

A Framework for Assessing the Effectiveness, Efficiency, and Equity of Behavioral Healthcare

Lu Ann Aday, PhD; Charles E. Begley, PhD; David R. Lairson, PhD; Carl H. Slater, MD; Alan J. Richard, PhD; and Isaac D. Montoya, PhD

Abstract

Objective: To evaluate the effectiveness, efficiency, and equity of behavioral healthcare and to guide an assessment of the current state of the art of behavioral health-oriented health services research.

Study Design: The framework is grounded in previous conceptual work by the authors in defining a prevention- and outcomes-oriented continuum of healthcare and in identifying and integrating the concepts and methods of health services research and policy analysis for assessing healthcare system performance.

Patients and Methods: The defining assumptions are that (1) the denominator for behavioral healthcare services must encompass a look at the population, not just the patients, who manifest behavioral health risks; and (2) the delivery system to address these needs must extend beyond acute, treatment-oriented services to include both primary prevention and aftercare services for chronic relapsing conditions.

Results: Current policy and practice in behavioral healthcare reveal the absence of a comprehensive, coordinated continuum of care; substantial variation in policy and financial incentives to encourage such development; and poorly defined or articulated outcome goals and objectives. The current state of the art of research in this area reflects considerable imprecision in conceptualizing and measuring the

effectiveness, efficiency, and equity criteria. Further, these 3 criteria have not been examined together in evaluating system performance.

Conclusions: The first era of behavioral healthcare focused on cost savings in managed care alternatives; the second is focusing on quality and outcomes; a third must consider the issues of equity and access to behavioral healthcare, especially for the most seriously ill and vulnerable, in an increasingly managed care-dominated public and private policy environment.

(*Am J Managed Care* 1999;5:SP25-SP44)

Although the terms “behavioral health” and “behavioral healthcare” sound precise and measurable, there are in fact no generally accepted definitions of these concepts. Their wide use in the managed care market owes more to a rhetorical history that implies precision rather than to any actual precision. Attempts to define these terms sometimes have merely served to underline their ambiguity. For instance, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) defined behavioral healthcare as “a broad array of mental health, chemical dependency, forensic, mental retardation or developmental disabilities, and cognitive rehabilitation services provided in settings providing services such as acute, long term, and ambulatory care.”^{1(p1)} Here, the “array” of “disorders” or “disabilities” that might fall under the rubric of behavioral health is broad and apparently open ended. Consequently, it is not clear what sorts of services this definition would exclude.

Because behavioral healthcare appears to be a reimbursement category that will be in use for

From The University of Texas School of Public Health, Houston, TX (L.A.A., C.E.B, D.R.L., C.H.S), and Affiliated Systems Corporation, Houston, TX (A.J.R., I.D.M).

Opinions expressed herein are solely those of the authors.

Address correspondence to: Lu Ann Aday, PhD, The University of Texas School of Public Health, PO Box 20186, Houston TX 77225. E-mail: laday@utsph.sph.uth.tmc.edu.

some time, it is important that practitioners of behavioral healthcare come to an agreement regarding a working definition. Based on a brief review of the history of behavioral healthcare and an overview of health services research on the measurement of effectiveness, efficiency, and equity, this article introduces a framework for defining behavioral healthcare and for guiding research on its performance and impact.

... BEHAVIORAL HEALTHCARE ...

“Behavioral”

The use of the adverb “behavioral” to modify “health” in “behavioral healthcare” has a precedent in the behavioral medicine movement of the 1970s, itself heavily dependent on behaviorism as it was interpreted by American psychologists in the 1950s and 1960s. Behavioral medicine was an attempt to integrate the goals of psychiatry and allied mental health disciplines with those of physical medicine. Interior emotional or cognitive states, and even mental illnesses as traditionally defined, concerned behavioral medicine “only insofar as they contribute to physical disorders as an end point.”^{2(p7)}

The most important legacy of behavioral medicine for today’s behavioral healthcare industry may lie in a subtle but nevertheless real shift of emphasis toward the treatment of behavior with undesirable consequences and away from the treatment of disordered cognition or affect. Behavioral medicine’s use of a strict, medically driven criterion for therapy and its insistence on observable behavioral change grow out of its sharp focus on behavioral symptoms. McKegney and Schwartz note that “one of the cardinal principles of behavioral medicine as a field is that well-defined treatment techniques are used for specific target symptoms or signs of illness.”^{3(p330)} This behavioral symptomatology at the heart of behavioral medicine also represents a movement away from neurobiologic symptomatology. This raises suspicions among some practitioners that the “behavioral” emphasis in behavioral healthcare will result in an emphasis on treating the emotional and personal problems of neurobiologically healthy individuals at the expense of persons with severe, chronic mental disorders.⁴

“Health”

What behavioral healthcare is also depends on what we mean by “health.” Caplan and colleagues observed that “the concept of health may have as

many nuances as there are diseases, and it may be a derivative from these particular disease concepts.”^{5(p32)} Traditional negative physical concepts of health may place practitioners of behavioral healthcare in some very awkward positions if physicians, nurses, and payers expect these practitioners to intervene to influence behavior change whenever a patient’s behavior poses a potential “health” risk. Skydiving, rock climbing, and even automobile driving are behaviors that significantly increase the chances of physical mortality or morbidity, but does that mean that they are behavioral disorders? Because people can derive considerable joy and fulfillment from activities that pose significant health risks, practitioners of behavioral medicine risk becoming *pleasure police*, maximizing the maintenance of functioning bodies without regard for the flourishing of persons. More holistic definitions of health have been endorsed by the World Health Organization (WHO). In its 1946 constitution, WHO defined health as “a complete state of physical, mental and social well-being and not merely the absence of illness.”^{6(p29)} More recently, it defined health as the ability “to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health is therefore a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities.”^{7(p1)}

“Care”

The meaning of the term “care” in the phrase “behavioral healthcare” depends to a large extent on the meaning given to the other words in the phrase. If we adapt the notion of behavioral health to the WHO’s conception of health, the scope of behavioral health shifts substantially. Syndromes such as clinical depression, bipolar disorder, schizophrenia, and the like can be consistently treated as direct threats to health, not simply as potential generators of unhealthy behaviors. In the process, however, much of the apparent clarity of purpose and outcome that distinguished behavioral medicine from mental health practice and psychiatry is lost.

Practitioners who provide behavioral healthcare do not face this problem alone. With the aging of the population, the entire healthcare community has shifted its focus away from acute care and toward the prevention, delay, and management of chronic conditions. During the period when the American mental health system was being developed, clinical medicine was primarily occupied

with the treatment of infectious diseases. The outcomes of such treatments are more easily measured than the outcomes of therapies for chronic physical illness or behavioral health problems such as depression or substance abuse. If these outcomes are measured at the time of discharge, the result is different from what it would be if they were measured a year later.

Like chronic diseases and conditions, chronic behavioral health conditions are often preceded by biological anomalies, environments, traits, states, and events that statistically or theoretically predispose individuals toward disease.⁸ For instance, exposure to shift work,⁹ avoidant problem solving, stressful, fateful, or disruptive life events such as marital breakup or job separation,¹⁰⁻¹³ and neuroticism¹⁴ all have been shown to predict the occurrence of major depressive disorders. Adult alcoholism has been shown to be preceded and predicted by a variety of factors, including a family history of alcoholism,¹⁵ poor early school performance,¹⁶ and low level of response to alcohol.¹⁷ Behavioral interventions can sometimes reduce the amount of suffering individuals and communities experience as a result of chronic, symptomatic, debilitating mental health or substance abuse conditions. Thus, once a positive definition of health is adopted, the scope of care expands to encompass a continuum extending from prevention to long-term maintenance and harm reduction.

... CONCEPT AND CONTINUUM OF
BEHAVIORAL HEALTHCARE ...

Based on the review of the defining elements of behavioral healthcare, we propose the following definition: *Behavioral healthcare represents a continuum of services aimed at promoting physical, mental, and social well-being through thoughtful and respectful intervention in human behavior, behavioral antecedents, and behavioral consequences.*

The array of programs and services that would be encompassed in a comprehensive continuum of behavioral healthcare is displayed in Figure 1. The continuum implies continuity, integration over time, and integration among components in the context of promoting and protecting the health of individuals and populations through primary prevention to inhibit the onset of mental health and substance abuse problems, secondary prevention to restore a person who is already affected to maximum functioning in the least restrictive environment, and tertiary prevention to minimize the deterioration of

mental and physical functioning for those experiencing chronic, relapsing conditions.

The provision of ambulatory and acute institutional care within the conventional clinical care system encompasses the treatment-oriented (secondary prevention) center of the continuum. Community social and economic resources, as well as mental health and substance abuse prevention programs, define the primary prevention-oriented beginning of the continuum. Long-term institutional, home, and community-based care extend the continuum toward enhancing quality of life and maximizing functioning of those with chronic mental illness or addictions. The prevention-oriented and long-term-care poles encompass an array of clinical, as well as nonclinical, programs and services directed toward promoting or protecting the physical, mental, and social health of populations and individuals.^{18(p117)}

... POLICY ISSUES ...

The magnitude of unmet need for mental health and substance abuse services is estimated to be high in many communities. Based on the Epidemiological Catchment Area survey, around 30% of individuals with a diagnosable mental disorder go untreated, whereas 56% to 59% receive care in the general medical sector and only 8% to 12% in the specialty mental health sector.¹⁹ The National Household Survey of Drug Abuse estimated even higher rates of unmet need among serious drug users. In 1996 around 63% of those in need of treatment did not receive it.²⁰ The rates of untreated disorders have been estimated to be even higher for children, the elderly, blacks, and Hispanics. Primary prevention and aftercare services also are poorly developed in many communities.

Much mental health and substance abuse policy in this country is shaped by state and local governments because of their historical role in caring for people with serious mental and behavioral disorders. State mental health authorities have extensive experience with providing services directly for citizens (primarily through state mental hospitals) under conditions of limited budgets and excess demand. In recent years, with deinstitutionalization, states have become engaged in developing community mental health systems that provide an array of home, clinical, and social support services, including case management, for their priority populations. The federal government has played a major role with the passage of the Community Mental Health Centers

Construction Act of 1963, providing federal funding to establish community mental health centers so that clients could be served in community settings instead of mental hospitals. In addition, over the

past 30 years, federal eligibility, coverage, and payment policies in the Medicare, Medicaid, Social Security Disability Insurance and Supplemental Security Income, and other welfare

Figure 1. Continuum of Behavioral Healthcare



Adapted from Aday LA. *At Risk in America: The Health and Health Care Needs of Vulnerable Populations in the United States*. San Francisco, CA: Jossey-Bass; 1993:Figure 5.1 (p 117), Table 5.4 (p 134), and Table 5.5 (p 139).¹⁸ Used with permission.

programs have had a major impact on behavioral healthcare practice.²¹

Governments at all levels are increasingly purchasing behavioral healthcare services from the private sector, typically from local private community mental health centers, psychiatric hospitals, and social service agencies. In response to rising costs, federal, state, and local governments also are learning to compete in the managed care market both as providers of behavioral healthcare services and as payers through state Medicaid managed care programs. They are implementing managed care practices such as risk-based contracting, utilization management, and protocols for contract development and credentialing that will impact mental health services.²²

Governments also are involved in extending behavioral healthcare insurance coverage through their role as regulators of insurance plans. Mental health benefit parity requirements, recently addressed by national legislation, have been a major focus of this regulation. A major effort is being made to determine how much and what type of government regulation is needed to ensure quality behavioral healthcare in the managed care environment and the appropriate integration with general healthcare. Governments are working on developing consistent financial reporting, cost-accounting methods, and outcomes reporting as they assume the role of “watchguards of the privatized public safety net.”^{21(p96)} Other areas of attention include standards for participation, monitoring access and quality, establishing patient rights, fair marketing, supporting professional responsibility and ethical behavior, and restricting perverse financial incentives.²³

The use of health services research in policy development can be illustrated by the number of studies focusing on the effects of managed care on the mentally ill. Policy makers need to know whether the care provided in managed care plans is equal to or more effective than that in traditional plans (and whether it is more or less costly). An example of a study addressing these questions is a randomized, controlled trial with Medicaid clients in the Medicaid managed care demonstration project in Hennepin County, Minnesota, done by Lurie et al.²⁴ This study indicated that neither general health status nor psychiatric symptoms were significantly different between the managed care and the fee-for-service groups. The Medical Outcomes Study, a 4-year longitudinal study started in 1986, involved more than 20,000 patients in different practice settings in competing financing systems in

three cities. It found that overall for nonpsychiatric patients there were no differences in mental health outcomes. Among patients with major depression or dysthymia who were seen by psychiatrists, however, the outcomes were poorer for those in health maintenance organizations.²⁵

This article provides a framework for guiding the conduct of policy-oriented health services research to assess the performance and impact of privately and publicly supported managed care arrangements. The defining assumptions of the perspective offered here are that (1) the denominator for behavioral healthcare services must encompass a look at the population, not just the patients, that manifest behavioral health risks; and (2) the delivery system to address these needs must extend beyond acute, treatment-oriented services to include both primary prevention and after-care services for chronic relapsing conditions.

... FRAMEWORK FOR ASSESSING
BEHAVIORAL HEALTHCARE ...

The framework for assessing behavioral healthcare, provided in Figure 2,²⁶ acknowledges the importance of including both clinical and nonclinical factors, as well as the associated continuum of behavioral healthcare programs and services (Figure 1), when evaluating the effectiveness, efficiency, and equity of mental healthcare and substance abuse programs and policies. It also recognizes the large role played by physical, social, and economic environments and the associated health risks in influencing health outcomes.

The design and conduct of evaluations of healthcare system performance often are motivated by questions related to the formulation or evaluation of health policy. The access, cost, and quality dilemmas faced by governmental and private policy makers and institutions at the national, state, and local level in providing and paying for mental health and substance abuse services serve as invitations to investigators to contribute to the knowledge and expertise needed to address them.

The concepts and methods of behavioral healthcare research provide guidance by describing, analyzing, and evaluating the structure, process, and outcomes of the healthcare system. *Structure* refers to the availability, organization, and financing of behavioral healthcare programs; the characteristics of the populations to be served by them; and the physical, social, and economic environment to

which they are exposed. *Process* encompasses the transactions between patients and providers in the course of actual care delivery, as well as the environmental and behavioral transactions exacerbating behavioral health risks.

The delivery of healthcare services is ultimately concerned with enhancing the health of individuals and communities. Improving the health of individuals and communities is, however, best viewed as a dynamic and ongoing process. Effectiveness, efficiency, and equity research provide evaluative indicators of this process.

Clinical effectiveness, production efficiency, and procedural equity focus on behavioral healthcare services. Clinical effectiveness addresses the impact of care on improvements for individual patients; production efficiency is concerned with the combination of inputs required to produce these and related services at the lowest costs; and procedural equity assesses the fairness of care delivery.

Population effectiveness, allocative efficiency, and substantive equity focus on the ultimate outcome of interest: community-wide behavioral health improvements. Population effectiveness addresses the role of clinical and nonclinical factors in influencing the health of populations as a whole; allocative efficiency analysis attempts to address what combination of inputs produce the greatest health improvements given the available resources; and substantive equity is judged ultimately by the extent to which those health benefits are shared equally across groups in the community.

Effectiveness—or the production of behavioral health benefits—is arrayed before efficiency and equity in the framework to indicate the central role it plays in assessing the cost effectiveness of producing behavioral health benefits (efficiency), as well as the distribution of these benefits and costs across groups (equity). Effectiveness, efficiency, and equity research can assist policy makers in deciding, given constrained resources, how most fairly *and* effectively to distribute these benefits.

Behavioral healthcare research provides basic descriptive data on the organization and operation of the behavioral healthcare system (number and distribution of providers, percentage of the population uninsured, rates of service utilization).²⁷⁻²⁹ It also analyzes likely relationships between and among components (reflected in the arrows in Figure 2), examining the impact of a health policy on the delivery system and the individuals and populations

affected by this initiative; on the effectiveness, efficiency, and equity of the delivery system; and ultimately—and most importantly—on the health of the population the policy was intended to serve.²³

The structure, process, and outcomes of behavioral healthcare can be studied at the macro or micro level of analysis. The macro level refers to a population perspective on the determinants of the behavioral health of communities as a whole, and the micro level represents a clinical perspective on the factors that contribute to the health of individuals at the system, institution, or patient level. The community encompasses the population in a defined area and the physical, social, and economic environment in which they reside. This perspective acknowledges the intimate linkage between mental health and substance abuse and related sociomedical health risks (eg, homicide, suicide, family abuse, homelessness). The system level refers to the healthcare system, including the resources (money, people, physical infrastructure, and technology) and the organizational configurations used to transform these resources into healthcare services.^{30(p2)} The institution level references a specific organizational entity such as a mental hospital, substance abuse clinic, or health maintenance organization. The patient level refers to the microcosm of clinical decision making and treatment.

Information from each of these levels is required to understand and interpret fully the effects of behavioral healthcare policies and programs. Commitments to developing high-cost technologies or procedures to optimize individual patient outcomes may fail to consider whether, in the light of limited resources, these are the best investments to enhance the health and well-being of the population as a whole. Treatments that have been demonstrated to be efficacious at the individual patient level may not be applied similarly across institutions, or even within the same institution. System-level outcomes may be influenced by organizational and financial incentives that influence the patterns of healthcare provision. The expanded role of managed care in behavioral healthcare provision calls, in particular, for research on the impact of alternative forms of managed care on the access, quality, and cost of behavioral healthcare services. Community-level outcome studies allow exploration of the variations in health outcomes that may be due to differential exposures to health risks and access to healthcare or to different styles of practice not detectable by outcomes research at the institutional or system level alone.

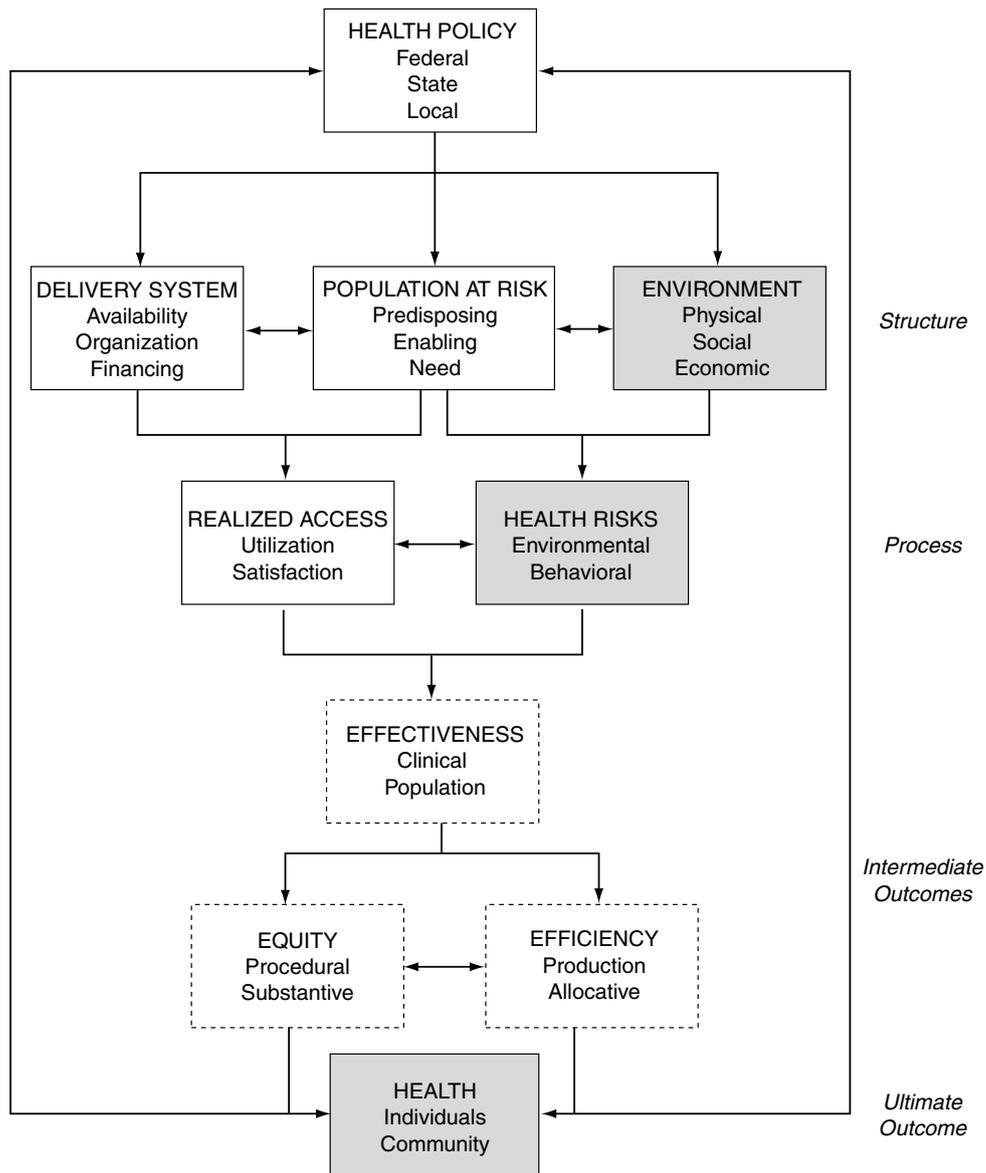
... CONCEPTS AND CRITERIA FOR ASSESSING PERFORMANCE: EFFECTIVENESS, EFFICIENCY, AND EQUITY ...

Effectiveness

Effectiveness research—more popularly known as outcomes research—attempts to link structure,

process, or both to the outcomes of healthcare at the community, system, institution, or patient level.³¹ Effectiveness research reflects 2 seemingly competing, but complementary, definitions of effectiveness. One definition represents a population perspective, or macro-level view, which considers the role of the physical, social, and economic environments on the health of the population. It includes in its purview

Figure 2. Framework for Assessing Behavioral Healthcare



Adapted from Aday LA, Begley CE, Lairson DR, et al. Evaluating the Healthcare System: Effectiveness, Efficiency, and Equity. 2nd ed. Chicago, IL: Health Administration Press; 1998:Figure 1.4 .26(p10) Used with permission.

both patients who have received care and individuals in the population as a whole who have not.²⁶ The second is a clinical perspective, or micro-level view, focused on the interactions of patients and providers in the clinical care system and institutions and the resulting improvement or health benefits achieved by patients. Research conducted from this point of view examines the impact of the structures and processes associated with delivering care on the achievement of improvements in the health of patients.

Dimensions of Effectiveness. Structure, process, and outcome are linked conceptually in a research paradigm. This paradigm assumes that structural elements of healthcare influence what is and is not done in the process, in addition to how well it is done. This process in turn influences the outcome (health) that people experience as a result of their encounters with the process.

Efficacy and effectiveness are key concerns in assessing the performance of behavioral healthcare.³²⁻³⁶ Efficacy is concerned with the benefits achievable from a therapy or an intervention under ideal conditions, such as are found in randomized clinical trials.³² The efficacy of psychotherapeutic interventions has been confirmed in a comprehensive meta-analysis of studies.³⁷ According to Lyons et al, the effectiveness of mental health services is now of concern: specifically, the questions of "what services work for whom, under what conditions, when should they be offered, and by which providers?"^{38(p1)}

Framework for Effectiveness Research. To empirically address these questions, Table 1 shows a framework for effectiveness research that attempts to integrate the 2 perspectives (ie, population and clinical) and the 4 levels (ie, community, system, institution, and patient). The population perspective focuses on addressing these questions in the context of a community-level analysis, whereas the clinical perspective could seek to address them at the system, institution, or patient level of analysis. Outcome measures, risk adjustment procedures, study designs, and data sources represent the defining dimensions of this framework.

The outcome measures, risk adjustment procedures, study designs, and data sources that might be drawn upon at each level, as well as examples that illustrate the application of these methods at each of the levels, are highlighted in Table 1 and in the discussion that follows. Specific illustrations of tools and methods applicable to behavioral healthcare also are provided.

OUTCOME MEASURES. Outcome measures in behavioral healthcare include indicators such as

improved functioning, reduction in symptoms, employment, and school behavior as well as performance on various rating scales and self-report questionnaires. Mental health performance measures have been identified and examined for their feasibility in a 5-state study.³⁹ An annotated bibliography of these rating scales and questionnaires is provided by Lyons et al.³⁸ Specific indicators of each of these broad outcome measures may be used at the different levels. Community-level outcome measures include overall population rates. For examining outcomes across institution and system levels, outcomes are aggregated from patient data within each of these levels.

RISK ADJUSTMENT. Ultimately the value of all effectiveness research depends on the ability to validly adjust for differences in risks associated with final outcomes. Risk adjustment of patient outcomes is undertaken and necessary in effectiveness research to account for the differing risks patients bring to the clinical setting. Clearly, patients who differ in their risks at entry to care or admission to a hospital—and who receive similarly effective treatments—will experience different outcomes. When randomized clinical trials are possible, these differences can be minimized by the random allocation of subjects to experimental and control groups. However, under nonexperimental conditions (the conditions under which most effectiveness research is conducted), these differences and their potential confounding should be adjusted for in the analysis. Differing risks in behavioral healthcare that require adjustments include differences in patient demographic characteristics (eg, age, gender, race); functioning; motivation; personality; severity of illness; social, marital, or family support; and symptom severity.³⁸

At the patient level, 2 general approaches may be taken to this risk adjustment. A subjective approach, relying on the informed judgments of experienced clinicians in rating the severity of the patient's illness at entry, may provide a valid assessment of a patient's status. This type of assessment, however, rarely is feasible because of the considerable therapist time required to provide a sufficiently sensitive and specific diagnosis.⁴⁰ In its place, an objective approach, based on clearly identified data related to the patient's risk, clinical state, and probable outcome, is used in an algorithm or formula to generate a score characterizing the patient's risk. These data may include characteristics of patients, their comorbid conditions, and their diagnoses, which at the institution and system levels may be incorporated into risk adjustment systems such as the Computerized Psychiatric Severity Index developed

by Horn et al.⁴¹ Also at the institution and system levels, where some of the detailed patient data may be lacking (as in discharge and claims data), demographic characteristics or comorbidity rates may be used as proxies for actual severity measures. At the community level, demographic characteristics (eg, age, gender) are used to adjust for differing risk of illness.

STUDY DESIGNS. Study designs for effectiveness research cover a range of possibilities. The design principles are the same as those for any study: namely, maximize experimental variance, control extraneous variance, and minimize error variance. Applying these principles results, on the one hand, in outcomes research designs that follow true experimental design principles of random allocation, con-

Table 1. Framework for Effectiveness Research*

Dimension	Level of Analysis			
	Population Perspective Community	Clinical Perspective		
		System	Institution	Patient
Outcome measures	Population relapse rates Population functioning rates Mental health status Population reduction rates Mental health incidence and prevalence rates Perceived mental health	Relapse rates Functioning rates Mental health status Reduction rates Diagnosis rates Averaged self-report	Relapse rates Functioning rates Mental health status Reduction rates Diagnosis rates Averaged self-report	Relapse/recidivism Functioning Mental health status Symptom reduction Diagnosis Self-reported mental health
Risk adjustment	Demographic characteristics	Demographic characteristics Comorbidity rates Risk adjustment systems	Demographic characteristics Comorbidity rates Risk adjustment systems	Patient profiles Comorbidity Diagnoses
Study design	Observational-epidemiological	Observational-interorganizational	Observational-intraorganizational	Observational Case reports/series Experimental—randomized clinical trials Synthetic Meta-analysis Decision analysis
Data source	Records Population health information system Surveillance Surveys	Records Medical records Discharge data Claims data Surveys	Records Medical records Discharge data Claims data Surveys	Records Medical records Discharge data Claims data Surveys

*The following are typical effectiveness research questions by level of analysis:

Community: What is the contribution of behavioral healthcare to the mental health of the population?

System: What is the impact of system-level variables (eg, provider specialty mix, organizational form, payment mechanism) on the processes and outcomes of behavioral healthcare?

Institution: What is the impact of the quality of care on the outcomes of behavioral healthcare?

Patient: What patient treatment options result in the best mental health outcomes for patients with a specific condition?

Adapted from Aday LA, Begley CE, Lairson DR, et al. *Evaluating the Healthcare System: Effectiveness, Efficiency, and Equity*. 2nd ed. Chicago, IL: Health Administration Press; 1998:Table 2.2.^{26(p53)} Used with permission.

trol groups, blinding, and homogeneity and that lead to efficacy studies. On the other hand are non-experimental observational designs, in which investigators do not directly intervene but instead develop methods for describing events that occur naturally and their effect on study subjects. An alternative is what has been called synthetic design⁴²: meta-analysis and decision analysis. Meta-analysis involves statistically combining the results of several randomized clinical trials to estimate the results of therapy. A decision analysis requires information on the actual treatment of patients with a disease, the outcomes, and the value of those outcomes to patients.

A comprehensive meta-analysis of psychotherapeutic interventions has been done by Lipsey and Wilson.³⁷ They reviewed more than 300 prior meta-analyses and concluded that the efficacy of these interventions has been well established. Given this conclusion, the effectiveness of these services and particularly their effectiveness under managed care arrangements still need investigation. The few studies related to their effectiveness under managed care are inconclusive, and the tools for a comprehensive assessment need further development. Agreed-on outcome measures and risk adjustment procedures are sorely needed and are under development. Data sources, particularly of the performance-monitoring type reflected in the Health Employer Data and Information Set (HEDIS) system, need development and implementation to make good effectiveness research possible.

DATA SOURCES. When clinical trials and true experiments are not possible, effectiveness research relies on a variety of data sources for cross-sectional type studies (as shown in Table 1). Surveys of institutions, providers, and patients as well as records of clinical care, discharges, and claims provide information for effectiveness research at the patient, institution, and system levels, depending on the level of aggregation of the data. At the community level, the following types of sources provide the data for effectiveness studies: state and county governments charged with the responsibility for administering mental health services, police records reflecting arrests related to mental health or drug abuse problems, the Drug Abuse Warning Network medical examiner and emergency room databases,⁴³ and prevalence surveys such as the National Comorbidity Survey⁴⁴ and the National Household Survey on Drug Abuse.⁴⁵

EXAMPLES. Studies of the effectiveness of behavioral healthcare under managed care are limited and

at this point inconclusive, which in itself argues the need for further research in this arena. A good overview of these studies is provided by Christianson and Osher,⁴⁶ who document studies done in 4 settings: the Northwest region (Kaiser Permanente); the RAND Medical Outcomes Study (Boston, MA; Chicago, IL; Los Angeles, CA); Hennepin County, Minnesota (the Medicaid demonstration); and Monroe and Livingston counties in New York. These studies taken together fail to provide a conclusive or coherent picture of the impact of managed care on patients with mental health problems,⁴⁶ a conclusion confirmed by Wells and Sturm.²⁵

One other example study, not focused on managed care and specific to drug abuse treatment only, is the National Drug Abuse Treatment Outcome Study. This study, funded by the National Institute on Drug Abuse, "is a multisite prospective study of drug treatment effectiveness based on a sample of 120,010 treatment admissions from approximately 100 treatment programs in 11 cities."^{47(p497)} This is an example of outcomes research at the patient level.

CRITERIA. The effectiveness framework also can be used to develop a set of criteria for assessing the adequacy of behavioral healthcare services. The conceptualization of the Community Healthcare Management System by Shortell and colleagues provides the theoretical basis for these criteria.⁴⁸ Such a system, they suggest, begins with the assessment of needs on a population level and proceeds to the development of (1) resources and services across the continuum of care to meet those needs, (2) guidelines and protocols to guide the care, and (3) a potential monitoring system to ensure that the needs are met. This conceptualization implies a set of criteria related to improving the effectiveness of behavioral healthcare; namely, behavioral healthcare options should be based on population mental health information, should address the continuum of behavioral healthcare services, should specify guidelines for clinical performance, and should seek to improve the performance of behavioral healthcare through monitoring of process and outcomes indicators. The first 2 criteria reflect the population perspective; the latter 2, the clinical perspective. The impact of the behavioral health continuum has been investigated for children and adolescents in a military setting through the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) program.⁴⁹ In a quasi-experimental evaluation design, comparing Fort Bragg as the demonstration site with 2 other military bases, this study showed

that with a continuum-of-care philosophy, children in this setting were less likely to leave treatment inappropriately; thus, time in treatment was extended.

Guideline development in the field of mental health has been as active as in medical fields. The *Clinical Practice Guidelines for Depression in Primary Care* developed by the Agency for Health Care Policy and Research,⁵⁰ the Practice Guideline for Major Depressive Disorder in Adults developed by the American Psychiatric Association,⁵¹ and the Treatment Improvement Protocols developed by the Center for Substance Abuse Treatment⁵² are prominent examples of these guidelines.

There are also significant efforts to develop monitoring systems for mental healthcare. One is the Performance Measures for Managed Behavioral Healthcare Programs developed by the American Managed Behavioral Health Care Association in a desire to supplement the HEDIS set. It consists of 16 measures covering the domains of access, consumer satisfaction, and quality of care. The effectiveness measures included are ambulatory follow-up after hospitalization for major depressive disorder and treatment failure for substance abuse.⁵³ Another monitoring approach is in the form of a report card. This activity represents a collaboration among consumers, the Mental Health Statistics Improvement Program, and the Center for Mental Health Services of the Substance and Mental Health Services Administration.^{54,55}

In summary, the efficacy of behavioral healthcare services has been established.³⁷ It is the effectiveness of these services and particularly their effectiveness under managed care arrangements that need investigation now. The few studies related to their effectiveness under managed care are inconclusive, and the tools for a comprehensive assessment need further development. Agreed-on outcome measures and risk adjustment procedures are sorely needed and are under development. Data sources, particularly of the performance-monitoring type reflected in the HEDIS system, need development and implementation to make good effectiveness research possible. Given the current need, the will, the concepts developed here, and the previous work with physical health effectiveness research, it should be possible to chart a course for assessing the effectiveness of behavioral healthcare in general and under managed care specifically.

Efficiency

For society as a whole, efficiency requires that the combination of goods and services with the high-

est attainable total value be produced, given limited resources and technology.⁵⁶ This requires attainment of both allocative and production efficiency. Allocative efficiency depends on attainment of the “right” (most valued) mix of outputs.⁵⁷ Production efficiency refers to producing a given level of output at minimum cost. As implied in the conceptual framework (Figure 2), improving the health of communities and individuals is the desired and valued endpoint (or output) of societal investments in behavioral health programs and policies. There is a need for a better understanding of these problems and how the healthcare system operates, as well as for policies that will improve the access, cost, and quality of behavioral healthcare. The tools of efficiency analysis can assist in formulating and assessing these policies.

Allocative Efficiency. Where behavioral healthcare is viewed as an input in the production of health improvements, the focus is on allocative efficiency (maximizing health with constrained resources). Allocative-efficiency problems arise in healthcare delivery, for example, when substantial resources are allocated to treatments of questionable effectiveness while proven preventive services are neglected. Primary health policy areas that reflect concerns with allocative efficiency in relationship to behavioral health improvements are (1) behavioral medicine versus nonmedical policy alternatives, (2) coverage of preventive services, and (3) mix or types of treatment.

BEHAVIORAL MEDICINE VERSUS NONMEDICAL ALTERNATIVES. In a broader context of health-oriented social policy, a society may achieve much greater health benefits by diverting resources from healthcare to investment in social capital (eg, education, job training, safe communities, community development).^{58,59} For example, a British study links increased job insecurity to worse health measures and health risks. From a position of no advantage at baseline, self-reported morbidity and physiologic risk factors tended to increase among respondents from the threatened department compared with those from other departments.⁶⁰ Grossman⁶¹ has proposed that schooling improves the efficiency by which one produces one’s own health; that is, better-educated people have more know-how regarding what is needed to stay healthy and know better how to use medical and other inputs, as well as their time, to produce better health.⁶²⁻⁶⁴ These findings present interesting challenges to state policy makers in particular, who face significant trade-offs in deciding the relative allocation of state tax dollars to

Medicaid versus public education and the effects of fiscal policy on employment.

PREVENTIVE SERVICES. Within the behavioral healthcare sector, there is concern that too much is spent on the treatment of persons with existing illness for whom health improvements are limited and too little is spent on preventive services. To date, however, behavioral healthcare lacks a workable paradigm for developing, implementing, and evaluating such services. School-based substance abuse prevention is the most heavily supported and researched preventive behavioral healthcare strategy in the United States. Studies indicate that participation in these programs does not delay drug use significantly once the former participants enter adolescence.^{65,66} Although researchers are improving their ability to predict the onset of mental disorders, including schizophrenia,⁶⁷ and research has indicated that interventions conducted in preadolescence can affect the severity of anxiety symptoms,⁶⁸ little has been written regarding the implications of these advances for the prevention of mental illness. To date, the United States lacks any effort to match Italy's Sonda Project,⁶⁹ an ambitious preventive undertaking designed to lower the risk of the development of debilitating mental illness in children.

As in medical care, it is difficult to document the effectiveness and cost effectiveness of behavioral healthcare preventive programs.^{70,71} Mechanic²³ described the potential, but unproven, advantage of managed care organizations to improve the allocation of resources and production efficiency by taking a population view of behavioral health problems, that is, by assessing the behavioral health needs in the population and having the flexibility to organize the most efficient preventive and therapeutic services to address those needs. In contrast, studies have documented poor performance of health maintenance organizations in covering and providing a broad range of behavioral healthcare services, especially services targeted to the most severely impaired patients.⁷² Although research has documented no overall variation in mental health outcomes in general by practice setting or payment plan, there is evidence that psychiatrically treated managed care patients with the most severe mental illnesses fare less well under managed care than under more traditional practices.^{25,73,74}

Economic controls imposed at the governmental level constitute another level of intervention in terms of primary prevention. For example, increasing the cost of substances such as drugs, alcohol, and ciga-

rettes can reduce the incidence and quantity of use by youths.⁷⁵⁻⁷⁷ In fact, a series of studies published over the past decade indicating that price significantly affects the consumption of so-called "addictive" substances poses one of the most interesting challenges to conventional notions of addiction—and one of the most promising avenues for prevention.⁷⁸⁻⁸⁶

MIX OR TYPES OF TREATMENT. There is a corresponding concern regarding the appropriate and efficient mix or types of services delivered in treating patients. This is reflected, for example, in the overuse of institutionalization for alcohol problems.^{87,88} When appropriately supported, less intensive outpatient care may be just as effective and less costly.⁸⁹ However, under managed care arrangements, there are questions about whether the reduction in inpatient care is truly more efficient, given the lack of studies on patient outcomes over the long term.²³ This may simply represent a reduction in services and shifting of costs without appropriate augmentation of community services such as outpatient and home treatment to achieve the same or improved outcomes for patients.

Production Efficiency. Health is viewed as the final output and behavioral health services as an intermediate output of the healthcare system. Production efficiency (producing output at the least cost) is of concern for both intermediate and final outputs. Production efficiency addresses whether resources are organized and managed in a manner that minimizes the cost of production (for a given level of quality), as well as whether personnel, supplies, and equipment are paid for at rates that represent their cost in their next-best alternative use. Inefficiency occurs when physicians provide services that could be provided just as well by nurses or other less expensive health personnel and when practice does not take advantage of economies of scale, as in the production of laboratory services.

The key methods for assessing allocative and production efficiency involve both micro- and macro-level analysis. These methods are described below.

Key Methods of Assessing Efficiency. Economic analysis typically is divided into micro and macro levels. The micro level encompasses the 3 health services research levels defined earlier as part of the clinical perspective on effectiveness: patient, institution, and system. Macroeconomics focuses on the population as a whole. This parallels the population perspective on health outcomes at the community level (as shown in Table 1).

MICRO LEVEL. The principal methods used in micro-level analyses of efficiency include (1) esti-

mating production functions and (2) cost-effectiveness, cost-benefit, and related cost-utility analyses.

Production Functions. Economists have developed a comprehensive theoretical model of production efficiency, expressing how the total, average, and marginal costs of a given product or commodity change under a given set of assumptions regarding the relationship between inputs and outputs (the production function), the cost of inputs, and technology. For example, inputs for behavioral healthcare may include physician and therapist time and prescription drugs, and outputs may be defined in terms of services rendered or their effect on the mental health of patients. Input costs include therapist and physician earnings, rents, and the cost of drugs. Technology is defined broadly as the information and techniques for transforming inputs into outputs. The cost functions represent the minimum total and unit costs attainable for alternative combinations of inputs and the size of the production units (eg, the number of beds in an inpatient facility).

Cost-Effectiveness Analysis, Cost-Benefit Analysis, and Cost-Utility Analysis. Other efficiency analysis methods frequently applied in healthcare are cost-effectiveness analysis, cost-benefit analysis, and cost-utility analysis.⁹⁰ (See Table 2 for a comparison of these methods.) These methods have not been extensively applied in the field of behavioral healthcare, except to the extent they are used to evaluate new drug therapies. Difficulty in measuring outcome is a major impediment to these studies in this field.²³

Cost-effectiveness analysis is a systematic analysis of the effects and costs of alternative methods or programs for achieving the same objective (eg, saving lives, preventing disease, providing services). Cost-effectiveness analysis is used when the concern is with determining production efficiency, and effects are measured in nonmonetary units.⁹¹ Cost-benefit analysis is a systematic analysis of one or more methods or programs for achieving a given objective and measures both benefits and costs in monetary units. In cost-utility analysis, effects are weighted by utility measures denoting the patient's or member of the general public's preference for or desirability of a particular outcome.⁹²

Cost-benefit analysis can determine whether a program is worth doing in the sense that its benefits are greater than its costs (allocative efficiency), whereas cost-effectiveness analysis compares the costs of alternatives for achieving a common objective (production efficiency) without determining whether the objective itself is worth achieving. For example, what are the costs and associated savings of screening and treat-

ment for alcohol problems in primary care settings? A broader view might compare this program with other medical alternatives (eg, a self-management program for chronic disease) or public health alternatives (eg, population-based health risk reduction programs).

Determination of net economic benefits in monetary terms, especially in programs for the elderly and poor, is difficult and controversial. Regardless, society generally supports such investments if they yield net health benefits. All programs with net health benefits cannot be funded and therefore should be compared in terms of cost per life-year gained or cost per quality-adjusted life-year gained. Instead of monetary values, life-years are valued (quality adjusted) according to utility values or how people feel about time spent in alternative health states ranging from states they think would be worse than death to being completely healthy.^{25,27} For example, while being completely healthy may be assigned a utility value of 1, the condition of severe depression may be assigned a value of 0.6. If an otherwise-healthy person could avert depression for 1 year, the gain would be 0.4 quality-adjusted life-years. This information provides a guide to resource allocation among programs to achieve the greatest health improvement with the available funds.^{93,94}

There is a paucity of cost-effectiveness studies in the field of behavioral healthcare primarily because the precise nature of the interventions and outcomes to be measured is difficult to specify. The economic evaluation of pharmaceutical remedies for mental and related behavioral disorders is probably the area in which the most work has been done in this regard.⁹⁵⁻⁹⁷

MACRO LEVEL. The principal macro-level approaches to efficiency analysis are based on international comparisons of the performances of healthcare systems in different countries.⁹⁸ Although there are major problems with comparisons at the system level (eg, measurement of health outcomes, cultural and demographic differences, data comparability), such comparisons do serve to raise questions about the efficiency and equity of health systems and to stimulate inquiry into reasons for major observed differences.⁹⁹ International surveys also can identify alternative approaches to treatment and prevention of behavioral health problems.

Analysts have emphasized the need to broaden the policy framework beyond healthcare to include the social and physical environment and to focus more on primary prevention and health promotion services that are usually underfunded because of the large expenditure for medical care treatment. Healthcare purchasers in a few countries (eg,

Canada, United Kingdom, Ireland, Iceland, New Zealand) have established health goals for the population and are searching for alternative ways of achieving those health goals, including preventive healthcare and more effective integration of health and other policy issues such as education, housing, and social policy. Methods of allocative-efficiency analysis are applied in making these decisions.⁹⁸

In summary, with population health as the goal, allocative efficiency concerns attainment of maximum population health using the limited resources that society has available for that objective during any given period of time. Attainment of this goal requires that societies choose the “right,” most-valued mix of medical and nonmedical services and that these services be produced at minimum cost (maximal production efficiency).

Equity

Three primary philosophic traditions have focused primarily on individuals, institutions, or the community in judging justice. These may be used to illuminate the correlates and indicators of equity in behavioral health and healthcare.²⁶

The distinctions between the individual and community perspectives are most deeply lodged in the debate between liberal and communitarian values.¹⁰⁰ The liberal political tradition focuses on the norms of personal well-being and individual freedom. Policies grounded in this tradition have been concerned with protecting or ensuring individual rights and the tradition’s underlying distributive justice paradigm. Rights are those benefits to which one has a claim, based on assessment of what a fair distribution of benefits and burdens might be. This assessment

Table 2. Comparisons of Cost-Effectiveness, Cost-Benefit, and Cost-Utility Analyses

Type of Study	Measurement/Valuation of Costs in Both Alternatives	Identification of Consequences	Measurement/Valuation of Consequences
Cost-effectiveness analysis	Dollars	Single effect of interest, common to both alternatives, but achieved to different degrees (eg, the ratio of incremental costs to incremental effectiveness [life-years saved] with usual care vs an enhanced program to screen and treat patients with substance abuse problems in primary care settings)	Natural units (eg, life-years gained, disability)
Cost-benefit analysis	Dollars	Single or multiple effects not necessarily common to both alternatives, and common effects may be achieved to different degrees by the alternatives (eg, dollars saved from investment in substance abuse prevention compared with treatment programs)	Dollars
Cost-utility analysis	Dollars	Single or multiple effects, not necessarily common to both alternatives, and common effects may be achieved to different degrees by the alternatives (eg, the ratio of incremental costs to incremental effectiveness [quality-adjusted life-years] added from investment in substance abuse prevention compared with treatment programs)	Healthy days or (more often) quality-adjusted life-years

Adapted from Drummond MF, O’Brien B, Stoddart GL, et al. *Methods for the Economic Evaluation of Health Care Programmes*. Oxford, UK: Oxford University Press; 1997: Table 1.1.^{90(p2)} Used with permission.

includes consideration of both negative rights (ie, noninterference and freedom of choice) and positive rights (ie, the conferring of specific material or non-material benefits). Posed from this point of view, the essential question regarding equity is, What can *I* justly claim? This perspective has focused most notably on the availability, organization, and financing of behavioral healthcare services.

Communitarian sentiments are based on norms of the common good, social solidarity, and protecting the public welfare. The concept of justice on which this perspective is based is concerned with the underlying social, economic, and environmental underpinnings of inequity. Rather than focusing on conferring or ensuring positive or negative rights (or benefits) to individuals, this paradigm encompasses a broader consideration of public health and social and economic interventions required to enhance the well-being of groups or communities as a whole. Posed from this perspective, the essential question regarding equity is, What's good for *us*? Health policy ultimately directed toward improving the health of individuals and populations demands investments in more comprehensive, integrated, and effective clinical and nonclinical interventions (see Figure 1).

Contemporary social theorists, most notably German philosopher Jürgen Habermas, have argued for a new synthesis of these competing foundations for fairness, based on a theory of deliberative democracy.²⁶ Policies attuned to this perspective address the extent to which norms of participation appear to guide decision making. Posed from this point of view, the question regarding equity is, *Who* decides and *how*? This deliberative justice paradigm recognizes and attempts to resolve conflicts rooted in the other dominant paradigms of fairness through posing the need for rational discourse on the part of affected groups and individuals. Habermas argues that strategic or technical-rational aims of decision makers at either the macro or micro level (eg, negotiating contract provisions for a state Medicaid behavioral healthcare managed care program, achieving patient adherence to therapeutic regimens) are unlikely to be orchestrated and achieved unless affected stakeholders (eg, providers, payers, patient advocates) have the opportunity to present and have their points of view heard and respected in the process.

Table 3 summarizes empiric indicators of equity as they relate to the primary dimensions of the framework for assessing behavioral healthcare (Figure 2) and the underlying criteria of justice. The ultimate test of the equity of health policy from the

social justice perspective is the extent to which disparities or inequalities in health among subgroups of the population are minimized. Substantive equity refers to the minimization of disparities in health among subgroups. Procedural equity refers to the extent to which the structure and process (or procedures) for achieving these outcomes may be judged to be fair, grounded in norms of deliberative, distributive, and social justice. The normative import of these procedural factors for substantive equity can be judged empirically, based on the extent to which they predict inequalities in health across groups and communities. Data may be gathered to assess dimensions of procedural and substantive equity descriptively, as well as to conduct analytic or evaluative research, exploring those factors that are most predictive of persistent substantive inequities (mirrored in subgroup variations in health). The challenge to analytic and evaluative research is how best to design studies and gather data to assess what factors are most likely to influence this endpoint and what health policy interventions are suggested as a consequence.

Participation. Empiric indicators of deliberative justice attempt to express the type and extent of affected groups' participation in formulating and implementing policies and programs. Such participation is manifest, for example, in the extent to which patients or patient advocacy groups are involved in influencing the provisions of behavioral healthcare managed care contracts, the mix of clinical and nonclinical services provided, and the criteria for assessing plan performance. An issue of central importance in working out programs of treatment for individuals who may be seriously compromised in terms of their decision-making capacity because of mental or related behavioral disorders is how to ethically and legally specify the protocol of informed consent for such treatment.

Freedom of Choice. Empiric indicators of access, based on the freedom-of-choice norm, are the distribution and availability of healthcare resources to consumers. For example, the ratios of personnel (eg, primary care physicians, mental healthcare specialists) and facilities (eg, inpatient and outpatient services) to population and the related inventories of behavioral healthcare personnel or providers (eg, managed care providers and contractors) in a given target or market area are indicators of the basic supply of providers and delivery sites available to consumers.

Cost Effectiveness. The costs and benefits of care are reflected in the type and comprehensive-

ness of services received and how satisfied patients and their families are with them relative to some standard. Studies comparing the costs and outcomes of behavioral healthcare services delivered in alternative managed care models (health maintenance organizations versus preferred provider organiza-

tions) would, for example, provide useful guidance in terms of how best to invest limited healthcare dollars. (See the more detailed discussion of cost effectiveness under "Cost Effectiveness Analysis, Cost Benefit Analysis, and Cost Utility Analysis.") *Similar Treatment*. The similar-treatment criterion empha-

sizes that age, sex, race, income, or whether a person is covered by Medicaid, has private insurance, or has no insurance should not dictate that people with similar needs enter different doors (eg, private versus public providers) or be treated differently (in terms of the type or intensity of services provided). This criterion is a defining tenet of the egalitarian concept of justice. A primary concern about care delivery in the mental health and substance abuse fields is that the existing system of financing such services lacks both parity and equity; that is, coverage comparable to that for medical care services and comparable coverage across groups, respectively.^{18(p183)}

Common Good. Empiric indicators related to the common good involve the array of social status, social capital, and human and material capital resources available to the population at risk in a given area, as well as the significant physical environmental exposures likely to exist. The role of interventions is not to alter individual actions and motivations, but to affect the more distal, foundational roots of health problems, such as the social-structural correlates of health and healthcare inequalities rooted in the physical, social, and economic environments in which individuals live and work. Health risks in the physical environment include toxic and environmental contaminants or stres-

Table 3. Criteria for and Indicators of Equity

Dimension	Criteria	Indicators
Procedural Equity		
Deliberative justice Health policy	Participation	Type and extent of affected groups' participation in formulating and implementing policies and programs
Distributive justice Delivery system Availability Organization Financing Realized access Utilization Satisfaction	Freedom of choice Cost effectiveness	Distribution of providers Types of facilities Sources of payment Type and volume of services used Public opinion, patient opinion
Distributive and social justice Population at risk Predisposing Enabling Need	Similar treatment	Age, sex, race, education, etc Regular source, insurance coverage, income, etc Perceived, evaluated
Social justice Environment Physical Social Economic Health risks Environmental Behavioral	Common good Need	Toxic, environmental hazards Social capital (family structure, voluntary organizations, social networks) Human and material capital (schools, jobs, income, housing) Toxic, environmental exposures Lifestyle, health promotion practices
Substantive Equity		
Health Individuals Community	Need	Clinical indicators Population rates

From Aday LA, Begley CE, Lairson DR, et al: *Evaluating the Healthcare System: Effectiveness, Efficiency, and Equity*. 2nd ed. Chicago, IL: Health Administration Press; 1998:Table 6.2.^{26(p186)} Used with permission.

sors (eg, lead paint, violent crime) in a given neighborhood or community. The social environment includes social resources (or social capital) associated with the family structure, voluntary organizations, and social networks that both bind and support individuals in a community. The economic environment encompasses both human and material capital resources, such as the schools, jobs, income, and housing that characterize the community.¹⁸

Need. Indicators of equity from the perspective of need attempt to measure health risks and health disparities in a population. The ultimate test of the equity of a health policy is the extent to which disparities or inequalities in health persist among subgroups of the population. The normative relevance of variations in the structure and process of care, however, can ultimately be judged empirically by the ability of these variations to predict inequalities in behavioral health risks and outcomes across groups and communities.

... CRITIQUE AND NEW DIRECTIONS ...

Behavioral healthcare is not reducible to mental health therapy, substance abuse treatment, health psychology, or the sum of these. It is a product of a larger trend toward service integration, driven by managed care's concern with cost savings. As such, it still lacks a coherent sense of itself as a systemic whole. Achieving more clarity and integration requires a serious effort on the part of behavioral healthcare practitioners and researchers to arrive at a definition that is broad enough to encompass the various specialties subsumed under it, but precise enough to possess a clear mission and a coherent set of goals.

In designing programs and policies to enhance the effectiveness, efficiency, and equity of behavioral healthcare (as well as in designing and conducting research to assess the extent to which these goals have been achieved), the following issues are particularly important to consider:

- Current policy and practice in behavioral healthcare reveal the absence of a comprehensive, coordinated continuum of care and substantial variation in policy and financial incentives to encourage its development through behavioral healthcare contracting.
- The current state of the art of research in this area reflects considerable imprecision in conceptualizing and measuring the effectiveness, effi-

ciency, and equity criteria. The goals of behavioral healthcare are not well articulated. Therefore, it is difficult to design research to evaluate "outcomes." Further, these 3 criteria have not been examined together when evaluating system performance.

- The limitations of the research in this area have resulted in a less-than-adequate knowledge base for the formulation of behavioral healthcare policy and program design.

The first era of behavioral healthcare focused on the cost savings to be realized in service integration and managed care alternatives. We are now entering a second era, which is focusing on quality and outcomes. To face the challenges of this era, we must put more effort into resolving questions related to definition,⁵ goal setting, and measurement. In a third era, we must consider the issues of equity and access to behavioral healthcare, especially for the most seriously ill and vulnerable, in a public and private environment increasingly dominated by managed care.

Acknowledgments

The authors gratefully acknowledge permission to reprint originals or adaptations of the following materials: selected excerpts from Chapters 1, 2, 4, and 6; Figure 1.4; and Tables 2.2, 4.1, and 6.2 from Aday LA, Begley CE, Lairson DR, et al. *Evaluating the Healthcare System: Effectiveness, Efficiency, and Equity*. 2nd ed. Chicago, IL: Health Administration Press, 1998; Figure 5.1 and Tables 5.4 and 5.5 from Aday LA. *At Risk in America: The Health and Health Care Needs of Vulnerable Populations in the United States*. San Francisco, CA: Jossey-Bass, 1993; and Table 1.1 from Drummond MF, O'Brien B, Stoddart GL, et al. *Methods for the Economic Evaluation of Health Care Programmes*. Oxford, UK: Oxford University Press, 1997.

... REFERENCES ...

1. Joint Commission on Accreditation of Healthcare Organizations. Glossary of terms for performance measurement systems. Available at: <http://www.jcaho.org/ns-search/perfmeas/oryx/10table3.htm>. Accessed May 22, 1998.
2. Schwartz GE, Weiss SM. Yale Conference on Behavioral Medicine: A proposed definition and statement of goals. *J Behav Med* 1978;1:3-12.
3. McKegney FP, Schwartz CE. Behavioral medicine: Treatment and organizational issues. *Gen Hosp Psychiatry* 1986;8:330-339.

4. Backlar P. What's in a name? Mental health? Behavioral health? *Community Ment Health J* 1996;32:5-8.
5. Caplan A, Engelhardt HT, McCartney J. *Concepts of Health and Disease*. Reading, MA: Addison-Wesley; 1981.
6. World Health Organization Interim Commission. Constitution of the World Health Organization. *Chronicle of the World Health Organization* 1997;1:29-40.
7. World Health Organization. *Ottawa Charter for Health Promotion*. First International Conference on Health Promotion; November 17-21, 1986; Ottawa, Ontario, Canada.
8. Shah C. *Public Health and Preventive Medicine in Canada*. 3rd ed. Toronto, Ontario, Canada: University of Toronto Press; 1994.
9. Scott AJ, Monk TH, Brink LL. Shiftwork as a risk factor for depression: A pilot study. *Int J Occup Environ Health* 1997;3(suppl 2):S2-S9.
10. Kendler KS, Karkowski LM, Prescott CA. Stressful life events and major depression: Risk period, long-term contextual threat, and diagnostic specificity. *J Nerv Ment Dis* 1998;186:661-669.
11. Roy A. A case-control study of social risk factors for depression in American patients. *Can J Psychiatry* 1997;42:307-309.
12. Salokangas RK, Poutanen O. Risk factors for depression in primary care. Findings of the TADEP Project. *J Affect Disord* 1998;48:171-180.
13. Shrout PE, Link BG, Dohrenwend BP, et al. Characterizing life events as risk factors for depression: The role of fateful loss events. *J Abnorm Psychol* 1989;98:460-467.
14. Maier W, Lichtermann D, Minges J, et al. Personality traits in subjects at risk for unipolar major depression: A family study perspective. *J Affect Disord* 1992;24:153-163.
15. Peterson JB, Pihl RO, Gianoulakis C, et al. Ethanol-induced change in cardiac and endogenous opiate function and risk for alcoholism. *Alcohol Clin Exp Res* 1996;20:1542-1552.
16. Crum RM, Ensminger ME, Ro MJ, et al. The association of educational achievement and school dropout with risk of alcoholism: A twenty-five-year prospective study of inner-city children. *J Stud Alcohol* 1998;59:318-326.
17. Schuckit MA, Smith TL. Assessing the risk for alcoholism among sons of alcoholics. *J Stud Alcohol* 1997;58:141-145.
18. Aday LA. *At Risk in America: The Health and Health Care Needs of Vulnerable Populations in the United States*. San Francisco, CA: Jossey-Bass; 1993.
19. Hough, RL, Landsverk JA, Karno M, et al. Utilization of health and mental health services by Los Angeles Mexican Americans and non-Hispanic whites. *Arch Gen Psychiatry* 1987;44:702-709.
20. Epstein J, Gfroerer J. Changes affecting NHSDA estimates of treatment need for 1994-1996. In: *Analyses of Substance Abuse and Treatment Need Issues*. Rockville, MD: US Dept of Health and Human Services, Substance Abuse and Mental Health Services Administration, Office of Applied Studies; 1998:127-145. DHHS publication (SMA) 98-3227.
21. Mechanic DS. Emerging trends in mental health policy and practice. *Health Aff* 1998;17(6):82-98.
22. Essock SM, Goldman HH. States' embrace of managed mental health care. *Health Aff* 1995;14(3):34-44.
23. Mechanic DS. Key policy considerations for mental health in the managed care era. In: Manderscheid RW, Sonnenschein MA, eds. *Mental Health, United States, 1996*. Washington, DC: US Dept of Health and Human Services; 1996:1-16. DHHS publication (SMA) 96-3098.
24. Lurie N, Moscovice IS, Finch M, et al. Does capitation affect the health of the chronically mentally ill? Results from a randomized trial. *JAMA* 1992;276:3300-3304.
25. Wells KB, Sturm R. Care for depression in a changing environment. *Health Aff* 1995;14(3):78-89.
26. Aday LA, Begley CE, Lairson DR, et al. *Evaluating the Healthcare System: Effectiveness, Efficiency, and Equity*. 2nd ed. Chicago, IL: Health Administration Press; 1998.
27. Dial TH, Kantor A, Buck JA, et al. Behavioral health care in HMOs. In: Manderscheid RW, Sonnenschein MA, eds. *Mental Health, United States, 1996*. Washington, DC: US Dept of Health and Human Services; 1996:45-58. DHHS publication (SMA) 96-3098.
28. Frank RG, McGuire TG, Norman EH, et al. Developments in Medicaid managed behavioral health care. In: Manderscheid RW, Sonnenschein MA, eds. *Mental Health, United States, 1996*. Washington, DC: US Dept of Health and Human Services; 1996:138-153. DHHS publication (SMA) 96-3098.
29. Redick RW, Witkin MJ, Atay JE, et al. Highlights of organized mental health services in 1992 and major national and state trends. In: Manderscheid RW, Sonnenschein MA, eds. *Mental Health, United States, 1996*. Washington, DC: US Dept of Health and Human Services; 1996:90-137. DHHS publication (SMA) 96-3098.
30. Longest BB Jr. *Health Policymaking in the United States*. Chicago, IL: The Association of University Programs in Health Administration; 1994.
31. Slater C. What is outcomes research and what can it tell us? *Eval Health Prof* 1997;20:243-264.
32. Brook R, Lohr K. Efficacy, effectiveness, variations, and quality: Boundary-crossing research. *Med Care* 1985;23(suppl):710-722.
33. Donabedian A. *Explorations in Quality Assessment and Monitoring*, vol I. *The Definition of Quality and Approaches to Its Assessment*. Ann Arbor, MI: Health Administration Press; 1980.
34. Cochrane A. *Effectiveness and Efficiency*. London, UK: The Nuffield Provincial Hospitals Trust; 1971.
35. Sackett DL. Evaluation of health services. In: Last J, ed. *Maxcy-Rosenau Public Health and Preventive Medicine*. Norwalk, CT:Appleton-Century-Crofts; 1980:1800-1823.
36. Williamson J. The estimation of achievable health care benefit. In: Williamson J, ed. *Assessing and Improving Health Care Outcomes*. Cambridge, MA: Ballinger Publishers; 1978:51-69.
37. Lipsey M, Wilson D. The efficacy of psychological, educational, and behavioral treatment. *Am Psychol* 1993;12:1181-1209.
38. Lyons J, Howard K, O'Mahoney M, et al. *The Measurement and Management of Clinical Outcomes in Mental Health*. New York, NY: John Wiley & Sons; 1997.

39. National Association of State Mental Health Program Directors Research Institute, Inc. Five state feasibility study on state mental health agency performance measures. Available at: <http://www.mentalhealth.org/mhstats/FeaFinal.htm>. Accessed November 24, 1998.
40. Charlson M, Sax F, MacKenzie C, et al. Assessing illness severity: Does clinical judgment work? *J Chronic Dis* 1986;39:439-452.
41. Horn S, Chambers A, Sharkey P, et al. Psychiatric severity of illness: A case mix study. *Med Care* 1989;27:69-84.
42. Fineberg H. The quest for causality in health services research. In: *Research Methodology: Strengthening Causal Interpretations of Nonexperimental Data*. Rockville, MD: Agency for Health Care Policy and Research; 1990:215-220. DHHS Publication No. (PMS) 90-3454.
43. Substance Abuse and Mental Health Services Administration. *Year-End Preliminary Estimates from the 1996 Drug Abuse Warning Network*. Rockville, MD: US Dept of Health and Human Services; 1997. DHHS Publication (SMA) 98-3175.
44. Kessler RC. The National Comorbidity Survey: Preliminary results and future directions. *International Journal of Methods in Psychiatric Research* 1995;5:139-151.
45. Substance Abuse and Mental Health Services Administration. *National Household Survey on Drug Abuse: Population Estimates, 1995*. Rockville, MD: US Dept of Health and Human Services; 1996. DHHS Publication (SMA) 96-3095.
46. Christianson J, Osher F. Health maintenance organizations, health care reform, and persons with serious illness. *Hosp Community Psychiatry* 1994;45:898-905.
47. Hser Y, Grella C, Chou C, et al. Relationships between drug treatment careers and outcomes: Findings from the National Drug Abuse Treatment Outcome Study. *Evaluation Review* 1998;22:496-519.
48. Shortell S, Gillies R, Devers K. Reinventing the American hospital. *Milbank Q* 1995;73:131-160.
49. Foster E. Does the continuum of care influence time in treatment? Evidence from the Fort Bragg Evaluation. *Evaluation Research* 1998;22:447-469.
50. Agency for Health Care Policy and Research. *Clinical Practice Guidelines for Depression in Primary Care*. Rockville, MD: Agency for Health Care Policy and Research; 1993. AHCPR Publication No. 93-0550.
51. American Psychiatric Association. Practice guideline for major depressive disorder in adults. *Am J Psychiatry* 1993;150(suppl):1-26.
52. McLellan T, Dembo T. *Screening and Assessment of Alcohol- and Other Drug-Abusing Adolescents*. Rockville, MD: Substance Abuse and Mental Health Services Administration; 1993. DHHS Publication (SMA) 93-2009.
53. Ross E. Managed behavioral health care premises, accountable systems of care, and AMBHA's PERMS. *Evaluation Review* 1997;21:318-321.
54. Substance Abuse and Mental Health Services Administration. Consumer-oriented mental health report card. Available at: <http://www.mentalhealth.org/resource/rptcrd.htm>. 1996. Accessed December 3, 1998.
55. Teague G, Ganju V, Hornik J, et al. The MHSIP mental health report card: A consumer-oriented approach to monitoring the quality of mental health plans. *Evaluation Review* 1997;21:330-341.
56. Byrns RT, Stone GW. *Microeconomics*, 6th ed. New York, NY: Harper Collins College Publishers; 1995.
57. Davis K, Anderson G, Rowland D, et al. *Health Care Cost Containment*. Baltimore, MD: The Johns Hopkins University Press; 1990.
58. Kennedy BP, Kawachi I, Glass R, et al. Income distribution, socioeconomic status, and self-rated health in the United States: Multilevel analysis. *Br Med J (Clinical Research Ed)* 1998;317:917-921.
59. Kennedy BP, Kawachi I, Prothrow-Stith D, et al. Social capital, income inequality, and firearm violent crime. *Soc Sci Med* 1998;47:7-17.
60. Ferrie JE, Shipley MJ, Marmot M, et al. An uncertain future: The health effects of threats to employment security in white-collar men and women. *Am J Public Health* 1998;88:1030-1036.
61. Grossman M. On the concept of health capital and the demand for health. *J Political Economy* 1972;80:223-255.
62. Behrman M, Wolfe BL. Does more schooling make women better nourished and healthier? Adult sibling and fixed effects estimates for Nicaragua. *J Hum Resour* 1989;24:644-663.
63. Berger MC, Lee JP. Schooling, self-selection, and health. *J Hum Resour* 1989;24:433-455.
64. Wolfe BL, Behrman JR. Women's schooling and children's health: Are the effects robust with adult sibling control for the women's childhood background? *J Health Econ* 1987;6:239-254.
65. Clayton RR, Cattarello AM, Johnstone BM. The effectiveness of Drug Abuse Resistance Education (project DARE): 5-year follow-up results. *Prev Med* 1996;25:307-318.
66. Shope JT, Copeland LA, Kamp ME, et al. Twelfth grade follow-up of the effectiveness of a middle school-based substance abuse prevention program. *J Drug Educ* 1998;28:185-197.
67. Yung AR, Phillips LJ, McGorry PD, et al. Prediction of psychosis. A step towards indicated prevention of schizophrenia. *Br J Psychiatry* 1998;172(suppl):14-20.
68. Dadds MR, Spence SH, Holland DE, et al. Prevention and early intervention for anxiety disorders: A controlled trial. *J Consult Clin Psychol* 1997;65:627-635.
69. Buscema M. The Sonda Project: Prevention, prediction, and psychological disorder. *Subst Use Misuse* 1997;32:1053-1153.
70. Ennett ST, Tobler NS, Ringwalt CL, et al. How effective is drug abuse resistance education? A meta-analysis of project DARE outcome evaluations. *Am J Public Health* 1994;84:1394-1401.
71. Gorman D. The effectiveness of DARE and other drug use prevention programs. *Am J Public Health* 1995;85:873.
72. Schlesinger M, Mechanic DS. Challenges for managed competition for chronic illness. *Health Aff* 1993;12(suppl):123-137.
73. Wells KB, Astrachan BM, Tischler GL, et al. Issues and approaches in evaluating managed mental health care. *Milbank Q* 1995;73:57-75.
74. Rogers WH, Wells KB, Meredith LS, et al. Outcomes for

- adult outpatients with depression under prepaid or fee for service financing. *Arch Gen Psychiatry* 1993;50:517-525.
75. Grossman M. Health benefits of increases in alcohol and cigarette taxes. *Br J Addict* 1989;84:1193-1204.
76. Grossman M, Chaloupka FJ. The demand for cocaine by young adults: A rational addiction approach. *J Health Econ* 1998;17:427-474.
77. Chaloupka FJ, Wechsler H. Price, tobacco control policies and smoking among young adults. *J Health Econ* 1997;16:359-373.
78. Becker GS, Grossman M, Murphy K. An empirical analysis of cigarette addiction. *Am Econ Rev* 1994;84(3):396-418.
79. Keeler TE, Hu T-W, Barnett PG, et al. Taxation, regulation, and addiction: A demand function for cigarettes based on time-series evidence. *J Health Econ* 1993;12:1-18.
80. Chaloupka F. Rational addictive behavior and cigarette smoking. *J Political Economy* 1991;99(4):722-742.
81. Ornstein SI. Control of alcohol consumption through price increase. *J Stud Alcohol* 1980;41:807-818.
82. Chaloupka FJ, Grossman M, Saffer H. The effects of price on the consequences of alcohol use and abuse. *Recent Dev Alcohol* 1998;14:331-346.
83. Ponicki W, Holder HD, Gruenewald PJ, et al. Altering alcohol price by ethanol content: Results from a Swedish tax policy in 1992. *Addiction* 1997;92:859-870.
84. Treno AJ, Nephew TM, Ponicki WR, et al. Alcohol beverage price spectra: Opportunities for substitution. *Alcohol Clin Exp Res* 1993;17:675-680.
85. Levy D, Sheflin N. New evidence on controlling alcohol use through price. *J Stud Alcohol* 1983;44:929-937.
86. Rabow J, Schwartz C, Stevens S, et al. Social psychological dimensions of alcohol availability: The relationship of perceived social obligations, price considerations, and energy expended to the frequency, amount, and type of alcoholic beverage consumed. *Int J Addict* 1982;17:1259-1271.
87. Miller W, Hester R. Inpatient alcoholism treatment: Who benefits? *Am Psychol* 1986;41:794-805.
88. Firshein J. Alcohol-treatment programmes are comparable. *Lancet* 1997;349:40.
89. McCrady B, Longabaugh R, Fink E, et al. Cost effectiveness of alcoholism treatment in partial hospital versus inpatient settings after brief inpatient treatment: 12 month outcomes. *J Consult Clin Psychol.* 1986;54:708-713.
90. Drummond MF, O'Brien B, Stoddart GL, et al. *Methods for the Economic Evaluation of Health Care Programmes.* Oxford, UK: Oxford University Press; 1997.
91. Clark RE, Teague GB, Ricketts SK, et al. Cost-effectiveness of assertive community treatment versus standard case management for persons with co-occurring severe mental illness and substance use disorders. *Health Serv Res* 1998;33:1285-1308.
92. Gold M, Siegel J, Russell L, et al. *Cost-Effectiveness in Health and Medicine.* New York, NY: Oxford University Press; 1996.
93. Torrance G, Feeny D. Utilities and quality adjusted life-years. *Int J Technol Assess Health Care* 1989;5:559-575.
94. Torrance G, Feeny DK, Furlong WJ, et al. Multiattribute utility function for a comprehensive health status classification system—Health Utilities Index Mark 2. *Med Care* 1996;34(7):702-722.
95. Agency for Health Care Policy and Research. *Report to Congress: Progress of Research on Outcomes of Health Care Services and Procedures.* Rockville, MD: Agency for Health Care Policy and Research; 1991. AHCPR publication 91-0004.
96. Power EJ. Current efforts in standards development: United States. *Med Care* 1996;34(suppl):DS204-DS207.
97. Hillman AL. Summary of economic analysis of health care technology: A report on principles. *Med Care* 1996;34(suppl):DS193-DS196.
98. Organization for Economic Cooperation and Development. *New Directions in Health Care Policy.* Paris, France: Organization for Economic Cooperation and Development; 1995. Health Policy Studies; No. 7.
99. Schieber G, Poullier J. Overview of international comparisons of health care expenditures. In: *Health Care Systems in Transition: The Search for Efficiency.* Paris, France: Organization for Economic Cooperation and Development; 1990. Social Policy Series; No. 7.
100. Mulhall S, Swift A. *Liberals and Communitarians.* Oxford, UK: Blackwell; 1992.