions and health care policy.

1. Introduction

The University of Miami Health Services Research Center recently collected extensive community-based information on chronic drug users (CDUs), CDUs who were also injecting drug users (IDUs), and non-drug users (NDUs). These categories were

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defined from information on quantity and frequency of use during the past 12 months as specified by the Office of National Drug Control Policy (ONDCP).¹ The survey instrument also included the 10-item Drug Abuse Screening Test (DAST-10), which was used to identify problem severity levels for drug users.^{2,3} In one study, French et al.⁴ used these community-based quantity/frequency data to estimate differences in health services utilization and cost for CDUs, IDUs, and NDUs. In another study, French et al.⁵ reestimated the health services models with a measure for problematic drug use (PDU) based on DAST-10 thresholds. The empirical findings in both studies suggested that PDUs consumed more inpatient and emergency room care during the past 12 months relative to nonproblematic drug users (NPDUs). However, NPDUs consumed more, but less expensive, outpatient visits. Consequently, the annual cost of health care was about \$1,000 higher for PDUs relative to NPDUs.

The survey instrument used by French et al.^{4,5} also collected information on alcohol use and problem drinking through the 10-item brief Michigan Alcoholism Screening Test (MAST-10). Test content of the MAST-10 refers to the respondent's self-appraisal of his or her drinking habits and the eventual social, physical, or psychological complications associated with problematic alcohol use (PAU). Items are weighted differentially and are summed to produce an overall diagnostic score. A score of six or more distinguished problem or heavy drinkers from nonproblem drinkers, which included light drinkers and nondrinkers.^{6,7}

Since many PDUs are also heavy drinkers, it would be interesting to examine the main effects of problem drinking as well as the interaction effects of problem drinking and drug use on the utilization and cost of health services. Problem drinking can lead to health consequences and, consequently, significant costs.^{8,9} Harwood et al.¹⁰ reported that treatment costs of health problems attributed to alcohol abuse totaled approximately \$13.2 billion in 1992. In this age of managed care, utilization studies of problem drinkers are necessary to determine (1) what type of care these individuals are consuming, (2) whether consumption patterns are different from other, demographically similar individuals, and (3) the differential cost of service utilization. Researchers, policy makers, treatment providers and clinicians could benefit from recent and accurate information on the relationships between problematic alcohol use and health care utilization. For example, new empirical information would help researchers verify theories, develop alternative models, and formulate research initiatives. Moreover, policy makers could use this information to determine areas for potential intervention and improvement. Finally, treatment providers and clinicians could reflect on their personal delivery patterns and compare their observations with the findings reported here.

As in the two previous and related studies,^{4,5} three common measures of health services utilization (emergency room episodes, outpatient visits, and hospital admissions) were examined. Using MAST-10 classifications for PAUs and non-PAUs (NPAUs), these measures of health services utilization and the associated total cost were estimated and compared.

2. Conceptual Framework

To model the consumption of health care, we followed the approach outlined by French, et al.^{4,5} and commonly used by economists. Namely, the demand for health care can be described through a household production process for good health.¹¹⁻¹⁴ The essence of the economic approach is that individuals do not consume health care for its direct pleasure, but for the effect that health care has on health status and, consequently, overall utility or well being. Utility-maximizing individuals are faced with a budget constraint that limits the amount of health care (and other goods) they can consume. Solving this constrained maximization problem will provide the demand relationship for each good and service in the person's utility function, including health care.¹⁵ In addition to the prices of health care and other consumption goods, several factors will influence the timing and amount of health care utilization. These include personal characteristics that influence preferences and tastes, such as age and education, behavioral choices such as alcohol use, environmental factors such as availability of care, and consumer income. The implicit form of this demand relationship is presented below:

$$HC = HC(P_{hc}, P_x, PC, I, BC), \quad (1)$$

where HC is a measure of health care utilization (eg, outpatient visits, inpatient episodes), P_{hc} is the price of health care (which is also dependent on the type of health insurance), P_x is the price of a composite good (normalized to 1), PC is a vector of personal characteristics (e.g., age, education, marital status), I is income, and BC is a vector of behavioral characteristics (e.g., alcohol use, drug use, eating habits).

The hypothesized relationships between HC and the set of explanatory variables are as follows. P_{hc} will be inversely related to HC due to the law of demand.^{16,14} Individuals with any health insurance should consume more health care and the possession of private health insurance may have a stronger effect relative to public insurance. Personal characteristics (PC) could affect HC in a variety of different ways. For example, one would presume that age is positively related to HC because of the onset of illness and disease attributed to the aging process and a corresponding decline in health capital.¹⁷ Conversely, one could argue that education is negatively related to HC due to better disease management information and overall healthy behaviors by more educated individuals. However, education could also be positively related to HC because educated people may be more aware and protective of their health. A priori, the exact direction and magnitude of these relationships are not easy to discern. Income (I) is believed to be positively related to the demand for health care. Although health care demand is usually more episodic than continuous, there is still ample evidence that individuals elect to consume discretionary care and more acute care overall as their income rises.¹⁶

The relationship between health care demand and problematic alcohol use, the focus of this analysis, is uncertain. Manning et al.^{8,18} examined the effects of

problem drinking on outpatient and inpatient care using two different data sets: the RAND Health Insurance Experiment (HIE) and the National Health Interview Survey of 1983 (NHIS83). Indicators of problem drinking used as predictors of health care utilization included monthly volume of alcohol consumed combined with dummy variables for former drinkers and abstainers. Both studies reported no significant relationship between problem drinking and inpatient care. However, problem drinking was found to be positively related to outpatient care for the NHIS83 data, but unrelated to outpatient care for the HIE data. An intuitive explanation is the following. Problem drinking may lead to increased demand for health care due to associated health consequences. When in denial or to avoid contempt resulting from their alcohol consumption, however, problem drinkers may use less health care despite a pronounced need. In addition, financial barriers and difficulties navigating the health care system could further impede their use of health care. Again, the empirical analysis will determine which (if any) of these effects are dominant.

3. Estimation Approach

The first issue in estimating Equation (1) was the actual measurement of some independent variables. One of the most important variables in a demand relationship is the price of the good or service. Actual prices for health services are very difficult to obtain for individual consumers and variation within state or city boundaries depends upon quoted prices, insurance status, and availability of care. Charge data from hospitals may be an acceptable approximation for actual prices, but this option was not possible because study participants did not indicate where they received care. As an alternative to direct information on health care prices, availability, and quality, a series of twenty-one dummy variables were coded based on respondents' zip code of residence within the region. Several zip codes with less than 5 observations in the data set were coded together to form the index category. Although zip codes are not the ideal proxy for health care prices, they do represent a fine level of distinction between small geographical markets, hence their inclusion in the empirical model.

The vector of behavioral characteristics, which is of primary interest in the right-side of Equation (1), included three dummy variables: (1) an indicator variable for meeting the MAST-10 threshold for problematic alcohol use (PAU);^{6,7} (2) a comparable indicator for DAST-10 diagnosis of problematic drug use (FDU);^{2,3} and (3) an interaction variable representing comorbid problematic alcohol use and problematic drug use (PAU-PDU). Several studies have found that the 25-, 13-, and 10-item MASTs are adept at screening for problematic drinking with good internal reliability, validity, and temporal consistency.^{19,20,7} Similarly, the ability of the 28-, 20-, and 10-item DASTs to detect problematic drug use has also been established.^{21-23,2,24-26}

Another estimation challenge involved the distributions of the dependent variables. None of the three measures of health care utilization in the analysis (number of outpatient visits, number of emergency room episodes, and number of inpatient

hospital days) were normally distributed. The values for each measure were clustered around zero and small integer numbers for the vast majority of the observations. The appropriate estimation technique for dependent variables that exhibit count-data properties is a Poisson regression.²⁷

Each equation was initially estimated using a Poisson regression. However, the Poisson model makes the restrictive assumption that the conditional mean of the dependent variable (HC) is equal to its variance. Using a method developed by Cameron and Trivedi,²⁸ statistical tests of this assumption were not supported for any of the HC variables, so the relationships were reestimated with the more flexible negative binomial regression, which allows for greater variation (i.e., overdispersion) of HC. In addition, the analysis tested for zero inflation of the observed outcome $HC=0$ to determine whether to implement the zero inflated negative binomial model.²⁹ As an example, the probability of a zero value could be “inflated” if some respondents reported no episodes of care during the past year simply because they would never use a particular type of service. A Vuong test³⁰ indicated that zero inflation was not present in these data, which increased support for the negative binomial technique.

Estimation was further challenged by the potential correlation of an explanatory variable(s) with the error structure of the estimating equation.³¹⁻³⁴ This situation could arise if an independent variable(s) was significantly correlated with missing or unobserved variables that were important predictors of HC. Explanatory variables that are correlated with the residual of the regression are endogenously determined explanatory variables.^{34,35}

The choice variables most likely to be considered endogenous in Equation (1) are problematic alcohol use (PAU), problematic drug use (PDU), and the interaction variable (PAU-PDU). One of the most common techniques to address potential endogeneity bias is instrumental variables (IV) regression or two-stage least squares.^{36,27} The purpose of IV regression is to use exogenous variables (referred to as instruments in this example) that are correlated with the potentially endogenous explanatory variables, but uncorrelated with the dependent variable. French et al.⁵ examined the potential endogeneity of drug use through a series of tests including analysis of the partial R^2 statistic for the explanatory power of the instruments,³⁷⁻³⁸ the χ^2 test of the joint significance of the instruments,³⁴⁻³⁷ the J statistic for misspecification of the regression,³⁹ the Hausman test,⁴⁰⁻⁴¹ and the test for overidentification of the instruments.³⁶ These statistical tests suggested that endogeneity corrections for drug use were not necessary.

To undertake these tests, French et al.⁵ used indicator variables for the degree that religious beliefs would influence behavior (i.e., strongly, somewhat, a little, not at all). The present analysis found that these instruments were not significantly related to PAU. Unfortunately, the remaining measures on the survey questionnaire did not offer any other reasonable instruments that would enable us to test and control for potential endogeneity of PAU. Accordingly, despite the lack of empirical verification, we treated PAU as an exogenous determinant of health services utilization and cost. This perspective was consistent with much of the medical literature that considers problematic drinking a disease.⁴² However, our empirical results are

valid to the extent that the exogeneity of problematic alcohol use (PAU) is a reasonable underlying assumption.

4. Sample and Data

The sample design and data collection procedures for this study were developed by the Health Services Research Center at the University of Miami. The primary objective was to administer a lengthy health services questionnaire to 1,800 African American, Hispanic, and non-Hispanic Whites who were demographically similar, but differentiated by their drug-using status. In addition, adequate representation by gender and race/ethnicity was also monitored. Eligibility for the study was determined through a brief screener prior to full administration of the instrument. Individuals were excluded from the study if they (1) were significantly impaired, (2) had difficulty understanding the questions, (3) were violent or abusive, or (4) misreported their eligibility based on laboratory reports of specimens. This ambitious data collection effort required about two years to complete and resulted in a final analysis sample of 1,480 individuals. Several researchers at the University of Miami have described the data collection methods and conducted independent analyses of these unique data.^{4,5,43} Thus, the material below is a brief overview of the sample and data.

4.1. Recruitment

The recruitment territory encompassed the entire area of metropolitan Dade County, Florida. The largest cities in Dade County are Miami, Miami Beach, Homestead, Hialeah, and Opalocka. Using geo-coding procedures, high-risk areas within Dade County were identified based on indicator data from drug treatment, criminal justice, and street outreach databases,⁴⁴ and recruitment efforts were mobilized in these areas. A high-risk designation was based on above average scores for crime, drug use, poverty, and other social indicators.

Subjects were recruited from an area that spanned 78 zip codes. Three full-time outreach workers visited these neighborhoods and potential participants were screened in the community. Consenting individuals who appeared to be eligible were provided round-trip transportation to a central assessment center for a more comprehensive screening. The outreach workers recruited subjects at all times and days of the week to obtain a representative sample. After passing the full eligibility criteria, the subjects were escorted to a private room to complete the questionnaire with the assistance of an experienced survey administrator. Total participant time (including transportation) generally ranged from 1.5 to 2.5 hours. Recruitment was completed in December 1997 with 1,570 individuals enrolled in the study.

4.2. Instrumentation

Considering the broad aims and objectives of the research project, it was not possible to locate a single data collection instrument that addressed all information

needs. Thus, questions from several of the leading health services instruments⁴⁵⁻⁴⁸ were reviewed and selected. Since health services information, especially with respect to drug users, had not been widely explored in the literature, many new questions were designed to obtain important information on demographics, health status, morbidity, health care utilization, barriers to utilization, drug use, route of drug ingestion, and related lifestyle behaviors. The final questionnaire was divided into seven sections—screening, general, medical, satisfaction, alcohol and drug use, demographics, safety—and contained well over 300 questions. A complete version of the Health Services Research Instrument is available from the corresponding author.

4.3. Response Rates

Calculating survey response rates was somewhat difficult for a sample that was assembled through street outreach activities because eligibility was not fully discerned until the subjects were screened at the assessment center. Of all the people who traveled to the assessment center and were deemed eligible, less than 1% declined to participate after being consulted about the study procedures and the informed consent. A larger percentage of individuals who were approached by the outreach workers decided not to travel to the assessment center, but this figure was difficult to measure given the nature of outreach activities. The sample accumulation generated by the outreach workers was outstanding by any measure and the final sample was representative of the target population in metropolitan Dade County, Florida.

4.4. Sample Statistics

After cleaning the data and eliminating unusable observations, the total sample included 253 PAUs and 1225 NPAUs. The criterion for PAU was a score of six or more on the MAST-10, which corresponded to heavy drinking. A total of 197 of these PAUs were also PDUs. The criterion for PDU was three or more affirmative answers on the DAST-10, which corresponded to moderate or severe problem severity. A two-stage quota sampling design was used to insure inclusion of adequate numbers of women and ethnic minorities. Subsamples by gender and race/ethnicity included 845 men, 633 women, 556 African Americans, 481 Hispanics, and 440 non-Hispanic Whites. Table I presents mean values for all of the variables used in the empirical analysis. In addition to overall sample means, values were reported by problem drinking status. Several of the variables displayed significant differences in mean values across the two groups ($p \leq 0.05$, Kruskal-Wallis rank-sum test).

The average age of the sample was about 37 years and the average grade completed was 11. The average illegal and legal incomes for the full sample were \$5,169 and \$6,993. Only 10% of the sample were working full-time and 9% were working part-time at the time of the interview. However, 58% of the sample were employed at least part of the year during the past 12 months. PAUs were significantly more likely to be male and White relative to NPAUs ($p \leq 0.05$). Furthermore, PAUs were significantly less likely to be Black and educated relative to NPAUs ($p \leq 0.10$). Average legal income during the past year ranged from \$6,501 for PAUs to \$7,094 for

Table I. Variable Means, by Drinking Status

Variable	PAU ^a (N=253)	NPAU ^a (N=1225)	Total (N=1,478)
Age	37.5534	37.3135	37.3448
Married	0.2372	0.2751	0.2691
Male** _b	0.7312	0.5388	0.5720
White*** _b	0.3913	0.2784	0.2975
Black*** _b	0.2727	0.3976	0.3759
Hispanic	0.3360	0.3233	0.3259
Highest Grade Completed*	10.8656	11.1665	11.1156
Working Full Time	0.0553	0.1110	0.1014
Working Part Time	0.0909	0.0857	0.0865
Worked 1–13 Weeks (past year)	0.2451	0.2049	0.2116
Worked 14–26 Weeks (past year)	0.1502	0.1241	0.1285
Worked 27–39 Weeks (past year)	0.0791	0.0694	0.0717
Worked 40–52 Weeks (past year)	0.1502	0.1747	0.1704
Legal Income (\$) (past year)	6,501	7,094	6,993
Illegal Income (\$) (past year)** _b	7,174	4,757	5,169
Any Health Insurance	0.5099	0.5298	0.5260
Had Insurance for Past 12 Months*	0.2885	0.3649	0.3516
Had Insurance for Past 1–11 Months	0.2213	0.1641	0.1738
Emergency Room Episodes (past year)** _b	0.7945	0.6653	0.6876
Outpatient Visits (past year)** _b	1.7628	1.5029	1.5470
Times Admitted to Hospital (past year)	0.3439	0.2745	0.2869

^a PAU = Problematic Alcohol Use; NPAU = Non-Problematic Alcohol Use.

^b Statistically significant differences in variable means across the drinking categories (* $p \leq 0.10$;

** $p \leq 0.05$) using Kruskal-Wallis rank test.

NPAUs. Conversely, PAUs acquired significantly more illegal income than NPAUs (\$7,174 versus \$4,757) during the past year ($p \leq 0.05$).

Regarding health services utilization and access to care, only 35% of the sample had some form of health insurance during the entire term of the previous 12 months and 17% had part-year coverage. Moreover, PAUs were significantly less likely to have held constant insurance coverage throughout the prior year than NPAUs ($p \leq 0.10$). For the full sample, the average number of outpatient visits, emergency room episodes, and hospital admissions were 1.55, 0.69, and 0.29. Notably, PAUs had a significantly higher number of outpatient visits and emergency room episodes during the past year than NPAUs ($p \leq 0.05$). But, no significant differences were present in the number of times admitted to a hospital during the past 12 months.

5. Estimation Results

Separate models were estimated for emergency room episodes, outpatient visits, and hospital admissions. All models were estimated with the full sample because interaction variables between gender and PAU were not statistically significant. Regression output for all independent variables is reported in Table II. All of

Table II. Regression Results for Health Services Utilization during the Past Year

Variable	Emer. Room Episodes	Outpatient Visits	Hospital Admissions
Problematic Alcohol Use (PAU)	0.6616** (0.2709)	0.3739** (0.1520)	0.6921* (0.3595)
Problematic Drug Use (PDU)	0.5810** (0.1266)	-0.1996** (0.0722)	0.4912** (0.1743)
Interaction (PAU-PDU)	-0.7220** (0.3105)	-0.0078 (0.1776)	-0.7294* (0.4174)
Marginal Effect (PAU)	0.1548	0.5277	0.0675
Marginal Effect (PDU)	0.2378	-0.2554	0.0749
Age	-0.0037 (0.0339)	-0.0194 (0.0182)	-0.0270 (0.0460)
Age Squared	-0.0000 (0.0004)	0.0003 (0.0002)	0.0004 (0.0006)
Married	-0.0678 (0.1210)	-0.1283* (0.0707)	-0.2358 (0.1720)
Male	-0.2471** (0.1150)	-0.5007** (0.0662)	-0.1137 (0.1626)
Black	-0.1801 (0.1436)	0.0494 (0.0836)	-0.1117 (0.1995)
Hispanic	0.0680 (0.1395)	0.1282 (0.0837)	0.2572 (0.1908)
Highest Grade Completed	0.0130 (0.0204)	0.0150 (0.0118)	-0.0083 (0.0271)
Working Full Time	-0.5163** (0.2284)	-0.1123 (0.1209)	-0.6519** (0.3177)
Working Part Time	-0.2646 (0.2098)	-0.1958 (0.1203)	-0.4946* (0.2981)
Worked 1–13 Weeks (past year)	-0.0848 (0.1424)	0.0300 (0.0840)	-0.0134 (0.1989)
Worked 14–26 Weeks (past year)	-0.1301 (0.1757)	-0.0093 (0.1016)	0.1928 (0.2313)
Worked 27–39 Weeks (past year)	0.0006 (0.2186)	-0.1313 (0.1333)	0.3430 (0.2898)
Worked 40–52 Weeks (past year)	-0.0660 (0.1949)	-0.0914 (0.1111)	-0.0268 (0.2600)
Legal Income / 1000(\$) (past year)	0.0000** (0.0000)	0.0000 (0.0000)	-0.0000 (0.0000)
Illegal Income / 1000 (\$) (past year)	0.0000** (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Had Insurance for Past 12 Months	1.1641** (0.1252)	1.0200** (0.0714)	1.5148** (0.1783)
Had Insurance for Past 1–11 Months	1.3961** (0.1392)	0.8773** (0.0831)	1.4399** (0.1995)
Constant	-1.4406** (0.6713)	0.2951 (0.3679)	-1.7680** (0.8833)

Note: Standard errors reported in parentheses. Estimates for 21 zip code variables not reported.
 * $p \leq 0.10$; ** $p \leq 0.05$.

the coefficient estimates for the main effects of PAU were significantly different from zero at the 90% confidence level, and usually at the 95% level or higher. In addition, tests for the joint significance of PAU, PDU, and PAU-PDU (χ^2 , $df=3$) showed that both the main and interaction effects were also significant ($p \leq 0.05$). All three specifications indicated that PAUs had more emergency room episodes, outpatient visits, and hospital admissions relative to NPAUs.

The negative binomial technique relies on an underlying gamma distribution to address overdispersion in the data. Thus, the estimated coefficients can be transformed to either incidence rate ratios (i.e., e^β) or marginal effects (i.e., $\partial E(HX|\bar{x})/\partial x$). Using the approach outlined in Greene,²⁷ the estimated marginal effects of the binary variable PAU on health services utilization (HC) were approximated using the formula below:²⁹

$$\frac{\partial}{\partial} \left(\beta \bar{x} + \beta \bar{PDU} + \beta x \right) \quad (2)$$

where x is the vector of explanatory variables, \bar{x} is the vector of mean values of x , excluding PAU, \bar{PDU} is the mean value of PDU, and β is the vector of coefficient estimates. The marginal effects for PAU are reported in Table II. Specifically, PAU was associated with 0.1548 more emergency room visits, 0.5277 more outpatient visits, and 0.0675 more hospital admissions relative to NPAUs.

In addition to health care utilization, the total cost of health services utilization for both groups are of interest to policy officials. To estimate these costs,* average charges were obtained for an emergency room visit (\$495), an outpatient visit (\$89), and an inpatient hospital episode (\$6,929).⁴⁹ These charges were then applied to each type of health care and a variable was created for total cost by summing across the three categories. The mean annual total cost for PAUs and NPAUs was \$2,933 and \$2,365. Using OLS with the same explanatory variables reported in Table II, the estimated differential in total cost for PAUs, including the interaction effect with PDU, was \$367 ($p=0.058$). The total cost (full effect) for PAUs was composed of a main effect (\$984) and an interaction effect (-\$617).

The coefficient estimates for PAU can also be compared with the coefficient estimates for PDUs in Table II. Recall that the present analysis found that PAUs had more outpatient visits, more emergency room visits, and more inpatient episodes relative to NPAUs. Except for outpatient visits, the same results emerged for PDUs. Namely, the estimated marginal effects for PDUs were 0.2378 for emergency room visits, -0.2554 for outpatient visits, and 0.0749 for hospital admissions. The differ-

*The estimates reported in French and Martin⁴⁹ were converted to 1996 dollars using the medical care price index. It is preferable to use economic costs for health services in South Florida when calculating the total cost of health care for this sample. However, economic costs were not available for specific services, so charges were used as an approximation.

ence in utilization of outpatient services may be due to the illicit nature of drug use as contrasted with the legal consumption of alcohol. PAUs, without fear of criminal sanctions, may seek outpatient care for routine conditions. PDUs, on the other hand, may be apt to avoid preventative and ambulatory care to conceal their illegal drug use. The differences in health services utilization between PDUs and PAUs extended to the total cost of health care as well. Specifically, the additional total cost of service utilization over the past year was \$872 for PDUs and \$367 for PAUs.

Returning to Table II, PAU and PDU were clearly significant predictors of health care utilization. A few other variables were also noteworthy. Not surprisingly, individuals with health insurance had higher utilization of all types of health care ($p \leq 0.05$). This result was significant even for part-year insurance. Men were less likely to consume each type of health care, with significant coefficient estimates for emergency room episodes and outpatient visits ($p \leq 0.05$). Employment status and legal income were somewhat related to health care utilization within this sample. Currently working full-time was negatively related to emergency room episodes and hospital admissions. However, income (both legal and illegal) was positively related to emergency room utilization.

6. Discussion

Using a rich set of variables from a community-based setting, this research compared health services utilization and cost between problematic and nonproblematic alcohol users. The marginal effects for PAU were estimated for three common measures of health services utilization: emergency room episodes, outpatient visits, and hospital admissions. The total annual cost of health services utilization for these three categories of care was also estimated. Controlling for other important covariates, the results strongly suggest that PAUs had a higher number of outpatient visits, more emergency room episodes, and more admissions to a hospital than NPAUs. In addition, controlling for the comorbidity of drug use, the estimated cost of health care during the previous year was \$367 higher for PAUs compared to NPAUs.

Despite the originality of the data and the diversity of the statistical techniques, the research had several limitations. The data were rich in many areas, but some measures were not ideal for the objectives of the paper and some important variables (e.g., prices for health services) were not available. Given the community-based sampling design, the findings naturally have direct implications for problematic alcohol users and the health care system in South Florida, but the results are not necessarily generalizable. Additionally, the criterion for problematic alcohol use based on the MAST-10 is one of several classification alternatives.^{50,42,51} In addition, many investigators have questioned binary measures of alcohol use because of the beneficial effect of light or occasional use of alcohol.⁵²⁻⁵⁶ Measures based on quantity/frequency dimensions may be more appropriate.

The statistical models also had some limitations. One critical assumption of the empirical approach was that PAU was an exogenous right-hand-side variable.

The instruments used by French et al.⁵ to test the exogeneity of PDU were not significantly related to PAU in the first stage equation. No other reasonable instruments were available from the data to test the validity of that assumption. Hence, the empirical results should be interpreted in the context that the exogeneity assumption of PAU was valid.

In summary, despite these limitations, the empirical results were informative and answered some enduring questions about problematic alcohol use, health services utilization, and medical care costs. The present study determined that PAUs consumed more emergency rooms episodes, more inpatient hospital care, and more outpatient care, which was equivalent to \$367 in additional health care during the past year relative NPAUs. Future research should determine whether these findings hold with different types of data and alternative measures of problem drinking.

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The Outcome of Treatment

Robert B. Huebner and Richard K. Fuller,
Section Editors

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Overview

Robert B. Huebner and Richard K. Fuller

Managed care is changing the delivery of health care. While the goal of providing health care in a cost-effective manner is laudable, concerns are being raised that cost containment is affecting health care delivery in a detrimental way. This is particularly true of addiction medicine. There has been a significant decrease in the number of private programs, and within those programs that remain, the length of stay has been significantly reduced. These changes in service delivery raise the serious issue of inadequate capacity to treat those afflicted with alcoholism. There has been a further shift from inpatient to outpatient treatment. This shift raises the concerns that certain patients—especially those with serious medical/psychiatric disorders—are not receiving the appropriate treatment.¹

Health services research studies the impact of organization and financing on access to treatment, quality of care provided, and outcome of treatment. Much of the focus of contemporary health services research is on understanding the impact of managed care arrangements on the outcomes of alcohol treatment. Although research on the impact of managed care arrangements on outcomes is just beginning to bear fruit, the field of alcohol treatment research has much to offer on outcomes of a variety of treatment modalities and approaches. This section of *Recent Developments in Alcoholism* covers research on treatment outcomes related to five important topics: adolescents, marital and family therapy, continuing care, effectiveness of 12-step, cognitive-behavioral, and combined treatments, and screening and brief intervention. Each chapter provides a number of important findings that have relevance to the changing managed care environment in addiction medicine.

In recent years, there has been increasing recognition among researchers and clinicians alike that alcohol problems among adolescents constitute a serious public health problem. As the nature and magnitude of the problem becomes increasing clear, so does the need for research on treatments for adolescents with alcohol problems. In their chapter on outcomes of treatment for adolescents, Brown and D'Amico

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make an important contribution to this nascent area of alcohol treatment research. A major theme running through this chapter is that a number of developmental factors unique to adolescents require us to rethink the applicability of diagnostic and treatment approaches based upon research on adults. In turn, this reconceptualization will require retooling some of our research methodologies. Among the developmental factors identified by the authors are the effects of continuing neurocognitive development on attention, risk appraisal and coping skills, increased priority of peer relations, first-time exposure to drinking situations, and role transitions. Clearly, these factors influence the content of alcohol treatment, its timing, the context in which it is delivered, and long-term outcomes. Moreover, these factors require the changes to adult-oriented screening instruments and diagnostic tools.

This chapter provides a thorough update of recent research on the outcomes of alcohol treatment for adolescents. A number of important issues are addressed: recent advances in assessment, pretreatment characteristics associated outcomes, course of treatment, effectiveness of existing treatment modalities and self-help approaches. This review is particularly valuable because it reports findings from a number of studies of posttreatment outcomes for adolescents. Interestingly, in one series of longitudinal studies, it was found that “minor” relapses (episodes of drinking without bingeing or consequences) did not automatically mean a return to problematic drinking behavior. The authors summarize current research on what mediates posttreatment relapse, such as the adequacy of coping skills in drinking situations, attendance at 12-step programs, social environment, quality of interpersonal relations, and individual emotional health. Finally, the authors speak to the importance of understanding the heterogeneity of the adolescent population—especially with regard to co-morbid psychiatric disorders—in evaluating treatment access and long-term outcome. They also point out that the adolescent treatment outcome literature is limited compared to the adult literature. Taken together, the issues and findings covered in this chapter provide a solid foundation for future research on this critical topic.

Encouraging the active and structured involvement of an alcoholic’s family members in alcohol treatment process continues to show great promise. In their update of recent research on family involved alcoholism treatment, O’Farrell and Fals-Stewart evaluate 36 randomized studies of family involved treatment and comparison conditions. Their review updates the review of family-involved treatment by McCrady in Volume 7 of *Recent Developments in Alcoholism*. This review begins with a meta-analysis that establishes the overall effectiveness of family-involved treatment. This meta-analysis found that a medium effect size of .30 supporting family-involved treatments compared to individually-oriented treatments or wait-list comparison groups. The authors point out that this is a very substantial effect size in light of the fact in other areas of medical research (e.g., aspirin and heart disease), significantly smaller effect sizes have prompted recommendations for major changes in clinical practice.

The body of this excellent review is organized into two conceptually distinct categories: (1) studies where the alcoholic is not currently motivated to seek help and (2) studies where the alcoholic has sought help or is involved in treatment. In

the first category, the focus of therapy is on helping family members manage the stress of living with a family member who is abusing alcohol or on pressuring the alcoholic to enter treatment. O'Farrell and Fals-Stewart found that coping skills therapy and 12-step Al-Anon approaches did reduce family members' emotional distress. With regard to techniques for pressuring the alcoholic into treatment, there were mixed results. Several approaches were reviewed: Pressure to Change (PTC), Unilateral Family Therapy (UFT), Community Reinforcement and Family Training (CRAFT), and the Johnson Institute family "intervention" approach. The authors concluded that the CRAFT approach, not the popular Johnson Institute family "intervention," had the strongest support for engaging unmotivated alcohol abusing adults into treatment.

In the second category of studies—family-involved treatment when alcoholic is seeking help—the authors found confirmatory support for behavioral couples therapy in promoting abstinence and improving the quality of interpersonal relationships. This effect was especially strong when a behavioral contract was established. A good example of this was the Counseling for Alcoholics' Marriages Project (CALM) that included behavioral contracts to adhere to disulfiram as well as relationship building activities. The authors conclude their review with several recommendations for future work, including the inclusion of more minority and women patients in family-involved treatment research, research on untested approaches such as network therapy, and working on ways to increase the adoption of research findings in real world settings.

Participation in some form of aftercare or continuing care has long been accepted as an important adjunct to formal treatment for alcohol dependence. However, there has been relatively little research that directly evaluates its effectiveness. McKay fills this gap by providing an excellent review of the available correlational and experimental studies that address the range of post-treatment interventions that fall under the rubric of "continuing care." Reflecting the managed care-driven shift to outpatient services, McKay focused on the effectiveness of continuing care after outpatient, rather than inpatient, alcohol treatment. In his review, he found that the association in correlational studies between receiving continuing care and positive outcomes was not strongly supported in the controlled studies. Only four of the twelve controlled studies showed a significant main effect. The approaches to continuing care that were found to be effective were the use of visiting nurses, behavioral interventions with couples, extended telephone contacts in the context of an EAP program, and individually based relapse prevention interventions.

Given these mixed results, McKay offers a number of recommendations to sharpen conceptualizations of continuing care and refine future research question about its effectiveness. Specifically, he suggests that we identify the key ingredients of continuing care interventions (e.g., social support, recovery houses, monitoring systems to detect potential relapses early on, case management, and medications), examine the issue of "readiness" for continuing care, and he proposes expanding the goals of continuing care. Finally, McKay recommends that continuing care interventions build in systems of performance monitoring as a way to monitor outcomes and fine tune their approaches.

In the current managed care environment, treatment approaches must demonstrate that they are not only efficacious in the context of a clinical trial but that they are effective when implemented in everyday practice settings. An exemplary model for such effectiveness research can be found in the chapter by Finney and his colleagues. This multisite, prospective evaluation design involved collecting clinical data on veterans participating in VA substance abuse programs at intake, discharge, and one year post discharge. In addition, data was collected on treatment orientation (12-step, cognitive-behavioral, and eclectic), the organizational context in which treatment was delivered, and on patient posttreatment activities (e.g., participation in continuing care, self-help groups, or mental health outpatient care). Overall, the investigators found that from intake to one-year follow-up, patients showed significant reductions in abusive drinking behavior, reduced psychiatric symptomatology, more employment, and fewer legal problems. The comparative analyses revealed that patients in 12-step programs fared as well as, and on some measures better than, patients in cognitive-behavioral programs. Moreover, the authors found that participation in either outpatient care or in self-help groups contributed to positive one-year outcomes. Finally, this study is significant because it argues for the importance of conceptualizing and measuring treatment processes in effectiveness studies. For example, evaluating proximal outcomes predicted by a given treatment approach strengthens casual inferences about the relationship between the treatment and longer-term outcomes, and serves as a check on the fidelity of treatment implementation.

The efficacy of screening and brief interventions has been well documented in the alcohol treatment literature. However, there has been less attention on integrating these well researched procedures in managed care settings, in particular, health maintenance organizations (HMOs). In the final chapter of this section on treatment outcome, Fleming and Graham discuss the unique challenges likely to be faced in implementing existing screening and brief interventions in HMOs. The authors rightly point out that addiction medicine professionals interested in instituting these procedures must convince stakeholders that the investment of resources into screening and brief intervention will show clear cut outcomes and cost savings. As a backdrop to this challenge, the authors provide a summary of the most widely used assessment and screening tools (e.g., CAGE, AUDIT, and biological markers) and their psychometric properties. They also provide a synopsis of brief interventions and a number of key findings. Brief interventions significantly decrease alcohol use for relatively long periods of time, and they reduce utilization of other health services (e.g., hospital days) and, in turn, health care costs. The authors also point out that more needs to be known about brief interventions in the context of everyday practice settings. For example, the relationship between the number of provider contacts and outcome is unknown. At what point do provider contacts lead to diminishing returns—a concern certain to be raised by health care administrators. The authors conclude by proposing a “systems” perspective when developing strategies for integrating screening and brief intervention in managed care settings and lay out a specific action plan for implementing one such strategy.

The increasing adoption of managed care arrangements in the delivery of alco-

hol services has meant more scrutiny of the outcomes of alcohol treatment. These chapters provide practitioners and administrators working in managed care environments a basis upon which to judge the effectiveness of treatments for alcohol abuse and alcoholism.

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Outcomes of Alcohol Treatment for Adolescents

Sandra A. Brown and Elizabeth J. D'Amico

Abstract. The use by adolescents and young adults of alcohol and other drugs continues to be a tremendous problem for this nation. Over 30% of all high school students nationwide report episodes of hazardous drinking (five or more drinks on one occasion), when both moderate and heavy alcohol consumption are associated with a higher risk of alcohol-related medical consequences and accidental injuries for youth. Increased awareness and concern related to adolescent substance use has led to the outgrowth of additional treatment facilities and programs for this age group. The current chapter discusses how developmental factors may impact the assessment process and subsequent treatment for adolescent alcohol use disorders. In addition, outcome research, intervention studies, relapse, and factors that may influence the recovery process are discussed.

1. Prevalence

The use by adolescents and young adults of alcohol and other drugs continues to be a tremendous problem for this nation.^{1,2} Surveys indicate that the use of alcohol and other drugs among adolescents remains high, with 50% of high school students reporting alcohol use in the last 30 days, 26% reporting marijuana use, and 17% indicating that they have used other illegal drugs during their lifetime (e.g., PCP, LSD, ecstasy, and stimulants). Hazardous drinking also continues to be a frequent occurrence, with over 30% of all adolescents nationwide reporting episodes of binge drinking (5 or more drinks on one occasion).¹ Binge drinking tends to become even more frequent during the college years, with 44% of males and 23% of females reporting a binge drinking episode within the previous two weeks.³

Both moderate and heavy alcohol consumption are associated with a higher risk of alcohol-related accidental injuries and medical consequence.^{4,5} The most

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common problems that adolescents report experiencing due to drinking are behavior they later regretted (52%) and inability to think clearly (30%).⁶ The frequency of these types of consequences is strongly associated with the age that youth begin drinking.⁷ Early onset of drinking is also associated with greater risk of developing an alcohol or other substance use disorder. For example, 40% of adults who reported onset of regular alcohol use before the age of 14 progressed to either alcohol abuse or dependence at some point during their lives.⁸ These youth are therefore four times as likely to become alcohol dependent compared to those who begin drinking at age 20 or older.⁹

As nearly one-third of high school students (31%) report that they have consumed alcohol before 13 years of age,¹ this suggests that many youth may be at risk for developing future problems related to alcohol. In support of this, findings from the Epidemiology of Child and Adolescent Mental Disorders Study (MECA) indicate that adolescents who reported even occasional use of alcohol had a greater risk of being diagnosed with a substance use disorder than those who reported no use of alcohol.¹⁰

In terms of progression of substance use, longitudinal data from general population studies have shown that adolescents who drink typically begin experimenting with beer or wine, followed by hard liquor or cigarettes. If other drug use occurs, marijuana use follows alcohol use, which is then followed by other illicit drug use.^{11,12} Age 16 was found to be a high-risk period for the initiation of cigarettes, age 18 for alcohol and marijuana, and ages 21–24 for the initiation of cocaine. Thus, the major risk periods for initiation of alcohol, cigarette, and marijuana use were mostly over by age 20.¹³

Martin and his colleagues¹⁴ have described a similar progression of use pattern for adolescents who were diagnosed with alcohol abuse. Most of the youth being treated were polydrug users and reported a consistent pattern in the age of onset of their substance use: alcohol, followed by marijuana, followed by other drugs.^{14,15}

In one of the few cohort-sequential studies, Chen and Kandel¹³ examined the natural history of the use of different substances in a general population by following up a cohort of adolescents first contacted in 1971 at three different time points (1980, 1984, and 1990). Results from this 19-year period indicated that of all of the drugs people reported using, alcohol and cigarettes showed the most persistence of use, followed by marijuana. Recency and frequency of use were most strongly related to persistence of use such that those individuals who had stopped using substances by their mid 30's also reported less frequent use in their mid 20's, whereas individuals who persisted in their use reported more active use of substances in their mid 20's.¹³

2. Assessment and Diagnosis

Increased awareness and concern related to adolescent alcohol and drug use has led to the outgrowth of additional treatment facilities and programs for this age group.¹⁶ *The Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-*

IV)¹⁷ is typically utilized to assess alcohol and other drug abuse and dependence in this population; however, these criteria were developed for the adult population and therefore tend to fall short when it comes to diagnosing adolescents.^{8,18,19} Bukstein and Kaminer²⁰ report that there is little empirical support or conceptual evidence for describing substance diagnoses for adolescents in terms of adult disorder. They outline several problems with the current classification system, including: the adult diagnostic system has not been established as applicable to an adolescent population, the diagnostic system currently defines too heterogeneous of a population, and an abuse or dependence diagnosis in adolescence may be debatable due to the possibility of concurring factors such as another psychiatric disorder or dysfunction in the family setting.

Martin and colleagues have empirically examined several of these issues and found that adolescents who abuse substances do tend to show excessive heterogeneity in abuse symptoms.¹⁸ Thus, alcohol and drug diagnoses may mean different things depending upon the presentation of the symptoms. In addition, the presentation of tolerance, withdrawal, and medical problems is different in adolescents than the presentation found in adults. For adolescents, tolerance is less specific in its relation to the diagnosis of alcohol, and withdrawal symptomatology is much lower in this age group compared with adults.¹⁸ Of note, Brown and colleagues reported that a different pattern of withdrawal symptoms are evident among adolescents compared to adults and these symptoms may be more predictive of long-term neurocognitive deficits relative to other indices of drinking.^{21,22} It appears, therefore, that the specific developmental needs of adolescents may create special issues in the assessment of alcohol abuse and dependence in this age group.^{8,19}

Recent examination of the accuracy of *DSM-IV* criteria for the progression of alcohol abuse and dependence in an adolescent population indicate more clearly how development may influence this diagnosis.²³ Martin and colleagues²³ assessed youth with a range of drinking practices and severity as half of the participants were recruited from inpatient and outpatient programs and half from community advertisements. Results indicated that among these adolescents abuse symptoms did not consistently precede dependence symptoms. For example, unsuccessful efforts to cut down or control drinking and reduction of important social, occupational, or recreational activities showed an onset with abuse symptoms related to interpersonal and role obligation problems and *before* other dependence symptoms. In all cases, withdrawal occurred after other abuse and other dependence symptoms. Thus, developmentally, the negative reinforcing “relief” drinking to avoid withdrawal may not be as important in diagnosing adolescent dependence; instead, the contribution of the positively reinforcing effects of alcohol appear *more* paramount.²³

The difficulty of diagnosing alcohol abuse and dependence in adolescents is often further complicated by the existence of co-occurring psychiatric disorders. Youth who have substance use disorders are at increased risk for a variety of psychopathology.²⁴ Greenbaum and colleagues²⁵ assessed mental and addictive disorders among 12–18 year olds who were receiving services from either residential mental health facilities or community-based programs and found that the preva-

lence of addictive and psychiatric disorders co-occurring in this population was 21.8%. In another sample of 64 adolescents with a substance use disorder, 68% reported at least one of the following: depression, antisocial personality disorder, and suicidality.²⁶

Furthermore, the recent MECA report indicated that the frequency of alcohol use was not only associated with a higher prevalence of meeting criteria for alcohol abuse or dependence, but was also associated with an increased risk for other psychiatric disorders, such as anxiety, mood, or disruptive behavior disorders.¹⁰ Grilo et al.²⁷ found that the most common co-occurring disorders among adolescents with substance abuse or dependence were conduct disorder (75%), mood disorder (65%), attention deficit hyperactivity disorder (29%), and anxiety disorder (15%).

In sum, several of the limitations of using *DSM-IV* criteria¹⁷ in diagnosing adolescent alcohol abuse and dependence are that specific developmental issues may not be taken into account, heterogeneity exists due to the one-symptom threshold for an abuse diagnosis, abuse symptoms may not always precede dependence symptoms, a high percentage of regular users may display one or two dependence symptoms but no abuse symptoms, and impairment may be difficult to assess as it may be a function of another psychiatric disorder or family dysfunction.^{8,18,19,23,28}

During the past decade, interviews and measures have been developed to address this problem so that alcohol abuse and dependence can be more accurately assessed in this age group. On a broad level, these structured interviews are used to assess both alcohol and drug use and other psychiatric disorders. The most commonly used interviews are the Diagnostic Interview Schedule for Children (DISC), the Kiddie SADS (K-SADS), the Diagnostic Interview for Children and Adolescents (DICA), and the Structured Clinical Interview for *DSM* (SCID), typically used with older adolescents.

The most recent DISC is based on the *DSM-IV* criteria;²⁹ however, it has shown only modest reliability for *DSM-III-R* substance use disorders.³⁰ The K-SADS is a youth version of the schedule for affective disorders and schizophrenia. Martin and Winters³¹ report that currently there are no reliability and validity studies for alcohol and drug use disorders for the new *DSM-IV* version of the K-SADS (K-SADS-E-5), so one should use caution when utilizing this measure. The DICA, which now incorporates *DSM-IV* criteria,³² has been shown to be reliable and valid.³¹ The SCID was recently modified by Martin and colleagues to assess substance use disorders in adolescents and good concurrent validity was shown.¹⁸

Psychometrically evaluated structured interviews have also been developed that specifically focus on alcohol and drug use disorders in this population.³³⁻³⁵ The Adolescent Diagnostic Interview (ADI) assesses sociodemographic information, alcohol and drug use history, psychosocial functioning, and the symptoms of alcohol and other drug use disorders as defined in *DSM-III-R* and *DSM-IV*. The ADI has shown good reliability and validity.³⁵ The Customary Drinking and Drug Use Record examines both lifetime and current alcohol and drug use and problems, *DSM-III-R* and *DSM-IV* symptoms, and age of onset for these behaviors. The instrument was found to be internally consistent and had high test-retest reliability coefficients. In addition, the measure had good convergent, discriminant, and criterion validity.³³

Finally, the Composite International Diagnostic Interview-Substance Abuse Module (CIDI-SAM) measures *DSM-III*, *DSM-III-R*, Feighner, RDC, and ICD-10 diagnoses for alcohol, tobacco, and nine classes of psychoactive drugs. It has shown high reliability for both *DSM-III* and *DSM-III-R* diagnoses.³⁴

In sum, it appears that the *DSM-IV* criteria has several limitations when applied to an adolescent population. There are new options available, however, and many of the recent instruments are specifically tailored to adolescents and have shown good reliability and validity in diagnosing adolescent substance use disorders.³³⁻³⁵

3. Treatment Outcome Research

Treatment outcome research for alcohol use disorders in adolescents has lagged behind the adult substance outcome research.⁸ For example, a recent review examined findings for the efficacy of 211 alcohol treatment programs and only two of the studies had a mean age below 21 years.³⁶ Although there is a great deal of work written on approaches to treatment for adolescents and the possible factors that may contribute to substance involvement, there is limited empirical data on adolescents receiving treatment and the long-term outcomes following treatment.^{8,19}

Adolescence is a period of time marked by considerable biological, cognitive, and social changes, all of which may influence functioning. The pubertal changes that take place during adolescence are strongly linked with a variety of social, relational, emotional, and cognitive factors,³⁷ which can play a large role in the initiation and maintenance of alcohol consumption.³⁸ For example, biological maturity can significantly influence adolescents' psychosocial functioning as they begin to develop and change their personal values (e.g., independence) and their perceptions of their social environment (e.g., parental and peer influence).³⁸ As with the assessment of alcohol and other drug disorders, treatment of these disorders must therefore factor in the special needs of this population.

As shown in Figures 1 and 2, the rates of return to alcohol or drug use are relatively comparable to those of adults receiving treatment for alcohol or other drug problems,⁸ however, different factors may motivate adolescents' initial alcohol use, maintenance of use, and potential relapse. Brown and colleagues³⁹ found, for example, that the vast majority of adolescents who had been in treatment for alcohol and drug problems and relapsed reported social factors as the most frequent reason for their relapse (e.g., pressure to use in a social situation). This environmental context of relapse is very different from reports of adult relapse in which negative emotional states and interpersonal conflict have been identified as prevalent reasons for addiction relapse.⁴⁰ Second, adolescents who present for treatment typically use multiple substances, which is associated with a poorer outcome in the adult literature.^{39,41} Teens also tend to have a shorter duration of substance involvement than adults entering treatment, therefore, the presentation of symptoms and the adverse consequences that are seen in this population are different than those evident among adult clinical populations.^{18,42} Finally, the stressors that adolescents

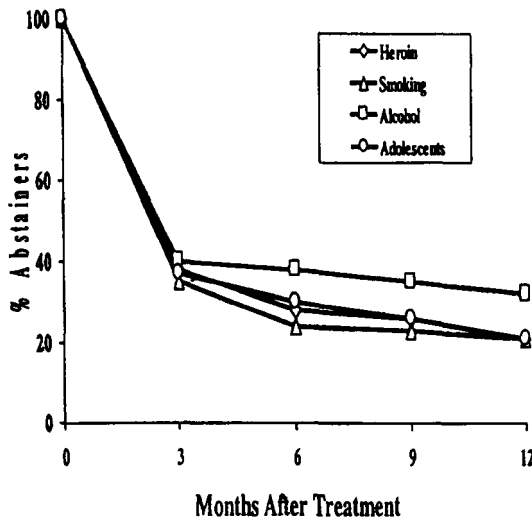


Figure 1. Survival rates: adults and adolescents. Note: adult relapse from Hunt, Barnett, and Branch.

experience vary depending on age and social and emotional stage of development.⁴² All of these factors can contribute to an adolescent's successful treatment outcome and should therefore be considered when developing treatment programs.

Available treatment outcome research for this population has focused on two areas: (1) pretreatment characteristics that may predict outcome and (2) the post-treatment clinical course.⁸ Previous studies that have attempted to evaluate treat-

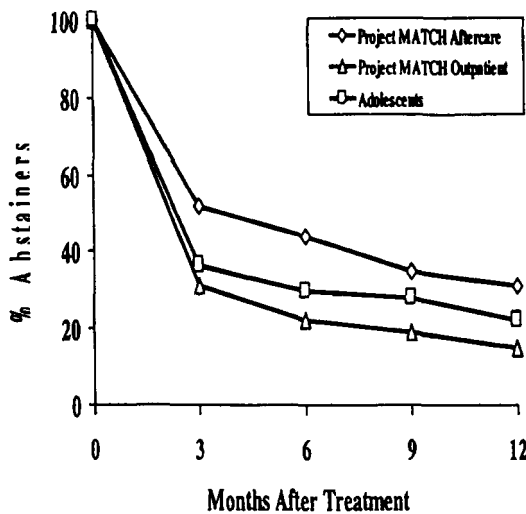


Figure 2. Survival rates: Project MATCH and treated Adolescents. Note: Project MATCH data: JSA, 1997.

ment efficacy are largely descriptive and were conducted when there were few programs available that specifically addressed adolescents' needs. Rush⁴³ evaluated treatment outcome for 4,738 teens from the Pennsylvania Data Collection System by comparing residential therapeutic communities (RTC) with outpatient programs (OP). Productivity related to education, training, and employment was the outcome measure. Results indicated that among adolescents in the RTC greater length of time in treatment was the strongest predictor of productivity, whereas treatment length for adolescents in OPs was negatively associated with productivity.

Sells and Simpson⁴⁴ analyzed information collected by the Drug Abuse Reporting Program (DARP) on 5,406 adolescents 4 to 6 years following treatment. The DARP program was originally designed for an adult opiate abuser clientele; however, most participants in the program were 19 years of age or younger. In addition, as the focus of the program was on opiate abuse, it is not clear how much effort was made to decrease alcohol or other drug use. Reductions were seen in participants' drug use and criminal activities, however, alcohol and marijuana were still used extensively one year after treatment.

The Treatment Outcome Prospective Study (TOPS) examined treatment outcome in six cities for 240 adolescents one year after treatment completion.⁴⁵ Residential programs and OPs were compared and findings indicated that adolescents in residential programs had favorable outcomes at one year for daily marijuana use, heavy alcohol use, and involvement in criminal activities. Teens in OPs reported less criminal activity and alcohol use; however, marijuana was still used extensively.⁴⁵

Results from these studies should be viewed with caution as the reported outcomes are mostly descriptive in nature, not all adolescents in these studies met criteria for alcohol use disorders, and no control or comparison groups were used. In addition, many of these programs were not designed to address the developmental needs of an adolescent age group; thus, there is limited generalizability of these findings.⁸

Typically, successful treatment outcomes for adolescents are associated with length of time in treatment and being older whereas poorer outcome is related to more severe psychiatric symptoms and early onset of conduct disorder.⁸ One recent study examined 33 demographic and substance use characteristics that might predict outcome for both an inpatient and outpatient adolescent population.⁴⁶ Results indicated that younger age, more education, not having dropped out of high school, not having been expelled from school, not being Catholic, and not being court referred to treatment were all associated with a greater decrease in substance use for the inpatient sample. For the outpatient sample, being female, not having been expelled from school, a high-level job for the client's head of the household, and being self-referred all predicted a better outcome. Interestingly, greater severity of substance abuse predicted a *poorer* outcome for outpatient adolescents; however, it predicted *better* outcome for inpatient adolescents.⁴⁶ This conflicts with previous outcome research for inpatients in which severity of pretreatment alcohol and drug use were related to poorer one-year substance outcomes.³⁹ Additional work in this area is needed to further explore pretreatment characteristics and their association with treatment outcome.

Recent longitudinal research has begun to examine the posttreatment course of adolescents diagnosed with alcohol and substance use disorders.^{8,22} Brown and colleagues found that, two years after treatment, adolescents who reported less alcohol and drug involvement displayed better functioning on several psychosocial domains.⁴⁷ Specifically, abstainers and nonproblem users showed better functioning related to school (e.g., attendance, academic problems) and fewer interpersonal problems. Abstainers also showed improved family functioning (e.g., cohesion, expressiveness) over time.

Whereas the comorbidity of nicotine and alcohol use disorder has received substantial attention within the adult alcohol treatment literature, only recently have researchers attended to this issue among clinical samples of adolescents. Myers and Brown⁴⁸ reported a rate of smoking immediately before treatment of 86% within an inpatient adolescent sample. These researchers found substantial decrements in alcohol and other drug involvement following treatment; however, the prevalence of cigarette smoking remained high (77%) two years after treatment.⁴⁹ Although shorter term alcohol outcomes appeared to be independent of smoking status, youth who were no longer smoking after treatment reported less alcohol and drug involvement than those whose smoking persisted.

Neurocognitive functioning has also been linked to adolescents' posttreatment alcohol and drug relapse and substance use patterns over extended periods of time.²² Brown and colleagues reported that adolescents who continued with heavy substance involvement four years after treatment exhibited modest neurocognitive deficits by late adolescence or young adulthood. In addition, severity of withdrawal symptoms experienced by youth was associated with neuropsychological functioning whereby adolescents who reported *any* withdrawal symptoms in the three months preceding testing had poorer visuospatial, attentional, and intrusion resistant performance.²² Given the potential academic and career implications of such findings, further long-term research is needed to examine the stability of these psychosocial and neurocognitive functioning patterns.

4. Intervention Studies

4.1. Self-Help Programs

Self-help groups for alcohol typically include the 12-step-based programs that focus on anonymity. Most adolescent treatment programs (90%) currently include Alcoholics Anonymous (AA) as a component of their treatment.⁸ There is recent evidence that AA group attendance is related to high levels of commitment to abstinence and improved substance use outcomes for adults⁵⁰ and also for youth.⁴²

In one study, Brown found that 57% of adolescents who received inpatient treatment for alcohol abuse or dependence reported that they attended 12-step meetings regularly during the year following treatment. Of these youth, 69% had positive alcohol outcomes during the first year after treatment. In contrast, only 31% of those who did not attend meetings regularly (e.g., 0–10 sessions during the year after

treatment) had a positive outcome.⁴² In a more recent study, Kelly et al.⁵¹ reported that adolescents who attended 12-step meetings in the first three months after treatment showed enhanced motivation for abstinence, and meeting attendance was related to continued abstinence as well as reductions in substance use behavior.

As the 12-step programs were originally developed for an adult population, the specific developmental needs of adolescents may not be addressed.⁸ Further research examining the possible benefits of this approach for youth and the role of emotional and cognitive development in the efficacy of 12-step programs is merited.

4.2. *Systems-Oriented Interventions*

Family-oriented approaches to adolescent alcohol and drug abuse have become more prevalent during the last decade, thus providing more opportunity to study the efficacy of this treatment.⁵² Liddle and Dakof provide a comprehensive review of the historical context of family-based treatment and the current empirical support for this treatment. Much of the early family-based work focused on problem behaviors, such as conduct-disordered and antisocial behavior. Although these strategies did not focus on substance use, they had a positive impact on problem behavior overall, thus paving the way for testing the efficacy of these techniques specifically for substance abuse.⁵²

Subsequently, researchers have examined the potential benefits of family therapy for treating adolescent substance use. Specifically Szapocznik et al.^{53,54} examined two family-based approaches: conjoint family therapy (all family members present) and one-person family therapy (at least one family member present for most sessions). Both approaches reduced substance use and problem behaviors in Hispanic adolescents at 6- and 12-month follow-ups. In addition, family functioning improved overall.^{53,54}

Although these first studies focused on polydrug use with small samples and there were no comparison groups, findings suggest that this approach can be used successfully to reduce substance use in this age group.⁵³ It is not entirely clear, however, whether other forms of adolescent treatment (e.g., peer or individual) would have been as effective as family-based treatment in decreasing alcohol and drug related problems.⁵²

More recent research has begun to answer this question by assessing the efficacy of family treatment compared with other available treatments.⁵⁵⁻⁵⁷ Specifically, youth who participated in family-based treatment reported less drug use at the end of treatment than those who received peer group therapy⁵⁶ or parent education.^{56,57}

Like the family-based approaches discussed above, Multisystemic Therapy (MST) is also based on treating the family system, although MST is more intensive (e.g., several hours of treatment per week versus 50 minutes) and also focuses on factors in the social networks of adolescents and families that are related to subsequent antisocial behavior.⁵⁸ MST has been examined in relation to typical community training,⁵⁹ parent training,⁶⁰ and outpatient counseling.⁶¹ MST showed greater improvements in family relations,⁵⁹ problematic parent-child relations,⁶⁰ and a greater

reduction in recidivism for both sexual offenses and criminal offenses⁶¹ when compared to these other available treatments. Findings related to the efficacy of this intervention in relation to alcohol use are underway.⁸

4.3. Brief Interventions

Recent efforts in the brief intervention area have shown promise in reducing adolescent and young adult drinking and consequences experienced from drinking.⁶²⁻⁶⁴ These brief interventions have been implemented in several different settings, such as college,⁶³ primary care,⁶² and an emergency room,⁶⁴ indicating the flexibility of such an approach.

In the Brief Alcohol Screening and Intervention for College Students (BASICS),⁶⁵ high-risk drinkers were identified in their senior year of high school and offered an assessment and one session of advice and feedback during their freshmen year of college. Reductions were seen in both drinking rates and the negative consequences they experienced from drinking at a two-year follow-up. High-risk students who did not receive this intervention reported no changes in their levels of drinking or alcohol related problems over the two-year period.⁶³

Monti and his colleagues have shown that a motivational, brief alcohol intervention given to older adolescents (e.g., 18–19 year olds) in an emergency room setting was sufficient to decrease reports of drinking and driving and alcohol-related problems. This approach was not successful with younger adolescents; however, a similar intervention that focused on smoking had a more positive impact on both older and younger adolescents compared to advice to quit smoking.⁶⁶ Breslin also recently developed a brief cognitive behavioral outpatient intervention for youth that is designed to motivate behavioral change related to substance use.⁶² Both of these programs indicated that age related factors were significantly related to the efficacy of the intervention, thus supporting the notion that developmental factors should be considered when intervening with this age group.

4.4. Behavioral Therapy

Behavioral strategies have also shown potential for treating adolescents with a substance use disorder. The efficacy of behavioral therapy for this population was recently evaluated and results indicated improvements among substance-abusing adolescents who received this treatment compared with standard counseling.⁶⁷ Components included in the behavioral treatment were: (1) stimulus control, (2) an urge-control procedure, and (3) behavioral contracting. Participants who completed the behavioral treatment decreased their drug use by 63% at a posttest and by 73% at a one-month follow-up, whereas supportive counseling participants did not decrease their drug use at either time point. Thus, there is initial support for this type of treatment with an adolescent age group.⁶⁷

4.5. *Pharmacotherapy*

The use of pharmacotherapy treatment for adolescents with an alcohol disorder is limited.⁸ Some of the pharmacotherapeutic strategies that have been used include craving reduction, substitution therapy, aversive therapy, and treatment of underlying psychiatric conditions.⁶⁸ Solhkhah and Wilens recently reviewed the published research and found only 10 studies (2 controlled studies, 4 open trials, and 4 case reports) that assessed the effects of medication for treating alcohol or substance abusing youth. The studies differed in their methods and definition and measurement of treatment outcome. Results also varied from study to study. Solhkhah and Wilens suggested the need for more controlled studies to evaluate the possible effects of medication for alcohol-abusing adolescents.⁶

Compliance with medication is an important issue for this population as the developmental stage, co-occurrence of other psychiatric disorders, and the family environment may all substantially influence level of compliance. One recent study found that 25% of alcohol-abusing adolescents were noncompliant with taking their medication and an additional 8% had either abused the medication or made it available to others for illicit use.⁶⁹ As adolescents with a substance use disorder are at increased risk for dysfunction in a number of domains,²⁴ the issue of compliance and possible medication interactions are of great concern.⁸ Future research should begin to examine ways to facilitate compliance by addressing the specific developmental factors that impact this age group.

4.6. *Self-change Efforts*

Many adolescents and adults who have had problems with alcohol do not resolve these problems through formal treatment, but instead appear to resolve alcohol problems without treatment.⁷⁰ For example, Stice and colleagues recently conducted a prospective study of adolescent drinking and found a portion of adolescents (14%) decreased their drinking over the nine-month school year without any formal treatment.⁷¹ As adolescents transition to new behavioral or interpersonal stages, their drinking may change and a “maturing-out” effect may take place as they progress into young adulthood and experience associated changes in work or family activities.⁷²

In a recent prospective study, a high-risk sample of adolescents (ages 13–18) was followed over six years. Of these youth, approximately half of the adolescents were found to have developed alcohol abuse and half of these were able to resolve their excessive drinking and alcohol-related problems for at least a two-year period without receiving any type of formal treatment.⁷⁰ Currently, no large-scale studies are available that examine the natural remission process for alcohol during adolescence.⁸ Examination of the personal change process for adolescents is critical to the understanding of the progression and remission of *youth* substance involvement during this period of rapid transition.

5. Outcome Process Research for Adolescence

As noted above, there are significant concerns regarding the generalizability of adult-based research findings to alcohol abusing adolescents. This is particularly the case with regard to investigations of the process or mechanisms that influence maintenance of behavior change (e.g., abstinence) or relapse following treatment for adolescents.⁷¹ In addition to potential differences in behavioral outcomes of alcohol treatment (i.e., alcohol use, quality of life, functioning on major life domains), developmental factors may directly influence or moderate the processes whereby behavior change is maintained or a return to alcohol use unfolds.

5.1. *Developmental Factors and Family Context*

Recent developments in the study of adolescent alcohol treatment outcome highlight the potential role of several developmental factors in the outcome process. Neuroanatomical maturation continues into adolescence, including changes in cerebral metabolic rates,⁷³ alterations in redundancy of synaptic connections,⁷⁴ and myelination of frontal and parietal association areas.⁷⁵ The neurocognitive consequences of these changes have important implications for attention, risk appraisal and coping skills, all of which influence alcohol use decisions for adolescents.⁷⁶ Several aspects of social development, such as increased priority of peer relations and exposure to new interpersonal situations, alter the likelihood of exposure to alcohol in the immediate environment. In addition, role transitions, which occur rapidly during adolescence (e.g., joining work force, independent living, obtaining a drivers license), significantly affect the potential adverse consequences of adolescent use of alcohol. Finally, other problems that commonly emerge during adolescence (e.g., delinquency, depression) may alter the nature of both risks and resources available to youth before, during, and after treatment. Thus, developmental changes during adolescence may influence both the process and outcome following treatment for alcohol problems.

In addition to developmental stage differences between adolescents and adults receiving treatment for alcohol problems, the family context of youth can influence access and barriers to treatment, likelihood of retention and involvement in treatment, and posttreatment resources and risks. For example, treatment drop-out rates are elevated for youth,¹⁹ and retention of families in treatment has been found to be a key factor in success for youth with alcohol, drug, and conduct disorder problems (e.g.,⁵⁷). Further, pretreatment family characteristics have been found to impact both the adaptational demands of adolescents after treatment and the outcome of youth receiving inpatient treatment for alcohol problems.^{77,78}

5.2. *Heterogeneity of the Adolescent Treatment Population*

The existing literature on theoretically based process investigations of adolescent alcohol treatment outcome is limited. However, a number of factors have been identified which may be critical to understanding sustained resolution as well as

resurgence of alcohol involvement for youth. One such area is the heterogeneity of youth in need of or receiving treatment. Recent studies indicate that up to one-third of high school students wish they could reduce their alcohol consumption and approximately one in seven have made personal attempts to stop; yet only half of those who felt the need for treatment for their alcohol problems had actually received treatment.^{68,79} Thus, substantial proportions of youth are interested in altering their drinking patterns and likely reflect the heterogeneity in the onset and course of alcohol abuse.

Given the diverse etiological pathways into adolescent alcohol dependence, as well as overlapping environmental and behavioral-genetic risks for disorders prevalent during adolescence, treatment samples of adolescent alcohol abusers tend to be heterogeneous with regard to concomitant substances of abuse and psychiatric comorbidity.⁷ Concomitant use of other substances also varies by age and racial/ethnic background. Unfortunately, treatment outcome studies of adolescent alcohol abuse/dependence inconsistently report pretreatment use or posttreatment outcomes independently for individual substances, and no consistent summary measures have been used across studies. Similarly, studies of drug-abusing adolescents often fail to separately report on alcohol outcomes although it has been shown that substantial portions of youth relapse using substances other than those for which they entered treatment.^{37,71} Given the high substance use comorbidity in adolescent alcohol abuse samples (e.g., 85%–90% of treatment samples of alcohol abusing/dependent adolescents smoke cigarettes⁴⁸), variable posttreatment reduction rates across substances,⁴² and age-related changes in substance prevalence rates, outcome process research findings may be misleading without separate consideration of alcohol and other individual drugs.

Among adult alcohol-abusing populations, a variety of concomitant mental health disorders have been associated with poorer treatment outcomes. Reduced resources, social supports, and coping skills, as well as elevations in life stress, have been identified as factors in the elevated relapse rates of adults. Several of these factors (e.g., coping skills, social resource networks) are predictive of treatment outcome for adolescents,³⁹ however, examination of the role of these factors in the relapse process has not been reported for adolescent alcohol abusers with psychiatric comorbidity.

At present, few models of adolescent alcohol and mental health disorder comorbidity exist.²⁸ Assessment methodology varies across adolescent studies. Consequently, alcohol- or drug-induced mental health disorders, which may be transient, are seldom distinguished from preexisting and presumably more protracted psychiatric disorders.⁷ Several studies indicate that for at least one common diagnosis, conduct disorder (CD), approximately 50% of cases of CD predate alcohol involvement⁸⁰ and such a primary diagnosis is more resistant to intervention⁸¹ and adversely impacts long-term outcomes⁸² by increasing risk for adverse consequences when drinking.⁷¹ In addition, preliminary evidence comparing alcohol and drug use outcomes of adolescents with an alcohol use disorder to adolescents with both an alcohol use disorder and a *DSM* Axis I mental health disorder showed that significantly poorer outcomes were associated with psychiatric comorbidity.⁸ Survival

analyses further indicate that a greater proportion of youth with alcohol and mental problems relapse and also return to alcohol use earlier in the post treatment period than adolescents without a concomitant mental health diagnosis.⁸ Both outcome and process studies for specific psychiatric comorbidity and adolescent alcohol abuse/dependence are needed.

Gender can also be an important factor for treatment outcome. Gender differences exist in alcohol and drug use patterns, the presenting of mental-health-related symptoms, and the pre- and posttreatment needs of adolescent clients with alcohol problems. For example, Rounds-Bryant⁸³ reported that among 3,382 adolescents with comparable alcohol, conduct disorder, and ADHD diagnoses, males ($M=16$ years) engaged in more illegal activities and had a higher prevalence of physical abuse whereas females ($M=15$ years) had elevated histories of sexual abuse. Across studies, females evidenced 2–4 times the rates of maltreatment compared to males with more severe behavioral, emotional, and psychiatric problems. Consequently, it has been inferred that factors affecting the process of outcome following treatment for adolescent alcohol treatment varies across genders. Unfortunately, no consistent pattern of treatment outcome differences has emerged for alcohol-abusing adolescent males compared to females. Gender-specific process-focused treatment outcome research has yet to be conducted.

Ethnic and cultural factors also significantly influence alcohol and drug use and related consequences.⁸⁴ Furthermore, ethnic and cultural factors relate to availability of treatment, barriers to treatment, perceived helpfulness of treatment, and retention in treatment. Recent work has show that the delinquent-behavior/alcohol-involvement relationship varies such that certain ethnic groups may benefit more from posttreatment abstinence. For example, Stewart and colleagues found that adverse consequences that are highly associated with alcohol involvement and conduct-disordered behavior diminished to a greater extent with abstinence for Hispanics compared to Caucasians.⁸⁴ Brooks et al.⁸⁵ have also shown in a series of studies that ethnic/cultural identity mitigates a number of environmental risks commonly associated with alcohol abuse among youth.

6. Relapse and Posttreatment Functioning

Initial posttreatment experience with alcohol or other drugs has a variable impact on the lives of adolescents. There appears to be considerable variability in the consequences of alcohol use, as well as the likelihood to progress to regular involvement with substances following the initial posttreatment use of alcohol or drugs. In a series of studies by Brown and her associates,^{39,42,47} two clinical cohorts of youth who met criteria for alcohol abuse or dependence were assessed. Approximately one-third of adolescents used alcohol or another drug in the first month after treatment, with up to three-quarters of youth having at least one alcohol or drug experience by one year after discharge from inpatient treatment. Six months after treatment, 22% of the treated adolescents had either a single-use episode or multiple-use episodes, without binges and with no identifiable problems associated

with their substance use. For this “minor relapse” group, alcohol and marijuana were the most commonly used substances. At one year posttreatment, 20% of the sample exhibited this minor relapse pattern and approximately one-third of those who had returned to more severe alcohol or drug use in the first six months were either abstaining or were in the minor relapse category. Thus, for adolescents, initial experiences with alcohol or drugs after treatment do not automatically result in a return to pretreatment use rates.

Several mediational processes are being examined to determine proximal factors that may influence risks, protective factors, or decisions to drink following treatment for adolescent alcohol problems. In cognitive and behavioral models of relapse,⁴⁰ inadequacies in coping responses for alcohol and drug situations are seen as critical factors in the relapse process. In both cross-sectional and prospective studies,⁸⁶ coping responses to high risk for relapse situations have been found to be associated with posttreatment drinking. In particular, greater appraisal of risk for relapse (difficulty coping with the situation), lower self-critical cognitive responses, and utilization of abstinence-focused social resources and behavioral responses are predictive of length of initial abstinence, as well as number of days drinking posttreatment. More recently, neurocognitive skills have been found to moderate this relationship such that coping skills appear more critical for those with poorer neurocognitive ability.⁸⁷ Youth with reduced attention or problem-solving ability also tend to have less well-developed coping skills, leading to increased vulnerability to relapse.

In a recent study by Kelly, Myers, and Brown,⁵¹ the role of 12-step programs in the process of maintaining abstinence after treatment was examined. Adolescents with a lifetime history of an alcohol use disorder were followed after treatment. The role of 12-step group attendance in relation to coping skills, self-efficacy, and motivation for abstinence was evaluated. Motivation for abstinence during the first three months was associated with attendance at 12-step meetings. Twelve-step group attendance was found to increase motivation for sustained abstinence and to predict outcome at six months after treatment. Therefore, for adolescents, 12-step group attendance appears to influence positive treatment outcomes by enhancing factors critical for self-regulation, such as motivation for abstinence and use of abstinence-focused coping strategies, rather than immediately improving self-efficacy for alcohol-related situations.

In addition to improvements in alcohol and other drug use outcomes, treatment for alcohol use disorders occurring during adolescence is presumed to lead to improvements in other aspects of the functioning of youth. Not only is there considerable variability in the course of alcohol and drug use for adolescents after treatment, but functioning across major life domains fluctuates for these youth as well. Change rates across such areas as school, family, or emotional health indicate that specific types of improvement occur at different times, depending upon the degree of control the adolescent has over the particular domain. For example, abstinence from alcohol and other drugs is associated with greater attendance at school early on in the posttreatment period. Improvement in grades, however, is not significantly different for youth who do better (e.g., abstain or have a single use episode)

compared to those adolescents who return to regular alcohol and drug use until the second grading period following a return to school.⁴⁷ Furthermore, even with sustained abstinence, improvement in family relations occurs even more gradually. In one prospective study,⁷⁷ adolescents demonstrating sustained improvement in alcohol and other drug outcomes after treatment were not found to differ significantly on family relation measures from their treatment peers who returned to alcohol or drug abuse until two years after treatment. Such a long-time course for improvement in family relations has also been demonstrated in families with an abusing parent.⁸⁸ This suggests that the interpersonal domain, which requires behavior change for individuals other than the adolescent, may have a slower improvement trajectory compared to domains reliant on adolescent behavior only (e.g., attending school).

A number of environmental factors have been associated with use outcomes in cross-sectional and prospective studies of adolescents receiving treatment for alcohol problems. Exposure to substances in the environment, particularly through peer networks, is associated with both length of initial abstinence and continuous measures of posttreatment use.⁷⁸ Whereas life stress has been linked to outcomes for adults with alcohol dependence, standard measures of youth stress may initially increase for youth remaining alcohol and drug free compared to peers who return to abuse. In one study that monitored the clinical course following treatment for adolescent alcohol abuse or dependence, self-reported measures of stress increased for adolescents remaining abstinent as measured at six months following treatment, but were lower than abusing outcome groups by one year after treatment.⁴²

Emotional health outcomes following adolescent alcohol treatment have been examined in several studies, although many questions remain regarding rates and patterns of change on these dimensions, as well as the process whereby such improvements take place. In a sample of 142 adolescents evaluated at 6, 12, and 24 months after treatment, Brown and associates⁴⁷ reported that posttreatment abstinence was associated with both quality of interpersonal and emotional functioning. Youth who abstained after treatment, as well as youth who gradually decreased their alcohol and drug involvement during the two years after treatment, reported significantly fewer interpersonal problems by late adolescence than those youth who used alcohol and drugs more consistently during this period. Abstinence was less directly linked to the emotional well-being of the adolescent following treatment. Youth with use patterns deteriorating over the initial two years following treatment (greater alcohol and drug involvement despite early success) reported more mental health symptoms (eg, depression, anxiety) over the follow-up assessments. This finding suggests that, despite improvement in alcohol or drug involvement at six months following treatment, youth exhibiting elevations in emotional symptoms are at risk for both increasing emotional problems and an acceleration in use as they transition to late adolescence.

Few studies of the physical health outcomes of treated youth with an alcohol use disorder have been conducted. In one five-year prospective comparison, adolescents receiving inpatient treatment for an alcohol use disorder were compared to youth from the same communities.⁸⁹ Community youth were selected to be matched

for family history of alcoholism. Findings indicated that only adolescents with a history of alcohol treatment had more self-reported health problems. Alcohol and drug involvement have been shown to have a deleterious effect on health status among adults and emerging evidence demonstrates that health problems will likely become even more evident as early-onset and chronic alcohol and drug abuse during adolescence continues into young adulthood. In addition, although family history of alcoholism has not been consistently associated with short-term outcomes, a substantial body of research suggests that this behavioral–genetic risk marker substantially elevates long-term risk.⁹⁰

7. Summary and Conclusions

Adolescent alcohol use continues to be a tremendous problem for this nation. Although the field of treatment for adolescent alcohol and alcohol-related problems is growing, there is still a great deal of work to be done. The biological, cognitive, emotional, and social changes that occur during adolescence are profound, and these factors are critical to treatment and influence the process of outcomes following treatment. Increased awareness of the importance of these developmental issues on alcohol use involvement has led to many improvements in both the assessment and treatment of alcohol abuse and dependence in this population.

Many questions remain, however, as treatment outcome research for this population is limited compared to the adult outcome literature. Reasons for the initiation and maintenance of use can differ dramatically across developmental stages and need to be examined more thoroughly for adolescents. Although relapse rates are similar among adults and adolescents, the risk factors associated with relapse are quite different, with social factors playing a crucial role in adolescent relapse. Understanding the heterogeneity of the adolescent population, for example, differences due to gender, ethnicity, comorbidity and concomitant use of other substances, is critical from both a treatment and posttreatment functioning perspective. Further research on the long-term course of treatment is needed so that the effects of developmental factors, such as the transition into young adulthood and the stress involved with remaining abstinent, can be better understood.

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Family-Involved Alcoholism Treatment An Update

Timothy J. O'Farrell and William Fals-Stewart

Abstract. We reviewed 36 randomized studies of family-involved treatment and comparison conditions. A meta-analysis showed a medium effect size favoring family-involved treatments, over individual treatment or wait-list, for outcomes of alcohol use, treatment entry/attendance, and family adjustment. Studies of family-involved treatment when the alcoholic is unwilling to seek help show: (1) Al-Anon facilitation and referral help family members cope better; (2) the popular Johnson intervention apparently does not effectively promote treatment entry; and (3) Community Reinforcement and Family Training promotes treatment entry and should be disseminated if replicated. Studies of family-involved treatment to aid recovery when the alcoholic has sought help show: (1) evidence supporting behavioral couples therapy (BCT) has grown considerably; (2) the disulfiram contract procedure should be disseminated as part of a BCT treatment package; and (3) studies of family systems and of family disease approaches are beginning to appear in the literature. Future studies need to include more women and minority patients and focus on children.

1. Introduction

Over 25 years ago, the U.S. National Institute on Alcohol Abuse and Alcoholism (NIAAA) hailed couple and family therapy as “one of the most outstanding current advances in the area of psychotherapy of alcoholism”¹ (p 161). This NIAAA report also called for controlled studies to test these promising methods.

In 1976, Steinglass² reviewed the outcomes of family treatment studies reported between 1950 to 1975. He concluded that there were few such studies, very little evidence demonstrating the efficacy of family treatment, and significant methodological shortcomings in most studies reviewed.

In 1989, McCrady's review³ of this area, which covered studies not included in

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Steinglass's earlier review, appeared in volume 7 of this series. McCrady evaluated the effectiveness of family treatments derived from a family disease perspective based on Al-Anon and 12-step principles, a family systems perspective based on general systems theory, and a behavioral perspective based on reinforcement principles. McCrady concluded "that despite the widespread popularity of family-involved alcoholism treatment, there is a paucity of well-controlled research in this area, that all of the research has evaluated *marital* rather than *family* therapy, and that there are notable discrepancies between the popularity of clinical practices and the empirical bases of practice" (p. 165, emphasis in original). In terms of the gap between research and practice, McCrady noted that clinically popular family disease and family systems approaches have little or no empirical support and that behavioral approaches which have relatively more empirical support are virtually unused in clinical practice.

This chapter reviews studies of the effectiveness of family-involved alcoholism treatment. It provides an update to the earlier reviews by McCrady and Steinglass. It is intended to be a comprehensive review of randomized studies to date comparing family-involved treatment with one or more comparison conditions, and so it does not just update the earlier reviews. However, most of the work reviewed does represent an update in that 26 of the 36 studies reviewed in this chapter were not included in these two earlier reviews.

This chapter presents (1) results from a meta-analysis of studies that compared family-involved treatment with individually-based treatment or wait-list control conditions; (2) study results for two main stages of change of family-involved treatment to (a) improve family coping and/or initiate change when the alcoholic individual is unwilling to seek help or (b) aid the alcoholic's recovery once the individual has sought help;⁴ (3) the current status of issues raised by McCrady's review including the extent of empirical support for treatments drawn from different perspectives and for marital rather than family therapy, and the implications of outcome research for clinical practice; and (4) conclusions and suggested future directions for research.

2. Results of Meta-Analysis

2.1. Criteria for Including Studies in the Meta-Analysis

Studies were included in this meta-analysis if they met the following criteria. First, we included only studies evaluating one or more treatment groups, in which spouses and/or other family members of an alcoholic adult were involved in treatment efforts to (a) improve family coping and/or initiate change when the alcoholic individual was unwilling to seek help or (b) aid the alcoholic's recovery once the individual had sought help. Second, studies were required to include a comparison group, either a wait-list control group or an individually-based treatment without a family-involved component. Third, cases had to have been randomly assigned to treatment and comparison conditions. Finally, we required that effect sizes were

calculable for outcome variables in one or more of five categories: (1) frequency or amount of alcohol use by the alcoholic person, (2) alcoholism treatment entry or attendance, (3) couple or family adjustment, (4) individual adjustment for the alcoholic person (i.e., unrelated to alcohol use), and (5) individual adjustment for the spouse or other family member. We obtained 22 studies meeting these criteria.

The results reported here are the first part of a more comprehensive meta-analysis in progress that includes other components (e.g., analysis of moderators of the effect sizes reported here, studies comparing different types of family treatment with each other). We decided to include the present results in this chapter because they are complete and informative in their own right and because additional results have not yet been completed.

2.2. *Measurement of Effect Sizes*

For each study, effect sizes were calculated from contrast analyses comparing all family treatment groups to all comparison groups on outcome variables of interest. For example, if a study had two groups receiving different kinds of marital therapy and one wait-list control group, contrasts would be computed on the relevant outcome variables, using contrast weights of +1 for each of the two marital therapy groups, and -2 for the wait-list control group. An effect size was calculated for each outcome measure, and the effect sizes presented here are based on data from the latest follow-up point in each study.

When multiple outcome measures were used within one of the five outcome variable categories for any study, they were aggregated using a procedure described by Rosenthal and Rubin.⁵ This procedure, which uses the intercorrelations between dependent measures used in the effect sizes to be aggregated, provides an effect size calculated as if the multiple dependent variables had been combined to form a composite variable. Because these intercorrelations were rarely reported in the original studies, we estimated the average intercorrelations within each of the five outcome variable classes from other data sets.

Effect sizes were computed using the procedures described by Rosenthal.⁶ Effect sizes were computed in units of Pearson's r . Fisher's Zr transformation was applied to all effect sizes before meta-analytic calculations were performed, but results are presented in units of r to facilitate interpretation.

2.3. *Results of Effect Size Calculations*

Table I presents the median effect size for each of the five outcome categories for the studies evaluated. The effect sizes reported represent the magnitude of differences on these specific outcomes between the family-involved treatment(s) and the comparison condition(s) in these studies. Overall, the results showed that family-involved treatments had significantly better outcomes in these five categories than did comparison groups consisting of individually-based treatment or wait-list control conditions. Effect sizes for studies with active treatment and wait-list control conditions did not differ significantly.

For alcohol use outcomes, the median effect size for 16 studies with 692 subjects was $r = .30$; and the combined significance of the 16 studies with alcohol use effect sizes was quite strong, using the fixed effects Stouffer's Z ($p = 2 \times 10^{-10}$). For treatment entry or attendance by the alcoholic patient, the median effect size for 3 studies with 106 subjects was $r = .32$, and the combined significance was $p = .007$. For individual adjustment, respectively, of the alcoholic patient and of the spouse or family member, the median effect size (a) for 10 studies with 309 subjects was $r = .21$ ($p = 2 \times 10^{-5}$); and (b) for 6 studies with 348 subjects was $r = .26$ ($p = 2 \times 10^{-6}$). Finally, for couple or family functioning, the median effect size for 11 studies with 413 subjects was $r = .17$, and the combined significance was $p = .035$.

Therefore, results of our meta-analysis of 22 randomized studies with a total of 1260 subjects showed that family-involved treatments, as compared to individually-based treatments or wait-list control conditions, had less alcohol use and greater likelihood of entering and continuing treatment by the alcoholic patient, more positive couple or family functioning, and more favorable individual adjustment of the alcoholic patient and of the spouse or family member. To understand the magnitude and meaning of the effect sizes observed, we can use Cohen's⁷ conventions, in which an r of .10 is categorized as a small effect, an r of .30 as a medium effect, and an r of .50 as a large effect. The magnitude of the effect size favoring family-involved treatments (a) is a medium-size effect for alcohol use and treatment entry/attendance, (b) approaches a medium effect for spouse or family member adjustment, and (c) is midway between a small and medium effect for individual patient adjustment and couple or family functioning.

In considering the potential practical importance of the effect sizes estimated herein for family-involved treatment of adult alcoholism, it may be useful to examine the example given by Rosenthal⁶ of an effect considered important in medical research. A large study ($N = 22,071$) showed that aspirin reduced heart attacks.⁸ The effect size r was .03 for the aspirin effect in this study. The results of this study became widely known. They influenced the recommendations made by physicians to their patients and the behavior of many people who take aspirin preventively. The effect sizes observed for family-involved treatment of alcoholism are 5 to 10 times greater than those observed for aspirin in preventing heart attacks.

Table I. Meta-analytic Summary by Outcome Category of 22 Randomized Studies Comparing a Family-Involved Treatment with an Individually-Based Treatment or a Wait-List Control Condition

Outcome Category	N		Median r	Z	Significance
	Studies	Subjects			p
Alcohol Use	16	692	0.30	6.28	2×10^{-10}
Treatment Attendance	3	106	0.32	2.48	.007
Couple/Family Adjustment	11	413	0.17	1.81	.035
Patient Adjustment	10	309	0.21	4.06	2×10^{-5}
Spouse/Family Member Adjustment	6	348	0.26	4.60	2×10^{-6}

3. Family-Involved Treatment When the Alcoholic Is Unwilling to Seek Help

Sections 3 and 4 of this chapter, respectively, will describe the results of 36 randomized studies of family-involved treatment to help the family before the alcoholic seeks help or to aid the alcoholic's recovery once help has been sought. A subset of 22 studies that had an individual-treatment or wait-list control group were included in the meta-analysis above.

The 10 studies reviewed in this section evaluated treatment in which spouses or other family members of an alcoholic adult took part in efforts to (a) improve family members' coping and well-being, or (b) initiate change when the alcoholic individual was unwilling to seek help.

3.1. *Helping the Family*

Spouses and other family members often experience many stressors and heightened emotional distress caused by the negative consequences of the alcoholic's drinking. Two major approaches have been studied to help the family member when the alcoholic is unwilling to seek help. These are efforts to teach specific coping skills to deal with alcohol-related situations involving the drinker or to help the family member use the concepts and resources of Al-Anon.

3.1.1. Coping-Skills Therapy. Zetterlind⁹ randomly assigned 39 spouses of alcoholics who were not in treatment to coping-skill therapy, group support, or a one-session information only control group. Results at one year follow-up showed spouses who got coping-skill therapy and group support had greater decreases in emotional distress than did the information-only control group. All three groups improved, but did not differ, on a self-report measure of coping behavior and on the extent of alcohol-related problems by the drinker.

Rychtarik and McGillicuddy¹⁰ randomly assigned 172 women with alcoholic partners who were not in treatment to manual-guided coping-skill training, a manual-guided Al-Anon facilitation program, or a waiting-list control group. Results showed better coping skills on a role-play observational measure for skill-training therapy than for Al-Anon facilitation and that both treatment groups were better than the wait-list control. Spouses in both treatment groups reported less depression and anxiety than those in the wait-list control.

3.1.2. Al-Anon. This twelve-step program is by far the most widely used source of support for family members troubled by a loved one's alcohol problem. Al-Anon advocates that family members detach themselves from the alcoholic's drinking in a loving way, accept that they are powerless to control the alcoholic, and seek support from other members of the Al-Anon program.¹¹

3.1.2a Referral to Al-Anon. This has been examined as a control condition in two studies of methods to initiate change in the alcoholic.^{12,13} Referral to Al-Anon did not produce treatment entry or change drinking in either study. This is not

surprising because change in the alcoholic is not a goal of Al-Anon. However, in the study that included measures of spouse well-being,¹³ spouses referred to Al-Anon reported reduced personal problems related to the drinkers' alcohol use as compared with the wait-list control.

3.1.2b Al-Anon Facilitation Therapy (AFT). This is a manual-guided, therapist-delivered counseling method designed to encourage involvement in the 12-step program.¹⁴ Two well-controlled, randomized studies with adequate sample sizes found positive results for AFT.^{10,15} In Rychtarik's study reviewed directly above, AFT reduced emotional distress and increased coping behaviors more than a wait-list control for spouses of treatment-resistant alcoholics.¹⁰ In the second study by Miller et al.,¹⁵ AFT showed significant reductions in emotional distress and family conflict and improvements in family cohesion and relationship happiness for spouses and parents of treatment resistant alcoholics. These AFT improvements were similar to the improvements observed among spouses and parents who received the other interventions studied.

3.1.2c Group Therapy Based on Al-Anon Concepts for Wives of Alcoholic Men. This was studied by Dittrich and Trapold¹⁶ who randomly assigned 23 wives of treatment resistant alcoholics to an eight-week group therapy program based on Al-Anon concepts or to a wait-list control condition. Results showed greater reduction in enabling behaviors, anxiety, and depression and greater increases in self-concept at the end of treatment for the experimental group than for the wait-list control. Similar results occurred for those on the waiting list once they had completed treatment. Improvements after treatment were maintained at 2- and 4-month follow-up.

3.2. Initiating Change in the Alcoholic

Four methods have been studied with a primary goal of initiating change in the treatment-resistant alcoholic in addition to helping the spouse or family member cope better. These include Unilateral Family Therapy, Pressure to Change, Community Reinforcement and Family Training (CRAFT), and the Johnson Institute Intervention.

3.2.1. The Unilateral Family Therapy (UFT) Approach. Edwin Thomas at the University of Michigan developed UFT, an extensive multifaceted method which consists of weekly individual counseling for 4–6 months with the spouse of the treatment resistant alcoholic. UFT educates the spouse about alcoholism, tries to decrease spouse emotional distress and spouse behavior that enables drinking, and promotes abstinence and treatment entry by the alcoholic. A programmed confrontation by the spouse at home with the alcoholic is the last part of the extensive multifaceted UFT method; the confrontation is used when other previous steps in this therapy have failed to change the alcoholic's drinking. There have been two studies of UFT.

An initial pilot study of 25 spouses¹⁷ found that 61% of the alcoholics whose spouses had received UFT had entered alcohol treatment and/or substantially reduced their drinking, whereas none of the alcoholics whose spouses had not re-

ceived UFT had done so ($p = .02$ by Fisher's Exact Test). Results also showed a significant decrease in spouses' emotional distress and increases in marital satisfaction after UFT as compared to those without UFT.

A second study¹⁸ randomly assigned spouses to either an immediate ($N=23$) or delayed ($N=19$) UFT treatment. Results comparing the immediate UFT group with the delayed (waitinglist) group showed (a) significantly more of the alcoholics whose spouses received UFT entered alcohol treatment; and (b) significantly greater reductions in certain spouse behaviors, including enabling, attempts to control the alcoholics' drinking, psychopathology and life distress, and improvements in marital adjustment and satisfaction.

3.2.2. The Pressure to Change (PTC) Approach. James Barber at the University of South Australia developed the "Pressure to Change" (PTC) approach for partners living with heavy drinkers who deny their alcohol problem and refuse treatment. PTC involves 5–6 structured counseling sessions to train the partner how to use five gradually increasing levels of pressure on the drinker to seek help or moderate his or her drinking. In these five levels the partner (a) receives feedback from the counselor about the seriousness of the drinker's problem and education on PTC; (b) plans incompatible activities during times when drinker usually drinks; (c) responds to drinking by withdrawing reinforcers and to drinking-related crises by suggesting treatment; (d) establishes a contract in which the partner agrees to exchange some reinforcer for sobriety; and (e) when prior steps have been unsuccessful, confronts the drinker with the negative effects of the drinking and a simple, unambiguous plea to seek change or seek help. There have been three studies of PTC.

The first PTC study¹⁹ randomly assigned 23 partners living with heavy drinkers who denied their alcohol problem and refused treatment to PTC delivered individually, PTC in a group format, or a waiting-list control group. Results showed that almost two-thirds of the drinkers whose partners received PTC made a significant move toward change, compared with none of the drinkers in the wait-list control group. Movement toward change was defined as the drinker either (a) seeking treatment, (b) ceasing drinking, or (c) reducing drinking to a level acceptable to the partner and maintaining this change for at least two weeks. If the definition of drinker change was restricted to seeking treatment, PTC still had significantly better results than the control group. The groups did not differ on measures of partners' well-being, depression, or marital discord.

The second PTC study¹³ randomly assigned 48 partners living with heavy problem drinkers to PTC delivered individually, PTC in a group format, referral to Al-Anon, or a waiting-list control group. Two-thirds of the drinkers whose partners received PTC made a significant move toward change (as described in the first PTC study directly above), compared with none of the drinkers in the waiting-list or Al-Anon referral control groups. If drinker change was restricted to seeking treatment, PTC still had significantly better results than the two control groups. Partners referred to Al-Anon and those treated in individual (but not group) PTC reported reduced personal problems related to the drinkers alcohol use as compared with the wait-list control.

The third PTC study²⁰ randomly assigned 38 partners living with heavy problem drinkers to PTC delivered individually, a PTC self-help manual, or a waiting-list control group. Half of the drinkers whose partners received either version of PTC made a significant move toward change, compared with 18% of the drinkers in the waiting-list control group, a significant difference. Partners who got PTC also had less depression than those in the control group.

3.2.3. The Community Reinforcement and Family Training (CRAFT) Approach.

CRAFT is a program for teaching the nonalcoholic family member how to (a) reduce the risk of physical abuse and other dangerous situations; (b) encourage sobriety by reinforcing nondrinking, extinguishing drinking, and planning competing nondrinking activities; (c) increase positive relationship communication; (d) engage in outside activities to reduce dependence on the relationship with the alcoholic; and (e) encourage the alcoholic to seek professional treatment. There have been two studies of CRAFT.

In an initial CRAFT study, Sisson and Azrin¹² randomly assigned 12 family members (mostly wives) of treatment-resistant alcoholics to either the CRAFT program or to a traditional disease model program consisting of alcohol education, individual supportive counseling, and referral to Al-Anon. Six of seven alcoholics entered treatment after relatives had received CRAFT for a mean of 58.2 days and an average of 7.2 sessions. During the five months after their relative started CRAFT, the alcoholics showed more than a 50% reduction in average consumption prior to treatment entry and nearly total abstinence in the three months after entering treatment. None of the five alcoholics whose relatives received the traditional program (mean of 3.5 sessions) entered treatment and their drinking was not reduced during the three months for which outcome data were available.

In the second CRAFT study, Miller, Meyers, and Tonigan¹⁵ used a larger sample, equally intensive treatments, and therapists strongly committed to their respective approaches to overcome the limitations of the earlier Sisson and Azrin study.¹² Miller and colleagues randomly assigned 130 concerned significant others (CSOs, i.e., mainly spouses and parents) of treatment-resistant alcoholics to (a) CRAFT, (b) a Johnson Institute Intervention to prepare for a confrontational family meeting, or (c) an Al-Anon facilitation therapy designed to encourage involvement in the 12-step program. All treatments were manual guided with 12 hours of contact planned. The CRAFT approach (64% engagement rate) was significantly more effective in engaging initially unmotivated alcohol abusing adults in alcohol treatment as compared with the more commonly used alternative methods of the Johnson Institute Intervention (22%) or Al-Anon (14%). All three approaches were associated with similar significant improvements in CSO functioning and relationship quality. Finally, treatment engagement rates across the three methods were higher for CSOs who were parents than for spouses.

3.2.4. The Johnson Institute Intervention. This method involves three to four educational and rehearsal sessions to prepare family members for a family confrontation meeting with the alcoholic known as an “intervention.” Confrontation is done

to overcome the denial of the alcoholic and promote treatment entry. During the intervention session itself, family members confront the alcohol abuser about his or her drinking and strongly encourage entry to an alcohol treatment program.²¹ Although this method is widely used in treatment centers in the United States, the only randomized study¹⁵ of the Johnson Institute Intervention found that only 22% of CSOs treated with this method were successful in getting their alcoholic family member to enter treatment. As just described above, this rate is much lower than CRAFT and not much higher than Al-Anon, which does not try to change the alcoholic's behavior. An earlier uncontrolled study²² reported similar results in that only 25% of families given the intervention training succeeded in getting the alcoholic to enter treatment. The reason for these disappointing findings is that a substantial majority of families do not go through with the family confrontation meeting; only 29% in the Liepman et al. study and 30% in the Miller et al. study of families given the intervention training completed the confrontation. When family members completed the confrontation in these two studies, most succeeded in getting their alcoholic into treatment (86% in the Liepman et al. study and 75% in the Miller et al. study). These results are similar to an earlier clinical report²³ that 90% of 60 families who completed the family confrontation intervention meeting got their alcoholic to enter treatment. Adherents of the Johnson Institute Intervention approach have often cited "a 90% success rate" which we now know does not apply for an intent-to-treat basis (which has about a 20% success rate) but only for the minority of families willing and able to use the method.

3.3. Conclusions About Family-Involved Treatment When the Alcoholic Is Unwilling to Seek Help

Considerable progress in research on family-involved treatment when the alcoholic is unwilling to seek help has been made. None of the 10 studies on this stage of change reviewed here were included in McCrady's 1989 review, and a number of new findings have emerged.

First, a major development has been the first controlled studies of the 12-step family disease approach showing improvements in CSO individual functioning after Al-Anon facilitation or referral that is greater than in a wait-list control group^{10,13} and equivalent to other family-involved methods^{10,15} when the alcoholic is unwilling to seek help. The availability of a therapist manual for AFT¹⁴ should lead to more studies of this approach.

Second, all the methods studied (i.e., coping skills and AI-Anon to help the CSO, and the various methods to initiate change in the alcoholic) resulted in reduced emotional distress in the CSO relative to baseline or a wait-list control group. The durability of the improved CSO functioning is not known given the limited follow-up periods used in most of these studies. Further, as Rychtarik¹⁰ noted, although the different treatment methods lead to similar improvements in CSO functioning, they may do so through different processes of change. For example, in the Rychtarik study, both coping skills training and AFT led to reduced CSO depression and improved CSO coping skills; however, the improved coping skills accounted

for the reduced depression in those who received coping skills training but not in those who received AFT, suggesting different change processes in the two methods.

Third, turning to studies of methods to initiate change, the popular Johnson Institute Intervention family confrontation method did not fare well in the first randomized, controlled study¹⁵ of this popular method. The randomized study was well designed, had a relatively large sample, and used therapists well-trained and committed to this approach. Treatment engagement rates were not much higher than for Al-Anon, which does not try to change the alcoholic's behavior. The disappointing results confirmed an earlier uncontrolled study.²² Until data show that this confrontational approach is effective in motivating treatment entry, treatment programs should consider discontinuing this approach in favor of more effective alternative methods.

Fourth, the very favorable treatment engagement rates for the CRAFT approach in a small-scale initial study¹² (85%) have been confirmed in a large-scale well-controlled study¹⁵ (64%) with CSOs of alcoholics as reviewed above. CRAFT has been equally effective in motivating drug abusers into treatment, with engagement rates of 74% in an uncontrolled study²⁴ and 64% in a controlled study.²⁵ CRAFT also has other reasons to recommend it. CRAFT is manualized and relatively brief, with treatment entry occurring after an average of five sessions. It is based on a consistent conceptual approach and part of the community reinforcement method for treating adult and adolescent substance abuse. It has been used with both spouses and parents. Studies of CRAFT have included substantial proportions of minority participants, but not many CSOs of female alcoholics. Finally, CRAFT is a more effective alternative to engage alcoholics in treatment than popular confrontational or detachment approaches. Therefore, CRAFT needs replication by another group of investigators and research to see if it is successful at engaging female alcoholics in treatment. Successful replication should then lead to dissemination of the CRAFT approach to facilitate increased treatment utilization by alcoholic individuals.

Fifth, three studies^{13,19,20} show that the recently developed Pressure to Change (PTC) approach is better than wait-list control on initiating change in the drinker. However, the measure of drinker change is not altogether convincing in that it includes either treatment entry or reduced drinking for the rather brief period of two weeks. The rate of treatment entry (31% across the three PTC studies) is less than half of that obtained in the CRAFT studies. Nonetheless, PTC appears to be a promising approach. It is brief and is well-specified in a manual for therapists and a self-help manual for CSOs. If it can be shown that PTC produces durable reductions in the drinker's alcohol use and related family dysfunction, it may be of particular use in countries without extensive alcohol treatment systems.

Sixth, Unilateral Family Therapy (UFT) is a creative, pioneering approach that has inspired and informed other methods. However, data on its effectiveness consist of a small pilot study¹⁷ and a modest randomized trial,¹⁸ neither of which have a full report of results published. UFT is an intensive method with weekly sessions for six months and a therapist's manual is not available. The effectiveness of UFT remains unproven and it is not ready for replication or widespread use.

4. Family-Involved Treatment to Aid Recovery When the Alcoholic Has Sought Help

The 26 studies reviewed in this section evaluated treatment methods in which spouses and/or other family members of an alcoholic adult were involved in treatment efforts to aid the alcoholic's recovery and help the family after the alcoholic had sought treatment. Of these 26 studies, 14 evaluated behavioral couples therapy, 7 studied family systems therapy, and 5 examined other forms of family-involved treatment.

4.1. Behavioral Couples Therapy (BCT)

Behavioral couples therapy (BCT) sees the alcoholic patient together with the spouse or cohabiting partner to build support for abstinence and/or to improve relationship functioning. BCT assumes that spouses can reward abstinence, and that alcoholic patients from happier, more cohesive relationships with better communication have a lower risk of relapse. BCT has two main components: *alcohol-focused interventions* to directly build support for abstinence; and *relationship-focused interventions* to increase positive feelings, shared activities, and constructive communication. While current work on BCT usually focuses on both drinking and the relationship, some earlier studies included only one type of intervention. BCT alcohol-focused interventions have included behavioral contracting (e.g., to promote disulfiram ingestion or aftercare attendance) and teaching spouses to decrease behaviors that trigger or enable abusive drinking.

4.1.1. BCT with a Behavioral Contract as the Alcohol-Focused Method. Three BCT studies used a behavioral contract other than a disulfiram contract as the alcohol-focused method. First, Hunt and Azrin²⁶ in the initial Community Reinforcement Approach (CRA) study included BCT in the form of about five "reciprocity counseling" sessions as one component of CRA. This BCT consisted of the couple making written agreements for specific activities each spouse would do to make the relationship rewarding. This always included an agreement that the alcoholic would not drink and that the spouse would discontinue providing agreed-upon satisfactions if the alcoholic drank; the counselor instructed the spouse "to discontinue physical and social contact with the client as much as possible" (p. 95) if the alcoholic drank. Sixteen male alcoholic patients were randomly assigned to get the standard state hospital alcoholism program consisting of 25 hours of alcohol education lectures and films (with little or no family involvement) or the standard program plus CRA. CFA patients at 6-month follow-up, compared to standardly treated patients, drank less, worked more, spent more time with their families and out of institutions, and were less likely to get separated or divorced.

Second, Hedberg and Campbell²⁷ compared behavioral family counseling (BFC) to three individually-oriented behavioral treatments (systematic desensitization, covert sensitization, and electric shock avoidance conditioning) for 49 alcoholic

patients (4 women) at a mental health center. BFC mainly with couples consisted of communication skills training and “Behavioral contracts were also designed for each family. . . . to modify certain identified behaviors and help achieve abstinence” (p. 253). At six-month follow-up, significantly more BFC clients were abstinent than were alcohol abusers in the three other individual behavioral treatments.

Third, a behavioral contract between an alcoholic and a family member (spouse, parent, or sibling) has been used to improve aftercare participation and maintain sobriety after inpatient alcohol treatment. The study randomly assigned 50 male alcoholics who had just completed a four-week inpatient alcohol program to receive a calendar prompt and behavioral contract with a family member to reinforce aftercare attendance or standard aftercare arrangements. During the 6 months after hospital discharge, while the contracts were in effect, nearly twice as many contract subjects as standard control subjects attended aftercare sessions.²⁸ In the year after hospital discharge, based on the 36 of 50 (72%) patients successfully contacted at 12-months follow-up, patients in the contract condition had significantly more months abstinent and were more likely to be employed and classified as a treatment success (abstinent or nonproblem drinking for at least 90% of the year).²⁹ These results are impressive given the simple, cost-effective, and rather limited nature of the aftercare contract intervention and the clear pattern of results favoring this method. Confidence is stronger in the results for the aftercare attendance findings based on the entire sample than it is for drinking and related outcome results based on an incomplete sample.

4.1.2. BCT with a Disulfiram Contract as the Alcohol-Focused Method. Fuller’s³⁰ large-scale clinical trial found that disulfiram was not effective due to serious problems with patient acceptance and compliance. However, abstinence was observed among patients who took the medication consistently. Further, the low patient acceptance may have been related to the fact that the disulfiram was not an integral part of the alcoholism counseling used. Findings such as these have led to the use of behavioral contracts between the alcoholic and a spouse or significant other to maintain compliance with disulfiram and to make disulfiram an integral part of alcoholism counseling.

4.1.2a Project CALM Studies of Disulfiram Contracts. The Counseling for Alcoholics’ Marriages (CALM) Project BCT program³¹ includes disulfiram contracts along with relationship-focused interventions to increase positive feelings, shared activities, and constructive communication. In the Project CALM disulfiram contract,³² each day at a specified time the alcoholic asks the spouse to witness the taking of disulfiram and thanks the spouse for doing so. The spouse, in turn, thanks the alcoholic for taking disulfiram and records the observation on a calendar provided by the therapist. Both partners agree not to discuss past drinking or fears about future drinking at home, but reserve these discussions for the therapy sessions. This contract has three parts—daily spouse observation of disulfiram ingestion, partners thanking each other, and partners refraining from conflict about drinking. Thus, the CALM contract also seeks to restructure the couple’s relationship to reduce their conflicts about past drinking or likelihood of future drinking and to de-

crease the spouse's anxiety, distrust, and need to control the alcoholic. The CALM contract tries to deal with these presumed relationship dynamics of the early sobriety period in order to increase support for abstinence and reduce the risk of relapse.

An initial Project CALM study^{33,34} randomly assigned 36 couples, in which the husband had recently begun individual alcohol counseling that included a disulfiram prescription, to (1) 10 weekly sessions of a BCT couples group with a disulfiram contract; (2) 10 weeks of an interactional³⁵ couples group without a disulfiram contract; or (3) a no-marital-treatment control group without a disulfiram contract. During treatment, BCT was better than interactional or individual counseling at stabilizing abstinence and improving marital relationships. BCT cases remained almost totally abstinent, had fewer days drinking than the interactional group, and avoided negative outcomes (i.e., >5% of days drinking and/or getting separated) better than the interactional or individual groups. BCT improved on four, interactional on one, and individual on none of the relationship measures studied; and BCT did better than interactional or individual groups on the most widely used relationship measure. During the 2-year follow-up period, BCT compared to individual had fewer drinking-related negative consequences, better marital adjustment, and less time separated; and BCT compared to interactional had more favorable cost-benefit and cost-effectiveness results because interactional cases who failed to stay sober during treatment incurred substantial hospital and jail costs during follow-up.³⁶ However, BCT did not produce less drinking than interactional or individual during follow-up, perhaps because use of the disulfiram contract decreased quickly after treatment ended.

A second CALM study^{37,38} evaluated couples relapse prevention (RP) sessions for maintaining change after BCT. Continued use of the disulfiram contract, especially for individuals suffering more severe drinking problems, was one of the goals of the RP sessions. In this study, after participating weekly for 5 months in the Project CALM BCT couples program, 59 couples with an alcoholic husband were assigned randomly to receive or not receive 15 additional couples RP sessions over the next 12 months. Outcome measures were collected before and after BCT and at quarterly intervals for the 30 months after BCT. This study produced three major findings. First, results for the entire sample showed that alcoholics who got RP after BCT had more days abstinent and used the disulfiram contract more than those who got BCT alone. These superior RP drinking outcomes continued through 18-months follow-up (i.e., 6 months after the end of RP). Couples who got RP also maintained improved marriages longer (through 24-months follow-up) than did those who got BCT only (through 12-months follow-up). Second, for alcoholics with more severe drinking and marital problems, RP produced better drinking and marital outcomes throughout the 30-month follow-up period. Specifically, alcoholics with more severe alcohol problems at study entry used the disulfiram contract more and showed a less steep decline in use of the disulfiram contract throughout the 30 months after BCT if they received RP than if they did not. Further, alcoholics with more severe marital problems had better marital adjustment and more days abstinent and maintained relatively stable levels of abstinence if they got RP, while those

who did not get RP had poorer marital adjustment and fewer abstinent days and showed a steep decline in abstinent days in the 30 months after BCT. Third, greater use of the disulfiram contract was associated with more days abstinent and more positive marital adjustment after BCT for all subjects irrespective of the amount of aftercare received.

4.1.2b Community Reinforcement Approach Studies of Disulfiram Contracts. Azrin's 1976 study³⁹ tried to improve the Community Reinforcement Approach (CRA)²⁶ by adding a disulfiram contract with a spouse or family member. The CRA contract was nearly identical to the Project CALM contract except that no attempt was made to reduce conflicts about drinking. Male alcoholic patients ($N = 18$) were randomly assigned to get the standard state hospital alcoholism program (with little or no family involvement) or the standard program plus CRA with disulfiram contract. CRA patients at 6-month follow-up, compared to standardly treated patients, drank less, worked more, spent more time with their families and out of institutions, and were less likely to get separated or divorced. Additional follow-up for two years of CRA subjects (follow-up for the control group subjects was limited to 6 months) showed that positive outcomes for CRA subjects were maintained with at least 90% days abstinent for each 6-month period during the 2-year follow-up. CRA patients after the intensive counseling period had continuing counseling "at intervals of about every 2 months" (p. 343) for an unstated duration, but presumably through the 2-year follow-up. The high level of abstinence associated with periodic monitoring of patients' use of the disulfiram contract is similar to results obtained in the Project CALM study of relapse prevention sessions.

Azrin's subsequent 1982 CRA study⁴⁰ more explicitly evaluated the benefits of disulfiram contracts. Outpatients (43 total, 7 women) in a rural community alcoholism clinic were randomly assigned to one of three treatment conditions each consisting of 5 weekly sessions with monthly contacts thereafter: (1) a prescription for Antabuse, plus individual counseling based on a disease model approach; (2) a disulfiram contract with spouse or family member, plus individual disease model counseling; or (3) CRA with disulfiram contract. Six-month follow-up showed that the three conditions differed on number of days taking disulfiram, days drinking, days intoxicated, and amount consumed per drinking episode. There were two major findings. First, patients receiving CRA and a disulfiram contract did best. Traditional therapy without disulfiram contract did worst. Outcomes for those in traditional therapy with disulfiram contract were intermediate between the other two groups. Disulfiram use declined appreciably by the second month for the traditional therapy group without the disulfiram contract and decreased quite rapidly thereafter with no disulfiram being taken after 3 months. Clients in the two groups given the disulfiram contract took disulfiram about 90% of the time initially and showed less of a decrease over time with two-thirds or more days taking disulfiram through 6-month follow-up. Second, married or cohabiting clients assigned to disulfiram contract and traditional treatment performed about as well on the four outcome measures as they did with CRA plus disulfiram contract. Single clients, however, did better when the disulfiram contract was accompanied by CRA than traditional therapy.

4.1.2c Other Studies of Disulfiram Contracts. Two other studies of disulfiram contracts have been reported. The disulfiram contract in these studies included only daily monitoring of disulfiram with little or no attention to verbal reinforcement or relationship aspects of the contract.

Chick et al.⁴¹ did the largest study of disulfiram contracts to date. Subjects were patients (N = 126, 16% women) at seven outpatient alcoholism treatment centers in the UK. In addition to outpatient counseling, patients were randomly assigned for a 6-month period to: (1) supervised 200 mg daily dose of disulfiram in which an informant (usually the spouse) supervised daily ingestion of disulfiram by the patient; or (2) supervised use of vitamin C to control for the effects of receiving supervised medication and outpatient counseling (patients were told this rationale). Outcome data, which were collected over the 6-month study period, were used on an intent-to-treat basis irrespective of patient compliance, with 80% of patients having complete data. Results showed that supervised disulfiram plus outpatient counseling produced better outcomes of more abstinence and less drinking and fewer alcohol-related social and health problems than counseling with supervised vitamin C. These results particularly merit credibility given the careful outcome evaluation methods used. However, disulfiram compliance was not measured directly, and 45% of patients discontinued the assigned treatment, a higher dropout rate than observed in CALM and CRA studies of disulfiram contracts which used a more complex disulfiram contract that was an integral part of the patients' counseling. Finally, the role of the counseling was difficult to determine since it varied considerably among the treatment centers participating in the study.

In the only study to find no advantage for the disulfiram contract,⁴² 25 male alcoholics being discharged from a 4-week behaviorally oriented inpatient alcohol treatment program were randomly assigned for a 3-month period to: (a) disulfiram contract with significant other, usually the wife, to observe daily taking of disulfiram plus instructions for the wife to use positive reinforcement for contract compliance; (b) disulfiram contract without reinforcement; or (c) disulfiram prescription without contract. At three-month follow-up, 84% of all subjects were still abstinent and taking disulfiram daily by collateral report, with no significant differences in drinking or in disulfiram use reported among treatment groups. The short duration of follow-up and the small sample size may have precluded emergence of convincing evidence of an advantage for the disulfiram contract. The motivational and instructional aspects common to all subjects, including the comparison group, also must be considered. All subjects started disulfiram after at least 4 weeks of inpatient treatment and the significant others viewed a videotape on use of disulfiram and its effects with instructions that they would be contacted regularly about the patient's compliance with disulfiram. The motivational and instructional sets appear to have increased compliance in the noncontract group beyond levels reported by others.^{30,40,41}

4.1.3. BCT with an Alcohol-Focused Method Other than a Behavioral Contract—Teaching Families to Deal with Alcohol-Related Situations. Some BCT studies have used an alcohol-focused method other than behavioral contracting. McCrady devel-

oped a method called “alcohol-focused spouse involvement.”⁴³ It involves teaching the spouse specific skills to deal with alcohol-related situations. The spouse is taught how to reinforce abstinence, decrease behaviors that trigger drinking, decrease behaviors that protect the alcoholic from naturally occurring adverse consequences of drinking, assertively discuss concerns about drinking-related situations, and respond to help the drinker in drink refusal situations.

McCrary^{43,44} randomly assigned 53 alcoholics (27% women) and their spouses to one of three outpatient behavioral treatments: (a) minimal spouse involvement (MSI) in which the spouse simply observed the alcohol abuser’s individual therapy; (b) alcohol-focused spouse involvement (AFSI) as described above; (c) alcohol behavioral marital therapy (ABMT) in which all skills taught in the MSI and AFSI conditions were included as well as relationship-focused interventions. Results at 6-month follow-up⁴³ indicated that all subjects had decreased drinking and reported increased life satisfaction and suggested ABMT led to better treatment outcomes than the other spouse-involved therapies. Specifically, ABMT couples (a) maintained their marital satisfaction after treatment better and tended to have more stable marriages than the other two groups, and (b) were more compliant with homework assignments, decreased the number of drinking days during treatment, and their post-treatment drinking increased more slowly than AFSI couples. Follow-up data through 18 months⁴⁴ showed that patients who received BCT with both an alcohol and relationship focus (i.e., ABMT group) had fewer marital separations and more improvement in marital satisfaction and subjective well-being than those who received individual therapy only (MSI group) or individual plus spouse focus to change drinking (AFSI group). Furthermore, ABMT had better drinking outcomes at 18-month follow-up than MSI or AFSI.

In a study of methods to maintain change after ABMT, McCrary⁴⁵ randomly assigned 90 male alcoholics and their female partners to 15 90-minute weekly sessions of (1) ABMT without special maintenance interventions; (2) RP/ABMT which had ABMT plus maintenance interventions based on a relapse-prevention (RP) model and 4–8 booster sessions in the 12 months following the main treatment; or (3) AA/ABMT which had ABMT plus maintenance interventions based on a 12-step AA and AI-Anon model. In the first 6 months after treatment, cases that completed at least 5 sessions showed increased abstinence, reduced heavy drinking, and overall improvement for all three treatment groups that was similar to other outpatient treatment studies; but there were no group differences. Two outcome variables favored the purely BCT treatment conditions (ABMT and RP/ABMT) over AA/ABMT: time to the first heavy drinking day was longer for ABMT than for AA/ABMT; and RP/ABMT had shorter drinking episodes than AA/ABMT. Patients who complied with posttreatment maintenance plans (i.e., booster sessions in RP/ABMT and AA meetings in AA/ABMT) were more likely to be abstinent than those who did not.

Longabaugh⁴⁶ conducted a study of patient treatment matching to determine the relative effectiveness of different amounts of BCT for different client characteristics. This study randomly assigned 229 alcoholic patients (31% women) to one of three 20-session outpatient cognitive behavioral treatments: (1) extended cognitive behavioral (ECB) that did not involve significant others; (2) extended relationship-

enhanced (ERE) that had 8 sessions for the patient with a concerned partner (spouse, relative, or friend) focused on supporting abstinence (using methods closely adapted from McCrady's AFSI procedures) and strengthening the relationship; and (3) brief broad spectrum (BBS) that had 4 sessions of partner involvement with the same goals as the ERE partner sessions. A hierarchical latent growth model was used to analyze the data on percentage of days abstinent of 188 patients (82%) followed for 18 months. The three treatments did not differ overall, but there were significant interaction effects that followed study predictions. Results showed that ERE was significantly more effective than the other two treatments in increasing abstinence of patients entering treatment with a network unsupportive of abstinence or with a low level of investment in their network, whereas BBS treatment was more effective for patients with either (a) both a social network unsupportive of abstinence and a low level of network investment or (b) high investment in a network supportive of abstinence. ECB outcomes were neither as good as those matched nor as bad as those mismatched to the different amounts of BCT. Longabaugh interpreted these complex results as follows. In the context of 20 planned sessions, for patients with a moderate level of problems in relationship support, 8 sessions of BCT were more effective than 4 or no sessions of BCT. For those with a high level of problems in relationship support, treatments which spent more time strengthening individual coping and little or no time on BCT were more effective, and 8 BCT sessions were not sufficient, suggesting that more BCT sessions were needed to deal effectively with higher levels of relationship problems.

4.1.4. BCT with a Relationship Focus and Without a Specific Alcohol-Focused Method.

Two studies examined BCT that focused on the couple's relationship but did not describe a specific alcohol-focused method as part of the BCT. First, Bowers and Al-Rehda⁴⁷ randomly assigned 16 alcoholics (2 women) and their spouses to standard individual counseling or to a BCT couples group that focused on rehearsal of communication skills as well as specification of desired individual and relationship changes. BCT had significantly lower alcohol consumption at 6-month follow-up than standard treatment and a trend toward lower consumption at 12-month follow-up.

Second, Monti et al.⁴⁸ randomly assigned 69 male alcoholics in a 28-day inpatient program to: (a) a communication skills training group (CST), (b) communication skills training group with participation of a family member, most often the spouse (CST-F), or (c) a cognitive behavioral mood-management training group (CBMMT). Patients who received CST or CST-F drank significantly less alcohol per drinking day in the 6 months after treatment than those in CBMMT, but groups did not differ in abstinence rates or time to relapse. Although all groups improved in alcohol-specific coping skills, CST improved most in skill in alcohol-specific high-risk role plays. Monti suggested that failure to find an advantage for adding family members to CST may have occurred for two reasons. First, the standard inpatient program was based on a family systems model and required family members (or a friend) to be involved in family therapy, education, Al-Anon, and Alateen. Second, including family in CST nearly doubled the therapy group size and may have reduced opportunities for clients to practice new skills in CST-F sessions.

4.2. Family Systems Therapy (FST)

FST has incorporated many of the core concepts of family systems theory into models of the alcoholic family system.⁴⁹ Therapy focuses on the interactional rather than the individual level. FST utilizes a variety of techniques to affect interactions within the family. Greatest emphasis is put on identifying and altering family interaction patterns that are associated with problematic alcohol use. FST can be applied in couples therapy or in whole family therapy.

McCrary et al.³⁵ evaluated the relative effectiveness of adding joint hospitalization and couples therapy based on a systems perspective to individual treatment for alcohol problems. Married alcoholics (N=33, 40% women) were randomly assigned to (a) individual involvement in which only the drinker attended group therapy; (b) couples involvement in which the drinker and spouse participated in an outpatient interactional couples therapy group in addition to concurrent individual treatment groups for each spouse; or (c) joint admission in which both partners were initially hospitalized and then participated in both the couples group therapy and individual therapy groups following discharge. At 6-month follow-up, findings indicated significant decreases in alcohol intake for both the couples involvement and joint admission treatment groups but not for the individual treatment group. All groups showed significant decreases in marital problems, depression, and alcohol-related problems. Four-year follow-up data⁵⁰ showed there were no longer any significant differences among the different treatment groups in the study.

Orchen⁵¹ randomly assigned 48 heavy drinkers at an outpatient community mental health center to (1) brief, strategic family systems therapy, (2) biofeedback, (3) relaxation training, or (4) a wait-list control group. Treatments had six sessions. For the family therapy sessions, "significant people in the individual's network are included in the treatment" (p. 48), suggesting that children and other family members beyond spouses were included. Family therapy improved more than wait-list control on a global clinician rating described as "overall condition," and showed a greater reduction in drinking than the other three groups in the six weeks from pre- to posttest. Groups did not differ in level of anxiety and depression at posttest.

Grigg⁵² randomly assigned 114 male alcoholics and their spouses at two outpatient alcoholism centers to 15 sessions of (1) experiential systemic couples therapy, (2) experiential systemic individual therapy, or (3) individual supportive treatment. Outcome data were collected before and after treatment and at 15 weeks follow-up for the 60 couples (20 in each group) who completed treatment. Results showed groups did not differ and all groups improved from baseline to posttreatment and follow-up on the husbands' alcohol dependence symptoms and on husbands' and wives' satisfaction with their couple and family relationships and symptoms of emotional distress. The only variable studied that did not show change was family satisfaction scores of the oldest child living at home in each family.

Kearney⁵³ randomly assigned 10 married alcoholics (2 women) at an outpatient alcohol treatment program to 10 weeks of twice-weekly sessions of either multiple family group therapy or individual conjoint family therapy. Children in the family were included in both treatments. Data collected before and after treatment

showed no differences between the treatments on couple or family functioning. Drinking outcomes were not assessed.

Bennun⁵⁴ randomly assigned 12 married alcoholic patients (4 women) in an outpatient alcohol program and the family members with whom they lived to an average of ⁸⁻⁹ sessions of family problem-solving therapy or family systems therapy based on the Milan school. Outcome data were collected before and after treatment and at 6-month follow-up. Results showed groups did not differ; and both groups improved from baseline to posttreatment and follow-up on the alcoholics' alcohol dependence symptoms and on husbands' and wives' satisfaction with their couple and family relationships, and on children's satisfaction with their family relationships.

Zweben et al.⁵⁵ randomly assigned 218 alcohol abusers to either (a) eight sessions of Conjoint Therapy based on a systemic perspective in which alcohol abuse was viewed as having adaptive consequences for the couple⁴⁹ or (b) a single session of Advice Counselling which also involved the spouse. Results for 116 (17% women) alcohol abusers with completed follow-up interviews over an 18-month period showed that couples in both treatments had significant improvement on all marital-adjustment and drinking-related outcome measures; but there were no significant between-group differences on any of the measures. Zweben noted that this sample had only moderate alcohol-related difficulties and relatively nondistressed relationships and suggested that the findings may be limited to this specific client population.

Shoham et al.⁵⁶ studied retention in treatment for 63 couples with a male alcoholic partner who had been randomly assigned to 20 scheduled sessions of either cognitive-behavioral therapy (CBT) or family-systems therapy (FST). Although they did not find main effect differences in retention between the two treatments, they did find an interesting moderator effect. Couples high on pretreatment measures of demand-withdraw interaction (a pattern in which the wife demands and the husband withdraws) attended fewer sessions and more often failed to complete CBT, whereas demand-withdraw interaction made little difference in FST. Shoham suggested that the alcoholic husband in such couples withdrew from a high-demand CBT therapy in the same way he tended to withdraw from a demanding wife. CBT in this study was "a high-demand cognitive-behavioral therapy that focused primarily on the partners as individuals" and FST was "a low-demand systemic treatment focused on the partners as a couple" (p. 572). CBT required that patients become abstinent by session 12 and used breathalyzer tests at each session to check compliance, whereas in FST "the therapist remained neutral about change until the clients as a couple explicitly chose to pursue a change goal related to drinking" (p. 561). Shoham acknowledged that the CBT used may not represent less demanding behavioral approaches, such as motivational interviewing or other BCT methods (e.g., Project CALM³¹).

4.3. Other Family-Involved Methods

Five studies examined family methods that do not follow a behavioral, systems, or 12-step family disease approach. The first two are early eclectic studies that

developed pragmatic and effective methods to involve the spouse. The remaining studies had more equivocal findings.

Corder et al.⁵⁸ added a four-day intensive residential couples group workshop to a standard four-week inpatient alcohol rehabilitation program. The workshop involved 20 patients and wives in aftercare planning, improving their communication, doing and planning shared recreational activities, AA and Al-Anon meetings, and alcohol education lectures. The control group of 20 patients received equally intensive treatment in the standard individual inpatient rehab program but without spouse involvement. At 6-month follow-up, the couples workshop group showed significantly better outcomes of higher sobriety rates, better aftercare participation, more recreational activities together, and fewer unemployed alcohol abusers.

Cadogan⁵⁹ randomly assigned 40 (5 women) inpatient alcoholics and their spouses to outpatient couples group therapy after the drinkers' hospital discharge or a waiting list control condition. At 6 months after hospital discharge, the 20 alcohol abusers who received the couples therapy for a 3–6 month period had significantly more abstinence and less drinking than the 20 control patients who did not. Thus, these favorable outcomes are for the time period when the patients were receiving couples therapy.

Fichter and Frick⁶⁰ studied 100 German alcoholic patients (42% women) living with a relative (over 90% spouses) and receiving an intensive 6-week inpatient program with a behavioral focus followed by a recommended 6-week outpatient program. Patients were randomly assigned to one of two equally intensive additional treatments during the inpatient program: (1) a weekly group for relatives plus family sessions on communication; or (2) a weekly group to encourage self-help initiatives. Outcome data on 90% of patients were collected after treatment and at 6- and 18-month follow-up. The main outcome studied was whether or not the patient had remained continuously abstinent. Relatives' group had a higher abstinence rate (95.9%) than self-help (80.4%) at discharge from inpatient care but the two groups did not differ at later time periods. Relatives-group patients, compared with self-help patients, more often sought additional outpatient counseling in the 6-months after inpatient discharge and in the entire 18-month period had fewer and shorter inpatient treatments for alcohol problems. Fichter suggested that greater aftercare use by relatives-group patients may have prevented more severe relapses and re-hospitalization. Fichter also offered two explanations for the lack of positive findings favoring the family-involved treatment. First, the additional treatments studied were only a small part of the total treatment received (9 of 126 hours total) and may not have been sufficiently intensive to make a difference. Second, many relatives were resistant to being in the relatives group and their participation was less than desired. Other explanations also should be considered. Third, the outcome measure of continuous abstinence is relatively insensitive because it counts infrequent, low-level drinking the same as frequent, heavy, problem drinking. Less use of further inpatient treatment by the family-involved group suggests that a more sensitive drinking measure might well have favored the relatives-group patients. Finally, for the most part the relatives group did not involve the patient and relative together but rather provided separate concurrent treatment for relatives. This latter

method may not be the most effective way to involve family members in alcoholism treatment.

Chapman and Huygens⁶¹ randomly assigned 113 alcoholic patients (20% women) after a 2-week inpatient detoxification to (1) a 6-week inpatient program in which “families were involved as much as possible in family therapy,” (2) a 6-week outpatient evening program of twice-weekly sessions with the patient’s spouse or friend also invited to attend, or (3) a single 1-2 hour confrontational interview in the presence of the patient’s spouse, relative, or friend whenever possible. “On a variety of outcome measures, that included both levels of drinking and general functioning taken 6 and 18 months after baseline, no treatment appeared to be consistently more effective than another” (p. 67). For the purposes of this review, the major problem with this generally well-executed study is that no information is provided on the extent to which family or significant others were actually involved in the three treatments. Only 40% of the sample were married, and no other information is provided on family or significant others, so it seems likely that most patients had little or no family involvement in their treatment. Interestingly, irrespective of type of treatment received, patients who reported they had been coerced by someone else to enter treatment had less drinking and more abstinence at 18-month follow-up.

Sobell⁶² randomly assigned spouses of 56 nondependent problem drinkers (75% male) receiving a 4-session guided self-change intervention to two sessions of either (1) “natural spousal support” to describe the recovery process; or (2) “directed spousal support” with the same information as the first group plus instructions on how the spouse could aid the drinker’s recovery. Outcome data showed the groups did not differ and both groups improved at 12-month follow-up on drinkers’ amount consumed, heavy drinking days, and abstinent days and on family cohesion scores for both drinkers and spouses.

4.4. Conclusions About Family-Involved Treatment to Aid Recovery When the Alcoholic Has Sought Help

Considerable progress in research on family-involved treatment to aid recovery when the alcoholic has sought help has been made. Only 10 of the 26 studies on this stage of change reviewed here were included in the earlier reviews; and a number of findings merit consideration.

First, evidence has accumulated for the effectiveness of behavioral couples therapy (BCT). BCT produces more abstinence and fewer alcohol-related problems, happier relationships, fewer couple separations, and lower risk of divorce than does standard or individual-based treatment.^{26,27,29,34,39–41,47} These positive results were observed in 8 of the 10 studies which compared BCT with a standard or individual-based treatment; and BCT was better than individual treatment for some patients in one⁴⁶ of the two remaining studies.^{42,46}

Additional outcome domains are positively impacted by the Project CALM BCT program, which shows substantial reductions (a) in domestic violence^{63,64} and (b) in hospital and jail stays after BCT that save 5 times the cost of delivering BCT.^{36,65} An

adaptation of the Project CALM BCT program for use with drug-abusing patients produces better results than individual-based treatment (a) with heterogeneous outpatient drug abusers on drug use and relationship outcomes,⁶⁶ extent of clinically significant improvement,⁶⁷ cost-benefit and cost-effectiveness,⁶⁸ and domestic violence,⁶⁹ (b) on drug use and relationship outcomes with patients in a methadone program⁷⁰ and with opioid addicts taking naltrexone,⁷¹ and (c) on HIV-medication compliance among HIV-positive male drug abusers.⁷² In adapting Project CALM BCT for use with drug abusers, the disulfiram contract is replaced with a “sobriety contract”⁷³ in which each day, at a specified time, the substance abuser initiates a brief discussion and reiterates his or her intention to stay abstinent that day (in the tradition of one-day-at-a-time). The couple agrees not to discuss drinking or drug use at other times, to mark that they had the discussion on a calendar provided, and to end it with a statement of appreciation to each other. If the sobriety contract includes 12-step meetings or urine screens, these are also marked on the calendar. This sobriety contract also can be used with alcoholic patients who are unwilling or not medically cleared to take disulfiram.

Second, the BCT alcohol-focused method with the strongest support is a behavioral contract to promote abstinence and behaviors directly associated with abstinence. Such a behavioral contract has positive support in 8 of 9 studies.^{26,27,29,34,38–41} The disulfiram contract is the specific type of contract with the greatest support, showing favorable outcomes in 5 of 6 studies.^{34,38–41} The evidence for the effectiveness of disulfiram contracts suggests that this method should be disseminated to the treatment community, probably as part of a BCT treatment package that includes relationship-focused methods to strengthen relationships. In any case, based on both our clinical experience and the studies reviewed, we recommend that the disulfiram contract be used as an integrated part of a holistic treatment program.

Third, two BCT studies^{38,39} suggest that continued therapist contact over relatively long periods of one to two years after the end of the intensive phase of treatment to reinforce continued use of treatment-targeted behaviors (e.g., disulfiram) can improve abstinence outcomes. The advantage of such prolonged treatment may be most apparent among patients with more severe drinking and relationship problems.³⁸ An important practical issue in applying these results will be the need to develop funding models to pay for such low-intensity treatment over extended periods.

Fourth, family systems therapy (FST) studies grew from one to seven since McCrady’s 1989 review. Two studies found better drinking outcomes for FST than individual treatment³⁵ or a wait-list control,⁵¹ while one did not.⁵² Three of four studies comparing FST to other types of family treatment^{53–55} found no differences, while one study⁵⁶ found FST was superior to BCT (without a behavioral contract) for couples with more seriously disturbed communication patterns. Important FST contributions were initial controlled studies that included whole families in treatment^{51,54} and examined children’s ratings of outcome.^{52–54}

Fifth, an initial controlled study of a family disease approach was conducted.⁴⁵ However, adding to BCT an emphasis on AA and Al-Anon as a maintenance intervention did not improve outcomes, probably because most clients did not attend

12-step meetings regularly. As study authors⁴⁵ noted “. . . higher rates of sustained AA involvement might have been achieved using therapists specifically trained in and committed to a Twelve-Step model of treatment” (p. 1392).

5. Conclusions and Future Directions

5.1. Summary and Conclusions

This chapter reviewed studies of the effectiveness of family-involved alcoholism treatment. It provided a comprehensive review of randomized studies to date comparing family-involved treatment with one or more comparison conditions and an update to McCrady's 1989 review³ and to Steinglass's earlier 1976 review.² Twenty-six of the 36 studies reviewed in this chapter were not included in these two earlier reviews. It divided study results into two main stages of change and examined family-involved treatment to (a) improve family coping and/or initiate change when the alcoholic individual is unwilling to seek help or (b) aid the alcoholic's recovery once the individual has sought help.

A meta-analysis showed that family-involved treatments, as compared to individually-based treatments or wait-list control conditions, had less alcohol use and greater likelihood of entering and continuing treatment by the alcoholic patient, more positive couple or family functioning, and more favorable individual adjustment of the alcoholic patient and of the spouse or family member. Using Cohen's⁷ (1988) conventions, the magnitude of the effect size favoring family-involved treatments (a) is solidly or nearly a medium-size effect for outcomes of alcohol use, treatment entry/attendance, and spouse-or family-member adjustment and (b) is midway between a small and medium effect for outcomes of individual patient adjustment and couple or family functioning. The effect sizes observed for family-involved treatment of alcoholism are 5 to 10 times greater than those observed for aspirin in preventing heart attacks, an effect considered important in medical research.

Ten studies of family-involved treatment when the alcoholic is unwilling to seek help, none of which were included in earlier reviews, provide a number of new findings: (1) 12-step Al-Anon facilitation and referral has been studied and it helps family members as intended and believed by its many adherents; (2) the popular Johnson intervention also has been studied and it apparently does not work very well to promote treatment entry despite its adherents' claims; (3) a variety of methods reduce the emotional distress of family members living with an alcoholic; and (4) the Community Reinforcement and Family Training approach promotes treatment entry effectively and should be disseminated if replicated successfully by another group of investigators.

Twenty-six studies of family-involved treatment to aid recovery when the alcoholic has sought help, 10 of which were included in earlier reviews, provide a number of new findings: (1) evidence supporting behavioral couples therapy (BCT) has grown—8 of 10 studies show better drinking and relationship outcomes for BCT

than for individual treatment, recent studies show BCT has additional beneficial outcomes (e.g., reduced domestic violence, cost-benefit ratio of 5:1), and BCT also has positive results with drug abusing patients; (2) the disulfiram contract procedure, the type of BCT alcohol-focused behavioral contract with the greatest research support, should be disseminated to the treatment community as part of a BCT treatment package; (3) family systems therapy (a) increased studies from one to seven, (b) had less drinking than individual treatment or a wait-list control in two studies, (c) retained couples with more troubled relationships in treatment better than BCT, and (d) had the first studies to treat the entire family and examine children's ratings of outcome; and (4) the first controlled study of a family disease approach did not find an advantage for adding an emphasis on AA and Al-Anon to BCT.

5.2. *Directions for Future Work*

In closing we will consider just a few future directions for research on family treatment in the next decade. First, studies are especially needed that include sizeable numbers of women and minority patients because, despite some notable exceptions, studies reviewed above have included mostly white male patients.

Second, although some family systems studies have begun to include children in treatment or in outcome measurement, a greater focus on children is needed. For example, research is needed to find out whether BCT for a substance abusing parent, with its demonstrated reductions in domestic violence and reduced risk for family breakup, has beneficial and preventive effects for children in the family, reducing their risk for mental health and substance abuse problems.⁷⁴

Third, research is needed to evaluate promising but not yet fully tested methods that have the potential for relatively easy adoption by the treatment community. For example, the Project CALM "sobriety contract"⁷³ has been adapted for those not taking disulfiram by replacing disulfiram observation by the partner with a brief discussion in which the alcoholic states his or her intention to stay abstinent that day (in the tradition of one day at a time). It has already been shown effective as part of BCT with drug abusing patients.⁶⁶⁻⁷² If the sobriety contract proves effective with alcoholics, it could become a very flexible behavioral contract method that could be used by clinicians and patients as a noncoercive method to encourage commitment to recovery and compliance with a range of recovery-related behaviors (e.g., AA, urine screens) and pharmacotherapy methods in addition to disulfiram. Network therapy is another promising candidate for controlled research. Network therapy involves key members of the patients social network at the outset and at regular intervals during treatment (using the clinician's usual practice) to support the patients recovery. Network therapy could be appealing because it does not require practitioners to make major changes in their usual practice or to devote most sessions to involving network members.^{75,76}

Finally, the Institute of Medicine⁷⁷ has documented a large gap between research and practice in substance abuse treatment, a problem that also exists in health care more broadly.⁷⁸ One way to address this problem is to continue the work begun in the last decade to systematically test popular but as yet underresearched

family treatments. We also need to begin work to disseminate effective family-involved treatments to the provider community. This review identified two candidates for dissemination efforts—a BCT treatment program consisting of a disulfiram contract and relationship enhancement procedures, and the Community Reinforcement and Family Training method, if replicated successfully by another group of investigators. As we pursue these efforts, it may be helpful to consider Rogers' comments:⁷⁹ "Innovations do not sell themselves. . . . Most innovations, in fact, diffuse at a disappointingly slow rate" (p. 7). Rogers goes on to report that it took over 200 years after the initial experiment demonstrating citrus fruits cured scurvy before the British Navy required citrus fruits for all ship's crews on long sea voyages, at which time scurvy was immediately wiped out. Work to move the results of research on family-involved treatment into the mainstream of alcoholism treatment most certainly should proceed at a faster pace than this. Our patients and their families deserve nothing less.

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The Role of Continuing Care in Outpatient Alcohol Treatment Programs

James R. McKay

Abstract. Substance-abusing patients are frequently urged to participate in continuing care, or “after-care,” following an initial phase of treatment. However, there has been relatively little research on the effectiveness of continuing care, particularly in the context of outpatient service delivery systems. Since 1988, 12 controlled studies of continuing care for alcohol use disorders have been published. Only three of these studies were conducted exclusively within outpatient service delivery systems; in the other studies, all patients (six studies) or at least half of the patients (three studies) were first treated in inpatient or residential facilities. Four of the 12 studies yielded positive findings (two of six studies with minimal/no continuing care control conditions and two of six studies with active control conditions). It is suggested that continuing care treatment might be improved by placing greater emphasis on addressing co-occurring problems and facilitating the identification and strengthening of patients' skills, interests, and talents, although additional research would be needed to evaluate the impact of these modifications. Further research is also needed to establish guidelines for when patients are ready to enter continuing care and to develop performance indicators to monitor progress.

1. Introduction

A certain percentage of individuals with alcohol use disorders are able to achieve sustained recoveries either on their own or after receiving a brief therapeutic intervention.¹⁻³ However, for many individuals alcoholism is a chronic disorder, characterized by periods of abstinence followed by eventual relapse and re-entry into the treatment system. Indeed, alcoholism and other substance use disorders are increasingly seen as similar in course and outcome to chronic health problems such as diabetes, hypertension, and asthma.^{4,5}

Due to the relapsing nature of the disorder, individuals receiving treatment for substance abuse are generally urged to participate in some form of continuing care after their initial phase of treatment has ended. When most substance abuse treat-

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ment was delivered in inpatient or residential settings, continuing care usually consisted of outpatient “aftercare” group therapy sessions and participation in self/mutual help programs such as Alcoholics Anonymous (AA). Aftercare was intended to ease the transition from the controlled therapeutic environment, particularly for people who traveled to another locale to attend a 30-day rehabilitation program and to maintain progress achieved in the inpatient or residential program. One of the other major goals of aftercare was to provide continued support for participation in self-/mutual-help programs.

At this point, most substance abuse treatment is provided in outpatient settings,^{4,6} with residential or inpatient treatment restricted to those with severe comorbid medical or psychiatric problems. In the outpatient model, patients participate in an initial treatment phase of 30 to 60 days duration, which could range from two (standard outpatient) or three (i.e., intensive outpatient treatment) contacts per week up to daily contact (i.e., day hospital). Patients who complete this phase then enter standard outpatient treatment, which usually consists of one contact per week. Continuing care treatment in the outpatient model is usually delivered through group sessions focused on substance use and oriented around the 12 steps of mutual-/self-help programs.

One important issue in the shift to a largely outpatient service-delivery model that has not been adequately addressed is the extent to which the role of “continuing care” is similar to, or different from, the role that “aftercare” assumed in the old residential service-delivery model. For substance abusers graduating from residential programs and other types of controlled environments, the main goal of aftercare is to maintain initial abstinence in an environment where alcohol and drugs are readily available and cues that stimulate craving are present. Most graduates of an initial phase of treatment in an outpatient service delivery system, on the other hand, have already demonstrated some ability to achieve and maintain abstinence outside of a controlled environment. Studies have indicated that patients who complete intensive outpatient treatment (IOP) are likely to have much better substance use outcomes than those who fail to complete IOP.⁷ Although for such patients the continued maintenance of abstinence is still obviously important, it is questionable whether this should always be the primary focus of continuing care.

The goal of this article is to examine the role of continuing care for individuals with alcohol use disorders within a service-delivery system that relies primarily on outpatient treatment. In the first half of the article, correlational and controlled studies of continuing care are reviewed, with particular attention paid to controlled studies conducted in the last decade. The results of the review are discussed with respect to two key methodological issues: (a) whether the initial treatment experience that preceded continuing care was delivered in a residential/inpatient or an outpatient setting, and (b) whether a no/minimal treatment or another active continuing care intervention served as the control condition. This part of the article draws heavily from another review of continuing care studies that also included studies of patients with drug use disorders.⁸ In the second half of the article, recommendations for improving continuing care interventions are proposed. These recommendations point toward a model of continuing care that is focused on adding

specific services to (a) address co-occurring problems that are of particular importance during this phase of recovery, and (b) identify and strengthen the patient's skills, talents, and interests.

2. Review of Continuing Care Studies

2.1. *Correlational Studies*

Correlational studies that have examined the relationship between participation in continuing care interventions and substance use outcomes have consistently generated positive results. In a review of alcohol aftercare studies done prior to 1985, Ito and Donovan concluded that greater participation in aftercare was associated with a reduced risk of relapse to heavy drinking, although not necessarily with higher abstinence rates.⁹ In a study of inpatient treatment for alcoholism in the Navy, the best single predictor of positive outcomes at one year was months of aftercare attendance.¹⁰ Inpatient VA programs whose patients attended at least two aftercare sessions following discharge had fewer patients readmitted.¹¹ In another study of inpatient treatment,¹² veterans who participated in subsequent continuing care (i.e., formal aftercare, self-help programs, or both) had better one-year drinking outcomes than those who did not attend continuing care. However, participation in formal programmatic aftercare only was not associated with better outcome. The primary limitation of correlational studies is that treatment effects are confounded with various patient characteristics, such as motivation to stop substance use and initial success in treatment. Therefore, controlled studies provide a better indication of the impact of continuing care interventions.

2.2. *Controlled Continuing Care Studies*

2.2.1. Description of Controlled Studies. Literature searches and an examination of the citations in a recent review⁴ yielded 12 controlled studies of continuing care, published between 1987 and 1999.¹³⁻²⁴ The studies are described in Table I. Eight studies included patients with a primary alcohol use disorder diagnosis, whereas the other four included patients with a combination of drug and alcohol problems. Ten studies featured random assignment of patients to two or more conditions. In the other two studies, assignment to treatment condition was done on the basis of sequential cohorts and availability of the experimental condition.

Several clinical researchers have conducted studies in which the experimental treatment protocol was divided into several distinct stages, or phases.^{25,26} Clinicians have also advocated the use of staged approaches in their treatments for substance abusers.^{27,28} However, the continuing care phases of these treatment protocols have not been evaluated independently, which precluded the inclusion of these studies in the review.

Several brief remarks are in order concerning the quality of the studies in this review. With regard to the sample size, nine of the 12 studies had sufficient num-

Table 1. Controlled Studies of Continuing Care

Citation	Characteristics of Subjects	N	Prior Treatment	Method Assigned	Type of Continuing Care	Follow-up Duration	Main Effects	Matching Effects	Other Comments
Alcohol Studies									
Gilbert (1988)	Male veterans, 89% White	96	Inpatient	R	Compliance enhancements: None, phone, home visits	12 mo	CC attendance highest with home visits, but no group differences in drinking outcome	Not tested	CC completion associated with better outcomes
Ito et al. (1988)	All male, 70% White	39	Inpatient	R	8 weeks of 1x/week groups: Relapse prevention vs. interpersonal	6 mo	No group differences on drinking outcome, CC attendance, or change process measures.	Not tested	6 early drop-outs not included in analyses.
McLatchie & Lomp (1988)	Not provided	155	Inpatient	SC	CC presented as: Mandatory, Voluntary, Delayed 12 weeks	3 mo 12 mo	No group differences on drinking, AA attend. or other outcomes Mixed results	Not tested	99% FU at 3 mo, much lower at 12 mo.
Cooney et al. (1991)	85% White, 33% women	96	Inpatient	R	26 weeks of 1x/week groups: Coping skills vs. Interactional	24 mo	No group differences on drinking outcome measures	Coping better for high sociopathy or psychopathology patients; Interactional better for cognitively impaired patients and those low in sociopathy or psychopathology	2-year follow-up of Kadden et al. (1989)

Connors et al. (1992)	68% male, "problem drinkers"	63	Outpatient	R	Group counseling vs. telephone calls (8 session/call) vs. no aftercare	18 mo	No differences between the three conditions	Not tested	Very good compliance with AC
Patterson et al. (1997)	White males, First admissions	127	Inpatient	NR	Nurse visits over 12 months vs. review visits every 6 weeks	60 mo	Better abstinence rates, less black-outs, less gambling in nurse visit group	Not tested	Nurse visits delivered by only one person
Project MATCH (1997)	80% male, 80% White	774	Inpatient or Intensive DH	R	Individual MET, CBT, or 12-Step Facilitation (12 weeks duration)	15 mo	No group differences	2 of 21 matching effects were sig.: TSF better for high meaning seeking and high alcohol dependence; CBT better for low dependence. Effects found post-treatment only.	
O'Farrell et al. (1998)	Married, Male	59	Outpatient couples treatment	R	15 couples BMT/RP sessions offered over 12 months vs. no CC	30 mo	Better drinking outcomes to 18 mo and marital outcomes to 30 mo in BMT/RP	Greater marital probs associated with larger treatment effects	
Drug and Alcohol Studies									
Hawkins et al. (1989)	82% male, 75% White Primary drug abusers	130	Therapeutic community (TC)	R	Skills training and networking activities (2x/wk for 26 wks) plus TC vs. TC only	12 mo	Skill level at 12 mo, Exp > cntrl; no differences on alcohol use outcome measures	Not tested	First 10 weeks of intervention delivered during final phase of TC
Foote & Erfurt (1992)	Predominantly male, 50% Black	325	Inpatient (60%) or outpatient	R	Follow-up contacts (15-20 over 12mo) plus CC vs. CC only	12 mo	Marginally better outcomes on 3 DA measures in exp cond.; no group differences on 3 other measures	Not tested	Implementation problems

Continued

Table 1. Continued

Citation	Characteristics of Subjects	N	Prior Treatment	Method Assigned	Type of Continuing Care	Follow-up Duration	Main Effects	Matching Effects	Other Comments
Graham et al. (1996)	73% male	91 101	Inpatient Evening OP	R	12 weekly RP sessions: group vs. individual	12 mo	No group differences on alcohol or drug use measures. Group RP better on social support	Not tested	Same results in inpatient and OP samples
McKay et al. (1999)	Male veterans, 85% Black cocaine dependent	132	Intensive outpatient (IOP)	R	2 sessions/wk for 20 wks: standard group vs. group plus individual RP	24 mo	No group differences on frequency of heavy drinking days, or ASI alcohol composite. However, heavy drinking in Y2 favored RP	Pts using alcohol in IOP had better drinking outcomes in Y2 if they received RP rather than STND	2-year follow-up of McKay et al. (1997)

Note: "CC" = continuing care; "R" = randomized; "SC" = assignment by sequential cohorts; "NR" = not randomized

bers of participants to detect medium effects. Of the three studies with samples of 80 or less, lack of power appeared to be an issue in only one study (i.e., apparent group differences that did not reach significance). Ten of the studies featured random assignment, and the majority included some sort of measures to corroborate self-report. Most studies tested manualized treatment interventions, and only one had a follow-up of less than 12 months. Therefore, the overall methodological quality of the studies in the sample was relatively high. Shortcomings in design or implementation that could have influenced the findings of a particular study are noted where appropriate.

Two important methodological issues in the examination of continuing care effects are the type of treatment provided initially and the type of control condition employed. Of the 12 studies in the review, six included patients from inpatient/residential programs, three included patients from outpatient programs, and three included patients from residential or outpatient programs, although typically the majority were from residential programs. With regard to type of control condition, six of the studies featured a no-treatment or minimal-treatment control condition, whereas six focused on comparisons between two or more active continuing care treatments. Studies that examined continuing care after inpatient/residential treatment only or outpatient treatment only tended to compare an active treatment against a minimal or no treatment control (four of six and two of three studies, respectively), whereas studies of continuing care after a mixture of residential or outpatient treatment compared two or more active treatments (three of three studies).

2.2.2. Results. The studies in Table I were classified according to whether a positive or negative treatment main effect result was obtained. Studies with positive results were those in which a treatment group difference was obtained on the primary substance use outcome measure(s). Studies with negative results were those in which no treatment group main effects were obtained on the primary substance use outcome measure(s), or mixed results were obtained, such as outcomes on one measure favored one group, but there was no effect or the opposite effect on the other specified primary substance use outcome measures. According to this classification system, four of the 12 studies yielded positive results. Somewhat surprisingly, studies with active control condition were as likely to yield a positive result as were those with minimal or no treatment control conditions (in each case, two of six, or 33%).

Positive results were found in the following four studies. Home visits by a nurse over a 12-month period produced better alcohol abstinence rates and fewer blackouts than a minimal control condition over a five-year follow-up period.¹⁸ In this study, however, all nursing visits were provided by one individual, which means that treatment and provider effects were confounded. Couples behavioral marital therapy relapse prevention sessions produced better drinking outcomes out to 18 months and better marital adjustment out to 30 months, as compared to a no continuing care control condition.²⁰ Extended follow-up telephone contacts in an EAP program produced marginally better outcomes on three drinking related outcome measures: substance abuse disability, substance abuse treatment costs, and number of substance abuse hospitalizations, over a 12-month follow-up, as compared to

standard EAP follow-up care.²² Finally, individualized relapse prevention produced better heavy drinking outcomes at the level of a trend in the second year of a two-year follow-up.²⁴

Four of the 12 studies included tests of potential patient–treatment “matching” effects. Of these four studies, three yielded positive matching findings. The study by Cooney, Kadden, and colleagues found that patients high in psychopathology or sociopathy had better drinking outcomes in coping skills than in interactional aftercare, whereas those with low scores on those measures or more cognitive impairment did better in the interactional aftercare condition.^{16,29} O’Farrell et al.²⁰ reported that greater marital problems at intake were associated with larger alcohol and marital satisfaction treatment effects in a comparison of behavioral marital relapse prevention therapy versus no further treatment. McKay et al.²⁴ found that cocaine and alcohol patients who had not achieved remission from current alcohol dependence during the IOP program that preceded continuing care had better heavy drinking outcomes in year two if they received RP rather than standard group continuing care. The only study with matching analyses that yielded primarily negative results was Project MATCH. In the aftercare wing of this alcohol treatment study, only two of 21 proposed matching effects received some support.^{19,30}

2.3. *Conclusions from Continuing Care Studies*

Although most of the correlational continuing care studies that were described here yielded positive findings, the controlled studies did not consistently provide support for the efficacy of these interventions. Even when an active continuing care intervention was compared to a minimal- or no-continuing-care control group, less than 50% of the studies found positive effects. However, most of the patients who participated in these studies were graduates of inpatient or residential primary treatment programs. Only three studies focused exclusively on continuing care effects following an initial phase of outpatient treatment. At this time, the vast majority of substance abuse patients receive their initial phase of treatment in day hospitals, intensive outpatient programs, or standard outpatient programs. Therefore, there is very little empirical data on the effectiveness of continuing care within contemporary substance abuse service delivery systems.

Most of the controlled studies included in this review examined interventions that were primarily, if not entirely, substance abuse focused. Of these interventions, cognitive-behavioral relapse prevention or coping skills treatments were examined most frequently (seven studies), followed by standard addictions counseling (three studies). Substance-abuse-focused interventions were also delivered in relatively novel ways in four studies, via home visits from a nurse or by telephone follow-up calls. Conversely, only two studies tested interventions that specifically focused on changing behavior in other areas, in addition to changing substance use behaviors. The behavioral marital therapy (BMT) relapse prevention treatment studied by O’Farrell et al.²⁰ directly addressed general marital problems in addition to substance use, and the coping skills intervention studied by Hawkins et al.²¹ included extensive efforts to engage patients with community volunteers and net-

working activities. The possibility that interventions designed to address co-occurring problems commonly found in substance abusers might improve the effectiveness of continuing care is discussed below.

3. Recommendations for Improving Continuing Care in an Outpatient Service Delivery System

The studies included in this review do not provide strong evidence for the effectiveness of continuing care, particularly in the context of outpatient service delivery systems. This may in part be due to the lack of studies that have directly addressed this issue; further studies may yield more positive findings. However, it is also possible that existing approaches to continuing care are not particularly effective with patients who have completed an initial phase of outpatient treatment and that new approaches or treatment components are therefore necessary.

Several excellent reviews have described specific treatment interventions that might be effective during the continuing care phase of substance abuse rehabilitation.^{4,31,32} Donovan, for example, has recommended that continuing care involve the social support system, make use of recovery houses, include a monitoring system to catch lapses early, encourage self-help group participation, consider medication when appropriate, and provide case management services.⁴ Hawkins and Catalano have also recommended that continuing care include strategies to improve social support and housing, along with vocationally-focused, activities-focused, advocacy, and skills-training interventions.³² The following sections of this review address the identification of clinical issues that may be particularly important during the continuing care phase of outpatient service delivery systems.

3.1. Determining When Outpatients Are Ready for Continuing Care

In the recent past, inpatient programs almost always had a fixed length of stay, which usually was 28 days. Within that model, the timing of transition to aftercare was governed by the planned duration of the residential program, rather than by other factors such as patient progress. In an outpatient service delivery system, programs also frequently have a fixed length of stay, although in some cases patients may be retained in the initial phase of treatment for an extra week or two because of relapse or failure to participate in self-help programs. However, because patients differ in their rate of progress, it might be more useful to consistently link transition to continuing care to the achievement of specific therapeutic goals. The American Society of Addiction Medicine (ASAM)²⁷ has developed a set of criteria for determining when patients are ready to transition to a less-restricted level of care. According to these criteria, patients should remain in a particular level of care until they have achieved certain goals. For example, patients who are in IOP should not be discharged to a lower level of care as long as they still meet *DSM-IV* criteria for a substance-related disorder, satisfy the specifications of at least one dimension of the criteria indicating a need for IOP, and are sufficiently stable to be maintained

at that level of care (i.e., their condition has not deteriorated to the point that a more intensive level of care is needed). Patients can be discharged from IOP when they no longer meet current substance use disorder criteria and do not meet criteria for continuing stay at that level of care on any of the six ASAM dimensions.

Unfortunately there has been little empirical research on the identification of markers of readiness to transition to lower levels of care in an outpatient system. In the cocaine continuing care study by McKay and colleagues, patients who had not achieved a 30-day period of remission from cocaine or alcohol dependence during IOP prior to entering continuing care had worse cocaine outcomes³³ and poorer retention³⁴ during the five-month continuing care program and worse cocaine and alcohol outcomes over the entire two-year follow-up.²⁴ This suggests that the achievement of at least 30 days of abstinence from substance use might be one performance indicator of readiness for transition from IOP to continuing care.

3.2. Important Therapeutic Goals During Continuing Care

The primary goal in all phases of substance abuse treatment is to sharply reduce, if not eliminate, alcohol and drug use. This suggests that certain therapeutic interventions or goals are likely to be important throughout a course of treatment. However, if continuing care within an outpatient service delivery system is really a separate phase of treatment, as opposed to simply a reduction in the intensity of services provided in IOP, then it should also have a unique set of therapeutic goals or tasks. Moreover, these goals and tasks should be different, at least to some degree, from those that are appropriate for patients entering continuing care following residential treatment. One possible resource for the identification of important therapeutic goals during continuing care is the literature on factors in relapse, either during or following treatment.

3.2.1. Findings from Relapse Studies. Substance abuse relapses have been studied with retrospective and prospective designs,³⁵ and more recently, with “near real time” methodologies in which data are collected at frequent intervals during periods of high risk.³⁶ A methodological review of alcohol, drug, and nicotine relapse studies found that five relapse factors or precipitants were consistently identified in retrospective, prospective, and near-real-time designs: negative emotional states, increased craving, cognitive factors such as reduced commitment to abstinence and lower self-efficacy, interpersonal problems, and lack of coping efforts during periods of temptation.³⁷ These factors also figure prominently in the models of relapse that dominate the field at this time.³⁸⁻⁴¹ This would suggest that these five relapse factors should be addressed aggressively in the continuing care phase of treatment. However, data from most relapse studies have been obtained either from patients who had received residential treatment or from individuals in outpatient smoking cessation studies. It is therefore not entirely clear that these specific factors are the most common precipitants of relapses in alcohol dependent individuals who have entered continuing care after completing a more intensive form of outpatient treatment.

3.2.2. Proposed Therapeutic Goals for Continuing Care. It is apparent that there is a relative paucity of research to guide in the identification of therapeutic goals, or the tasks needed to reach them, for continuing care within an outpatient service delivery system. However, it may be useful conceptually to divide potential continuing care therapeutic goals into three basic categories. The first, which might be labeled “abstinence management,” consists of goals initially addressed in the first phase of treatment that are also appropriate for continuing care patients. These could include (1) establishing or shoring up shaky abstinence in patients with recent use, strong cravings to use, or diminished commitment to abstinence; (2) improving the management of money and free time; and (3) strengthening coping responses to situations previously associated with substance use.

A variant of motivational enhancement therapy (MET)⁴² may be particularly useful for patients who experience reduced commitment to abstinence during continuing care. Contingency-based interventions that reward abstinence, such as the provision of employment or housing opportunities to patients who provide drug-free urine toxicology samples, may also be effective in the continuing care phase for patients who are struggling to achieve abstinence.²⁵ As Donovan⁴ has recommended, recovery houses and other abstinence-oriented living situations may help substance abusers get through periods of decreased motivation and learn to better manage free time and money, and naltrexone and other medications may help reduce craving and the reinforcing effects of alcohol when episodes of use do occur.

A second category of therapeutic goals, which might be labeled “comorbid problem management,” concerns the reduction of other problems that could lead to eventual relapse, including relationship difficulties, chronic medical and psychiatric disorders, and lack of employment and other life skills.^{4,20,26,32,43,44} In many cases, treatment for acute or severe problems in any of these areas should probably begin in the initial phase of treatment, whether it is delivered in an outpatient (e.g., IOP or partial hospital) or a residential setting.⁴³ However, even when acute care has been provided for comorbid problems, it may be beneficial to provide additional services targeted at these problems during the continuing care phase of treatment to ensure that they are appropriately managed.

The final proposed category of therapeutic goals concerns the identification, facilitation, and strengthening of patients’ existing skills, interests, and talents. This set of goals, which might be labeled “facilitation of alternative reinforcers,” would serve to reduce the likelihood of relapse by making abstinence more satisfying and rewarding than continued use.³⁹ In this regard, treatment strategies that stress involvement in community organizations and pro-recovery recreational and leisure activities have been recommended.³² Furthermore, controlled studies have indicated that that so-called “broad spectrum” interventions, such as the community reinforcement approach, that facilitate participation in abstinence-oriented social events, as well as interventions that stress other alternative reinforcers, can have a positive impact.⁴⁵⁻⁴⁹ Interventions that facilitate exercise and other forms of physical activity also appear to be promising.³¹

Longitudinal studies by Vaillant and colleagues suggest that long-term recovery is associated with several factors, including substitute dependencies (e.g., medi-

tation, compulsive hobbies), new social supports, and increased hope and self-esteem.^{50,51} According to Vaillant, participation in religion and self-help programs can be particularly useful for rekindling hope and rebuilding self-esteem. At this time, the therapeutic goals in this third category are less likely to be addressed in continuing care interventions than abstinence management or comorbid problem-management goals. However, they are perhaps the only goals that are truly specific to the continuing care phase of treatment.

Data gathered at entrance to continuing care on progress toward achieving abstinence during the initial phase of treatment and current comorbid problem severity could be used to prioritize therapeutic goals for continuing care. For patients who have achieved abstinence and have relatively low levels of comorbid problem severity, continuing care could place comparatively greater emphasis on facilitating alternative reinforcers. For the abstinent patient with comorbid problems, the greatest emphasis would be on the reduction of these problems, followed by the facilitation of alternative reinforcers and the management of abstinence. Conversely, for patients who had not achieved stable abstinence during the initial phase of treatment and for those who relapse during continuing care, abstinence management would be the highest priority goal, along with comorbid problem management for those who also have serious problems in other areas. Further research would be needed to evaluate the utility of such an approach to prioritizing therapeutic goals during continuing care. At this point, no studies have directly addressed this issue.

Finally, although addiction is often a chronic, relapsing disorder, it is not economically feasible to provide long-term treatment for all or even the majority of individuals with substance abuse disorders. Therefore, during continuing care, patients should assume increasing responsibility for their recoveries by making the sort of lifestyle changes that will support continued abstinence once formal continuing care has ended. Active and regular participation in self-/mutual-help organizations such as Alcoholics Anonymous is one of the more effective vehicles through which to effect and sustain these sorts of lifestyle changes and may be at least as important as formal continuing care.¹² Therefore, one of the crucial goals of continuing care should be to prepare patients to cope effectively when they are no longer in treatment.

3.2.3. Need for Further Research. It is clear from this review that there is a great need for further research on the continuing care phase of treatment for alcohol use disorders. First, the lack of strong and consistent empirical support for the effectiveness of continuing care suggests that additional research is needed on the content of these interventions. Potential research topics include the identification of specific therapeutic goals and tasks that facilitate the maintenance of abstinence or sharply reduced use and detailed examinations of factors that lead to relapse during continuing care. For example, there is now convincing evidence that posttreatment commitment to absolute abstinence is a strong and consistent predictor of better substance use outcomes,^{52,53} as is participation in self-help programs.^{12,54} However, little is known about the therapeutic processes that effect abstinence com-

mitment. Information generated by studies on therapeutic goals and tasks could be used to modify existing interventions or develop new approaches, which could then be subjected to rigorous experimental evaluation.

Second, there is little empirical information on the optimal frequency or duration of continuing care with regard to efficacy and cost-effectiveness, or whether this varies as a function of patient characteristics and progress toward treatment goals. For example, it is possible that low-intensity follow-up over prolonged periods of time via the telephone, coupled with self-monitoring of severity of cravings and any drinking episodes, might be a cost-effective approach to the treatment of patients with histories of repeated relapses (i.e., those for whom alcoholism truly resembles a “chronic” disease). Third, the effectiveness of naltrexone and other medications that appear to reduce use as part of continuing care has yet to be evaluated. This is likely to become a more important issue as other effective pharmacological interventions are identified. Fourth, more information on the long-term effectiveness of continuing care is needed. Only four of the controlled studies in this review had follow-ups of two years or more.

Finally, there is great interest among substance abuse treatment providers and health care policy makers in the identification of “performance indicators” that can be used to document the impact of treatment, without having to resort to expensive and time-consuming outcome studies. Typically, performance indicators are measures that are collected during treatment that are predictive of posttreatment outcome, such as the achievement of initial abstinence and treatment completion. With regard to continuing care, performance indicators collected at the end of a more intensive initial phase of treatment could be useful in deciding (a) when patients are ready to move to continuing care, and (b) what therapeutic goals are appropriate during continuing care. Performance indicators collected during continuing care would facilitate the assessment of progress toward therapeutic goals. This information could form the basis for decisions concerning the maintenance or discontinuation of specific services as well as discharge. Further research is needed on the relationship of treatment process and patient status during continuing care to post-treatment outcomes in order to develop such performance indicators.⁵⁵

4. Final Conclusions

Within an outpatient service delivery system, the continuing care phase of treatment is a period for habilitation/rehabilitation in important life areas, following the achievement of abstinence, or at least a sharp reduction in use, during a more intensive initial treatment phase. This may best be accomplished through a combination of core addiction services to maintain abstinence motivation and address craving, through interventions that address co-occurring psychiatric, social, and life skills problems, and through additional interventions designed to identify, facilitate, and strengthen patients’ existing skills, interests, and talents. For patients who have already managed to achieve a toe-hold on abstinence, perhaps the most important function of continuing care is to ensure that these individuals get a clear

sense that abstinence can be more satisfying and rewarding than further substance use.

In addition, within outpatient service delivery systems, continuing care should probably have more fluid boundaries with adjacent levels of care than was the case in the old residential treatment—aftercare model. Length of stay in one level of care and point of transition to less intensive treatment should be determined by progress toward therapeutic goals, although more research is needed to establish what these goals should be. One important question is whether patients who do not achieve initial abstinence while in the first phase of care should “graduate” into continued care or be retained in a more intensive treatment until abstinence is established. When patients who are in the continuing care phase of treatment suffer slips or relapses, it may be necessary to increase the intensity of continuing care services or provide additional services.

As the findings of this review point out, the widespread belief that formal continuing care promotes abstinence is not strongly supported by the studies that have been done to date. Given that we are in an era of health care cost containment, it is particularly important to develop continuing care interventions that will yield positive effects on substance use and psychosocial functioning outcome measures when subjected to rigorous empirical evaluation.

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A Comparative, Process-Effectiveness Evaluation of VA Substance Abuse Treatment

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Abstract. Over 3,000 patients from 15 VA inpatient, substance abuse treatment programs showed considerable improvement from intake to a one-year follow-up. Patients in 12-step programs, as opposed to cognitive-behavioral (CB) or eclectic programs, and those with more extended continuing outpatient mental health care and 12-step self-help group involvement, were more likely to be abstinent and free of substance use problems at follow-up. Consistent with their better one-year outcomes, patients in 12-step programs improved more between intake and discharge than CB patients on proximal outcomes assumed to be specific to 12-step treatment (e.g., disease model beliefs) and as much or more on CB proximal outcomes. Proximal outcomes assessed at treatment discharge and follow-up were, at best, modestly related to one-year substance use and other outcomes. No evidence was found that CB or 12-step treatment is more beneficial for certain types of patients.

Health services research focuses on the “effectiveness” of interventions when administered under normal conditions of care. Some effectiveness evaluations also focus on the processes leading to positive patient outcomes and the types of patients who benefit most from different treatment approaches. The need for more data in these areas is especially acute in the substance abuse field, given the dearth of information on treatment processes, the continuing debate about the effectiveness of different forms of treatment,¹ conflicting findings regarding patient-treatment matching, and concerns about the generalizability of findings from “efficacy” trials (where treatment is delivered under idealized conditions to highly selected patients) when implemented in actual clinical practice.² Periodic process-effective-

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ness evaluations can be an important asset in gauging the performance of programs and in trying to improve the quality of care in a substance abuse treatment system.

The Department of Veterans Affairs (VA) is the largest provider of substance abuse treatment in the United States. Almost a quarter (23%) of all inpatients discharged from VA medical facilities in fiscal year 1998 had a primary or secondary substance use disorder. About 20,100 veterans were treated in a VA substance abuse inpatient unit; in addition, 131,800 veterans received outpatient substance abuse care.³ Under the auspices of the VA Mental Health Strategic Healthcare Group in VA Headquarters, the Program Evaluation and Resource Center at the VA Palo Alto Health Care System has been conducting an evaluation of over 3,000 patients from 15 VA substance abuse treatment programs. Patients were recruited at treatment intake and completed discharge, one-year, and two-year follow-up assessments.

In this chapter, we provide an overview of project findings through discharge and the one-year follow-up; more details are in the source publications cited. We describe the guiding conceptual framework, evaluation design, and characteristics of the patients, examine overall outcomes in terms of patients' improvement from intake to the one-year follow-up, determine whether patients with psychiatric comorbidities, especially posttraumatic stress disorder (PTSD), experience worse outcomes than patients with only substance use disorders, identify outcomes for three prevalent treatment orientations (12-step, cognitive-behavioral, and eclectic), examine treatment processes underlying 12-step and cognitive-behavioral (CB) treatment, and assess the impact of continuing care and self-help group involvement following the initial inpatient phase of care. Finally, we determine whether different types of patients experience better outcomes in programs with different treatment orientations.

1. Conceptual Framework and Evaluation Design

1.1. Guiding Conceptual Framework

The evaluation was guided by a conceptual framework (see Figure 1) that assumes patients' outcomes (Panel IV) are influenced by their characteristics at treatment intake (Panel I) and the nature of the treatment received during the acute inpatient phase (Panel II), including length of stay and the program's staffing, treatment environment, work milieu, and treatment orientation. Patients' involvement in continuing care, both outpatient mental health treatment and 12-step self-help involvement (Panel III), is determined by patient and inpatient treatment program factors, and influences patients' outcomes. In our earlier work,⁴ we also examined the impact of patients' life context factors (e.g., stressful life circumstances), as they affected treatment participation and outcome. For this evaluation, we assessed some facets of patients' life contexts (e.g., partner support and friends support), but we do not focus on those factors here.

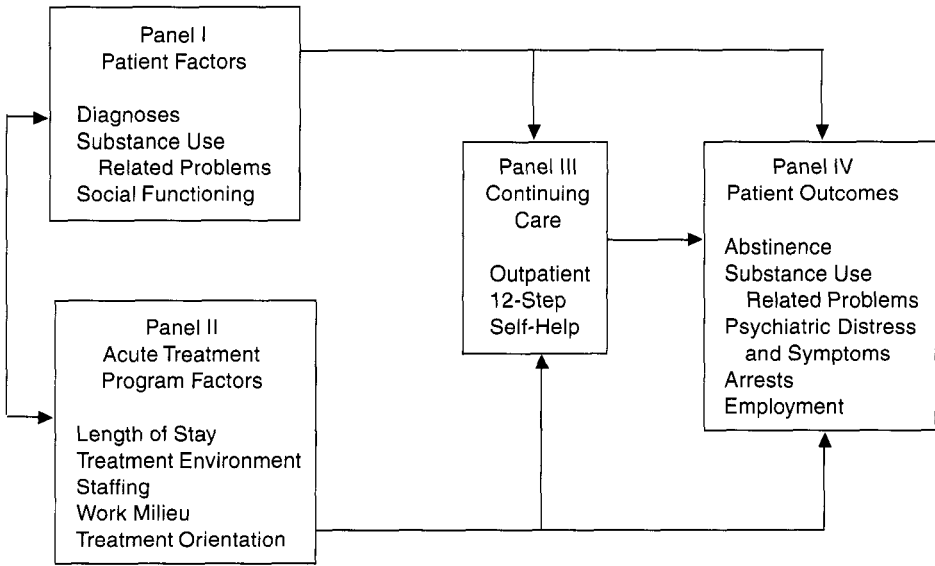


Figure 1. Conceptual framework guiding the evaluation.

1.2. Participants

In all, 4,192 male patients in 15 VA inpatient treatment programs located at 13 VA Medical Centers were invited to participate. Consistent with an “effectiveness” evaluation orientation, the only exclusion criterion was female gender (women comprised only 1%–2% of the patients). Otherwise, all patients who were in the program for standard (as opposed to “booster session”) substance abuse treatment were eligible to participate (patients were randomly sampled at larger programs). The 4,192 patients approached for the evaluation constituted 90% of those who were eligible; the other 10% left treatment before completing detoxification or were not invited to participate because of scheduling problems. Of the 4,192 patients, 494 (12%) refused to participate, leaving a final sample of 3,698 patients who completed an Intake Information Form (IIF).

1.3. Discharge and Follow-Up Assessments

At some point in the final 72 hours of a typical 21- or 28-day stay in inpatient treatment, participants were scheduled to complete a discharge information form (DIF). Most patients completing the DIF did so during this period. If a patient left a program unexpectedly, an attempt was made to obtain the discharge information from him in the community. In all, 3,218 (87%) of the 3,698 recruited patients completed a DIF before discharge or within the 30 days thereafter.

A follow-up was attempted on each patient approximately 12-months after he left the treatment program, using an inventory (the follow-up information form-FIF) identical in content to the IIF. Follow-ups took place an average of 13.4 (SD=2.8) months after patients left the program. For convenience, we refer to this as a “one-year follow-up.” Of 3,612 patients eligible for follow-up (86 had died), 3,018 (83.6%) completed the FIF. Most of the patients (93.7%) completed the FIF as a mailed, self-administered questionnaire, with the remainder completing the inventory during an in-person or telephone interview. Follow-up participants and nonparticipants (excluding deceased patients) did not differ when compared on age, education, ethnicity, employment status, and symptoms of alcohol dependence at treatment intake.

1.4. Patient Characteristics

The 3,698 patients in the intake sample were 42.8 years old (SD=9.7), on average; 49% were African American, 46% were Caucasian, 3% were Hispanic/Latino, and the remaining 2% were Asian, Native American, or other. Only 18% of the patients were married, 17% were separated, 39% divorced, 3% widowed, and 23% never married. More than three-quarters (76%) of the patients were unemployed when they entered treatment; patients who had been employed had earned an average of \$10,692 (SD=\$9,450) in an average of 19 weeks of work in the prior year. In all, 77% of the patients were living in a house or apartment most of the year prior to treatment, 9% were homeless, and 2% were in jail. The others lived in some form of structured environment (halfway house, domiciliary, hospital, inpatient treatment unit, shelter).

Using information on *International Classification of Diseases*, Ninth Revision (ICD-9-CM)⁵ diagnoses from the VA’s national Patient Treatment File, we determined that 36% of the patients had an alcohol-related diagnosis, 14% had a drug use diagnosis, and 51% had both alcohol- and drug-related diagnoses. Slightly more than half (52%) of the patients had used heroin or cocaine in the three months prior to beginning treatment. A total of 93% reported consuming alcohol in the prior three months, with the entire sample consuming an average of 10 ounces of ethanol per day. More than a third (36%) of the patients had at least one concomitant psychiatric diagnosis.

2. Findings

2.1. Overall Improvement on Substance Use and Functioning Outcomes

By the one-year follow-up, patients had improved significantly on each of six outcome criteria.⁶ The percentage of patients who were abstinent from alcohol and drugs increased from 2% in the three months prior to treatment, to 40% for the three months prior to the one-year follow-up. In addition, 30% of the patients reported no problems with alcohol or drugs at follow-up, a substantial improvement

over the 3% reporting no problems at treatment intake. Patients' psychiatric symptoms and social functioning also improved in the year after treatment, although not as substantially. Whereas 39% of patients had reported significant psychiatric distress and 33% had reported significant psychiatric symptoms at intake, those percentages declined to 25% and 23%, respectively, at follow-up. Proportionately fewer patients had been arrested in the past year (22%) at follow-up than was the case for the year prior to treatment (34%). Finally, whereas only 24% of the patients had been employed at treatment intake, 38% were employed at the one-year follow-up.

Patients with dual diagnoses, particularly patients with PTSD (a prevalent disorder among VA substance abuse patients), improved less on some outcomes than did patients with only substance use disorders. Specifically, compared to patients with only substance use disorders and those with other concomitant psychiatric disorders, patients with comorbid PTSD had more problems associated with their substance use at follow-up, as well as more psychiatric distress. They also were less likely to be employed than were patients with only substance use disorders.⁷ Patients with psychotic disorders or with anxiety/depression disorders were especially likely to experience significant psychiatric distress and symptoms, and to be unemployed.⁸ PTSD patients' poorer outcomes were only partially explained by their having more risk factors (greater reliance on emotional discharge coping, more positive expectancies regarding substance use, and fewer expectancies regarding the benefits of abstinence) when they entered treatment.⁷

2.2. Patients' Treatment in the Inpatient Phase of Care

To characterize the inpatient treatment phase, we considered patients' length of stay and the treatment environment, staffing, work milieu, and treatment orientation of the program in which patients received care.

2.2.1. Length of Inpatient Stay. Patients remained in inpatient treatment an average of 25 days, although length of stay varied. Specifically, 11% of the patients left treatment after 14 days or less, 64% stayed 15–28 days, and 25% remained in treatment 29 days or more. After controlling for patients' intake status and program treatment orientation, we found only one significant relationship between the length of inpatient treatment (as trichotomized above) and patients' one-year outcomes: Patients who had short episodes of inpatient care (1–14 days) were less likely to be abstinent (34%) than were patients in the other two length of stay groups (40% and 43%, respectively).⁶

2.2.2. Program Staff, Work Environment, and Treatment Environment. To learn more about the treatment programs, Kyrouz and Humphreys⁹ examined the relationship between workplace organizational factors and the treatment environment among 327 staff members from the 15 programs. In programs where there was greater managerial control, staff exhibited less sensitivity toward patients and patients were more alienated. There was more staff sensitivity and less patient alienation in programs that had a stronger addiction-as-disease model¹⁰ orientation. We

also found that programs with greater staff endorsement of disease model beliefs and a 12-step treatment orientation had work environments that were more supportive and goal-directed.¹¹ Such work environments tended to be associated with treatment environments that also were supportive and goal-directed. Patients in such treatment environments participated more in a range of services (substance abuse, educational and social, and family treatment), were more involved in self-help groups, were more satisfied with their treatment, improved more during treatment, and tended to participate more in outpatient, mental health continuing care.¹¹ PTSD patients had fewer psychiatric symptoms at the end of treatment in programs that were more supportive and well-organized.¹² These findings show that more goal-directed work environments are linked to more goal-directed treatment environments and to patients' treatment engagement and improvement.

The treatment environments of programs, in turn, were related to one-year outcomes among dual-diagnosis patients. Receiving substance abuse treatment in a program that had a stronger dual-diagnosis treatment orientation (i.e., a more supportive, service-intensive, medication-focused program that was well-organized, encouraged patients' involvement and practical goals, and that had clear rules) was associated with more patients being free of substantial psychiatric symptoms (71%) and employed (34%) than was receiving treatment in a program with a weaker dual-diagnosis orientation (65% and 25%, respectively).¹³

2.2.3. Program Treatment Orientation. Given the continuing uncertainty over the relative effectiveness of different forms of substance abuse treatment and the dearth of research on 12-step treatment, it is important to determine if treatment orientation is related to patients' treatment outcome. Traditional 12-step and CB treatment are the two predominant treatment orientations in the VA, either alone or in combination.¹⁴ We examined the relative effectiveness of three treatment types—12-step, CB, and “eclectic,” which mixed 12-step and CB elements.

2.2.3a Types of Treatment Programs. We used two data sources to classify the inpatient programs in terms of their treatment orientation. First, program directors were interviewed regarding the number of treatment hours devoted to 12-step activities and CB activities. Additionally, program directors completed an adapted version of the Drug and Alcohol Program Treatment Inventory (DAPTI),¹⁵ which assesses therapeutic activities and short-term goals characteristic of 12-step and CB (including relapse prevention) treatment. Based on this information, we classified five programs as 12-step, five as CB, and five as eclectic (combining both 12-step and CB) programs.

To verify our classification of programs into three types, a second source of information was used—the responses of staff at the 15 programs to the adapted DAPTI¹⁵ and to an adapted and shorter version of the disease model beliefs subscale^{10,16} developed by Moyers and Miller.¹⁷ The staff data supported the validity of our program type classifications.¹⁸

2.2.3b Treatment Orientation and One-Year Outcomes. In all, 897 patients in the one-year follow-up sample had been treated in a 12-step program, 1,148 in a CB program, and 973 in an eclectic program. After controlling for case mix differences

across the three program types, we found that patients in 12-step programs were more likely to have been abstinent (45%) in the three months prior to follow-up than were patients in CB (36%) or eclectic (40%) programs. Also, proportionately more patients treated in 12-step programs were free of substance use problems (34% compared with 30% among CB patients and 27% among eclectic patients). Finally, patients treated in both 12-step and CB programs were more likely to be employed (41% and 40%, respectively) than were patients from eclectic programs (33%).^{6,18} Involvement in 12-step self-help groups following the inpatient phase mediated some of the effect of inpatient 12-step treatment on one-year abstinence and freedom from substance use problems.¹⁹

2.2.3c Process Analyses: Change on Proximal Outcomes During Inpatient Treatment. Our findings with respect to patients' overall improvement and the somewhat better substance use outcomes of patients in the 12-step programs may be interpreted more accurately by examining patients' changes on process variables during inpatient treatment. If patients made the more immediate changes prescribed by the different treatment approaches during their stays, we would have greater confidence that some of the overall improvement shown by patients reflected the effect of treatment, and that the findings on outcome differences for the different treatment orientations apply to well-implemented programs.

Our process analyses focused on "proximal outcomes"²⁰ associated with 12-step and CB treatment. Proximal outcomes, sometimes referred to as "intermediate outcomes" or "suboutcomes," are outcomes that, according to the treatment program's underlying theory, should result from patients' treatment involvement and be conducive to positive ultimate outcomes (e.g., abstinence). In this regard, traditional 12-step treatment emphasizes accepting the disease model of addiction, an "alcoholic" or "addict" identity, and abstinence as a treatment goal, as well as becoming involved in 12-step activities (e.g., attending meetings, getting a sponsor, working the steps). Important cognitive proximal outcomes with CB treatment are an enhanced sense of self-efficacy to remain abstinent in high-risk situations, lowered expectancies regarding the positive consequences of drinking or using drugs, and heightened expectancies regarding the benefits of quitting or reducing drinking behavior or drug use. CB programs also train patients in cognitive and behavioral skills for avoiding substance abuse in high-risk situations, as well as generic methods for coping with stressful situations.

Patients in all three types of programs significantly improved on most of the proximal outcomes. Patients who stayed in inpatient treatment longer tended to make more change on at least some proximal outcomes, although in most cases those relationships were only modest in magnitude.²¹ As expected, 12-step patients improved more than CB patients on all of the 12-step proximal outcomes, except number of steps taken. They exhibited greater increases in endorsing disease model beliefs, accepting an alcoholic or addict identity, adherence to an abstinence goal, attending 12-step meetings, having close friends involved in 12-step groups, having a sponsor, and reading 12-step materials. With respect to the proximal outcomes focused on in CB treatment, however, CB patients made no greater change, and on three proximal outcomes, less change, than did 12-step patients.²¹

Patients with comorbid psychiatric disorders other than PTSD improved significantly during their inpatient stays on all proximal outcomes examined, except for substance use expectancies.¹² PTSD patients improved on all proximal outcomes, except for substance use and abstinence expectancies. Even though they improved on some proximal outcomes during inpatient treatment, patients with PTSD and those with other dual diagnoses reported using less effective coping responses and having fewer positive expectancies regarding the benefits of abstinence than did patients with only substance use disorders. In addition, PTSD patients perceived more benefits of substance use than did substance-use-disorder-only patients.¹²

2.2.3d Treatment Processes and One-Year Outcomes. The programs were successful in changing proximal outcomes between intake and discharge from inpatient treatment, especially among 12-step patients. As a next step, we examined the stability of changes in proximal outcomes over the one-year follow-up period and the predictive and cross-sectional relationships of proximal to one-year outcomes.

To be able to focus on more general proximal outcome indices and reduce the number of analyses, we developed composites that combined cognitive or behavioral proximal outcomes associated with 12-step or CB treatment. Most of the composite proximal outcomes exhibited an increase from intake to discharge, followed by a decline after discharge to a one-year follow-up level between the intake and discharge mean scores.²² These findings illustrate a pattern long known to clinicians: It is relatively easy to effect patient change during the initial phase of treatment, but more difficult to maintain those gains thereafter.

The relationships of greatest interest in testing the adequacy of the 12-step and CB treatment models are those between proximal outcomes at discharge and substance use outcomes at the one-year follow-up. None of the significant correlations between the 12-step cognitions and behaviors composites, as well as the CB cognitions composite, assessed at discharge, accounted for more than 1% of the variance in one-year abstinence. Likewise, the associations of discharge CB cognitions and general coping with the absence of substance use-related problems, although statistically significant, were very modest in magnitude ($r_s = .16$ and $.10$, respectively).²² Overall, our findings are similar to those of prior studies that generally have found weak to modest relationships with substance use outcomes for such proximal outcomes as 12-step involvement,²³ reinforcement expectancies,²⁴ outcome expectancies,²⁵ self-efficacy,²⁶ and general and substance use-specific coping skills.^{4,27-28}

We also found that, other than 12-step cognitions in relation to substance use-related problems, each of the proximal outcome composites assessed at the one-year follow-up was significantly related to abstinence and freedom from substance use problems assessed at follow-up.²² These cross-sectional correlations were generally moderate in magnitude, however. Thus, they provide only modest support for the theories underlying 12-step and CB treatment.

2.3. Patients' Involvement in Continuing Care

Substance abuse is a chronic, relapsing disorder, with treatment often taking place at various points over an extended period. One function that a given episode

of inpatient or residential care can serve is to motivate patients to become involved in continuing outpatient mental health care, which, in turn, has been linked to better substance abuse treatment outcomes.²⁹⁻³⁰ Likewise, inpatient or residential care may increase the likelihood of patients' involvement in self-help groups, such as Alcoholics Anonymous (AA), Narcotics Anonymous (NA), and Cocaine Anonymous (CA), which has been predictive of better outcomes.^{26,31-33}

In this evaluation, continuing outpatient mental health care was tracked in the VA's nationwide outpatient clinic file database and categorized as no outpatient mental health care in the year after discharge from inpatient care, two or more outpatient mental health visits in each of 1–3 months, two or more visits in each of 4–6 months, or two or more visits in each of 7 months or more. Self-help group participation following inpatient treatment was assessed by patients' reports of the number of AA, NA, and/or CA meetings attended in the three months prior to the one-year follow-up.

2.3.1. Outpatient Mental Health Care and One-Year Outcomes. Patients had moderate involvement in outpatient mental health care. About one-third (34%) of patients participated in two or more outpatient mental health sessions for each of 1–3 months, 13% participated in two or more sessions for each of 4–6 months, and 15% participated in two or more sessions for each of 7 months or more. Controlling for intake status, program treatment orientation, and participation in the index episode, we found significant associations between more extended outpatient care and abstinence, freedom from substance use problems, and fewer arrests at the one-year follow-up.^{6,34} For example, 65% of patients who had two or more outpatient mental health visits for seven months or more were abstinent at one year, versus only 34% of patients who had no outpatient care.⁶ Similar relationships were found for patients with and without comorbid Axis I psychiatric disorders.^{8,18}

2.3.2. Self-Help Groups and One-Year Outcomes. The majority of patients was involved in self-help groups following inpatient treatment. A total of 20% of patients attended between 1 and 9 meetings, 19% attended between 10 and 29 meetings, and 17% attended 30 meetings or more in the three months prior to follow-up. Patients who had prior 12-step group involvement, more religious behaviors, stronger disease model beliefs, and abstinence as a treatment goal at treatment intake, as well as those who were treated in 12-step and eclectic programs (as opposed to CB) and were discharged to some form of group housing, were more likely to participate in 12-step groups following their inpatient treatment episode.³⁵⁻³⁶

After controlling for intake status, program treatment orientation, and participation in the index episode and in outpatient care, more involvement in self-help groups was associated with a greater likelihood of abstinence and freedom from substance use problems, and a lower likelihood of significant distress and psychiatric symptoms at follow-up. Patients who participated more in self-help groups also were somewhat more likely to be employed.⁶

For patients treated in programs that emphasized 12-step beliefs and activities, the associations between 12-step group involvement and outcomes were even stron-

ger.¹⁹ Surprisingly, the relationships of 12-step group involvement to the outcome indices were consistent regardless of patients' religiosity and Axis I psychiatric disorders.^{18,36} Other analyses^{37–38} suggest 12-step self-help group participation may be linked to positive substance use outcomes because it leads to the development of more effective coping responses and to friendships with individuals who abstain from alcohol and drugs

2.3.3. Continuing Care, Proximal Outcomes, and Posttreatment Substance Use. We also found that continuing care—at least 12-step group involvement—was related to the maintenance of during-treatment proximal outcome gains over the follow-up interval.²² Earlier, we noted that patients who participated in both outpatient mental health treatment and 12-step groups following the inpatient treatment phase experienced better substance use and psychosocial functioning outcomes. Our process analysis suggests that continuing care may be related to ultimate outcomes by helping to maintain proximal outcome gains.

2.4. Patient–Treatment Matching

One method to enhance patients' substance abuse treatment outcomes, allow better allocation of treatment resources, and increase the overall cost-effectiveness of treatment systems, is to match patients to optimal types of treatment. Research on patient-treatment matching in the substance abuse field has yielded some scattered promising findings.³⁹ One limitation of most studies, however, is that they have not included process analyses, so little is known about why specific patient-treatment interactions did or did not occur.

2.4.1. Patient-Treatment Interaction Effects on One-Year Outcomes. Drawing on hypotheses examined in a large trial of patient-treatment matching for patients with alcohol use disorders (Project MATCH),^{40–41} we tested six patient-treatment matching hypotheses relevant for 12-step and CB substance abuse treatment.⁴² We expected that patients with poorer cognitive functioning at intake would benefit more from 12-step than CB treatment, due to the greater cognitive demands that CB treatment makes on patients. Given that abstinence is seen as the sole successful outcome of 12-step treatment, we believed that patients who already had abstinence as a treatment goal and patients who were more dependent on alcohol would have better outcomes after 12-step than CB treatment. Because 12-step treatment emphasizes spirituality, we hypothesized that patients for whom religion was more important would have better substance use outcomes after 12-step treatment than CB treatment. Finally, because CB treatment focuses on patients' acquiring coping skills to avoid substance use and to handle emotional and situational triggers to substance use, we expected that patients with fewer coping skills at intake and those with more psychiatric symptoms, would improve more after CB than 12-step treatment.

None of the six hypothesized patient-treatment interactions was significant in maximum-likelihood logistic regressions,⁴² however (earlier analyses also had indicated no interaction between treatment type and whether or not a patient had an

Axis I psychiatric disorder).¹⁸ As stronger tests of the patient-treatment matching hypotheses, we focused on just those patients who had received a “full dose” of treatment by completing their programs’ expected length of stay, as well as just those patients who had participated in the “purest” 12-step and CB programs (i.e., the two programs of each type in which treatment goals and activities were most consistent with the treatment orientation, as assessed by the surveys of program directors and staff). Again, no hypothesized interaction effect was significant for the “full dose” or purest program patient subsets.⁴²

2.4.2. Testing the Hypothesized Process Links Underlying the Hypothesized Interactions. Given the absence of significant patient-treatment matching effects, we wanted to explore where hypothesized processes underlying the expected interactions may have broken down. An overall interaction effect is depicted in Path C of Figure 2 where an effect of treatment orientation is moderated by a patient matching variable. For example, one of our patient-treatment matching hypotheses was that more religious patients would do better in 12-step than in CB treatment, whereas we expected no difference in outcome among less religious patients in the two types of programs.

Two processes that could account for an overall patient-treatment matching effect are illustrated in Figure 2. One process involves a patient matching variable interacting with treatment to determine a proximal outcome at discharge, which, in turn, is related to an ultimate outcome at follow-up (see Path (a) in Figure 2). For example, we expected that during 12-step treatment, more religious patients would acquire more 12-step-related beliefs and become more involved in 12-step activities than would less religious patients (Path (a) in Figure 2). In CB treatment, where 12-step beliefs and activities are not emphasized, we expected little change on 12-step proximal outcomes, regardless of how religious patients are. Greater acquisition of 12-step beliefs and greater involvement in 12-step activities by more religious patients during 12-step treatment were expected to lead to better ultimate outcomes at follow-up

In the second process that could account for a patient-treatment interaction, type of treatment is directly related to a proximal outcome. The patient matching

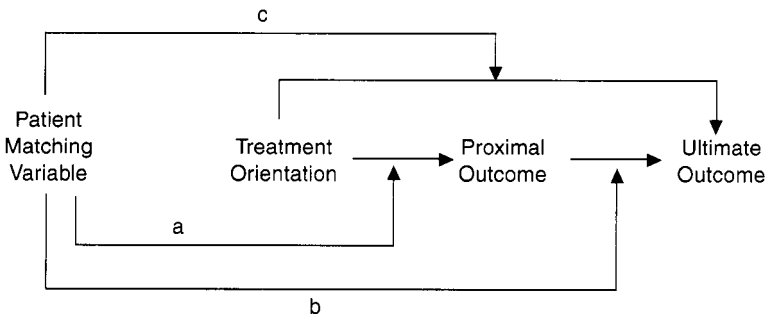


Figure 2. Two process mechanisms that can account for an overall patient-treatment interaction effect.

variable interacts with the proximal outcome to produce ultimate outcomes (Path (b) in Figure 2). For example, we believed that 12-step programs would instill 12-step beliefs and involve patients in 12-step activities to a greater degree than CB programs (as has already been demonstrated). After leaving inpatient treatment, however, religious patients might retain their 12-step beliefs and continue their involvement in 12-step activities more than less religious patients, and therefore, show better outcomes. Thus, the interaction between patient religiosity and type of treatment on ultimate outcomes could be explained by differences in what patients retained once inpatient treatment had ended, rather than by differences in what they acquired during inpatient treatment.

To understand where these two basic processes might have broken down, we examined each process with respect to each of our six patient-treatment matching hypotheses. The hypothesized processes were examined in one random half of the patient sample, and, if significant effects emerged, tested for replication in the other half of the sample.

2.4.2a Examining Pathway 1. To probe the process mechanism depicted in Path (a) in Figure 2, the interactions between patient matching variables and treatment type (12-step and CB) were examined in relation to each of the proximal outcome composites. Three significant interactions in the first half sample were confirmed in the second subsample. Contrary to hypothesis, CB treatment was less effective than 12-step treatment in producing improvement on substance-specific coping for patients with fewer coping skills and more psychiatric symptoms at intake. As expected, patients who were more alcohol dependent showed greater gains in 12-step activities and behaviors at the end of 12-step inpatient treatment than after CB treatment.⁴²

To transmit a patient X treatment interaction on a proximal outcome to an ultimate outcome, such as abstinence, the proximal outcome must be related to the ultimate outcome (see Figure 2). However, discharge substance-specific coping was not significantly associated with either abstinence or freedom from substance use problems at the one-year follow-up. Discharge 12-step behaviors were significantly correlated with abstinence at one year in both the exploratory and confirmatory subsamples, but the magnitude of those relationships ($r=.09$ and $r=.12$ in the two half-samples) was low. Consequently, discharge 12-step behaviors were a very weak transmitter to one-year abstinence of the patient-treatment interaction effect on 12-step behaviors.⁴²

2.4.2b Examining Pathway 2. To probe where in the second potential two-step pathway (see Path (b) in Figure 2) breakdowns might have occurred, we first examined the relationship of program type to proximal outcomes. Consistent with the findings already presented for the entire sample, being treated in a 12-step program (versus a CB program) was related to more participation in 12-step behaviors and activities, and to greater adherence to 12-step beliefs at discharge in both the exploratory and replication half-samples. The next link in the process chain requires the patient pretreatment (matching) variable to interact with the discharge proximal outcome in accounting for the one-year ultimate outcome (Path (b) in Figure 1). None of these interactions were significant when they were examined in the first random subsample, however.⁴²

3. Discussion

We have described the conceptual framework that guided a 15-program process-effectiveness evaluation of VA substance abuse treatment services, examined patients' overall outcomes in terms of the improvement shown from intake to a one-year follow-up, compared ultimate outcomes at one year and proximal outcomes at discharge and one year for patients treated in 12-step, CB, and eclectic treatment programs, examined the impact of patient participation in continuing care and self-help groups, and focused on patient-treatment matching and processes underlying hypothesized matching effects.

3.1. Patient Improvement Following Treatment

Although many of the patients had severe psychosocial liabilities at treatment entry, they showed considerable improvement by the one-year follow-up. The level of improvement is similar to that found in other substance abuse treatment evaluations.⁴³ Because our evaluation did not include a no-treatment control group, we cannot determine to what degree the patients' improvement reflects the effects of treatment versus other influences (e.g., personal and environmental factors, as well as regression to the mean). Nevertheless, the improvement shown is impressive, given the severity of the patients' disorders. We will monitor the extent to which patients maintain this improvement at future follow-ups.

Although dual diagnosis patients were no less likely to be abstinent than were patients with only substance use disorders, they were more likely to have problems associated with substance use and to experience significant psychiatric distress. Patients with PTSD also were more likely to be unemployed at follow-up than were substance abuse-only patients. These findings indicate that a concomitant psychiatric disorder is a significant risk factor for poor outcomes, and imply that dual-diagnosis patients should receive care for their psychiatric disorders while in substance abuse treatment.

3.2. Treatment Orientation and Proximal and Ultimate Outcomes

3.2.1. Treatment Orientation and One-Year Outcomes. Although prevalent in the United States in general, as well as in the VA healthcare system in particular, 12-step-based programs rarely have been the focus of comparative treatment research. In contrast, cognitive-behavioral treatments have considerable research supporting their effectiveness.⁴⁴⁻⁴⁵

We found no difference between 12-step and cognitive-behavioral patients on four of six outcome variables assessed at a 1-year follow-up. On the other two outcome indices, patients treated in 12-step programs were more likely to be abstinent and to be free of substance use problems than those treated in CB programs. Project MATCH found similar results for patients with alcohol use disorders.⁴⁰ Patients who received 12-step facilitation treatment in that trial did not differ from patients given CB or motivational enhancement therapy on two indices of posttreatment

drinking frequency and alcohol consumption. However, 12-step facilitation patients were more likely to be abstinent on a global outcome variable than were patients in the other two conditions. Combined with the findings of Project MATCH, the fact that patients in 12-step treatment in this VA evaluation fared as well or better than those in CB programs is important new evidence that 12-step treatment can be effective. We will determine if the superior outcomes of 12-step patients at one year are sustained at later follow-ups.

3.2.2. Treatment Orientation and Proximal Outcomes. Patients in traditional 12-step programs improved more than CB patients on all but one of the proximal outcome variables assumed to be specific to 12-step treatment. In contrast, patients in the CB programs made no greater change (and, on three variables, less change) than 12-step patients on the proximal outcomes typically focused on in CB treatment. This pattern is consistent with our findings regarding the better ultimate outcomes of 12-step patients on abstinence and substance use problems, and suggests, as suspected, that the proximal outcomes sometimes examined with respect to CB treatment actually may be general proximal outcomes of psychosocial substance abuse treatment, or at least of 12-step treatment.

It should be noted, however, that many of the 12-step proximal outcomes we assessed focused on concrete 12-step behaviors or activities (attending 12-step meetings, reading 12-step materials). In contrast, the proximal outcomes highlighted in descriptions of CB treatment are more general in nature, referring to broader cognitions (e.g., expectancies) and behaviors (behavioral coping skills), and not to specific treatment activities. If we had assessed specific CB treatment activities, such as “performed a functional analysis,” CB patients may have shown significantly more change on them than 12-step or eclectic program patients.

We also examined relationships of proximal outcome variables assessed at treatment discharge and follow-up to ultimate outcomes at follow-up. Overall, the results indicated that, although programs were effective in achieving their immediate aims, these changes were not sustained well over a one-year follow-up period. Patients who were involved in self-help groups were more likely to maintain treatment-induced change on proximal outcomes, however. Even if gains on proximal outcomes are maintained, they may not be sufficient to effect positive ultimate outcomes consistently. The modest cross-sectional relationships between proximal and ultimate outcomes at follow-up suggest that the theories on which 12-step and cognitive-behavioral substance abuse treatments are based need to be expanded, or that more critical proximal outcomes need to be identified and influenced by treatment.

3.3. Continuing Care and Self-Help Group Involvement

Our findings suggest that continuing outpatient care and/or self-help group involvement is a critical component in the recovery process for many substance abuse patients. The duration of outpatient mental health care was linked to better substance use and arrest outcomes at the one-year follow-up, relationships that

held for dual-diagnosis patients, as well. Future research should disaggregate the effects of the duration and intensity of continuing care, given that most previous studies have focused on the amount (duration X intensity) of continuing treatment. Such research may be able to identify cost-effective duration-intensity combinations for specific types of patients.

Self-help group participation also was linked to better outcomes—abstinence, freedom from substance use problems, good mental health, and employment. Again, these findings held for dual diagnosis patients, as well as those with only substance use disorders. Our analyses suggest that two reasons that self-help group participation is linked to better outcomes are because it produces more effective coping responses and encourages friendships with persons who do not use drugs or alcohol. The implication is that self-help group involvement should be encouraged by treatment providers as a cost-effective form of continuing care.³²

3.4. Patient–Treatment Matching

Our patient-treatment matching results are consistent with those of Project MATCH,^{40–41} which also failed to find consistent patient–treatment interaction effects for 12-step and CB treatments. The present evaluation complements Project MATCH by extending its findings to patients with a wider range of substance use disorders and patients in “real world” settings with natural variations in treatment.

Our analyses of the process links underlying the hypothesized patient-treatment matches revealed three patient–treatment interactions on discharge proximal outcomes that were replicated in both subsamples. However, the proximal outcomes were, at best, weakly associated with one-year ultimate outcomes, again reflecting the fact that 12-step and CB treatment models did not consistently produce lasting change on proximal outcomes. CB and 12-step treatment, as implemented here, simply may not have been powerful enough to produce strong effects, even for specific types of patients. On the other hand, the range of matching variable-treatment orientation combinations that were examined in our evaluation and Project MATCH is relatively small. Other types of patient-treatment interactions could occur, involving such combinations as patients needs and treatment services,⁴⁶ gender and gender-composition of treatment groups, and level of patient impairment and treatment setting.

3.5. Strengths and Limitations

Donovan⁴⁷ summarized many of the strengths of this evaluation, including the large heterogeneous sample drawn from multiple sites (ensuring sufficient statistical power), rigorous classification of treatment type based on multiple data sources, adjustment for multiple tests of significance, use of standardized instruments and determination of the psychometric properties of adapted, abbreviated measures, a high follow-up rate, attempts to verify self-reports of substance use, examination of treatment processes and patient-treatment matching, and generalizability to the

VA population. He concludes that the evaluation shows that “there need not be a drop in methodological rigor as a transition is made from randomized clinical trials to effectiveness studies” (p. 565).⁴⁷

Although the evaluation has many strengths, there also are some limitations. The sample of veterans, although large and drawn from 15 substance abuse treatment programs, consisted only of men. The extent to which our findings would generalize to women veterans in treatment is not known. Additional evaluations are needed that focus on substance abuse treatment outcomes among women veterans.⁴⁸

Our outcome data were drawn from patient self-reports. Although data from drug screens indicated relatively high consistency with patient reports of substance use,¹⁸ corroborating evidence was available for only a relatively small number of participants. Nevertheless, prior research⁴⁹ suggests that patients give accurate self-reports when data are collected under the conditions (e.g., assurances of confidentiality) that characterized the present evaluation.

Because patients were not randomly assigned to program type (12-step, CB, and eclectic), one concern is whether the differential changes on proximal and ultimate outcomes across program types actually reflect differences in patient pretreatment characteristics for the three program types. Although we attempted to control for patient pretreatment differences by taking into account several covariates, including the intake score of the proximal or ultimate outcome variable, it nevertheless is possible that those covariates did not remove all relevant differences in patients across the three types of programs.

4. Conclusion

For many years, efficacy trials were the predominant source of empirical information on treatment effects in the substance abuse field, primarily because of the usually greater internal validity of their treatment effect estimates. Today, there is greater appreciation of the external validity of effectiveness evaluation^{2,50} and the complementary nature of efficacy and effectiveness research.⁴⁷ The effectiveness evaluation summarized here was “conducted prospectively with a representative, heterogeneous sample, while preserving the fact of self-selection of treatment, progress-contingent treatment duration, and continuation of formal and informal care depending on a combination of initial patient motivation, providers’ ability to retain patients in treatment, and the strength of self-help group sponsors’ and members’ efforts to communicate their message of hope” (pp. 534–535).⁶ Such effectiveness evaluations can play an important role in the current effort to translate treatment research findings into clinical practice. Available practice guidelines have been drawn largely from the results of efficacy trials. Effectiveness evaluations provide some indication as to what the impact of such practice guidelines might be if they were broadly implemented.

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Screening and Brief Interventions for Alcohol Use Disorders in Managed Care Settings

Michael F. Fleming and Allan W. Graham

This chapter will focus on the identification and treatment of alcohol use disorders in general medical care settings in the context of managed care systems. The chapter will include the best data available on the prevalence of problem drinking, screening procedures, brief intervention (“talk therapy”), and implementation in managed care environments. The clinical protocols presented were designed for primary care clinicians working with patients seeking routine medical care. The protocol was developed for the National Institute on Alcohol Abuse and Alcoholism (NIAAA) Physicians’ Guide.¹ The four steps were designed to help clinicians to screen, to conduct a brief assessment, to provide advice and or referral and to establish follow-up procedures (see Figure 1).

1. Public Health Paradigm

The alcohol field is moving toward a harm reduction public health paradigm and away from an exclusive focus on abstinence-based programs. The harm reduction paradigm focuses on reducing alcohol use to low-risk levels of use. This change is based on the observation that most problems related to alcohol use occur in persons who are not alcoholic. It is estimated that the ratio of problem drinkers to those severely affected by alcohol is about 4:1.² Most people who experience alcohol-related accidents, health problems, or family difficulties do not meet criteria for alcoholism; they just drink too much, often in high risk situations.²⁻⁵ It is also be-

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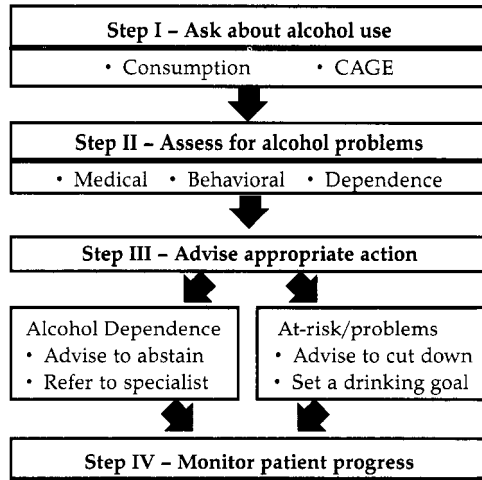


Figure 1. Steps for alcohol screening and brief intervention. (From National Institute on Alcohol Abuse and Alcoholism¹)

coming increasingly apparent, that many problem drinkers and persons who are alcohol dependent, who quit or reduce their use do so without specialized treatment.⁵⁻¹⁰ Studies suggest that just asking a problem drinker about alcohol consumption can reduce use.^{11,12} These findings parallel a large body of research showing that 80–90% of smokers who quit do so on their own with minimal professional intervention.¹³

Historically, treatment for alcohol problems has relied predominantly on abstinence-based 12 step treatment models such as the “Minnesota Model.” Recently, however, the alcohol field has shifted to include a broader range of treatment methods.¹⁴ A number of studies have demonstrated the efficacy of cognitive behavioral therapy, motivational enhancement therapy, 12-step facilitation therapy, and guided self-change.^{10,15,16} The public health perspective of harm reduction acknowledges the need to address the spectrum of alcohol use disorders and to offer patients a broad range of prevention and treatment methods.

The shift to this broader view has important implications for the US health care system. In the past, the physician's role was to identify persons with alcoholism and refer them for specialized treatment. Research conducted over the past 10 years has demonstrated that the role of physicians has changed.^{1,2,17} A number of alcohol screening tests are available that are sensitive and specific. Clinical trials have shown the effectiveness of brief physician advice in reducing alcohol use and associated problems in problem drinkers.^{18,19} The ability to follow patients and family members over a long period of time places physicians in a unique position to intervene and support the behavioral changes necessary to reduce the consequences of problem drinking.²⁰

2. Alcohol Use Disorders and Managed Care

Reducing adverse outcomes related to excessive drinking seems to be a straightforward problem readily amenable to a variety of solutions. Identification of alcohol use problems in health care settings is relatively easy.^{21,22} Brief intervention techniques have been shown to significantly reduce the amounts of hazardous drinking in medical patients.^{18,23} Improvements in associated medical problems come rather quickly once the patient stops alcohol use. Potential financial rewards are plentiful as measured by improved work performance and job attendance after excessive alcohol use is curtailed. So, shouldn't it be easy for health care systems to decrease the expense, morbidity, and mortality of alcohol abuse in their membership? Not necessarily.

The first problem facing any health delivery system is balancing competing demands for resources against anticipated beneficial outcomes.^{24,25} Careful analysis of conflicting and complementary goals is essential for developing the best strategies for screening and brief interventions for problematic alcohol use. Managed care and health maintenance organizations are particularly mindful of the necessity for balancing outcomes against costs as part of their capacity to survive amidst very competitive market pressures.

In general, outcomes likely to be promoted have dramatic changes in function, are financially large and have quickly demonstrable benefits, and have politically popular support. Outcomes which appear less attractive usually require longer times to show improvement, have smaller financial rewards to the health system, or serve the politically disenfranchised. Just because a particular outcome is achievable and even medically laudable does not mean that it can compete successfully against other laudable but perhaps politically more popular outcomes.

2.1. What is the Prevalence of Alcohol Use Disorders in HMO Settings?

For alcohol use disorders, the development of a systematic strategy for intervention begins with evaluating five areas of the problem:

1. Identification of at-risk drinkers
2. Treatment
3. Cost analysis of providing identification and intervention
4. Outcome evaluation in morbidity, mortality, and future health service utilization
5. Integration of medical and behavioral health services

A successful approach to screening and brief intervention must blend solutions from these problem areas into the organization's existing delivery system. To succeed, interventions for alcohol use disorders must be able to compete for resource dollars and staff time based on demonstrable cost-effectiveness. Further, skillful presentations to financially focused constituencies will be needed if these interventions are to be embraced by the health care organization. Financial benefits

accruing only to employers (e.g. through decreased absenteeism and improved worker productivity) are not likely to be influential within the HMO (Health Maintenance Organization) when cost-effectiveness of the intervention is being assessed only in terms of health service utilization. Somehow, financial savings to business, legal, and community entities need to be factored into the deliberations that influence the promotion of alcohol intervention programs.

Doing "the right thing" to benefit the community (in terms of lower alcohol-related costs to society) may not be financially sustainable for an HMO unless these benefits are in some way made tangible. For example, the HMO could be offered tax incentives for decreased crime related to substance abuse treatment. The HMO could be encouraged by appreciative companies continuing to offer the HMO as one of the health options for their employees. The HMO could be encouraged even more if the employer helped to further subsidized insurance costs of employees choosing the HMOs that have programs which have shown enhancement in workers' attendance and productivity.

The following examples from current literature show the degree of variation in estimated prevalence of alcohol use problems (alcohol dependence, abuse, and/or heavy drinking) in various clinical populations.

- Emergency department trauma victims at Harborview Medical Center: 43% (SMAST [Short Michigan Alcoholism Screening Test] ≥ 3), 37% (blood alcohol ≥ 100 mg/dl), and 19% (abnormally elevated GGT [gamma-glutamyl transpeptidase]) (n=2578)²⁶
- Mail-survey respondents of Veterans Affairs general medical clinics in Seattle, Vermont, and Boston: 41% (NIAAA current heavy drinkers [≥ 14 drinks/week or ≥ 5 drinks on an occasion] or *DSM-III R* positive, average age 67, 100% male, n=447)²⁷
- New patients attending inner city medical clinic, Wayne State University: 22% (current AUDIT [Alcohol Use Disorders Identification Test] ≥ 8 , mean age 45, 48% male, n=124)²⁸
- Emergency department patients aged 65 and over at University of North Carolina Hospital: 14% with alcohol problem in past 12 months and 24% for lifetime (CAGE ≥ 2 or self-report of "drinking problem," n=205)²⁹
- Older patients telephoned prior to a primary care visit at a Veterans Affairs hospital in Pittsburgh: 9% (AUDIT ≥ 8 , mean age 64, 100% male, n=714)³⁰
- Patients in primary care family practice waiting rooms in Wisconsin: 7.5% (World Health Organization criteria); 19.7% (NIAAA criteria for at-risk drinking, n=19372)³¹
- Patients in HMO waiting rooms in Colorado: 10.1% (AUDIT ≥ 7 for women, ≥ 8 for men, average age 50, 58% male, n=8680)³²
- Patients in HMO waiting rooms in Oregon: 8.2% (AUDIT > 8 , mean age 42, 70% male, n=8017)³³
- Mail-survey respondents of a California HMO: 7% "heavy drinkers" (NIAAA standard of ≥ 14 drinks/week, average age 51/29 % male, n=4264)³⁴

2.2. Methodological Considerations of Assessment

Figures 2–5 present the frequency of alcohol use disorders in a large primary care sample by gender and age.^{35,36} These figures illustrate the frequency of abstainers, low-risk drinkers, at-risk drinkers, problem drinkers, and dependent drinkers. The study was conducted on a sample of patients seeking routine medical care in four managed care organizations in Southern Wisconsin. The definition of abstainers and low-risk, at-risk, problem and dependent drinking is as follows:

- *Abstainers*: persons who drink less than 1 drink per month
- *Low risk alcohol use*: females or persons over the age of 65: <7 drinks/wk or <4/occasion; males 65 and younger: <14 drinks/wk or <4/occasion
- *At-risk alcohol use*: females or persons over the age of 65: >7 drinks/wk or >3/occasion; males 65 and younger: >14 drinks/wk or >4/occasion
- *Problem alcohol use*: 2 positive CAGE responses and/or evidence of alcohol-related medical or behavioral problems
- *Dependent alcohol use*: 3 or 4 positive CAGE responses and/or evidence of one or more symptoms (compulsion to drink, impaired control, relief drinking, withdrawal, increased tolerance)

Quantity and frequency determinations are consistent with the recognized dose–response characteristics of excessive alcohol or other drug use.^{37,38} Prior studies have shown that there is a linear relationship between *DSM-IV* dependence and the mean number of drinks consumed per day or the number of days drinking five or more glasses of alcohol in the past 12 months.³⁹ Dose-response is also the empiric foundation upon which DUI limits (driving under the influence of alcohol) have been set. Studies conducted in emergency department settings have found that the higher the BAL (blood alcohol level), the greater the severity of traumatic injury.^{26,40,41}

Test–retest reliability of quantity–frequency measures of consumption is most

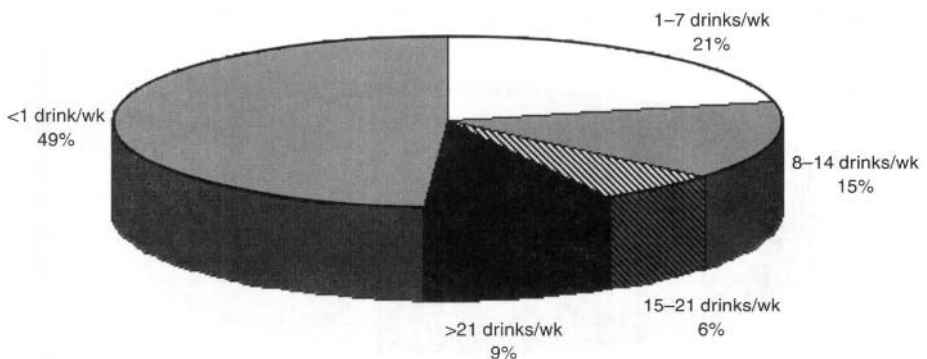


Figure 2. Twelve-month prevalence in primary care: Men ages 65–75. (Data derived from Adams *et al.*³⁶)

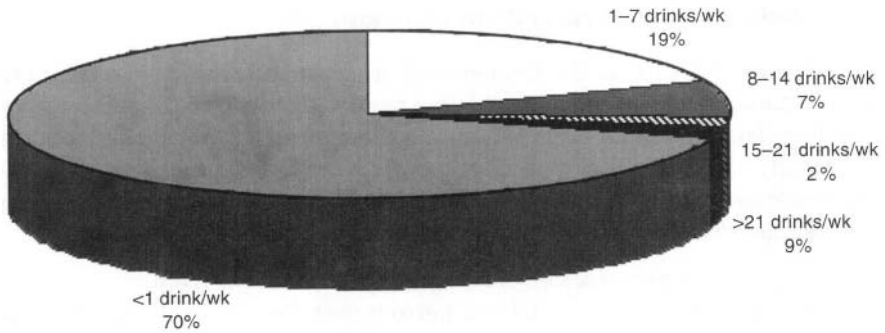


Figure 3. Twelve-month prevalence in primary care: Women ages 65–75. (Data derived from Adams *et al.*³⁶)

reliable in light drinkers and less reliable in heavy drinkers.⁴² Heavy drinkers also show less long-term stability in their drinking levels and report significantly decreased levels of consumption on retest after a long interval. Notably, the addiction treatment field has tended to under-emphasize quantity frequency measures in preference for emphasizing the behavioral consequences of the drinking.

Recommended quantity frequency questions are as follows:

1. Do you drink alcohol, including beer, wine or distilled spirits?

If yes:

2. On average, how many days per week do you drink alcohol?
3. On a typical day when you drink, how many drinks do you have?
4. What is the maximum number of drinks you had on any given occasion during the last month?

The single question of “how often in the past month have you had five or more drinks on one occasion” can identify at-risk drinkers or alcohol dependent drinkers with a sensitivity of 62% and a specificity of 92% using NIAAA criteria for at-risk drinking and *DSM-IV* criteria for alcohol dependence or abuse.^{38,43}

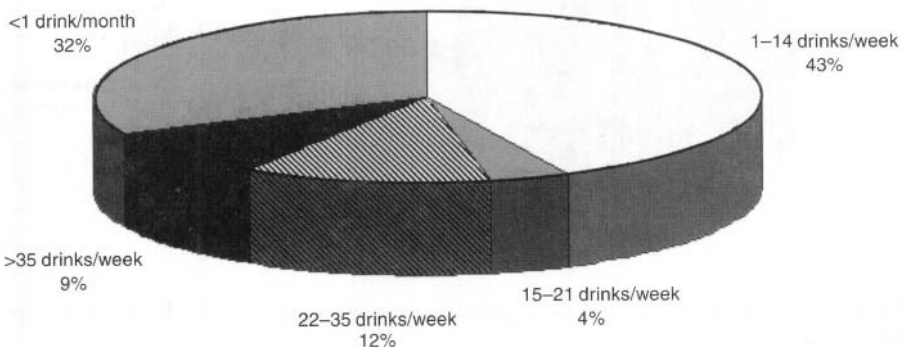


Figure 4. Twelve-month prevalence in primary care: Men ages 18–65. (Data derived from Manwell *et al.*³⁵)

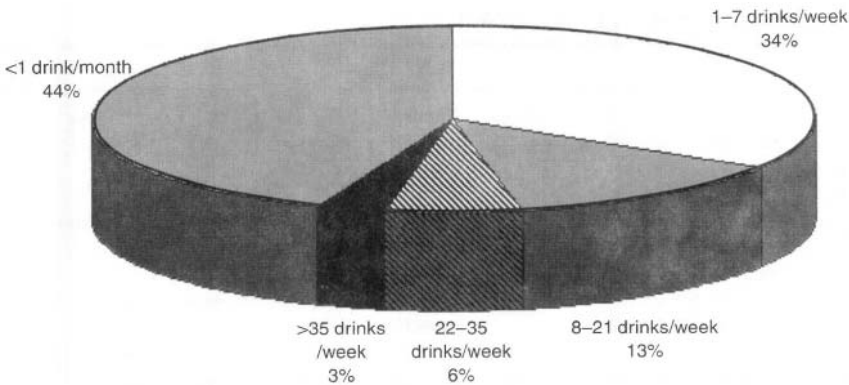


Figure 5. Twelve-month prevalence in primary care: Men ages 18–64. (Data derived from Manwell *et al.*³⁵)

Remarkable sensitivity and specificity have consistently been demonstrated in studies of the CAGE questions^{44,45} for detecting alcohol dependence and abuse. (C = have you ever felt you ought to Cut down on your drinking? A = have people Annoyed you by criticizing your drinking? G = have you felt bad or Guilty about your drinking? E = have you ever had a drink first thing in the morning (Eye opener) to steady your nerves or get rid of a hangover?). A score of 2 or more positive answers has a sensitivity of 75–95% and a specificity of 84–97%^{22,46} for alcohol dependence or abuse in varied populations. However, lower sensitivities have been found for populations composed primarily of White women (38%–50%).⁴⁷

The performance of the CAGE in community screening is likely to be less satisfactory due the lower prevalence in such samples compared to the health-care seeking populations. As an example, detecting heavy drinkers (≥ 20 drinks/week) and not alcoholics in a community sample, a CAGE score of 2 or more had a sensitivity of 47% and a specificity of 87% in a study of 40-year-old, Finnish men at a health screening.⁴⁸ In a similar study of primary care patients aged more than 60 years, 9% of men and 2% of women regularly drank over 21 drinks/week but the CAGE detected these at risk drinkers with a sensitivity of 40% and a specificity of 96%.³⁶

The CAGE is one of the most popular tools for alcohol abuse screening because of its simplicity, nonthreatening nature, brevity, and ease of recall by providers. The four questions have become the standard against which other screening tools must demonstrate superiority. Variations on the CAGE questions, such as the TWEAK, have modestly improved performance characteristics in selected populations.^{49,50} Gender and ethnicity have been shown to degrade the performance of the CAGE moderately.^{51,52}

The AUDIT (see AUDIT in Table I), developed by the World Health Organization, was intended to be more sensitive than the MAST (Michigan Alcoholism Screening Test) in identifying at risk drinkers who did not yet meet the criteria for alcohol dependence or abuse. The AUDIT performed well as a screening instrument in a large multinational trial of brief intervention for at risk drinking.³⁷

Table I. Alcohol Use Disorder Inventory Test (AUDIT)

AUDIT	0	1	2	3	4	Totals
1. How often do you have a drink containing alcohol? (One drink is a beer, glass of wine, or mixed drink)	Never	Monthly or less month	2-4 times a month	2-3 times a week	4 or more times a	
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more	
3. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
4. How often during the last year have you found that you were unable to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
5. How often during the last year have you failed to do what was normally expected from you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
9. Have you or someone else been injured as a result of your drinking?	No		Yes, but not in the last year		Yes, during the last year	
10. Has a relative, friend, doctor, or other health worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year	
						TOTAL ^b

^a From the World Health Organization, AMETHYST Project, 1987.

^b A total score of 8-15 may indicate a problem with alcohol use. You may want to ask your physician about possibly cutting down or becoming abstinent. A total score of 16 or more suggests a more serious problem. You should contact your physician or an alcohol treatment program for help.

Cut-off scores of 7-8 maximized discrimination for predicting trauma and hypertension, 12 for predicting social problems, and 22 for liver disease and gastrointestinal bleeding.⁵³ Further, the AUDIT is more sensitive to hazardous drinking than the MAST or the CAGE; the AUDIT is more reliable across ethnic and gender domains.^{49,51,54-56} The AUDIT may have less sensitivity among latinos.⁵⁷ A subset of the

first 3 questions from the AUDIT has been demonstrated to perform effectively as a screening tool for problem drinkers in late middle aged, male veterans.²⁷

Using the first 2 questions (quantity/frequency) of the AUDIT proved a useful tool in detecting current alcohol dependence among trauma victims in an emergency department⁴¹ with a sensitivity of 80–88% and specificity of 71–82%. Another variation combining AUDIT and CAGE includes the first two questions from the AUDIT (frequency drinking and drinks per drinking day) and the last three from the CAGE.⁴⁸ This “five-shot questionnaire” has been studied using a “gold standard” of self-reported weekly alcohol consumption and appears to differentiate effectively between moderate and heavy drinkers. However, if the “gold standard” is quantity and frequency, then assessing weekly alcohol consumption would appear to be a more direct approach, a fact also confirmed by Seppa.⁵²

Laboratory determinations have poor sensitivity and specificity for alcohol dependence and perform even less well for at-risk drinking.⁵⁸ Gamma-glutamyl transpeptidase (GGT) has been one of the more sensitive markers for alcohol dependence; but even its sensitivity will not exceed 50% in most office- or hospital-based studies and is particularly insensitive in adolescents and young adults.⁵⁹ Aspartate aminotransferase (AST) and alanine aminotransferase (ALT) are even less sensitive than GGT,^{59,60} typically being elevated in about 25–30% of alcohol dependent persons and less often in at risk drinkers. Mean corpuscular volume of red cells is also less sensitive than GGT and can be influenced by a rather wide range of other medical conditions.^{60,61}

Carbohydrate-deficient transferrin (CDT) has some modest benefits over GGT in detecting relapse drinking in alcoholic populations but has not proven sensitive enough to distinguish nonalcoholic, heavy drinkers from moderate or low risk drinkers.⁶² Combining three laboratory markers (GGT, blood alcohol, and mean corpuscular volume) produced a reasonably performing screening tool compared to the standards of CAGE and SMAST.⁶³ The sensitivity was 75%–85% and specificity 83%–85% when studied in a high prevalence population—emergency department trauma patients.²⁶

Biochemical determinations are of limited utility as screening tools. However, on an individual case basis, an abnormal laboratory value can be used by a provider as an effective tool to get the patient’s attention about the effects of his drinking and to assist in moving the patient toward changing drinking behavior.⁶⁴

Younger drinkers have greater risks of adverse consequences from their drinking than older drinkers.^{39,65} In addition, most screening studies are relatively less sensitive in populations of younger drinkers. Motivation to make changes or even recognize a problem with substance use is the hallmark therapeutic dilemma characterizing adolescent substance users. There appears to be no significant amount of HMO literature about screening and intervention for persons under age 18 with alcohol and substance use problems.

What do we know about screening HMO patients for alcohol use disorders? For HMO screening, especially in asymptomatic patients, low prevalence rates must be carefully analyzed relative to the acceptability of higher false positive rates. Any screening tool will have better sensitivity and specificity when studied in popula-

tions with high prevalence. Each organization engaging in broad-based screening must balance the problem of false positive results against the potential benefits expected from a particular intervention or treatment.

Within HMOs, opportunities exist to proactively identify members at risk for drinking related problems. Mailing questionnaires periodically to members to assess lifestyle and health care behaviors is a common practice. These questionnaires may be analyzed and responses sent to members offering feedback about the number of years gained or lost by various behaviors.

In summary, there are a number of alcohol screening and assessment tools available to managed care systems. We recommend following the NIAAA Physicians' Guide for screening.¹ All patients should be screened with alcohol quantity frequency questions on a regular basis. These questions could be incorporated into other routine screening question such as "Do you exercise 3 or more times a week?" and "Do you smoke cigarettes?" The CAGE questions may be utilized in patients with potential alcohol problems (e.g., hypertension) or in patients who appear to have some resistance or ambivalence with the quantity frequency questions. Assessment instruments that are useful in primary care settings include the AUDIT, MAST, and the SAAST (Self Administered Alcoholism Screening Test). Patients who screen positive on these screening or assessment tests should be classified into at risk, problem or dependent drinkers. Physician or clinicians can then apply brief intervention techniques to help patients cut down on their drinking or follow through with referral to a specialized treatment center.

3. What Is Brief Intervention?

Brief interventions are time-limited, patient-centered counseling strategies that focus on changing behavior and increasing medication compliance. Brief intervention is not unique to the treatment of alcohol problems; in fact, these counseling strategies are widely used by physicians and other health care professionals for a number of other behaviors. This method is routinely used to help patients change dietary habits, reduce weight, stop smoking, reduce cholesterol or blood pressure, or take medications as prescribed.

While the definition of brief intervention and brief counseling varies across trials and clinical programs, a number of common elements can be identified:

1. Assessment: *"Tell me about your drinking?" "What does your family or partner think about your drinking?" "Have you had any problems related to your alcohol use?" "What do you think about your drinking?" "Have you ever been concerned about how much you drink?"*
2. Direct feedback: *"As your doctor/therapist I am concerned about how much you drink and how it is affecting your health." "The car accident is a direct result of your alcohol use." "Your unborn child could develop a birth defect if you continue to drink."*
3. Contracting, negotiating, and goal setting: *"You need to reduce your drinking."*

What do you think about cutting down to three drinks 2–3 times per week?” “I would like you to use these diary cards to keep track of your drinking over the next two weeks. We will review these at your next visit.”

4. Behavioral modification techniques: *“Here is a list of situations when people drink and sometimes lose control of their drinking. let’s talk about ways you can avoid these situations.”*
5. Self-help directed bibliotherapy: *“I would like you to review this booklet and bring it with you at your next visit. It would be very helpful if you would complete some of the exercises in this guide.”*
6. Follow-up and reinforcement (establishing a plan for supportive phone calls and follow-up visits). *“I would like you to schedule a follow-up appointment in one month to review your diary cards and answer any questions you might have. I will also ask one of the nurses to call you in a couple of weeks to see how things are going.”*

The number and duration of sessions have varied by trial and setting. The classic brief intervention performed by a physician or nurse usually lasted for 5–10 minutes and was repeated 1–3 times over a 6–8 week period. Other trials that utilized therapists or psychologists as the interventionist usually had 30–60 minute counseling sessions for 1–6 visits. Some trials developed manuals or scripted workbooks. Others studies left it up to the interventionist to decide how to conduct the intervention based on a training program. Some studies used the FRAMES mnemonic developed by Miller as a guide for the intervention.⁶⁶

4. What We Know About Brief Intervention

1. Brief intervention counseling delivered by primary care providers, therapists, and research staff can decrease alcohol use for at least one year in nondependent drinkers in primary care clinics, managed care settings, hospitals, and research settings.^{18,23,37,67-72} In positive trials, reductions in alcohol use varied from 10–30% between the experimental and control groups.
2. The effect size for men and women is similar.^{19,37,71,73}
3. The effect size for persons over the age of 18 is similar for all age groups including older adults.^{11,37,69–71,73,74}
4. Brief intervention can reduce health care utilization.^{19,64,72,75} Project TrEAT¹⁹ and Kristenson found reductions in emergency room visits and hospital days. Gentilello found reductions in hospital readmissions. Israel reported reductions in physician office visits.
5. Brief intervention can reduce alcohol-related harm. A number of studies found a reduction in laboratory tests such as GGT levels,^{64,73,75,76} sick days,^{64,77} and drinking and driving.^{74,78}
6. Brief intervention may reduce mortality.^{64,79} These trials found twice as many deaths in the control group as in the experimental group. Kristenson reported 10 deaths in the control group and five in the experimental group 60

months post intervention. Project TrEAT⁷⁹ found seven deaths in the control group and three in the experimental group during a 48-month post intervention period.

7. Brief intervention may reduce health care and societal costs. An analysis of 12-month outcome data for Project TrEAT found a benefit-cost ratio of 5.6 to 1 for health care and societal costs.⁷⁸ Preliminary analysis of the 48-month outcome data for Project TrEAT indicate a benefit-cost ratio of 3.8 to 1 for health care costs and 39 to 1 for societal costs.⁷⁹ Cost estimates performed by Holder⁸⁰ using indirect data reported a cost saving of 1.5 to 1. Additional cost studies are in progress by several investigators (Kramer, University of Pittsburg; Babor, University of Connecticut). Data derived from benefit-cost studies are critical because many managed care organizations will not implement alcohol screening and brief intervention until they have compelling evidence that these clinical activities reduce morbidity, mortality, and health care costs.

5. What We Don't Know About Brief Intervention

1. What are the essential elements—the so-called “black box” of brief intervention treatment? Is the effect related to assessment, feedback, education, a discussion of norms, cognitive dissonance, contracting, diary cards, bibliotherapy, clinician empathy, discussing cues and alternatives, or follow-up visits? What is the appropriate balance of clinician-directed versus client-centered therapy?
2. Is there a relationship between the number of provider contacts and outcome? A majority of the positive trials included four or more contacts delivered over 6–8 weeks. It is not clear if additional brief intervention sessions over a longer period would improve efficacy. Project TrEAT⁷⁹ found a sustained effect in the experimental group for 48 months with four contacts over an eight-week period. Additional studies are needed.
3. Is there a relationship between the length and complexity of the intervention and outcome? Trials comparing brief intervention to more extensive counseling suggest that minimal benefit is derived from more extensive and complex counseling.^{18,37,81} Project MATCH⁸² found minimal difference between the MET (Motivational Enhancement Therapy) group and two other arms of the trial that utilized 2–3 times as many sessions.
4. Is brief intervention more effective when performed by a member of the patient's personal health care team as opposed to a researcher who does not have a professional relationship with the research subject? Most of the large positive trials utilized the subject's personal provider to deliver the brief intervention protocol.^{18,19,23,64,71,73,75,83} A few trials used researchers with clinical skills to deliver the intervention.^{37,70,72,74,84}
5. Does brief intervention increase rates of abstinence before, during, and

after pregnancy? Five uncontrolled trials conducted in the 70's suggested a treatment effect.⁸⁵ Two recent randomized trials conducted by Hankin (personal communication, 1999) and Chang⁸⁶ demonstrated minimal differences between control and experimental groups. A number of trials recently funded by the CDC and NIAAA should provide new information in this area. There are gaps in the current research portfolio regarding brief intervention with women in the post-partum period.

6. Does brief intervention reduce rates of adolescent alcohol use? NIAAA-funded trials are in progress to address this question.
7. Does brief intervention reduce alcohol use in persons admitted for trauma? Recently completed trials have found mixed results. Two different studies conducted at the University of Cincinnati by Sommers and Dyehouse found no effect (unpublished data). The trial by Gentilello⁷² was positive. The opposite results of these studies may be related to sample size issues. The trial conducted by Gentilello had a sample size nearly three times as large as studies conducted at the University of Cincinnati. Additional trials are in progress.
8. Does brief intervention reduce alcohol use in persons treated in the emergency room? An uncontrolled trial conducted by Hungerford⁸⁴ showed reductions in AUDIT and readiness to change scores. Preliminary data reported by Carty⁸⁷ did not reveal significant differences in alcohol use or the DrInC scale at three months post-intervention. Monti⁷⁴ reported significant decreases in alcohol-related harm but no differences in alcohol use in a sample of older adolescents.
9. What is the efficacy of brief intervention combined with pharmacotherapy? A pilot study conducted by a Yale group found encouraging results.⁸⁸ Project COMBINE,⁸⁹ an NIAAA supported research study, should further address this question. While the Medical Management protocol to be used by clinicians is more extensive and longer in duration than the majority of brief intervention trials, COMBINE should provide new information in this area.
10. Does brief intervention treatment work with persons who are alcohol dependent? While a number of trials included very heavy drinkers who were probably alcohol dependent,^{37,73} a stratified analysis for this group was not reported. Most of the trials discussed in this review specifically excluded persons who were alcohol dependent. No trials are currently in progress to address this question. While Project MATCH⁸² found no difference between the four-session MET intervention and more extensive counseling delivered to subjects who were alcohol dependent, the study did not specifically address this question.
11. Is brief intervention as effective as more intensive and costly specialized treatment for problem drinkers and persons who are alcohol dependent? No current trials are in progress to specifically address this question. Again, the findings from Project MATCH suggest that four sessions may be as effective as more extensive therapy, however, this trial did not use group

therapy, AA meeting attendance, supportive counseling, or other interventions that are usually part of standard outpatient alcohol treatment.

12. Are there certain groups of patients who are more likely to respond to brief intervention treatment? Completed trials suggest that 60–70% of heavy/problem drinkers do not respond to brief intervention. Project TrEAT found that smokers did not respond as well as non-smokers.¹⁹ TrEAT also found that other co-variables such as depression, conduct disorders, and SES factors did not predict a response to brief intervention. Recent trials have assessed readiness to change and found mixed results.⁸⁷ Much more research needs to be conducted in this area. One of the major problems, however, is the issue of power, sample size, and resources. All but four studies^{23,37,72,73} have had fewer than 300 subjects per group with many having fewer than 100 subjects per cell.
13. How do we implement primary care based screening, brief intervention and referral into the US health care system? All NIAAA funded trials to date have been *efficacy trials* as opposed to *effectiveness trials*. A study conducted in Australia found mixed results. The Phase IV World Health Organization Trial⁹⁰ attempted to compare implementation methods. They compared three methods: direct mail, telemarketing and academic detailing. While academic detailing resulted in greater use of the clinical materials distributed than the other methods, methodological limitations make interpretation of the findings difficult.
14. How do we develop a “stepped care approach” to the treatment of patients who are adversely affected by alcohol use? How can we develop a continuum of care from primary care to specialized treatment for patients who do not respond to brief intervention? Alcohol treatment programs continue to be separate from general medical care centers and academic medical centers. We need to develop and test better models of care.

In addition to these 14 research areas that require additional research, there are a number of methodological concerns and challenges that should be addressed by scientists and clinicians. These issues have a significant effect on the strength of the evidence. Managed care systems should interpret the brief intervention literature with an understanding of these methodological issues. The following is a list of reasons a number of recent brief intervention have found minimal differences between control (“usual care”) and treatment groups.

- a. Inadequate sample size: While the effect size was robust in many trials, nearly all trials have found large reductions in alcohol use by the control groups. Most trials with fewer than 100 subjects per group have been negative or equivocal.
- b. Spontaneous reductions in alcohol use in the control groups: As stated above, nearly all trials have demonstrated a reduction in alcohol use by the control group. In most of the negative trials, the control groups change as much or more than the experimental groups. There are at least four possible reasons: (1) regression to the mean phenomena; (2) historical effects—people

reduce their drinking over time due to health, family, societal, work and cultural factors; (3) Hawthorne effect—the intervention effect of research procedures; and (4) calling attention to a person's drinking may cause a reduction in use.

- c. Failing to mask the intent of the study: Most of the strongly positive trials conducted a partially blinded study. Studies conducted by Kristenson,⁶⁴ Wallace,⁷³ Israel,⁷⁵ Fleming,^{23,69} Ockene,⁷¹ and Gentilello⁷² screened patients using imbedded alcohol screening procedures that placed alcohol use in the context of other health issues, such as smoking, exercise, diet, trauma, etc. An attempt was made to blind subjects randomly assigned to the control group to the true nature of the study. For example, in Project TrEAT,¹⁹ all baseline and follow-up interview alcohol questions were imbedded in a lifestyle survey that also included questions about tobacco use, exercise, weight concerns, mental health issues, and sleep. Many of the studies that did not try to mask the intent of the study were negative or equivocal due to large reductions in alcohol use by the control groups.
- d. Failure to blind the intervenor to members of the control group: Many successful studies did not inform the clinician as to which patients were in the control group until the trial was completed. Training and sensitizing clinicians can result in interventions with control subjects.
- e. Lack of standardization in the delivery of the intervention protocol by the intervenors: Methodological issues identified in some of the studies include the absence of: (1) scripted workbooks or standard protocols; (2) skills training assessments with booster training sessions prior to the first interventions; and (3) quality control procedures to assure standard delivery across sites and intervenors.
- f. Low follow-up rates: Even many of the positive trials report follow-up rates of less than 80%. Trials conducted in residency teaching sites, emergency departments, and hospitals have the poorest follow-up rates; community-based primary care sites generally have the highest. While the presence of HMOs has influenced the number of persons who change health care providers each year, community clinics still have relatively stable patient populations that are easier to follow-up. Trials conducted in these settings by Wallace,⁷³ Fleming,^{23,69} and Ockene⁷¹ report drop out rates at one year of 18%, 7%, 8%, and 15%, respectively. Project TrEAT⁷⁹ had a follow-up rate of 83% at 48 months. Most studies indicate that follow-up rates are lower in the experimental groups.
- g. Use of screening instruments such as the AUDIT, MAST, T-ACE, or Trauma scale to collect baseline and follow-up data as opposed to using time line follow back (TLFB) procedures in order to obtain better estimates of alcohol use: Some trials randomized subjects based on the results of screening tests. As a result, subjects with no current alcohol use were randomized into the trial. Since alcohol use is the main effect variable in the studies, this significantly limits the power of the trial to detect differences. For example, in the study conducted by Chang⁸⁶ that used a positive score on the T-ACE as the

entry criteria, nearly one-half of the pregnant women enrolled in the trial were not drinking any alcohol at the time of randomization. Many trials did not use timeline follow-back procedures or similar methods to assess alcohol use. They estimated use by multiplying the average *frequency* by the average *quantity* reported over a period of time, such as a year in the case of the AUDIT.

- h. Dropping subjects who were randomized but who did not complete one or more intervention sessions.
- i. The absence of intention to treat procedures.
- j. The failure to blind the researchers conducting the follow-up interviews.
- k. The absence of a laboratory test that is sensitive and specific in a non-dependent population

We will review five studies in detail that were conducted in HMO settings. Two were negative trials and three were positive. These trials illustrate the complexity of brief intervention trials and the challenges associated with community-based settings.

Trial 1:

One of the first community-based U.S. trials was conducted in a family medicine teaching clinic in Texas with a sample of predominantly Mexican Americans.⁸¹ The trial screened 4,014 patients seeking routine care in primary care clinics; 279 of these subjects were randomized into one of four groups: no treatment, patient education only, physician intervention only, and both patient education and physician intervention. Seventy-eight percent of the subjects completed 12-month follow-up procedures that assessed alcohol use, health status, and GGT levels. No significant differences were found between the four groups at follow-up; all groups demonstrated significant improvement in alcohol consumption, ASI variables, and GGT. This was a negative trial.

Trial 2:

Discouraging results have been reported from Kaiser Permanente in Oregon³³ in a brief intervention trial for hazardous drinkers in primary care settings. The investigators used the AUDIT (see elsewhere in text for the 10 questions of the AUDIT and for scoring and performance characteristics of the instrument) to identify hazardous drinkers. They defined a positive score to be either in the range of 8–21 or to be a score of ≥ 5 on Question 1 (frequency) plus Question 2 (quantity). The patient outcomes at 6 and 12 months were compared with patients having been randomized to one of three treatment interventions: (1) 30 seconds of advice about safe drinking levels, (2) 15 minutes of motivational counseling, or (3) a packet of printed materials. The 516 hazardous drinkers identified by the AUDIT had a mean intake score of 10.5, average age of 42, and 70% were male. At 12-month follow-up, 80% of patients completed a phone interview; no differences were found in the

reported number of drinks per drinking day or number of drinks per week. Neither were any differences between groups found for use of medical care during the year following the interventions: mean number of outpatient visits 10.7 intervention group and 10.3 for controls. Hospitalization rates were similar: 15% for intervention group and 14% for controls.

Trial 3:

Project TrEAT (Trial for Early Alcohol Treatment)¹⁹ was designed to replicate the Medical Research Council trial⁷³ conducted in Great Britain. Physicians were recruited through the Wisconsin Research Network, local community hospitals, managed care organizations, and personal contacts. Sixty-four physicians from 17 clinics participated: 46 male physicians and 18 female physicians, with a mean age of 46 and a mean of 13 years in practice. A total of 774 men and women ages 18–65 were randomized to a control group or a physician-delivered brief intervention group. Major inclusion criteria included men who drank between 15 and 50 drinks per week, women who drank between 12 and 50 drinks per week, no evidence of alcohol dependence, and no alcohol treatment in the past 12 months. A total of 723 subjects completed the 12-month follow-up interview for 93.4% follow-up rate.

The major alcohol use outcome variables were average drinks per week, binge drinking, and excessive drinking. Large decreases were found for all alcohol use variables in all groups at 6 and 12 months. The greatest reductions occurred in the female experimental group, where use had decreased by 47% at 12 months (15.05–8.03 drinks/week). The difference between the female intervention and control groups was significant for seven-day alcohol use ($t=3.7$; $p<.001$). Men in the experimental group reduced their consumption slightly less than their female counterparts, but large decreases were reported across all alcohol measures. Preliminary analysis suggests a possible treatment effect for days of hospitalization but not for emergency room visits; there was a difference in hospital days at 6 and 12 months for both men (Chi-square=29.55, $p<.01$) and women (Chi-square=10.98; $p<.05$).

Trial 4:

Project GOAL (Guiding Older Adult Lifestyles)¹¹ was designed to test the efficacy of brief physician advice in older adult problem drinkers over the age of 65. This is one of the first brief intervention trial focused on older adults. Forty-three physicians from 24 community-based primary care practices located in ten Wisconsin counties were recruited and trained. Of the 6,073 patients screened for problem drinking, 105 males and 53 females met inclusion criteria ($n=158$) and were randomized into a control ($n=71$) or intervention group ($n=87$). One hundred forty-six subjects (92.4%) participated in the 12-month follow-up procedures. The 12-month follow-up data indicate a significant reduction in seven-day alcohol use ($t=3.77$; $p<.001$), episodes of binge drinking ($t=2.68$, $p<.005$), and frequency of excessive drinking ($t=2.65$; $p<.005$). This is one of the few brief intervention trials where the control group exhibited no pre- post-randomization changes in drinking. No sig-

nificant changes in health status were demonstrated; there were too few utilization events at 12 months to estimate differences between groups.

Trial 5:

Gentilello⁷² studied the efficacy of providing brief alcohol interventions as a routine component of trauma care to reduce alcohol consumption and decrease trauma recidivism. A total of 2,524 patients admitted to a level-1 trauma center for treatment of an injury were screened for an alcohol problem via BAC (blood alcohol content), GGT, and the SMAST. Those with positive results were randomized to a brief intervention (n=366) and a control group (n=396). The intervention, conducted on or near the day of hospital discharge, consisted of a single motivational interview with a trained psychologist. Subjects were interviewed at six and 12 months in order to assess changes in alcohol use. Trauma registries and Washington State databases were used to assess rates of hospital readmission and legal events. The investigators reported a significant reduction in alcohol use 12-months postintervention compared to the control. While there was a reduction in trauma events and readmission these differences were not statistically significant.

6. How Do We Implement Screening and Brief Intervention in Managed Care: Policy and Systems Issues

Implementing screening and brief intervention clinical protocols is best approached as a systems issue.⁶⁹ Health care settings are complex systems with multiple competing agendas. Implementation strategies include convincing purchaser (e.g., employers and governmental agencies) and payers (e.g., insurance companies and health care maintenance organizations) to provide financial support and leadership. Purchasers of health care insurance and providers will need to be convinced that the prevention and treatment of alcohol problems will improve the health of their populations and reduce health care and social costs. Professional organizations need to take a more active role in working with payers and providers to allocate a level of resources that matches the importance of alcohol problems to the health care industry and the health of the American people.

Clinicians require skills training workshops and incentives to make brief intervention treatment for alcohol problems an essential clinical activity for all health care professionals. These workshops should focus on skills training activities using role play exercises and standardized clients. Quality improvement programs which are being implemented throughout the health care system can provide a unique opportunity to change clinician practice behavior. The establishment of monitoring systems to examine rates of alcohol use in persons being treated for hypertension, depression, or anxiety disorders can significantly change practice patterns. Clinician incentives can include financial reimbursement for this clinical activity, paid education time to attend training workshops, and quality improvement peer review

programs. In the current system, it is often difficult for clinicians to receive compensation for alcohol and drug screening and treatment.

Consideration of the clinic delivery system is crucial. Clinical settings perform a wide range of clinical tasks and prevention activities. These range from performing routine physicals (e.g., sports, well woman, insurance), treating acute medical problems (e.g., trauma, infections, anxiety, headaches), managing chronic conditions (e.g., depression, hypertension, diabetes) and conducting prevention programs (e.g., breast cancer screening, nutrition and diet counseling, immunizations). In order to implement and maintain screening and brief intervention clinical protocols, the procedures must be incorporated into routine clinical care. Strategies include the use of self-administered screening tests, having the nurse ask alcohol Questions as part of routine vital signs, or setting up computerized reminder systems to remind clinicians to screen clients for alcohol problems. Reminder systems can be attached to the front of the client's medical record or in another prominent location. Clinical protocols can be placed on a card and taped to a desk or wall in clinical areas. Self-help booklets, alcohol diary cards, lists of self-help group meetings such as AA, and referral information with phone numbers and names of alcohol specialists can assist clinicians and clients in establishing follow-up plans and strategies.

Another important component of a clinic-based system is the integration of specialized treatment with the general medical care system. Alcohol treatment has historically occurred outside the traditional medical care system. Many alcohol treatment programs are self standing community-based programs. Lack of communication between these specialized alcohol/drug treatment programs and the client's physicians and nurses can have a serious adverse effect on a patient's long term sobriety. In contrast to referral to other specialty referral systems (eg., medical and surgical specialty clinics), alcohol and drug programs do not routinely send copies of the assessment, treatment plans, or discharge summaries to the client's health care providers. Alcohol and drug specialists do not routinely call the client's physician or therapist to coordinate and develop long-term treatment plans. Clinicians and therapists could also increase communication by sending referral letters to alcohol treatment programs.

One way to facilitate an integrated treatment process and to increase communication is to locate alcohol treatment programs in close physical proximity and to carve-in alcohol specialty services as opposed to carve-out systems of behavioral care. Physicians are more likely to refer clients to a trusted colleague whose office is down the hall than to a stranger located many miles away in a different system of care. It is also easier for clients to accept and follow through with an in-house referral. Confidentiality concerns about sharing of information between physicians and alcohol counselors can be handled via informed consent procedures by asking clients to sign medical release forms. Clinicians and alcohol/drug specialists need to be part of the same medical staff and care team. Clients need their treating providers to communicate and to work together in order to provide coordinated comprehensive care.

Action Plan:

1. Encourage primary care physicians to establish routine alcohol screening procedures for all patients over the age of 14. Medical and surgical subspecialists should be encouraged to screen patients where undetected alcohol use could affect care (e.g., post operative delirium tremens). Quantity frequency questions used in combination with the CAGE are the recommended alcohol screening method.
2. Primary care physicians need to learn how to conduct brief intervention counseling and motivational interviewing. Physicians can learn these skills in a 1–2 hour skills-based workshop that includes role play exercises. The NIAAA's *Training Physicians in Techniques for Alcohol Screening and Brief Intervention*⁹¹ was developed to teach physicians these skills.
3. Clinics should establish close working relationships with alcohol treatment specialists and the self-help community. Physicians should become familiar with addiction specialists and alcohol counselors in their community.
4. Specialized alcohol and drug treatment programs should be integrated and “carved in” as part of the routine clinical practice of medicine. These programs should be located in close physical proximity to medical centers and outpatient clinics. The current emphasis on “carve out” behavioral health companies has created enormous barriers between the medical profession and alcohol treatment programs.
5. Alcohol screening should become one of the HEDIS indicators with a goal of 75% of patients over the age of 14 screened for alcohol use disorders every five years.

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Report of the American Society of Addiction Medicine

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The Impact of Managed Care on Substance Abuse Treatment: A Problem in Need of Solution

A Report of the American Society of Addiction Medicine

**Marc Galanter, Daniel S. Keller,
Helen Dermatis, and Susan Egelko**

1. Executive Summary

The rise of managed care has had an enormous impact on all areas of the health care system. This report examines the impact of this movement and related developments on substance abuse treatment, and evaluates how they have been associated with a decline in the availability of care for many addicted patient. The problems associated with this decline have affected the extent and quality of employer provided insurance coverage, access to and utilization of treatment services, medicare and medicaid, and substance abuse treatment professionals. We are confronted with the following issues in this regard:

- Substance abuse disorders are among the most frequently occurring mental health problems in the United States¹ and impose an enormous cost upon society of \$246 billion per year.² Despite this, substance abuse disorders continue to be significantly undertreated.^{1,3}
- A review of the impact of managed care on substance abuse treatment suggests that some managed care structures and practices may be contributing to this serious healthcare problem.

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- ASAM's study with the Hay Group⁴ found that the value of substance abuse insurance coverage had declined by 75% between 1988 and 1998 for employees of mid- to large-size companies. This figure compared with only an 11.5% decline in the value of general health insurance. This pattern has been confirmed by data from the Bureau of Labor statistics.⁵
- A trend toward carve-out and for-profit managed behavioral healthcare organizations is associated with lower financial incentives for intensive treatment than those in staff-model and not-for-profit managed care organizations.^{6,7}
- A shift towards managed care has also been associated with a drastic reduction in frequency and duration of inpatient hospitalization, even for many patients who require this level of treatment intensity. It is not clear that this decrease has been offset by a corresponding increase in outpatient treatment utilization.⁸⁻¹⁰
- In a survey conducted by ASAM,¹¹ the majority of physicians treating addiction felt that managed care had a negative impact on detoxification, rehabilitation, and their ethical practice.
- Initial positive cost-containment results were sometimes attributed to cost shifts to other medical services rather than actual savings.¹²
- Medicare recipients, initially welcomed by managed care, have been increasingly dropped.

Recommendations include:

- Substance abuse must be treated adequately since treatment can offset its enormous costs to society, and costs of treatment have not escalated as had been predicted.
- Substance abuse treatment should be given parity in coverage to other medical illnesses.
- Additional support is needed for the treatment of addicted patients with dual disorders such as psychiatric and general medical illnesses.
- Treatment should be dictated by empirically determined clinical guidelines flexible enough to be augmented by clinicians' judgment.
- Legislation should be enacted to ensure minimal standards of care independent of economic gain.
- Insurers should be liable for constraints they apply to treatment.

2. Substance Abuse: A Major Undertreated Problem

The recent and dramatic shift toward pre-paid health insurance and cost containment strategies known as managed care has rapidly encompassed virtually all areas of the American health care system. According to a recent Institute of Medicine report 161 million Americans (i.e., more than 60% of the total U.S. population) belong to some form of managed health care plan.¹³ Moreover, the same report noted that only slightly less (142 million) already have managed behavioral health

(i.e., mental health and substance abuse) coverage.¹³ Thus, it is likely that the managed care revolution has had and will continue to have an enormous impact on the treatment received by substance abuse patients.

It is well known that substance use disorders are among the most frequently occurring mental health problems in the United States.^{14–17} The National Comorbidity Survey (NCS) data estimated the prevalence of lifetime substance abuse disorders including both alcohol and/or drug abuse or dependence using *DSM-III-R* criteria to be 11.3% of the population.¹⁸ Other studies have indicated even higher rates in a variety of sub-groups including those with concurrent medical and mental illness.^{19,14,20–22} Moreover, the costs to society associated with these prevalence rates of substance abuse are enormous.^{23,13} For example, in one of the most extensive studies to date, the U.S. Department of Health and Human Services and the National Institutes of Health (1998) has estimated that costs associated with alcoholism and substance abuse for 1992 were nearly 250 billion dollars with projections for 1995 estimated to exceed 276 billion dollars. Extensive research has confirmed that treatment can reduce the cost to society of drug and alcohol abuse.^{24–33} on a variety of factors for both patient and collateral health care as well as multiple societal correlates. As such, treatment of substance abuse will need to rank among top national priorities if these costs are to be managed effectively.

But does it? Despite an explosion in the development of empirically tested treatments for substance abuse,^{34,35} these disorders continue to be vastly *undertreated*^{1,13} Many factors play a role in undertreatment of substance abuse including patient stigmatization and lack of diagnostic skills among medical providers. However, a concern increasingly voiced by clinicians, patients, and families of patients is that the transition of the health care system to one dominated by managed care organizations may be inimical to adequately addressing the overall treatment needs of substance abusers. Research, too, substantiates this concern.^{6,36}

Given the persisting need for substance abuse treatment and its associated costs, it is therefore legitimate and timely to inquire into the extent to which managed care has impacted on substance abuse treatment. The remainder of the paper is devoted, therefore, to an assessment of these issues.

The first section of the paper briefly reviews the structure and functioning of the varieties of managed behavioral health care. We then discuss the impact of managed care on: (1) employer-sponsored insurance; (2) access to and utilization of treatment for substance use disorders; (3) Medicare and Medicaid patients; (4) and specialist professionals. Many of these areas are only just now receiving sufficient empirical scrutiny. We therefore present empirical data bearing on these areas where available but make use of other sources as well.

3. What Is Managed Care?

Managed care is an umbrella term used to cover a variety of organizational structures, insurance benefits, and regulations which both provide for and control the cost of health care procedures.⁶ When applied to substance abuse and mental

health, the term *managed behavioral health care* (MBHC) is most often employed.¹³ As noted in a recent report,⁷ MBHC was virtually unheard of ten years ago but appears to be one of the fastest growing areas in managed care which covered 142 million Americans in 1995 and has continued to expand in its penetration of the health market since then.

Like other forms of managed care, MBHC attempts to control costs of treatment. One prominent approach to cost control is achieved through limiting the utilization of services. Utilization is limited through imposing a variety of financial incentives and restrictions on which services are covered and which practitioners may be selected. For example, an approach often used and one that typified the earliest forms of managed care is the *managing of benefits*. Such benefit management is most often associated with annual and lifetime maximums, copayments, gatekeeping procedure such as preauthorizations, retrospective denial of reimbursements and the like. These procedures have been well-chronicled in the media usually in a negative light.

It is important to note that managing benefit structures is but one of a number of procedures employed to contain costs effectively. In recent years, managed care organizations have broadened the way in which cost-containment may be conceptualized. In particular, nowadays MBHC organizations frequently speak of *managing care* in addition to managing benefits by which it is meant that care is taken to ensure that only appropriate and necessary care is delivered in the least restrictive settings by qualified professionals. Thus, it is nowadays more common to see the use of level of care placement criteria, standardized treatment planning methods, and the small but increasing use of evidenced-based treatments. In this way, expensive treatments such as 30-day inpatient alcoholism programs are utilized more judiciously, at least in theory.

Although the market place in health care has proliferated with different types of managed care, MBHC is most often accessed through one of two types of managed care organizations: (1) staff model HMOs and (2) managed behavioral health care organizations (MBHCOs).^{7,13}

In the *staff models*, enrollees receive substance abuse or mental health treatment from specialist in-house staff providers. There are certain advantages to the management of behavioral health under this type of arrangement. For example, a patient's overall treatment is consolidated among one provider group leading to better communication and coordination, which can be especially important for patients with multiple medical, psychiatric and substance abuse problems. In addition, there are financial incentives since reductions in mental illness and substance abuse are reported to offset medical costs.⁷

In contrast, MBHCOs, which are also referred to as *carve-out vendors*, are managed care organizations hired by employers to organize specialized mental health and substance abuse treatment for enrollees independently from overall health care. MBHCOs contract with mental health and substance abuse specialist groups or preferred provider networks. Typically, MBHCOs employ specialist "gatekeepers" to assess and monitor patient need for access to and utilization of treatment within

the network. Carve-out arrangements now administer the vast majority of behavioral health care for people with private health insurance.³⁷ Increasingly, staff model HMOs and traditional fee-for-service insurers are employing carve-out vendors to provide managed behavioral health care.⁷

The carve-out format is attractive to the insurer in that it entails the potential advantage of offering more highly specialized treatment and personnel than in the staff model HMO. These may be more successful in effecting a cost conscious approach to providing care. A potential disadvantage, however, is that MBHCOs, which do not stand to benefit from the medical cost-offset, lack an inherent financial incentive to provide more costly treatment of behavioral disorders if it is more effective.⁶ This can lead to promoting less costly short-term approaches over ones which could effect a more beneficial long-term outcome.

It is important to note that not all managed care organizations operate on a for-profit basis.^{38,39} The emergence of for-profit managed care is a relatively recent phenomenon and represents a (some would say radical) departure from the non-profit managed care industry which characterized these organizations from 1940–1980. Indeed, the proportion of HMO members enrolled in for-profit plans has risen from 12% in 1981 to over 60% today.³⁸ Clearly, a for-profit entity is more likely to place pecuniary benefit as a primary organizational goal, likely competing with the provision of care as a priority.

4. What Is Its Impact on Insurance Coverage?

Employers have clearly pushed for managed care.^{40,41,13} By 1996 approximately 100 million Americans were enrolled in either employer-sponsored HMOs or PPOs.⁴² This dramatic shift was achieved largely through employers either offering incentives to employees to shift to managed care plans or by offering managed care insurance only.^{40,41} In turn, this has led to decreased choice of healthcare providers and treatment dictated by the insurer rather than the healthcare provider.

Not only has general health insurance coverage changed in the managed care era but the shift toward employer provided managed care as a means of cost containment has been particularly noticeable in the area of managed behavioral health care.^{40,41,13,36} Indeed the number of Americans covered by carved-out managed behavioral health care arrangements increased from 78 million in 1992 to 150 million in 1997.⁴³ This shift began in the late 1980's when empirical reports and media coverage warned that the overall rate of growth in behavioral health care spending greatly exceeded increases in general health care expenditures⁴⁴ sometimes by as much as 20 to 30 percent annually.⁴⁵ Thus, it was felt that managed behavioral health care plans would have a broad appeal for employers seeking to provide behavioral health care to a large portion of the population while holding down costs.^{36,13}

To what extent do empirical evaluations bear these trends out? On the positive side, there appears to be consensus that more people have access to employer-sponsored behavioral health care insurance than ever before.^{46-48,13} For example, Jensen

et al.⁴⁷ report that among all insured workers access to mental health coverage increased from 86% in 1991 to 92% in 1995. On the other hand, the depth or value of coverage appears to be shrinking.^{47,48,4} Let us consider this.

4.1. *The ASAM/Hay Report*

As an example, the ASAM/Hay Benefits Report⁴ presents data on the typical design of health care benefits provided by medium and large employers in the United States. In 1998, ASAM commissioned the Hay Group, an independent health insurance analysis organization to evaluate substance abuse treatment benefits relative to those for overall health care. These data were collected from 1,017 U.S. employers, representing a broad industry and geographic mix, between 1988–1998. According to Hay report, the value of benefits offered by employers has changed substantially over the past decade. To determine benefit value, Hay has developed and employed a benefits value comparison (BVC) model which extracts plan design information (e.g., deductibles, co-payments, coverage limitations, etc.) yielding a standardized estimate of the value of plans. The BVC approach has been employed widely within the private sector as well as by NIMH, and the Congressional Research Service to analyze cost and prevalence of benefits in the U.S.⁴

Overall, the total value of employer provided health benefits decreased, in constant dollars, by 14.2% from 1988–1998 thus indicating that the depth of coverage provided in employer sponsored health care insurance was substantially reduced during that period. However, when this general decline is disaggregated into component benefits, the Hay data indicate that the value of general health benefit expenditures declined by only 11.5%; by contrast, substance abuse and mental health benefit values decreased by 74.5% and 52.3% respectively between 1988–1998. Stated otherwise, whereas substance abuse benefits (on average) accounted for 0.7% of a plan's overall value in 1988, it accounts for only 0.2% today. Likewise, mental health accounted for 5.4% of total plan value in 1988, but only 3% currently. While these data are not equivalent to actual employer expenditures, they do suggest that the value of plans, on average, has markedly decreased in terms of the value of benefits for substance abuse and mental health treatment.

What factors are most responsible for driving down these plan values? According to Hay,⁴ the single most important factor is that the type of plans offered has substantially changed. According to the Hay data, there has been a dramatic shift in the kinds of coverage for employees. For example, in 1987 92% of employers reported fee-for-service (FFS) plans as the most prevalent plan type. By contrast, the most recent data reveal that PPOs are the most prevalent followed by HMOs (24%), point of service (POS) plans (22%), and FFS plans (20%)⁴. In general, these managed care alternatives are less generous especially with respect to substance abuse and mental health than in terms of general health. Hay⁴ further reports that increased day and dollar limits on inpatient care also contribute to overall decreasing value benefits value.

This report provides convincing empirical evidence of the concern, held by a wide variety of practitioners, that substance abuse treatment has declined in the

managed care era. That is to say, under managed care plans purchased by middle to large-scale employers, inpatient substance abuse treatment is virtually no longer available (except in life-threatening situations). Moreover, unlike general healthcare, where outpatient visits have increased to compensate for decreases in inpatient treatment, in some cases substance abuse outpatient visits have declined even in the context of virtually nonexistent hospitalization for substance abuse.⁴

4.2. Other Reports on impact

Other empirical reports appear to parallel these trends reported in the Hay data. For example, Bureau of Labor Statistics show that coverage became increasingly restrictive between 1988-1993 for substance abuse and mental health benefits in behavioral health plans offered by employers with 100 or more employees. Limitation increases included both inpatient and outpatient services in terms of limits on days, visits, total dollars for care, and cost sharing requirements⁵ Buck and Umland⁴⁸ report statistical trends similar to the BLS data. They report that although more people employed by middle to large scale employers have behavioral health care coverage, the coverage itself has become more restrictive over the last decade due mainly to the growth of managed behavioral health care. Buck and Umland report on data for 1995 from 171 large employers surveyed by Foster Higgins, an employee benefits consulting firm. They found (1) employees are more often enrolled in managed care as opposed to indemnity plans; (2) two-thirds of employers offer mental health and substance abuse insurance that does not cover services to the extent of other medical services; and (3) there are more restrictive limits and different cost-sharing requirements for mental health and substance abuse services than for other health care services.⁴⁸

In addition, the 1995 data were compared to the same data collected in 1989. This comparison revealed that mental health and substance abuse services accounted for only 4% of total plan costs in 1995 compared to about 9% of employers' total medical plan costs in 1989. Finally, the percentage of employers with special limitations on substance abuse benefits grew from 76% to 93% from 1989 to 1995.⁴⁸ All of these data provide further support for the conclusions of the ASAM/Hay report that substance abuse coverage has been eviscerated and has declined even more dramatically than coverage for general health care.

To what extent have costs been contained and for whom? Several studies from the early to mid-1990's estimated costs associated with various forms of managed versus fee-for-service substance abuse care. Each found managed care to be more cost effective than indemnity coverage.^{8,10,9,49} However, all studies were naturalistic, lacking random assignment and other controls, and all but one were performed on Medicaid populations limiting generalizability. More recently, the Substance Abuse and Mental Health Services Administration (SAMHSA) sponsored a comprehensive investigation of nationwide spending trends in mental health and substance abuse treatment over the decade spanning 1986-1996.⁴⁶ They found that annual rate of growth of overall substance abuse and mental health expenditures was 7.2%. While this figure exceeded the annual rate of growth in the CPI (3.5%) over the

same period, it was actually a full point lower than the annual growth rate in expenditures for general health care (8.3%). The discrepancy holds true when considering expenditures from private insurance sources (substance abuse/mental health [SA/MH]: 8.0% versus general health 8.9%). Clearly, while SA/MH costs have grown, they do not appear to have skyrocketed to the degree suggested by earlier warnings.⁴⁴

Finally, Schoenbaum, Zhang, and Sturm³⁷ have recently reported on costs of substance abuse treatment based on insurance payments for 93 private sector behavioral health care plans in 1995 covering over 600,000 members. They found that substance abuse coverage accounts for only a small percentage (13%) of insurance payments for behavioral health care and an extremely small fraction (0.4%) of insurance payments for total health care.

5. What Is Its Impact on Treatment?

The literature on managed care thus far suggests that (1) the majority of insured Americans have mental health and substance abuse covered by managed behavioral care organizations; (2) the value of benefit structures of such coverage are on the whole more restrictive than previous insurance arrangements; and (3) while overall cost has been held in line with general medical health care, the value of coverage for substance abuse has tended to decline on average. To what extent has this impacted actual availability and delivery of treatment for substance use disorders?

There is a consensus among clinician and researchers that substance abuse is undertreated,^{13,6,1} and there are several major studies of substance abuse treatment under managed care that shed light on access, utilization, and treatment intensity. We now review the results of these.

5.1. Access and Utilization

Several major studies have investigated the effect of managed care on substance abuse treatment^{8,10,9,49} the results of which were summarized by the Institute of Medicine.⁷ We have already referred to these in the section above on cost. Although naturalistic and lacking controls, all of these studies have the value of comparing managed care with unmanaged care or different types of managed care.

Access to treatment was assessed in three of the four studies cited above and provide a mixed picture on the effect of managed care on this variable. For example, Callahan et al.⁸ compared substance abuse treatment for Medicaid patients before and after the Massachusetts Medicaid Program was converted from a fee-for-service to a managed care system. Access was defined as the number of service users per 1000 enrollees and actually increased 4.6%. In contrast, Ellis¹⁰ examined access to treatment among employees of a single large employer (n=140,000) over a four year period in which the employer mandated managed care midway through the time period. Access dropped 43% overall for the two year period in which man-

aged care was mandated. Finally, Asher et al.⁹ studied the Pennsylvania Medicaid Program for drug abuse treatment which was comprised of four types of coverage: (1)HMO, (2)PPO; (3) mixed managed/unmanaged and (4)FFS. Patients in the mixed coverage group has greatest access (4.9% eligible recipients) followed by PPO (3.9%) and HMO (2.0%) patients respectively (FFS patients were not studied here).

Based on these studies, a mixed picture emerges regarding the impact of managed care on access to treatment. In the Callahan et al.⁸ study, access to treatment under managed care appears to have increased, although modestly. On the other hand, Ellis' data¹⁰ suggests a dramatic reduction in access.

These same studies report utilization of service data which point in the direction of reductions under managed care. For example, in Callahan et al.,⁸ inpatient admissions declined by 69% in the first year accompanied by a surge in outpatient detoxification utilization. At the same time, outpatient admissions did not increase but rather declined by 4%. This pattern of utilization rates were similar to those obtained by Callahan et al.⁸ inpatient episodes dropped 41% while outpatient and office claims episodes increased by 19% and 45% respectively. Likewise, the Minnesota Consolidated Chemical Dependency Treatment Fund, which transitioned from a FFS to a managed care operation, evaluated utilization rates during the transition phase. Managed care clients were less likely to receive inpatient treatment than FFS clients (MC=27% versus FFS=48%) even though there were no differences in severity of inpatient admissions.⁴⁹ Finally, in the study by Asher⁹ patients in the mixed managed/unmanaged care had the greatest utilization rates followed by FFS, PPO, and HMO patients respectively with FFS patients receiving the greatest amount of inpatient care and HMO receiving the least.

Thus, these studies apparently support the view that inpatient substance abuse treatment has been curtailed under managed care. While outpatient substance abuse treatment is effective for many uncomplicated substance abuse case,⁵⁰ many other more severely compromised patients (e.g., dual diagnosis patients) may need inpatient services. The above data suggest this may be harder to achieve under managed care. In addition, the lowered inpatient utilization rates above do not appear to show corresponding increases in outpatient utilization of services which support the notion that managed care practice may lead to under treatment of substance abuse.⁶

5.2. Illustrations

To illustrate how managed care practices can impact upon access to and utilization of clinical care, we solicited leading substance abuse administrators/practitioners to submit examples of typical difficulties they face on a day-to-day basis. Here are two such illustrations.

The first illustrates how administrative barriers and predetermined criteria presented significant roadblocks to a patient attempting to follow through with a treatment plan. A 39-year-old divorced mother called her physician stating that she was depressed, drinking excessively, and needed help. She was brought to the admission office of a psychiatric hospital where it was determined that she had been

spending most of her time in bed drinking eight to 12 beers a day, and was clinically depressed. The clinician was concerned over the decline in her clinical status and the likelihood of a continued increase in drinking severity and suicide risk. After numerous phone calls to the managed care entity the admissions office was told that since her diastolic blood pressure was not over 100 (a criterion for alcohol withdrawal) she would not be eligible for inpatient admission. The patient was taken home to her family and she never entered specific treatment for her combined substance abuse disorder and depression. This case illustrates the not uncommon scenario of misapplication of preset criteria leading to denial of appropriate patient care. Furthermore, it illustrates as well that health care decisions are being made by the insurer rather than the patients' physician.

In some cases this type of decision making can even lead to more serious consequences, as in the next case. A 28-year-old man with a history of polysubstance abuse was hospitalized at a private psychiatric hospital. His stay as an inpatient was initially limited to three days by his managed care company. While in the hospital, in addition to his polysubstance abuse including alcohol and cocaine, it was noted that there was a strong family history of bipolar illness and the patient reported both highs and lows while not on various substances. The diagnosis of bipolar disorder was, therefore, added to his substance abuse diagnosis. Following his three day inpatient stay, he was referred to an outpatient chemical dependency program for which his managed care company approved only six visits per year.

After showing up for his first visit, he dropped out of treatment and wound up at an emergency room some time later, stating: "I don't know what I will do with myself. I'm just totally lost. I need help." A call to the case reviewer led to a denial of further inpatient care since his insurance would cover only one hospital stay during the course of the year, and his relapse was blamed on the patient in the form of denial of further care and treatment. Since the hospital appreciated that this patient absolutely required extended inpatient treatment, it sought to transfer him to a state hospital; however, amid this confusion the patient suddenly bolted from the emergency room. He was found two days later frozen to death under a railroad bridge.

This case illustrates the inadequacies of making clinical decisions based on actuarial or economically-grounded guidelines. Such decisions are best made by a physician who is directly examining the patient rather than a managed care case reviewer.

6. What Is Its Impact on Medicare and Medicaid?

The rapid growth of expenditures in government entitlement programs has been a central topic of socio-political discourse within the United States over the past two decades. Of the estimated \$100 billion spent on mental health and substance abuse conditions in 1995, Medicare and Medicaid programs spent 22% and 38%, respectively, according to 1990 government projections.⁵¹ Encouraged by the federal government, there has been a trend to implement Managed Care programs

for Medicare and Medicaid enrollees in order to contain these costs. Despite early optimism, however, the transition has at best occasioned mixed results. It is important to note that Medicare and Medicaid managed care programs differ from those in the private sector. Although it is not possible, therefore, to generalize criticisms of one system to the other, we briefly describe these governmental forms of managed care to illustrate emerging problems within that sphere.

6.1. Medicare

Medicare HMOs were recently reported to be growing at a rate of nearly 25% per year.⁵² This has not been a process without difficulties. A number of managed care companies were forced to discontinue providing coverage to elderly Medicare patients.⁵³ It is estimated that a total of 400,000 Medicare beneficiaries dropped by these managed care companies will have to find a new HMO or go into the traditional fee-for-service Medicare program.⁵⁴ One reason for this chaotic situation is that managed care companies in certain regions of the US made inaccurate financial projections and were unable to provide comprehensive care at the cost they expected. The fact that this shortfall was experienced in a number of regions throughout the United States suggests that this is not a short term issue but rather points to a systemic problem.

6.2. Medicaid

The shift of Medicaid patients into managed care arrangements has been widely heralded though only a few such transitions have been studied empirically. Perhaps the most widely cited of these involved the Massachusetts Medicaid study which assessed the impact of managed behavioral care on mental health and substance abuse treatment for enrollees.⁸ In Massachusetts all Medicaid enrollees not covered by an HMO, approximately 350,000 people were covered under a MBHC carve-out program in July, 1992. An evaluation of this program, the first statewide behavioral health carve-out for MH and SA, showed (1) access to care increased (2) perceived quality of services was maintained, (3) expenditures for MH and SA services declined 22%.⁵⁵ The savings were achieved due to a dramatic 94% reduction in the use of inpatient hospital detoxification services for SA and diversion to nonhospital detoxification services. These initial results were regarded therefore as extremely promising.

Further evaluation of these data, however, suggests there may have been significant cost shifting in the form of increased demand for other medical services among Massachusetts Medicaid patients (e.g., medical inpatient services, emergency room visits, etc.).¹² Thus, many patients denied adequate substance abuse services (e.g., brief inpatient detoxification and hospitalization) *seek and receive treatment* elsewhere within the same system thus shifting costs. Not only are costs shifted but patients are treated by non-specialist clinicians thereby increasing the likelihood that patients will reenter the system for continuing substance abuse problems over the long term.

Despite the early optimism generated by the Massachusetts experiment, at least

two states have had severe difficulties implementing the transition to managed care. Tennessee carved out MH/SA services from the general Medicaid MC program, TennCare, making use of a subcontractor. When the subcontractor declared bankruptcy, TennCare Partners deteriorated into a crisis where many patients did not receive care or lost continuity of care.⁵⁶ Not only did this transition cause problems in patient care but health care providers were left unpaid for services rendered. According to Newman (1998), when the Tennessee MCO declared bankruptcy, \$300,000 in unpaid reimbursement was left for behavioral health services. Likewise, in a New Jersey Medicaid HMO program, health providers were owed more than \$100 million in past claims.⁵⁷

In sum, Medicare and Medicaid programs have increasingly relied on managed care to contain costs. However, recent trends indicate (1) managed care organizations are pulling out of the Medicare market altogether; and (2) managed behavioral health care for Medicaid patients may lead to cost-shifting and perhaps inappropriate treatment. More extensive research is needed in each of these areas.

7. How Do Professionals Feel?

The introduction of managed care has raised a number of shared concerns among the various healthcare disciplines directly involved with the delivery of addiction treatment. While the managed-care driven emphasis on credentialing and setting standards for providers of addiction treatment has the potential for improved level of services delivered, other developments related to this shift towards managed care are deeply troubling to healthcare providers. Perhaps no issue is of greater concern than the shift in clinical care decision-making from the providers to the insurance industry, with legal liability remaining solely with the former group. Examples of clinical care decision-making pertinent to addiction care include: increasingly restrictive policy on inpatient detoxification; financial coverage for only brief outpatient psychotherapeutic treatment directed at alleviating acute symptoms of addiction; and an emphasis on prescription of psychiatric medication. This nominally “medicalized” approach to the immediate symptoms of the addictive disorders ignores the reality that such disorders are chronic, relapsing conditions. As noted in the earlier case illustrations, patients with addictive disorders may present as uncooperative in following through on treatment. While the healthcare community might be more inclined to see motivational difficulties as part of the very symptom complex of the addictive disorder, the insurance industry is more likely to take the position that a negative attitude represents a “lifestyle choice,” thereby forfeiting the prospective patient's right to health insurance benefits.

Other changes introduced by managed care which affect healthcare providers of addictive treatment services are: below-market rigid reimbursement rates, commensurate with professional discipline only and not level of experience (e.g., both novice and seasoned clinician mandated to be reimbursed at the same rate); an onerous system required for authorizing treatment, confusing policies regarding benefit coverage, frequent delays and cumbersome paperwork, all of which might

deter all but the most motivated (and perhaps less severely compromised) patients from receiving treatment; and increased requirements for disclosure of the specifics of treatment, thereby eroding confidentiality, a concern that may be particularly salient in addiction treatment. These changes in the delivery of addiction services towards a managed care approach have presented healthcare providers with an increasing level of ethical concerns and pressure to reconcile discrepancies between their own judgment regarding proper course of treatment and the managed care directives. These concerns have resulted in the healthcare providers' supporting certain lawsuits in which complaints concerning managed care practices are at issue and lobbying Congress for legislation designed to enhance the delivery of addiction services.

Several surveys have been conducted to assess the impact of MC on physicians' practices and attitudes concerning how MC has influenced the quality of patient care. Grumbach et al.⁵⁸ surveyed 766 primary care physicians employed in MC settings as to the types of incentives they encountered, pressures imposed on their practices and impact on patient care. Nearly 40% of the respondents reported that their contracts with MC organizations included some form of incentive. Incentives that involve limiting referrals or increasing patient caseloads were considered to negatively impact on patient care.

In a 1998 physician survey conducted by ASAM,¹¹ the majority of 200 respondents felt that MC had a negative impact on the following substance abuse treatment services: inpatient detoxification (67%), inpatient rehabilitation (86%), and outpatient rehabilitation (65%). Seventy-nine percent indicated that managed care impacted negatively on quality of patient care. Most respondents indicated a negative impact on their own practices with regard to the ethical practice of addiction medicine (79%), and income (56%) as well. Although cost savings might be derived from diminished income, it should be noted that a majority (63%) indicated that MC was adding rather than subtracting work effort to their clinical time. Only a minority (37%) reported that it resulted in less time demanded of them.

Other professional organizations have also increasingly acted to offset what are perceived to be unfair practices on the part of managed care organization. For example, the American Psychological Association, the largest organization representing psychologists, has been in the forefront of supporting initiatives aimed at holding managed care plans legally accountable for their treatment decisions, increasing public awareness regarding the need for improved access and quality in managed care health plans and promoting a legal advocacy agenda.³ Thus, various state psychological associations have supported litigation aimed at eliminating potentially harmful MC strategies and procedures such as (1) usurping treatment decision-making by the patient's doctor;³ (2) advertising to employers, employees, and others treatment benefits ranging from 20 to 50 outpatients per year but typically providing only a small fraction (e.g., *only three or four outpatient sessions*);³ (3) terminating providers from managed care panels who advocate for necessary patient services labeling them as "managed-care incompatible" when, in reality, their practice patterns did not fit the financially determined standards of the managed care organization;³ and (4) banning "gag rules" that prohibit providers from telling patients about expensive treatment options, allowing patients to challenge a plan's

denial of care, and prohibiting plans from discriminating against health-care professionals solely on their licensure or certification.⁵⁹

8. Conclusions and Recommendations

There is little question that managed care has had a tremendous impact on the delivery of substance abuse treatment services. This review indicates that managed care procedures have contained costs, an achievement of no small consequence given the spiraling costs of healthcare. Nevertheless, one unintended consequence of the managed care revolution has resulted in decreased value of substance abuse treatment benefits, decreased availability of appropriate care, and decreased autonomy of clinicians to make treatment decisions for *their* patients. While these trends mirror changes noted elsewhere in the health care system, there is strong evidence that they are particularly egregious in the area of substance abuse treatment.⁴ Given the overwhelming cost that substance abuse imposes on our society (nearly a quarter trillion dollars per year), it is vital that these trends be reversed. We therefore make the following recommendations.

8.1. Economic Recommendations

1. Substance abuse treatment is a cost-effective approach to a problem that poses an enormous financial burden to society. Because of this, the society saves money by providing treatment necessary to achieve symptom relief and remission. Substance abuse treatment benefits should therefore be given parity with those for general health.
2. When higher quality treatment is made available by removing ceilings on reimbursement, costs have not escalated appreciably.⁴⁶ Major constraints on expenditure are apparently not necessary and should be rescinded.
3. Reimbursement levels for clinicians treating substance abuse should be commensurate with the time and experience required for each service, relative to other medical treatments. Clinicians should not be forced out of the field by an inadequate reimbursement structure or by unwarranted exclusion from provider panels.
4. The criteria for reimbursement applied by managed care organizations should be available to both patients and healthcare providers on request.
5. Parity in coverage with other medical illnesses should be established. It should, however, not be secured at the expense of access to treatment or at a prohibitively low reimbursement rate.

8.2. Clinical Recommendations

1. Adequate treatment requires the use of a set of criteria for patient care which are empirically developed by clinicians, such as the ASAM Patient Placement Criteria.

2. Patient placement criteria should be flexible enough to address the medical and psychosocial problems that impede recovery. Clinicians' judgment should therefore be respected in defining limits of care, even beyond criteria usually applied.
3. Special attention needs to be paid to patients with addiction and other disorders. Specifically, patients with concomitant medical illness such as hepatic disease or psychiatric illness such as bipolar disorder will require additional intensive treatment.
4. Treatment should include support for patients' entry into care. Motivational difficulties and denial are part of addictive illness and must be addressed with support for initiating treatment.
5. There is need for legislation to ensure proper minimal standards of care. Otherwise treatment may be defined with appropriate clinical care secondary to economic gain.

8.3. Managed Care Organizations' Responsibility

1. Insurers should be liable for the constraints they apply to treatment. This is particularly relevant when they operate contrary to the preferences of the treating clinician. The repeal of ERISA legislation would be a step towards addressing this issue.
2. It should be possible to appeal denial or restriction of treatment. Such appeals should be conducted by a group independent of the managed care insurer or provider.
3. Any arbitration should be done with full participation of independent professional organizations, as well as the managed care entity.

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