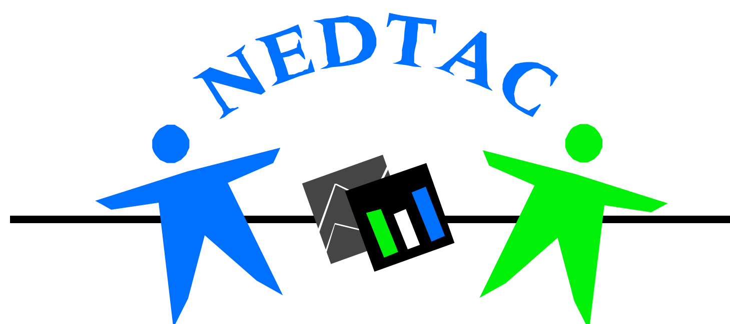
NATIONAL EVALUATION DATA AND TECHNICAL ASSISTANCE CENTER



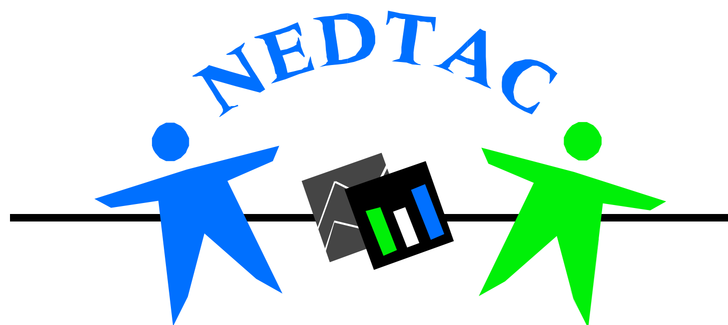
COST BENEFIT OF SUBSTANCE ABUSE TREATMENT: SELECTED BIBLIOGRAPHIES, 1990-1998

April 1999

CSAT
Center for Substance Abuse Treatment
SAMHSA

CALIBER
ASSOCIATES

NATIONAL EVALUATION DATA AND TECHNICAL ASSISTANCE CENTER



COST BENEFIT OF SUBSTANCE ABUSE TREATMENT: SELECTED BIBLIOGRAPHIES, 1990-1998

April 1999

This document was supported by the Center for Substance Abuse Treatment, Department of Health and Human Services, Caliber/NEDTAC Contract No. 270-94-0001.

CSAT
Center for Substance Abuse Treatment
SAMHSA

TABLE OF CONTENTS

FOREWORD i

I. COST BENEFIT OF SUBSTANCE ABUSE TREATMENT: ANNOTATED BIBLIOGRAPHY 1

II. COST BENEFIT OF SUBSTANCE ABUSE TREATMENT: SELECTED BIBLIOGRAPHY 48

FOREWORD

One of the missions of the Center for Substance Abuse Treatment (CSAT) is to enhance the nation's substance abuse treatment system by identifying, developing, and supporting appropriate policies, approaches, and programs. In short, for the field of substance abuse treatment, CSAT seeks to determine what works, for whom, how well, and at what cost.

Building knowledge through evaluation is the key to answering these questions. From CSAT's perspective, evaluation—including cost analysis and performance measurement—is an integral component of program management and part of an ongoing process of knowledge development, assessment, and improvement. Toward this end, CSAT's Program Evaluation Branch established the National Evaluation Data and Technical Assistance Center (NEDTAC) to advance state-of-the-art evaluation in the field of substance abuse.

A primary NEDTAC activity was to provide evaluation technical assistance and support to substance abuse treatment providers and evaluators. To this end, NEDTAC produced a series of bibliographies in key topic areas. This document belongs to that series. This annotated and selected bibliography lists books, articles, and research studies that focus on assessing cost effectiveness of program services and on benefits to clients in substance abuse treatment programs. We hope this document will assist professionals within the substance abuse treatment community with their ongoing determination of effective program services.

This bibliography, along with others in this series, was developed under the guidance of Ron Smith, Ph.D., Government Project Officer, Program Evaluation Branch, Office of Evaluation, Scientific Analysis, and Synthesis. We also wish to thank Beth Archibald Tang of the NEDTAC Clearinghouse for compiling and reviewing this document.

Sharon Bishop
Director
National Data Evaluation and
Technical Assistance Center (NEDTAC)

I. Cost Benefit of Substance Abuse Treatment: Annotated Bibliography

I. Cost Benefit of Substance Abuse Treatment: Annotated Bibliography

Alterman, A.I. et al. (1994). Effectiveness and costs of inpatient versus day hospital cocaine rehabilitation. Journal of Nervous and Mental Diseases, 157-163.

The authors compared the effectiveness and costs of day hospital (DH) versus inpatient (INP) rehabilitation for cocaine dependence. Subjects were 111 inner-city, lower socioeconomic, primarily African-American male veterans who qualified for a diagnosis of cocaine dependence and presented no acute medical or psychiatric conditions requiring inpatient treatment. Fifty-six men were randomly assigned to 1 month of DH rehabilitation, and 55 were assigned to 1 month of INP rehabilitation. Treatment outcome was evaluated 7 months after admission into treatment (92% of the subjects), and a cost analysis was performed. A significantly greater portion of INP subjects (89%) completed treatment than did DH subjects (54%). Significant improvements in substance abuse, psychosocial functioning, and health status were found 7 months post-admission for both groups, but there was little evidence of differential improvement between groups. Urine toxicology findings were consistent with self-reported data in showing improvement from baseline, but no group differences in cocaine use. The groups did not differ significantly in post-rehabilitation aftercare participation or in relapse to additional treatment. DH treatment costs were 40 percent to 60 percent of INP treatment costs, depending on the measure used. (Author abstract modified)

Anderson, D.W., Bowland, B.J., Cartwright, W.S., & Bassin, G. (1998). Service-level costing of drug abuse treatment. Journal of Substance Abuse Treatment, 15, 201-211.

A method for estimating the costs of delivering specific substance abuse treatment services is described. With data from 13 programs, the mean monthly costs per patient for residential are estimated to be $2,773; for outpatient treatment, $636. Data are also presented on the monthly cost per patient for individual treatment and nontreatment services, average number of services, cost per unit of service, and intensity of services. The data are germane to estimating insurance benefit costs and to illustrating the costing of best-practice treatment of adolescents (consistent with the Treatment Improvement Protocol of the Center for Substance Abuse Treatment). (NIAAA modified)

Arons, B.S. (1993). Dr. Arons testifies for inclusion of mental and addictive disorders benefits. SAMSHA News, 1, 11.

Mental health and substance abuse services should be included in health care reform because mental illness and substance abuse disorders affect more than 50 million Americans. Cost-effective treatments for mental illness and substance abuse disorders are available, and high rates of success are being achieved across the spectrum of diagnoses. Mental illness and substance abuse often result in physical illness, inability to work, impaired relationships, crime, and

homelessness. Private insurance coverage of mental health and substance abuse care discriminates between mental health and substance abuse care and general medical care by limiting the number of visits or days of treatment. Limits on access to care have resulted in shifting both the responsibility and cost of care onto the public mental health and substance abuse system. (NCADI abstract modified)

Atkins, N. (1994, May 5). The cost of living clean: When the answer is treatment, these are the questions: What works, and what doesn't? How much does it cost, and can we afford it? Rolling Stone, 27-28.

There is a need for treatment on demand that has yet to be recognized by the U.S. government. Treatment programs need to be tailored to individual needs to guarantee their cost effectiveness. Therapeutic communities are highly structured, 1- to 2-year residential treatment programs that tend to be best suited for hard-core addicts. For heroin users, methadone maintenance has been the treatment of choice since it was first introduced three decades ago. The best methadone programs offer counseling and other rehabilitative services, and studies indicate that the rate of crime commission drops 65 percent for those who stay in the program at least 1 year. Chemical dependency programs offer short-term residential treatment, usually a month-long stay, often starting with a period of detoxification. In the 1980s, hospital-based chemical dependency treatment programs were notorious for over-treating anyone with "dirty" urine as a way to siphon a seemingly endless supply of insurance coverage. Addicts need to be matched with the proper rehabilitative services if this problem is ever to be solved. (NCADI abstract modified)

Baker, J.R., Lattimore, P.K., & Matheson, L.A. (1996). Cost-effective drug testing in the transportation industry. IIE Transactions, 28, 735-744.

The recent tightening of industry standards by the Department of Transportation requires that firms operating in the transportation industry test 25 percent of their employees for drug use each year. This provides an incentive to evaluate the effectiveness of ad hoc random approaches to drug testing, particularly since the testing is estimated to cost the industry $200 million annually. The proposed model recognizes the dependence of a Bayesian acceptance sampling approach on the prior distribution of users in the population and on the outcome of the test itself. The approach offers a minimum expected total cost solution and decision rule for testing, based on the optimal sampling plan derived, which may then be used to determine future testing schedules and outcomes. The comparative cost of sampling plans derived with the Bayesian approach are compared with those obtained with a random, non-economic approach. The results show that use of an economic approach can generate savings of from 8 percent to 90 percent. The approach is applied to the Los Angeles County Metropolitan Transit Authority as a method of monitoring and randomly testing a population of 4,000 bus drivers. Compared with its existing approach and using cost inputs provided by the Authority, acceptance sampling would allow a significant increase in the amount of testing possible and provide a more proactive drug-testing policy toward drivers who use drugs.

Barnett, P.G., & Swindle, R.W. (1997). Cost-effectiveness of inpatient substance abuse treatment. Health Services Research, 32, 615-629.

This article describes a study to identify the characteristics of cost-effective inpatient substance abuse treatment programs. A survey was administered to program directors and cost and discharge data were obtained for a study of 38,863 patients treated in 98 Veterans Affairs treatment programs. The authors used random-effects regression to find the effect of program and patient characteristics on cost and readmission rates. A treatment was defined as successful if the patient was not readmitted for psychiatric or substance abuse care within 6 months. The study showed that treatment was more expensive when the program was smaller, had a longer intended length of stay (LOS), or a higher ratio of staff to patients. The average treatment cost $3,754 with a 75 percent chance of being effective and a cost-effectiveness ratio of $5,007 per treatment success. A 28-day treatment program cost $860 more and was 3 percent more effective than a 21-day program. Patient characteristics did not affect readmission rates in the same way they affected costs. Patients with a history of prior treatment were more likely to be readmitted, but their subsequent stays were less costly. Findings indicate that a 21-day limit on intended LOS would increase the cost-effectiveness of treatment programs. (Author abstract modified)

Berg, B.J., & Dhopesh, V. (1996). Unscheduled admissions and AMA discharges from a substance abuse unit. American Journal of Drug and Alcohol Abuse, 22, 589-593.

A study on the inpatient substance abuse service of the Philadelphia Veterans Administration Hospital, the authors found that patients who were admitted to the hospital “unscheduled” had a disproportionately higher incidence of subsequent AMA (against medical advice) discharge, particularly if they were alcohol abusers. This finding questions the cost-effectiveness of hospitalization as an initial treatment strategy for substance abusers who enter treatment impulsively and points out the need for additional studies to determine the most cost-effective treatments for substance users whose primary motivation for treatment may be to obtain relief from precipitating stressors. (Author abstract modified)

Beshai, N.N. (1990, September-October). Providing cost efficient detoxification services to alcoholic patients. Public Health Reports, 105, 475-481.

The authors conducted a literature review to determine whether social model detoxification programs are safe and adequate for treating persons with alcohol withdrawal symptoms. The review showed that the majority of alcohol abusers can be detoxified safely in social model programs. There are two main benefits to detoxing in social model programs: program cost-efficiency and the patient’s increased commitment to treatment (compared with the patients treated at medical model programs). Medically operated detoxification programs appeared necessary for patients with severe withdrawal conditions at intake (abnormal blood pressure and

pulse) and those with a history of severe withdrawal symptomatology. The results of the review reiterated the importance of screening clients at intake to ensure the safety of the patient and the appropriateness of the detoxification program. (Author abstract modified)

Bickman, L. (1996). Implications for evaluators from the Fort Bragg evaluation. Evaluation Practice, 17, 57-74.

This paper describes an $80 million project designed to evaluate whether a coordinated continuum of mental health and substance abuse services for children and adolescents is more cost-effective than services delivered in the more typical fragmented system. The evaluation examined the implementation and quality of the demonstration and the impact on service utilization, client satisfaction, clinical outcomes, and cost. Several competing explanations for the results are described and implications for evaluators are discussed. The paper concludes with a discussion of the lessons learned. (Author abstract modified)

Booth, B.M., Blow, F.C., Cook, C.A.L., Bunn, J.Y., & Fortney, J.C. (1997). Relationship between inpatient alcoholism treatment and longitudinal changes in health care utilization. Journal of Studies on Alcohol, 58, 625-637.

This study evaluated changes in health care utilization associated with inpatient alcoholism treatment of clients of low socioeconomic status with different histories of treatment relapse. The sample consisted of more than 85,000 male alcohol abusers using inpatient care in Department of Veterans Affairs medical centers in fiscal year 1987. Five treatment groups were identified to represent a continuum of length and intensity of alcoholism treatment, including formal inpatient alcoholism treatment, short detoxification, and hospitalizations for primary diagnoses other than alcoholism. All inpatient and outpatient health services for 3 years before and after the index hospitalization were examined for differential changes in utilization associated with the five treatment groups after controlling for patient predisposing, enabling, and need characteristics. Both total inpatient days and outpatient visits increased significantly for all treatment groups, with the greatest increases occurring in the group completing inpatient treatment (both $p < .0001$); however, use of inpatient medical care decreased and substance abuse inpatient care increased significantly for most groups, with the largest increases in substance abuse care found for the completed treatment group. In a hospital system that does not deny care on the basis of ability to pay, certain groups of chronic alcoholics who cannot sustain prolonged remission will continue to be heavy utilizers of services. Alcoholism treatment may be associated with higher short-term costs but it remains to be seen whether provision of more focused treatment services is able to achieve longer term better outcomes and, ultimately, lower costs. (Author abstract modified)

Booth, P.G., & Murphy, D. (1997). Measuring outcomes in the treatment of alcohol dependency. Journal of Psychiatric and Mental Health Nursing, 4(1), 17-22.

Outcome evaluation in treatment services for alcohol dependency is given as an example of the methodological issues associated with the establishment of clinical efficacy. It is argued that the adoption of clear protocols for assessment, treatment, and outcome are a prerequisite of the process. There are costs associated with in-house follow-up studies, but the benefits of feedback are evident for patients and for staff providing their care. Although exposing service providers (and commissioners) to the possibility of negative feedback, outcome evaluation in the treatment of alcohol dependency should be an integral part of provision. The principle of systematic assessment of efficacy applies to health care provision generally and should include management, teaching, purchasing, and policy making.

Borkman, T.J., Kaskutas, L.A., Room, J., Bryan, K., & Barrows, D. (1998). A historical and developmental analysis of social model programs. Journal of Substance Abuse Treatment, 15, 7-17.

This review synthesizes the philosophy, development, history, and current status of the philosophy of social or community model of recovery and of Social Model Programs (SMPs) based on an analysis of the available literature, much of it outside traditional sources. The social-community model of recovery evolved out of Alcoholics Anonymous (AA) and has a distinctive program philosophy with different assumptions, knowledge, and practice than professionally based treatment models. SMPs began in the 1940s in California, evolving by the 1980s into a continuum of recovery services that are publicly funded, legally incorporated, nonprofit organizations. The characteristics of SMPs are described and the range of services are presented, including social setting detoxification, residential recovery homes, non-residential neighborhood recovery centers, and sober living houses. SMPs are staffed exclusively by recovering alcoholics and their structure is based on the 12 traditions of AA, which emphasize democratic group processes with shared and rotated leadership and a minimal hierarchy. Cost effectiveness data suggest that residential social model programs average approximately $2,700 per stay versus $4,400 for other residential approaches, yet may offer similar outcomes in terms of substance use and improvement employment or family functioning. (Author abstract)

Borrie, R.A. (1990-1991). Use of restricted environmental stimulation therapy in treating addictive behaviors. International Journal of the Addictions, 25, 995-1015.

Successful treatment of addictive behaviors is difficult because of the complexity of relevant contributing variables. Restricted environmental stimulation therapy (REST) is offered as a useful, flexible tool that can facilitate change in addictive variables at each level of complexity, from habitual acts through attitudes to self-concept and spirituality. The nature of REST is discussed in terms of processes and effects. Basically two processes, refocusing and re-balancing, contribute to the various physical and mental effects of restricted environmental stimulation. These effects include profound relaxation, relief from pain, and a shift in consciousness to a state that is more introspective, less defensive, and more receptive. Research in treating addictive behaviors with REST is reviewed with smoking, overeating, alcohol consumption, and drug

misuse. There is a substantial body of literature demonstrating the effectiveness of REST in modifying smoking behavior, yet very little research has been done on REST and drug misuse. Each of the other areas has a small number of preliminary studies that suggest REST proves to be effective in facilitating attitudinal and behavioral change and maintaining those changes. The scant research with flotation REST show it to be less effective in modifying behavior but more relaxing and pain-alleviating than chamber REST. The characteristics of the REST experience that make it effective in treating addictions are discussed as follows: the induction of a general relaxation response so that substance misusers find serenity and relief by nonchemical means; internal refocusing to concentrate on personal problems; disruption of habits through removal of trigger cues and responses possibilities; increased feelings of control over addictive behaviors; and enhanced learning processes. REST is a versatile, cost-effective treatment modality with demonstrated effectiveness in modifying some addictive behaviors and promising applications with others. (NCADI abstract)

Bradley, C.J., French, M.T., & Rachal, J.V. (1994). Financing and cost of standard and enhanced methadone treatment. Journal of Substance Abuse Treatment, 11, 433-442.

Although some national surveys of drug-abuse treatment have examined cost and financing issues, this study is one of the first to rigorously analyze the costs and financing of methadone treatment at the program level. The findings are similar to those found at the national level for treatment cost but deviate significantly from the National Drug and Alcoholism Treatment Unit Survey (NDATUS) on funding sources. In addition to examining financing and total cost, the authors grouped resources into particular categories and examined variations at the client, program, regimen, and setting levels. Specific findings show that public funding sources overwhelmingly support the programs examined; the average annual cost per client for standard methadone treatment was between $3,750 and $4,400; the marginal cost of providing enhanced treatment was between 5 percent and 6 percent of the total annual cost of standard treatment; and the average annual cost at the free-standing community-based programs was significantly different from the average annual cost at the hospital-based treatment program. The results provide a treatment cost methodology and a financial profile of treatment operations at three clinics that can be compared across programs and settings. (NCADI abstract)

Brandeau, M.L., Owens, D.K., Sox, C.H., & Wachter, R.M. (1992). Screening women of childbearing age for human immunodeficiency virus: A cost-benefit analysis. Archives of Internal Medicine, 152, 2229-2237.

In light of the increasing problem of perinatal human immunodeficiency virus (HIV) transmission, the issue of screening women for HIV is receiving considerable attention. The authors analyzed the costs and benefits of screening women of childbearing age for HIV. The analysis was based on a dynamic model of the HIV epidemic that incorporated disease transmission and progression, behavioral changes, and effects of screening and counseling. The authors found that the primary benefit of screening programs targeted to women of childbearing age lies not in the prevention of

HIV infection in their newborns but in the prevention of infection in their adult contacts. Because of this benefit, screening medium- and high-risk women is likely to be cost-beneficial over a wide range of assumptions about program cost and behavioral changes in response to screening. (Author abstract modified)

Brumbaugh, A.G. (1993, November-December). Acupuncture as a foundation for treatment services: It offers a gateway to improved treatment efficacy. Addiction and Recovery, 26-28.

Acupuncture treatment for chemical dependency has been integrated into hundreds of international drug and alcohol programs during the past several years. There are two ways of adding acupuncture services to a conventional treatment continuum. The first is to simply attach an acupuncture component to existing services. However, for the most efficacious use of acupuncture, it must come to form the foundation for the other program services. In this capacity, acupuncture functions in the following ways: the treatment is offered daily; the treatment is administered in a group setting; the treatment is barrier-free; and the treatment is non-verbal. The accumulated advantages of this program design add up to a safe, drug-free, and cost-effective treatment that helps the client improve consistently during the transition phase of recovery. Acupuncture serves as the foundation for ancillary services, such as counseling, education, case management, assessment, referral, and 12-step programs, which optimally are scheduled on-site immediately following acupuncture clinic hours. (NCADI abstract)

Buckley, R., & Bigelow, D.A. (1992, February). The multi-service network: Reaching the unserved multi-problem individual. Community Mental Health Journal, 28, 43-50.

A small number of multi-problem, service-resistant individuals in metropolitan communities consume extraordinary amounts of human services at great cost to publicly funded agencies with less than satisfactory benefit to the individual. This paper describes an innovative collaboration among mental health, alcohol/drug treatment, corrections, forensic, and social and housing agencies to provide more effective services at less cost. The theory of action was that interagency communication and external controls developed by core service agencies increase the efficacy of treatment and reduce the cost of caring for multi-problem clients. Agencies refer clients to the Multi-Service Network who are then screened for problematic multi-agency involvement. Case conferences result in individual service plans. Three illustrative cases are described, and the results of two evaluative studies are summarized. Cost of care for clients appears to have been reduced. Agencies appear to have benefited from improved information and communication. Clients' behavior was stabilized by external controls and more adequate attention to their needs. (Author abstract)

Buddress, L.A.N. (1997). Federal probation and pretrial services: Cost-effective and successful community corrections system. Federal Probation, 61, 5-12.

The Federal probation and pretrial services system provides unequaled successful and cost-efficient community corrections, yet it is substantially underutilized. A number of factors other than cost effectiveness and success rate contribute to the excellence of the Federal community corrections program; the system has access to necessary resources for substance abuse and mental health treatment and for employment training and job placement. The quality of probation and pretrial services officers is central to their success—their education, their training opportunities, and their dedication and professionalism. Having the Federal Judicial Center as a primary training and educational resource contributes to the system's success. Within the system, there also are considerable differences regarding when and how frequently persons under supervision should be returned to custody due to drug use. Probation and pretrial services officers best protect the community by reducing recidivism rates and helping ex-offenders become contributing members of society. By combining the economic deficits created by incarceration with the economic surplus created by local community supervision, taxpayers benefit by approximately $37,000 per inmate, per year, for offenders who are punished locally using probation and pretrial supervision rather than incarceration.

Carter, J.H., & Meridy, H. (1996). Making a performance improvement plan work. Joint Commission on Quality Improvement Journal, 22, 104-113.

In order to make services more helpful and usable, many institutions are implementing performance improvement (PI) plans. PI plans study the services an organization provides, suggest ways to make those services more accessible, and then, after changes have been implemented, evaluate the outcome of those changes. Gathering this information involves input from many different sources, especially the service providers and users. By including both the providers and users, the PI plan can develop services that are easy to use and maintain.

Cartwright, W.S. (1998). Cost-benefit and cost-effectiveness analysis of drug abuse treatment services. Evaluation Review, 22, 609-636.

The foundations of cost-benefit analysis and cost-effectiveness analysis for drug abuse treatment are developed. An economic model of addict choice and drug markets is presented. This model is synthesized with the current "cost of illness" methods used to measure the burden of the disease to society. The problem of doing cost-effectiveness studies in the presence of large nonhealth benefits is examined, and guidance is offered to clinical studies with a cost-effectiveness component or to stand-alone cost-effectiveness studies. (Author abstract modified)

Cartwright, W.S., & Kaple, J.M. (1991). Economic costs, cost-effectiveness, financing, and community-based drug treatment. Rockville, MD: National Institute on Drug Abuse.

This technical review used three main themes to organize the issues: the development of the latest cost estimates associated with drug abuse and new approaches to improve the methodology; the states of cost-effectiveness research of alternative drug treatments; and a review of alternative drug treatments financing from public and private perspectives. The research opportunities and data collection needs of suggested services were examined. The first section covers economic costs of drug abuse, illicit-drug studies, and economics and drugs. The second section discusses evaluating the cost-effectiveness of drug abuse treatment (relevant issues and alternative longitudinal modeling approaches); new perspectives on the benefit cost and cost effectiveness of drug abuse treatment; and cost effectiveness of drug abuse treatment for primary prevention of acquired immunodeficiency syndrome/epidemiological considerations. The third section covers policy relevant research of drug treatment; community-based drug treatment reimbursement; financing treatment for substance abuse; forecasting the cost of drug abuse treatment coverage in private health insurance; and health insurance coverage questions, public health surveys, and drug abuse. (Author abstract modified)

Chapman, W.R., & MacDonald, D.G. (1996). Comprehensive alcohol and substance abuse treatment program as of June 30, 1996. Rockville, MD: National Institute of Justice/NCJRS.

The program provides a continuum of treatment in three phases, including community reintegration and aftercare. A total of 12,663 participants successfully completed the first phase and moved to community reintegration between April 1991 and June 30, 1996. A total of 4,310 successful completers of community reintegration were released to parole supervision, including 689 inmates who reverted to drug abuse during Phase II but were able to complete Phase II community reintegration due to their participation in the CASAT relapse program. A total of 1,696 inmates were participating in Phase I on June 30, 1996. Their average age was 35. Eighty-three percent had been convicted of a drug law offense. The contractual community reintegration programs provided for 515 residential beds and 240-day reporting slots in addition to the program operated by the Department of Corrections. Eighty-five percent of the available contractual beds were filled on an average day in fiscal year 1995-96. Seventy-two percent of all offenders who began Phase II had been released to parole supervision for a period of 12 months or longer as of June 30, 1996. The CASAT program has produced an estimated $153 million in operating and capital cost savings since its beginning.

Cisler, R., Holder, H.D., Longabaugh, R., Stout, R.L., & Zweben, A. (1998). Actual and estimated replication costs for alcohol treatment modalities: Case study from Project MATCH. Journal of Studies on Alcohol, 59, 503-512.

As a first step in a thorough cost-effectiveness analysis of a randomized alcohol treatment matching trial (Project MATCH), this study examines the relative costs of three manual-guided, individually delivered treatments and the costs of replicating them in non-research settings. Costs of delivering a 12-session Cognitive Behavioral Therapy (CBT), a four-session Motivational Enhancement Therapy (MET), and a 12-session Twelve-Step Facilitation (TSF) treatment over 12 weeks were assessed for three treatment sites at two of the nine project locations. Research cost calculations included clinical, administrative, and training/supervision variables in determining total treatment costs, average cost per contact hour, and average cost per research participant. Investigators from all nine project locations estimated direct clinical costs, administrative overhead costs, and training/supervision costs for replicating these treatments. For the project, MET costs twice as much or more per patient contact hour (mean=$498) than CBT (mean=$198) and TSF (mean=$253) but was less costly per research participant (mean=$1,969). For clinical replication, high-end per patient costs ranged from $512 for MET to $750 for TSF to $788 for CBT; there was a cost savings for MET of $238 (32%) over TSF and $276 (35%) over CBT. As part of a randomized clinical trial, MATCH treatments are costly to produce; however, when estimates are used to project these costs to non-research clinical settings, the costs are greatly reduced. Whereas MET appears to be much less costly to deliver in non-research settings than the other two treatments, the estimated cost differentials are less than the 1:3 treatment session ratio for MET versus TSF or CBT. (Author abstract modified)

Clark, R.E. (1994). Family costs associated with severe mental illness and substance use. Hospital and Community Psychiatry, 45, 808-813.

The study's aim was to document the economic assistance in the form of money, in-kind contributions, and time spent in care-giving by families of adult children with both severe mental illness and substance use disorders. A total of 119 families of adult children with dual disorders were compared with a similar group of 127 families whose adult children did not have chronic illnesses. In telephone interviews, parents reported the amount of money, goods, and direct care family members gave to a designated adult child. Two methods were used to estimate the value of family time: opportunity costs, based on the average wage for production workers in the study area, and the cost of paid substitutes for the task being performed. Parents of adults with dual disorders reported that family members gave significantly more money and time to the adult child than did parents of adults with no chronic illnesses. The estimated value of family assistance in the dual disorder group was $9,703 using the opportunity-cost method and $13,891 using the substitution method, compared with $2,421 and $3,547 for the group with no chronic illnesses. Dual disorders impose a significant economic burden on families. Direct support that families provide to adult children with dual disorders should be considered carefully in treatment planning and policy decisions. (Author abstract modified)

Cromwell, J., Bartosch, W.J., Fiore, M.C., Hasselblad, V., & Baker, T. (1997). Cost-effectiveness of the clinical practice recommendations in the AHCPR guideline for smoking cessation. Journal of the American Medical Association, 278, 1759-1766.

The Agency for Health Care Policy and Research (AHCPR) published the Smoking Cessation: Clinical Practice Guideline in 1996. Based on the results of meta-analyses and expert opinion, the guideline identifies efficacious interventions for primary care clinicians and smoking cessation specialty providers. The purpose of this study is to determine the cost-effectiveness of clinical recommendations in AHCPR's guideline. The guideline's 15 recommended smoking cessation interventions were analyzed to determine their relative cost-effectiveness. Then, using decision probabilities, the interventions were combined into a global model of the guideline's overall cost-effectiveness. The analysis assumes that primary care clinicians screen all presenting adults for smoking status and advise and motivate all smokers to quit during the course of a routine office visit or hospitalization. Smoking cessation interventions are provided to 75 percent of U.S. smokers 18 years and older who are assumed to be willing to make a quit attempt during a year's time. Three counseling interventions for primary care clinicians and two counseling interventions for smoking cessation specialists were modeled with and without transdermal nicotine and nicotine gum. Main outcome measures cost (1995 dollars) per life-year or quality-adjusted life-year (QALY) saved, at a discount of 3 percent. The guideline would cost $6.3 billion to implement in its first year. As a result, society could expect to gain 1.7 million new quitters at an average cost of $3,779 per quitter, $2,587 per life-year saved, and $1,915 for every QALY saved. Costs per QALY saved ranged from $1,108 to $4,542, with more intensive interventions being more cost-effective. Group intensive cessation counseling exhibited the lowest cost per QALY saved, but only 5 percent of smokers appear willing to undertake this type of intervention. Compared with other preventive interventions, smoking cessation is extremely cost-effective. The more intensive the intervention, the lower the cost per QALY saved, which suggests that greater spending on interventions yields more net benefit. While all these clinically delivered interventions seem a reasonable societal investment, those involving more intensive counseling and the nicotine patch as adjuvant therapy are particularly meritorious.

DeHart, S.S., & Hoffman, N.G. (1993, January-February). Cost savings of treatment. Counselor, 14-16.

Decisions about alcoholism treatment for the elderly are varied across the United States. Some health care professionals and families believe that alcoholism treatment is less effective for the elderly and that treatment should be focused on the younger, higher risk groups. This view is not substantiated by the current study, which yielded a positive evaluation of long-term outcomes 2 years post-substance abuse treatment for the elderly. Recovering and abstinent elderly are generally healthier and require fewer medical services. In contrast, elderly who relapse following substance abuse treatment and continue to use alcohol and other drugs, continue to use a disproportionate amount of health care services, including hospitalization. (NCADI abstract)

Dickey, B., & Azeni, H. (1996). Persons with dual diagnosis of substance abuse and major mental illness: Their excess costs of psychiatric care. American Journal of Public Health, 86, 973-977.

This study examined the costs of psychiatric treatment for seriously mentally ill people with comorbid substance abuse as compared with mentally ill people not abusing substances. Three different sources of data were used to construct client-level files to compare the patterns of care and expenditures of 16,395 psychiatrically disabled Medicaid beneficiaries with and without substance abuse: Massachusetts Medicaid paid claims; Department of Mental Health state hospital inpatient record files; and community support service client tracking files. Psychiatrically disabled substance abusers had psychiatric treatment costs that were almost 60 percent higher than those of nonabusers. Most of the cost difference was the result of more acute psychiatric inpatient treatment. Although the public health and financial costs of high rates of comorbidity are obvious, the solutions to these problems are not. Numerous bureaucratic and social obstacles must be overcome before programs for those with dual diagnoses can be tested for clinical effectiveness.

Duda, M. (1992). Managed care, treatment field seek common ground. Hazelden News and Professional Update, 1-3, 11.

Managed care and addictions treatment professionals are working to find a common ground. Managed care tends to slice away at inpatient treatment services, which are considered too costly, often managing the costs of treatment rather than the program itself. Treatment professionals must convince employers and insurers of the long-term cost benefits of inpatient treatment. The issues under examination by managed care and chemical dependency should ultimately help both sides improve their role in providing health care. (Author abstract)

Earnest, E. (1996). Youth day treatment program works for Alabama. Corrections Today, 58, 70-73.

Programs such as the Community Intensive Treatment for Youth (CITY) Program are based in an assessment that includes academic diagnostic testing, a home visit, completion of parent and youth data questionnaires, collection of school data, and observation of behavior. The treatment plan begins with the youth's goals and consists of four or more parts, including academic, behavioral, family, and group components. For each component, a measurable objective is set. A plan to reach the objective and a means of evaluating the effectiveness of the plan are developed. Overall CITY program objectives are to identify each juvenile's strengths and weaknesses, to provide an individualized environment in which a juvenile can develop the skills necessary for successful living, and to alter the natural environment of the juvenile so that the newly acquired skills are fostered and previous negative behaviors are discouraged. Tracking of 231 juveniles for 1 year after they exited seven of the programs showed that 72 percent had no new adjudications. The cost per person per day for the 240 CITY program slots in eight program locations is $43.83, and the cost per bed per day in the juvenile institution is estimated to be more than $120.

Finney, J.W., & Monahan, S.C. (1996). The cost-effectiveness of treatment for alcoholism: A

second approximation. Journal of Studies on Alcohol, 57, 229-243.

This review addresses some of the limitations of Holder et al.'s box-score approach to assessing treatment effectiveness and provides a second approximation of the cost-effectiveness of treatment for alcoholism. Method: For each of 141 comparative treatment studies, we determined whether or not it found at least one statistically significant positive effect on a drinking-related outcome variable for each of the modalities examined in a paired contrast with one other condition. Next, the authors calculated the predicted probability of each study yielding at least one statistically significant treatment effect, based on the number of tests for treatment effects conducted. Following that, for each study of a particular treatment modality, the strength of the "weakest competitor" against which the modality had been compared was determined. For each modality, the average predicted probability of the relevant studies finding a significant effect was used as well as the average effectiveness of the weakest competitor to predict the modality's effectiveness. Results: The Adjusted Effectiveness Index (AEIn) was calculated for each modality, which was the difference between its predicted and actual effectiveness score. The AEIn results were consistent with those of Holder et al. in suggesting that some of the same modalities appear to be effective or ineffective. The results differed from their findings with respect to other modalities, however. Using data presented by Holder and his colleagues on the minimum estimated cost of providing different modalities, the findings offer a second approximation of the modalities' cost-effectiveness. Conclusions: Overall, there was a smaller range of effectiveness across modalities than did Holder and his colleagues and a nonsignificant relationship between cost and effectiveness. The authors suggest that major treatment provision or funding decisions be based solely on this type of review. (Author abstract modified)

Fox, A. et al. (1996). Insider/partnership evaluation: Approach and concept development. Evaluation and Program Planning, 19, 199-207.

A model of evaluation is presented that allows direct service agencies in mental health and substance abuse areas to evaluate their program's cost effectively and appropriately. The approach emphasizes research partnerships as potentially valuable ways for self-help group members to explore their own practices through communication and critical reflection.

French, M.T., Dunlap, L.J., Zarkin, G.A., McGeary, K.A., & McLellan, A.T. (1997). A structured instrument for estimating the economic cost of drug abuse treatment. The Drug Abuse Treatment Cost Analysis Program (DATCAP). Journal of Substance Abuse Treatment, 14, 445-455.

Continued public and private funding is now being linked to cost and performance measures, and programs can use financial data to improve organizational efficiency. However, one of the dangers of promoting cost studies at treatment programs is that most program staff are not technically prepared to perform a cost analysis and little user-friendly information is available to offer assistance. Furthermore, not all cost methods are consistent, which can lead to noncomparable estimates that are difficult to use for policy or planning purposes. This paper tries to fill this gap in the research literature and to provide treatment programs with a much-needed technical assistance tool. A structured and scientifically based instrument for estimating the economic cost of treatment services is presented. The Drug Abuse Treatment Cost Analysis Program (DATCAP) is described in detail along with a companion instrument to analyze treatment financing; the Drug Abuse Treatment Financing Analysis Program (DATFin). The components of both instruments are outlined and findings from a variety of actual case studies are presented. Lastly, the DATCAP User's Manual is described, which enables individual programs to begin collecting the necessary data and estimating economic costs at their own clinics. (Author abstract modified)

French, M.T., Rachal, J.V., & Hubbard, R.L. (1991). Conceptual framework for estimating the social cost of drug abuse. Journal of Health and Social Policy, 2(3), 1-22.

Drug abuse imposes costs on individuals and society. Researchers have produced several studies on a subset of tangible costs of drug abuse and other illnesses, but key tangible costs sometimes have been overlooked and, even when recognized, rarely have been estimated. An assortment of intangible costs also have received very little research attention. This study outlines a comprehensive conceptual framework for estimating the social costs for the drug-abusing and non-drug-abusing population. The conceptual framework is based on critical reviews of new and traditional methods for estimating the costs of illness and disease, including cost-of-illness methods, averting behavior methods, and utility valuation techniques. The authors show how the proposed methods can be combined with existing data to estimate the total social cost of drug abuse. Using social cost estimates will enable policy makers to more accurately assess the total burden of drug abuse and related problems on society. (Author abstract modified)

French, M.T., Zarkin, G.A., & Bray, J.W. (1995, Spring). A methodology for evaluating the costs and benefits of employee assistance programs. Journal of Drug Issues, 25, 451-470.

Employee Assistance Programs (EAPs) represent a relatively new fringe benefit for workers; the number of these programs has been steadily increasing in worksites of all sizes. Despite this surge in the growth of EAPs, few studies have estimated their costs or benefits. To guide future economic evaluation studies of EAPs, the authors have developed a methodology that has four components: a process description to understand the structure, operating environment, and goals of the EAP; a cost analysis to comprehensively identify and estimate the full range of EAP costs; an outcomes analysis to rigorously estimate the effectiveness of the EAP on employee performance and workplace productivity; and an economic evaluation to estimate

cost-effectiveness ratios, dollar benefits, and net benefits of the EAP. The methodology is based on standard economic theory, but presents the evaluation strategy in a nontechnical way so that it can be used by employers and other researchers to estimate the costs and benefits of EAPs. (Author abstract)

French, M.T., Zarkin, G.A., Hubbard, R.L., & Rachal, J.V. (1991). Impact of time in treatment on the employment and earnings of drug abusers. American Journal of Public Health, 81, 904-907.

The authors used data from a longitudinal survey to estimate the effects of time in drug abuse treatment on post-treatment weeks worked and earnings for 2,420 clients in three treatment modalities. The regression analysis shows that time in treatment had a positive and statistically significant impact of these labor market outcomes, but the effects were small for all modalities. Although clients in residential programs experienced the largest relative changes in weeks worked and real earnings, a benefit-cost calculation suggests that additional residential treatment cannot be justified from earnings improvement alone. These results may indicate a need for more employment services while in treatment. (Author abstract modified)

Friedman, M. (1997). A guide to developing and using performance measures in results-based budgeting. Washington, DC: Finance Project.

This document provides guidelines for implementing the Strategy Map for Results-Based Budgeting, developed by the Finance Project to improve the cost-effectiveness of public social services. The guide specifically addresses how to develop and use performance measures within the results framework. Emphasis is placed on assessing the performance of programs and agencies as they seek to achieve defined goals for the well-being of children and families. The paper presents a four-quadrant approach to performance measurement that guides the selection of data elements in terms of quality of products, quality of services, quantity of products, and quantity of service. Examples of performance measures used for education programs, child welfare programs, welfare reform, juvenile justice, and mental health programs are provided. The guide also reviews steps for creating a performance measurement system and summarizes lessons learned by states that have implemented those systems.

Friedman, S.M., & Singer, M.I. (1993). Hospitalization and incarceration costs of dually diagnosed adults: An argument for intensive outpatient treatment. Substance Abuse, 14, 53-59.

Thirty-seven percent of alcohol users and 53 percent of persons with other drug disorders had at least one other psychiatric disorder. Dually diagnosed individuals encounter difficulties in housing, nutrition, social functioning, and access to health/mental care. Individuals referred to an

outpatient treatment program for dually diagnosed adults in Cleveland, Ohio, between 1988 and 1991 were studied. The authors describe the extent of hospitalizations and incarcerations of dually diagnosed individuals before their referral to outpatient treatment. They also discuss the fiscal and service implications of these data. Admission criteria were a diagnosis of chronic, severe mental disability and a history of AOD abuse or dependence. Successful interventions with this group require programs that not only address the deficits for mental illness and the problems resulting from drug use, but also address the impact of prolonged and frequent institutionalizations. Service providers need to be familiar with the criminal justice system; arrests and indictments on criminal charges should not be the basis for rejection from a program. (NCADI abstract)

Fuller, M.G., Diamond, D.L., Jordan, M.L., & Walters, M.C. (1995, May). The role of a substance abuse consultation team in a trauma center. Journal of Studies on Alcohol, 56, 267-271.

Trauma is a leading cause of morbidity and mortality in the United States, and substance abuse makes an enormous contribution to this problem as well as to the increased cost of health care. A substance abuse consultation (SAC) team was developed to evaluate and intervene with trauma victims who are suspected of having problems with alcohol and/or other drugs. This study is a retrospective review of 100 consecutive trauma admissions who were felt to be at high risk for substance abuse and were referred to the SAC team for evaluation and intervention. This study was undertaken in a tertiary-care teaching hospital in a cooperative effort between the trauma center and the addictions program. All 100 patients were diagnosed with psychoactive substance use disorders and 78 were referred for alcohol and other drug rehabilitation. Of these patients, 62 percent accepted a referral for drug and alcohol treatment. From these preliminary data, it appears that a SAC team may be effective in intervening with hospitalized trauma patients who have alcohol and other drug problems. (Author abstract)

Garnick, D.W., Hendricks, A.M., Dulski, J.D., Thorpe, K.E., & Horgan, C. (1994, December). Characteristics of private-sector managed care for mental health and substance abuse treatment. Hospital and Community Psychiatry, 45, 1201-1205.

This study examined diversity during the late 1980s in managed care programs for mental health, alcohol abuse, and drug abuse to identify ways in which research can generate more meaningful data on the effectiveness of utilization review programs. Telephone interviews were conducted with representatives of utilization review programs for employee health insurance plans in 31 firms that employed 2.1 million people in 1990. Questions addressed qualifications of personnel, clinical criteria to authorize care, integration with employee assistance plans, penalties for not complying with utilization review procedures, outpatient review, and carve-out of mental health and substance abuse review. Large variations in utilization review programs were found. Programs employed a range of review personnel and used a variety of clinical criteria to authorize care. More than two-thirds did not carve out mental health and substance abuse review from

medical/surgical review. Some firms' employee assistance plans were integrated with utilization review programs, while others remained unintegrated. Penalties for not following program procedures varied widely, as did review of outpatient services. Because of trends toward even more diversity in utilization review programs in the 1990s, research that identifies the specific features of managed care programs that hold most promise for controlling costs while maintaining quality of care will increasingly be needed. (Author abstract)

Gerstein, D.R., Johnson, R.A., Harwood, H.J., Fountain, D., et al. (1994). Evaluating recovery services: The California Drug and Alcohol Treatment Assessment (CALDATA). Sacramento, CA: California Department of Alcohol and Drug Programs.

CALDATA is an extensive study that focuses on the effectiveness of drug abuse treatment. The research discovered that treatment is extremely cost effective. Depending on the mode of treatment there was a range of 4:1 to 10:1 savings, mostly in prevention of criminal activity but also in a reduction in hospitalization and overall drug use. The more expensive the treatment, the more absolute benefits it provided. The study also found that treatment was effective regardless of age, gender, or ethnicity, even though there were disproportionately more African Americans in residential programs and Hispanics in methadone programs. (Author abstract)

Goehl, L., Nunes, E., Quitkin, F., & Hilton, I. (1993). Social networks and methadone treatment outcome: The costs and benefits of social ties. American Journal of Drug and Alcohol Abuse, 19, 252-262.

Two models that predict alternative hypotheses were evaluated. Based on the self-medication model, it was hypothesized that social support would aid in coping with painful affects and decrease the need for drugs; and, based on a social learning model, it was hypothesized that drug use in the social network would threaten abstinence due to modeling and conditioning effects. Seventy methadone treatment maintenance patients were given baseline measures of mood, stress, social support, and drug use in the network and followed prospectively for 3 months with weekly urine drug screens. Social support was correlated with positive effect and stress with negative effect but no measures of social support, affect, or stress correlated with the proportion of drug-positive urines. However, patients with at least one drug user among the closest significant others had 63+38 percent positive urines versus 33+56 percent positive among those without a drug-using significant other. Substance use in the social network had a substantial negative impact on treatment outcome. Consistent with the social learning model and the traditional persons, places, and things, this suggests intervention should get drug-using significant others into treatment and teach patients coping skills to reduce their negative influence. (NCADI abstract)

Goodman, A.C., Holder, H.D., & Nishiura, E. (1991). Alcoholism treatment offset effects: Cost model. Inquiry, 28, 168-178.

Alcoholism treatment (AL) changes usage and/or spending on non-alcoholism treatment (NA). Yet there has been little economic analysis of the effect of AL on individuals' uses of health services and total health care costs. The author's model yields both cost and usage impacts. A 1 percent increase in short-term AL events implies a 1.9 percent increase in costs; subsequent NA increases cost by 1.5 percent. Initiation of AL directly lowers NA, but indirectly increases NA usage (and costs) in subsequent treatment. Overall, a 10 percent increase in AL leads to a 9.2 percent increase in health care costs. (Author abstract modified)

Gostin, L.O. (1991). Compulsory treatment for drug-dependent persons: Justifications for a public health approach to drug dependence. Milbank Quarterly, 69, 561-593.

The idea of compulsory treatment is often roundly rejected by civil libertarians, government officials, and clinicians; however, their refusal to consider this idea is based largely on a misunderstanding of the goals of compulsory treatment and modern research findings. The proposal for compulsory treatment system proposed would require the person's agreement, would not restrict freedom longer than if the person were convicted, and would allow a less restrictive, more humane, and effective alternative to incarceration. Outcome studies suggest that, in the long run, the public is better protected by treatment than by incarceration. Compulsory treatment offers an opportunity to shift some of the huge investment in the criminal justice system to expand the treatment system. The empirical evidence demonstrating the efficacy of treatment, the philosophical arguments explaining its humanity, and the economic studies showing its cost-benefit all lean toward a fundamental re-evaluation of current policies favoring criminal punishment over public health interventions in combatting the drug epidemic. (Author abstract)

Harlow, K.C., & Christie, J.P. (1994, September). Centers of excellence: New approach to cocaine treatment fits managed care trends. Control of costs ultimately will depend on prevention of relapse through use of proven treatment facilities. Employee Assistance: Solutions to the Problems, 27-30.

A center for excellence is a treatment provider identified as representing best practice in addressing a specific health problem. The centers of excellence approach is being adapted as an approach to cocaine treatment. Four phases that must be identified to implement centers for excellence are discussed: finding what works; program review and dialogue; plan design; and research and evaluation. (NCADI abstract)

Harwood, H.J., Thomson, M., & Nesmith, T. (1994). Healthcare reform and substance abuse treatment: Cost of financing under alternative approaches. Final report. Fairfax, VA: Lewin-VHI.

Treatment for substance abuse is a successful, proven strategy to reduce the prevalence and consequences of substance abuse. Currently, about three million persons per year receive

specialized substance abuse treatment. There are both financial and other reasons for the treatment gap between the number of persons who need treatment and the number who obtain treatment. Increased financing would evoke only a modest overall increase in the demand for and use of substance abuse treatment, but only a fraction of those who could benefit from treatment actually receive it. Alcohol and drug abuse treatment is effective and should be made more widely available. The cost impact of several different patterns of matching patients to types of treatment is explored. There are strong differences in referral/matching patterns between privately and publicly reimbursed treatment, and within publicly reimbursed systems there are further differences. Information concerning the need for substance abuse treatment in the United States is reviewed and data on the economic impact of alcohol and drug abuse are examined. The current provision of substance abuse treatment in the United States is analyzed. Several major approaches to reforming the financing for substance abuse treatment are described, and the ways these approaches have been modeled are defined. (NCADI abstract modified)

Havens, L. (1993, March-April). Adapt or perish: Designing effective health care delivery systems. Counselor, 12-14, 16-17.

President Clinton stated that his primary goals for health care include universal workplace coverage, improved preventive and primary care, expanded long-term care, and intensified health education. He stated that the only way to secure national health insurance coverage for everyone is to bring down costs. His goals are very much in alignment with what the treatment industry needs to be doing to survive. Quality treatment and cost effectiveness must coexist. The treatment industry is undergoing fundamental changes in its health care delivery system. Though no one knows exactly what the future holds for health, one of the best ways for counselors to predict the future is to invent it. (NCADI abstract)

Holder, H.D., & Blose, J.O. (1991). Typical patterns and cost of alcoholism treatment across a variety of populations and providers. Alcoholism: Clinical and Experimental Research, 15, 190-195.

This paper presents data on the utilization of alcoholism treatment services in three populations of insurance enrollees: enrollees covered by the insurance plan of a large midwestern manufacturing firm, 1981-1987 (N=1425); enrollees of the California Health Insurance Plan of the Public Employees Retirement System 1974-1976 (N=766); U.S. government civilian employees enrolled with Aetna Insurance Company, 1980-1983 (N=1697). The average age of the treated alcoholics in these three groups ranged from 37 to 51. Between two-thirds and three-quarters were male. Inpatient alcoholism treatment services were more frequently used than outpatient, with inpatient admissions averaging between 1.2 and 1.5 per person. For enrollees of the midwestern manufacturing firm, total alcoholism treatment costs average $4,665 per person (1985 dollars). The influence of insurance plan coverage and other factors on utilization patterns is discussed. (NCADI abstract)

Holder, H.D., & Blose, J.O. (1992). Reduction of health care costs associated with alcoholism treatment: A 14-year longitudinal study. Journal of Studies on Alcohol, 53, 293-302.

This study utilized two separate research designs to examine whether the initiation of alcoholism treatment is associated with a change in overall medical care cost in a population of alcoholics enrolled under a health plan sponsored by a large midwestern manufacturing corporation. In the longest longitudinal study of alcoholism treatment costs to date, a review of claims files from 1974 to 1987 identified 3,729 alcoholics (3,068 of whom received treatment and 661 of whom did not). In one design, a time-series analysis found that following treatment initiation, the total health care cost of treated alcoholics—including the cost of alcoholism treatment—declined by 23 percent to 55 percent from their highest pretreatment levels. Costs for identified but untreated alcoholics rose following identification. In a second design, analysis of variance was used to control for group differences including pretreatment health status and age. This analysis indicated that the post-treatment costs of treated alcoholics were 24 percent lower than comparable costs for untreated alcoholics. The study provides considerable evidence that alcoholism treatment can reduce overall medical costs in a heterogeneous alcoholic population (white collar/blue collar; fee-for-service/HMO). (NCADI abstract)

Holder, H.D., & Cunningham, D.W. (1992). Alcoholism treatment for employees and family members: Its effects on health care costs. Alcohol Health and Research World, 16, 149-153.

Whether or not alcoholic workers are treated, they contribute to increased health care utilization and therefore to associated costs. The employer pays for these increased costs through higher overall health insurance premiums and higher direct care costs. If treatment of alcoholism, even with its additional cost, can contribute to lower total long-term health care costs, then treatment is a good investment for employers. The cumulative evidence of studies based on employees and members of their families has revealed a decline in overall health care costs following alcoholism treatment. Alcoholics generally are less productive, incur more absences, and create more problems as employees. There are two main problems with using termination as a solution: collective-bargaining agreements with labor unions might proscribe termination based on alcoholism, and many alcoholic workers are highly skilled, and their termination might represent a significant loss in terms of the training and performance of replacements. Recovery, even with occasional relapses, may be a less expensive alternative to new hiring and training. (NCADI abstract)

Holder, H.D., Lennox, R.D., & Blose, J.O. (1992). The economic benefits of alcoholism treatment: Summary of 20 years of research. Journal of Employee Assistance Research, 1, 63-82.

This paper reviews over 20 years of research into the potential total health care cost savings associated with alcoholism treatment. This research has found consistent savings associated with

treatment, findings that have been replicated in a variety of employment settings and with a number of research designs and analytical strategies. In general, research has shown that untreated alcoholics use health care at twice the rate of their age/gender cohort, that this difference can be closed after alcoholism treatment is initiated, and that younger problem drinkers have a much better prognosis for cost savings than older problem drinkers. No differences were found by gender. The paper concludes with a discussion of the implications of this research for EAPs. (NCADI abstract)

Holder, H., Longabaugh, R., Miller, W.R., & Rubonis, A.V. (1991). Cost effectiveness of treatment for alcoholism: First approximation. Journal of Studies on Alcohol, 52, 517-540.

This study undertakes an analysis of cost effectiveness of alcoholism treatment modalities based upon findings from clinical trials; costs for treatment in settings and/or by providers; and recommendations from treatment experts about appropriate settings, providers, and treatment events. This analysis, which assumes a prototypical patient, suggests that modalities with the most evidence of effectiveness (based on three or more clinical trials) are not the most expensive. Within this study, total cost of care was negatively related to effectiveness. Modalities categorized as having insufficient evidence of effectiveness (i.e., lacking three or more clinical trials) are in the higher cost categories. The results of this first effort to establish initial cost/effectiveness considerations are intended to stimulate researchers to conduct the types of clinical studies where both cost and effectiveness are carefully measured to increase the scientific basis for future cost/effect policy considerations. The authors expect future clinical studies will revise the results of this initial effort. (NCADI abstract)

Holtgrave, D., & Kelly, J. (1996). Preventing HIV/AIDS among high-risk urban women: The cost effectiveness of a behavioral group intervention. American Journal of Public Health, 86, 1442-1445.

A human immunodeficiency virus (HIV) intervention trial for women at high risk for acquired immunodeficiency syndrome and attending an urban clinic was reported previously. The behavioral group intervention was shown to increase condom use behaviors significantly. This study retrospectively assessed the intervention's cost-effectiveness. Standard methods of cost and cost-utility analysis were used. The intervention cost was just over $2,000 for each quality-adjusted life-year saved; this is favorable compared with other life-saving programs. However, the results are sensitive to change in some model assumptions. Under most scenarios, the HIV prevention intervention was cost-effective.

Holtgrave, D.R., Pinkerton, S.D., Jones, T.S., Lurie, P., & Vlahov, D. (1998). Cost and cost-effectiveness of increasing access to sterile syringes and needles as an HIV prevention

intervention in the United States. Journal of Acquired Immune Deficiency Syndrome and Human Retrovirology, 18(Suppl. 1), S133-S138.

The authors determined the cost of increasing access of injection drug users (IDUs) to sterile syringes and needles as an HIV prevention intervention in the U.S. and the cost per HIV infection averted by such a program. They considered a hypothetical cohort of one million active IDUs. Standard methods were used to estimate the cost and cost-effectiveness of policies to increase access to sterile syringes and syringe disposal at various levels of coverage (e.g., a 100% coverage level would ensure access to a sterile syringe for each injection given current levels of illicit drug injection in the United States; a 50% coverage level would ensure access to one-half of the required syringes). A mathematical model of HIV transmission was employed to link programmatic coverage levels with estimates of numbers of HIV infections averted. A policy of funding syringe exchange programs, pharmacy sales, and syringe disposal to cover all illicit drug injections would cost just over $423 million for 1 year. One-third of these costs would be paid for as out-of-pocket expenditures by IDUs purchasing syringes in pharmacies. Compared with the status quo, this policy would cost an estimated $34,278 per HIV infection averted, a figure well under the estimated lifetime costs of medical care for a person with HIV infection. At very high levels of coverage (>88%), the marginal cost-effectiveness of increased program coverage becomes less favorable. Although the total costs of funding large-scale IDU access to sterile syringes and disposal seem high, the economic benefits are substantial. Even at high levels of coverage, such funding would save society money. As part of a comprehensive program of HIV prevention, policies to increase IDUs access to sterile syringes urgently need further consideration by public health decision makers. (Author abstract modified)

Hser, Y. (1995, Winter). A referral system that matches drug users to treatment programs: Existing research and relevant issues. Journal of Drug Issues, 25, 209-224.

Matching clients to treatment has been a topic of great interest to clinicians and researchers in the field of alcohol and drug abuse. Currently, several nationwide efforts are attempting to establish central intakes in communities using computerized systems. This article includes a brief literature review to provide an assessment of the current knowledge about matching that can be used to support a matching system guided by expert knowledge. A conceptual framework for the development of an expert-guided system to be used in a central intake or referral agency is then described. A drug treatment referral system that matches drug users to appropriate treatment programs requires several interlinked components: an accurate list of available programs with comprehensive descriptors characterizing the programs, including the nature and kinds of services provided; an assessment instrument that can be easily and routinely administered is needed for determining clients' characteristics and needs; and results of that assessment instrument are used to match clients with the most appropriate available programs according to a set of decisional guidelines, which is the most critical component of the referral system. Component-specific issues that need to be addressed in developing an expert-guided referral system are discussed. The paper concludes that an expert-guided system using profile matching, although constrained by the resources available in a community, is likely to improve client outcomes and program efficiency

over the current haphazard utilization practices of unstructured referral. Development of a matching index that can predict client outcome is necessary to provide empirical directions for future research and improved practice. (Author abstract)

Hser, Y.I., & Anglin, D. (1991). Cost-effectiveness of drug abuse treatment: Relevant issues and alternative longitudinal modeling approaches. In W.S. Cartwright & J.M. Kaple, (Eds.), Economic costs, cost-effectiveness, financing and community-based drug treatment (pp. 67-93). Rockville, MD: National Institute on Drug Abuse.

The authors have comprehensively reviewed the effectiveness of drug treatment in a paper published elsewhere. In this chapter, they point out new directions for research into cost-effectiveness studies of drug treatment. They start with the definitional and conceptual framework for cost-effectiveness studies and then focus on the dynamic aspects of the treatment system and the client's career in drug addiction and treatment. They discuss the use of time-series analysis and its potential for studying the addiction career and for policy analysis. They also discuss survival analysis, Markov and Semi-Markov modeling, and system dynamics approaches. Within such a methodological focus, they argue that in the framework of these models, interventions can be examined to provide policy analysis of alternatives. (NCADI abstract)

Hubbard, R.L., & French, M.T. (1991). New perspectives on the benefit-cost and cost-effectiveness of drug abuse treatment. In W.S. Cartwright, & J.M. Kaple, (Eds.), Economic costs, cost-effectiveness, financing and community-based drug treatment (pp. 94-113). Rockville, MD: National Institute on Drug Abuse.

The authors maintain that treatment is an effective and cost-effective strategy. They recommend that attention be shifted from a defensive posturing regarding treatment outcome findings to a more offensive one so that the maximum return on each dollar invested in treatment can be achieved. This chapter presents new perspectives on research to study treatment career, components of treatment, and the effects of client impairment. The authors take a reductionist approach to disaggregating the "black box" of treatment and the client types in the system. They argue that only through this approach can a better understanding of what is cost effective be developed. (NCADI abstract)

Hughey, R., & Klemke, L.W. (1996). Evaluation of a jail-based substance abuse treatment program. Federal Probation, 60(4), 40-44.

There is some encouraging evidence that prison-based drug and alcohol programs can be effective in reducing recidivism. Jails, however, have been slow to develop strong AOD abuse programs. Several recent efforts have attempted to break through this historic pattern of neglect and respond to the need for programs at the jail level. These programs have been funded by the Bureau of Justice Assistance. One is the Hillsborough County Jail Program in Tampa, Florida. A second,

which is the focus of this article, is the Linn County alcohol and drug treatment program: Inmate Recovery Program (IRP). The evaluation reported here benefited from and was able to make several improvements on the evaluation study of the Hillsborough jail program. The focus of this evaluation is the assessment of the impact of the IRP with the hypothesis that inmates who graduate from the program will have less post-program criminal activity than they had in the year before their arrest, than those who did not finish the program, and than those inmates in the control group who did not receive special AOD treatment. The article also assesses the cost effectiveness of the program and provides several insights that were identified to suggest ways in which future versions of this type of program could be modified to increase the chances of implementing a more successful AOD program in a jail facility.

Jansson, L.M., Svikis, D., Lee, J., Paluzzi, P., Rutigliano, P., & Hackerman, F. (1996). Pregnancy and addiction: A comprehensive care model. Journal of Substance Abuse Treatment, 13, 321-329.

The problem of substance abuse in pregnancy is a major public health dilemma. Effective comprehensive care of drug addicted women has been shown to improve maternal and neonatal outcomes. The Center for Addiction and Pregnancy (CAP) combines the disciplines of pediatrics, substance abuse treatment, obstetrics/gynecology, and family planning in an effort to reduce the barriers to care often presenting in this subpopulation. For the first 100 CAP births, 82 percent were delivered vaginally, with a mean gestational age of 38 weeks. The Neonatal Intensive Care Unit admission rate was 10 percent, and the Bayley Scales of Infant Development performed at 6 and 12 months revealed mean developmental indices within the normal range. In a comparison study, a group of CAP participants had nearly $5,000 savings in costs when compared to a matched cohort. The CAP model of care appears to be an effective mode of treatment for substance-abusing pregnant women.

Kim, S., Coletti, S.D., Williams, C., & Hepler, N. (1995). Benefit-cost analysis of drug abuse prevention programs: A macroscopic approach. Journal of Drug Education, 25, 111-127.

To date, benefit-cost analysis has rarely been used to justify the drug abuse prevention field. However, there is an increasing demand for this type of analysis as the field of substance abuse prevention enters a new phase—a phase characterized by a competitive marketplace, an increased demand for accountability, and the desire to measure return on the money invested in prevention. In response, an effort is made to stimulate discussion and further research on the topic. This article first determines the overall strategy for initiating benefit-cost analysis (BCA), followed by definitions of BCA and cost-effectiveness analysis (CEA). This is followed by the determination of some of the major variables used in BCA along with the algorithm for determining the benefit-cost efficiency ratio (R) as it applies to the macro level analysis. In estimating a value for

the R, a decision has been made to incorporate uncertainty into the BCA. In a macroscopic approach to BCA, four independent variables are identified for computing R. These independent and dependent variables are assumed to be random variables with normal distributions. The population means and standard deviations pertaining to these independent variables are estimated from the existing literature. In order to incorporate uncertainty into the computation of R, 10 measurements have been randomly selected for each of the four independent variables. Following this procedure, 15 benefit-cost efficiency ratios are calculated by selecting one of the 10 values at random per variable used in the R equation. In this way, we were able to determine the most likely population benefit-cost efficiency ratio of 15:1, indicating that there is a $15 savings on every dollar spent on drug abuse prevention. The 95 percent confidence level pertaining to the R has an interval from $13.7 to $16.1. This indicates that the population R resides within the range 95 percent of the time. (Author abstract)

Kraft, M.K., Rothbard, A.B., Hadley, T.R., McLellan, A.T., & Asch, D.A. (1997). Are supplementary services provided during methadone maintenance really cost effective? American Journal of Psychiatry, 154, 1214-1219.

Previous research has suggested that support services supplementing methadone maintenance programs vary in their cost effectiveness. This study examined the cost effectiveness of varying levels of supplementary support services to determine whether the relative cost effectiveness of alternative levels of support is sustained over time. A group of 100 methadone-maintained opiate users were randomly assigned to three treatment groups receiving different levels of support services during a 24-week clinical trial. One group received methadone treatment with a minimum of counseling, the second received methadone plus more intensive counseling, and the third received methadone plus enhanced counseling, medical, and psychosocial services. The results at the end of the trial period have been published elsewhere. This article reports the results of an analysis at a 6-month follow-up. The follow-up analysis reaffirmed the preliminary findings that the methadone plus counseling level provided the most cost-effective implementation of the treatment program. At 12 months, the annual cost per abstinent client was $16,485, $9,804, and $11,818 for the low, intermediate, and high levels of support, respectively. Abstinence rates were highest, but modestly so, for the group receiving the high-intensity, high-cost methadone with enhanced services intervention. This study suggests that large amounts of support to methadone-maintained clients are not cost effective, but it also demonstrates that moderate amounts of support are better than minimal amounts. As funding for these programs is reduced, these findings suggest a floor below which supplementary support should not fall.

Lampinen, T.M. (1991). Cost effectiveness of drug abuse treatment for primary prevention of acquired immunodeficiency syndrome: Epidemiologic considerations. In W.S. Cartwright, & J.M. Kaple, (Eds.), Economic costs, cost effectiveness, financing and community-based drug treatment (pp. 114-128). Rockville, MD: National Institute on Drug Abuse.

The author examines cost-effectiveness issues in the prevention of acquired immunodeficiency syndrome (AIDS). He reviews epidemiologic and public health issues in evaluating cost effectiveness of the drug treatment as an AIDS prevention strategy. The problem the author perceives is that Federal AIDS prevention funding is distributed to areas with the highest cumulative incidence rates of diagnosed AIDS cases. This is problematic because AIDS among intravenous drug users is underweighted in resource discussion and allocations and because the latency period for AIDS is so long. In assessing alternative prevention strategies for intravenous drug users, he notes that the drug treatment approach may be limited by the lack of treatment slots and the costs associated with treatment. Outreach initiatives to conduct AIDS education and prevention still remain the most logical alternative given the current size of the drug treatment system. Finally, consideration must be given to epidemiologic information on rates of infectivity in weighing prevention strategies so that resource allocations will be more effective. (NCADI abstract)

Langenbucher, J.W. (1996). Socioeconomic analysis of addictions treatment. Public Health Reports, 111, 135-137.

Several analytic tools can be used to evaluate the economic consequences of treatment and of failure to treat. Cost of illness analyses help prioritize remedial efforts based on the relative economic impact of the illness. Cost-benefit analyses attempt to determine whether the expenditures on a treatment are greater or less than the benefits achieved by treatment. Cost-offset analyses examine records of health care utilization before, during, and after treatment. Cost-effectiveness analyses compare two or more treatments by determining the cost of a given desirable outcome using each treatment. Analyses of the cost of illnesses, of the benefits of providing treatment, and of the most economical treatment approaches are of particular relevance in an era in which costs are substantial, opportunity costs are large, and there are many competing calls on scarce resources. On the contrary, addictions treatment is low cost and seriously under used. Of the total costs borne by society, very little is absorbed by treatment. Alcohol and drug treatment account for little more than 1 percent of total service costs in health maintenance organizations and a similarly small fraction of expenditures by major health insurers. Most economic evaluations of addictions treatment link a favorable outcome more to a focus on reducing substance use and the likelihood of relapse than to the treatment's intensity per se. In the case of serious narcotic addiction, clinical effectiveness rarely is associated with intense or intrusive treatment. Untreated alcohol and drug users fill 10 percent to 50 percent of hospital and emergency room beds, mostly for treatment of illnesses secondary to the addiction.

Lennox, R.D., Scott-Lennox, J.A., & Holder, H.D. (1992, Spring). Substance abuse and family illness: Evidence from health care utilization and cost-offset research. Journal of Mental Health Administration, 19, 83-95.

Although the substance abuse treatment community recognizes that physical and psychological problems are common among families with a substance-abusing member, third-party funding for

comprehensive treatment of the families of substance abusers is limited. Failure to provide treatment for these collateral effects of substance abuse on the family is thought to reduce the efficacy of substance abuse treatment, increase the risk of relapse, and leave untreated secondary pathology among family members. This article presents a review of health care utilization and cost-offset studies of the collateral effects of substance abuse on the family to aid administrators and planners in documenting the economic advantages of comprehensive treatment for the families of substance abusers. (Author abstract)

Levy, D.T., & Miller, T.R. (1995, March). A cost benefit analysis of enforcement efforts to reduce serving intoxicated patients. Journal of Studies on Alcohol, 56, 240-247.

A cost-benefit analysis was conducted of a pilot program of increased enforcement of laws forbidding service to intoxicated patrons. This study provides an example of the issues that typically arise in cost-benefit analysis applied to a program directed at alcohol abuse. This methodology translates reported DWIs into cost savings. Benefit measures are presented that distinguish pain and suffering from productive loss, that distinguish social costs from losses internalized by the individual, and that allow for substitution of other unsafe activity. The analysis is based on a case study conducted in Washtenaw, Michigan. Data from police files on sources of DWIs before and after implementation of a program aimed at enforcement of alcohol server laws are used. For estimating the dollar value of benefits from reducing DWIs, incidence data were used, along with a number of different recently developed measures of alcohol- involved crash costs. The study provides the component costs of alcohol-involved crashes and distinguishes external costs from other costs. The estimates indicate that the Washtenaw SIP program provides benefits that greatly exceed its costs. This result holds under a variety of different assumptions about the appropriate measurement of social benefits. Although the benefits are in all cases large relative to the costs, they are highly sensitive to whether the savings include personal losses and losses borne directly by intoxicated drivers, and whether harmful activity is diverted to other costly activities. The study highlights the importance of underlying assumptions that are commonly made in conducting cost-benefit analyses of programs aimed at substance abuse. (Author abstract)

Loneck, B., Garrett, J.A., & Banks, S.M. (1996). A comparison of the Johnson Intervention with four other methods of referral to outpatient treatment. American Journal of Drug and Alcohol Abuse, 22, 233-246.

The Johnson Intervention is a therapeutic technique in which members of the person's social network confront him or her about the damage the drinking or drug use has caused and the action they will take if treatment is refused. It is highly effective in engaging and retaining clients in inpatient treatment, but, since initial evaluations, two trends have emerged in the field. First, there has been an increase in the use of outpatient treatment, and, second, a number of variations of the Johnson Intervention have been developed. The purpose of this study was to compare the effectiveness of the Johnson Intervention with four other methods of referral to outpatient

treatment. The other methods included two naturally occurring types of referral (coerced and non-coerced) and two less intense and less costly variations of the Intervention (Unrehearsed and Unsupervised). Effectiveness was determined by both entry into, and completion of, treatment. A retrospective study was conducted on a sample of 331 cases drawn from an alcohol and other drug treatment agency. Those who had undergone the Johnson Intervention were more likely to enter treatment than those in any of the four other groups. Of those that entered treatment, the Johnson Intervention and the coerced referral groups were equally likely to complete treatment, and both groups were more likely to complete treatment than those in the other three types of referral. Although the Johnson Intervention was the most effective, the variations did show some measure of success and can be viewed as part of an intervention continuum. (Author abstract)

Long, C.G., Williams, M., & Hollin, C.R. (1998). Treating alcohol problems: Study of programme effectiveness and cost effectiveness according to length and delivery of treatment. Addiction, 93, 561-571.

The aims of this study were to compare effectiveness and cost effectiveness of a 5-week inpatient and a 2-week in- and day-patient regime. Pre- and post-assessment of consecutive treatment referrals with follow-up at 6 and 12 months were implemented. In a sequential study design, 112 patients underwent a 5-week residential program while a subsequent 100 patients underwent a 2-week in- and day-patient program. To investigate the effect of changing program delivery, patient groups from before and after the program changes were compared. Self-report, collateral report, and blood test data were used to categorize patients into abstinent, non-problem drinker, drinking but improved, and unimproved groups. Percentage of days abstinent, intensity of drinking, length of time in treatment, treatment cost, and use of aftercare were also measured. Abstinence or non-problem drinking was achieved by 55.6 percent of all patients at 1 year. Change in program delivery did not affect outcome, but treatment costs and mean length of stay for the revised program were significantly reduced. A 2-week in- and day-patient treatment was more cost effective than a 5-week inpatient treatment. Design limitations make these conclusions tentative pending a randomized controlled trial.

Luxenberg, M., Christenson, M., Betzner, A., & Rainey, J. (n.d.). Chemical dependency treatment programs in Minnesota: Treatment effectiveness and cost-offset analysis. Minneapolis, MN: Minnesota Department of Human Services.

This report presents the results of a study conducted to determine how well substance abuse treatment works in Minnesota and to provide a systematic analysis of the costs and cost offsets of substance abuse treatment programs. The costs of treatment and the benefits of treatment are measured in monetary terms. The study demonstrated treatment effectiveness on all outcome and utilization parameters examined, including rates of abstinence, daily use, full-time employment, detoxification, and arrest. In 1992, almost half of the program costs for inpatients was offset

within 1 year of treatment. For outpatients, the savings more than covered the complete cost of treatment. For extended care, almost 75 percent of the costs were offset.

Maddox, L.O. (1996, April). Drug courts: What's the verdict? Corrections Compendium, 21, 6-7.

Drug courts combine needed substance abuse treatment with intensive, judicially monitored probation and frequent urinalysis to guarantee abstinence. In return for successful completion of the drug court program, participants have a "clean" criminal record. The Bureau of Justice Assistance's Drug Court Resource Center has recently published the first volume of "Drug Courts: An Overview of Operational Characteristics and Implementation Issues." This report is the first comprehensive profile of drug court programs in the United States, as it documents the operations and impact of 20 drug court programs that have operated for at least 1 year. The study found that recidivism has been significantly reduced for drug court program participants. There has been a significant decrease in drug use among most drug court participants while involved in the program, along with a substantial period of abstinence prior to graduation for those who successfully complete the program. An unanticipated beneficial impact of the programs has been the birth of a significant number of drug-free babies to women enrolled in the programs. Many programs are now expanding their targeted population, based on the success of their initial implementation experience. Support for the drug court programs from prosecutors and law enforcement officials has been strong. Judges involved with drug court programs believe that this approach is more effective than the traditional criminal case process for those offenders who want to address their substance abuse problem. The average cost for the treatment component of a drug court program ranges between $900 and $1,600 per participant. Savings in jail bed days alone have been estimated to be at least $5,000 per defendant.

Maloney, E.H. (1990, September-October). Ignorance and bigotry: In the closet with denial. EAP Digest, 18, 56-57.

The author offers a commentary on how the reappearance of ignorance and bigotry in the health care system has become frightening both to victims of alcoholism and to those who treat them. Certain areas of care are being singled out to be slashed from the broad range of health care services available to Americans in the name of cost containment. According to the author, various insurers are exhibiting profound ignorance and callous bigotry toward the chemically dependent person seeking treatment. The insurance industry's cost containment efforts have caused two themes to emerge. The first is the notion that addicted people may not need treatment, which is evidenced by the fact that review agencies limit access to inpatient treatment for many alcoholics. The second idea is that treatment alternatives other than inpatient treatment may be adequate, although the efficacy of these have not been proven. The author focuses on the cost-effectiveness of treatment and provides a case for inpatient treatment. (NCADI abstract)

McCoy, C.B., Rivers, J.E., & Khoury, E.L. (1993). An emerging public health model for reducing AIDS-related risk behavior among injecting drug users and their sexual partners. In D.G. Fisher & R.H. Needle, (Eds.), AIDS and community-based drug intervention programs: Evaluation and outreach. Binghamton, NY: Harrington Park Press.

An efficient and cost-effective public health model for reducing AIDS-related risk behavior among injecting drug users and their sexual partners is emerging from data obtained from NIDA's multi-site National AIDS Demonstration Research (NADR) project. Long-term (18-month post-intervention) follow-up data from the Miami site demonstrate the durability of substantial risk reduction among project participants related to both drug use and sexual behavior. Public health, drug treatment, and other health care providers should be aware of successful outreach intervention strategies and incorporate them into state and local AIDS prevention programs targeting out-of-treatment drug users and their sexual partners. (Author abstract)

McFarland, B., Heisel, J., Badger, K., & Mello, N.K. (1992). Behavioral strategies for the evaluation of new pharmacotherapies for drug abuse treatment. In L. Harris, (Ed.), Problems of drug dependence 1991: Proceedings of the 53rd Annual Scientific Meeting, (NIDA Research Monograph No. 119, pp. 28-31). Rockville, MD: National Institute on Drug Abuse.

It is assumed that if a new pharmacotherapy reduces drug self-administration by monkeys, it is more likely to be effective in humans than a pharmacotherapy that has no effect or increases drug self-administration. Among the several advantages of the primate model for pre-clinical evaluation of new medications are: compliance with the drug treatment regimen; the treatment drug effects cannot be influenced by unreported polydrug abuse; the treatment drug effects cannot be modulated by expectancy; accurate baseline measures of the daily dose and pattern of drug self-administration are available for comparison before, during, and after treatment; and targeted preclinical trials are more cost-effective than extensive clinical trials. Validation of animal models for treatment drug evaluation will require measuring the degree of concordance between pre-clinical studies and outpatient studies of new medications. In addition to the evaluation and prediction of therapeutic efficacy, a valid pre-clinical model also could be useful for the identification of new pharmacotherapies and could suggest novel approaches to treatment. Buprenorphine, an opioid mixed agonist-antagonist, and naltrexone, an opioid antagonist, each significantly reduced heroin self-administration by heroin-dependent men in inpatient studies and opiate self-administration by macaque monkeys. Naltrexone treatment also significantly reduced cocaine self-administration by an average of 28 percent to 25 percent. (Author abstract modified)

McGuire, T.G. (1994). Predicting the cost of mental health benefits. Milbank Quarterly, 72, 3-23.

Actuarial and economic methods are combined to predict the costs of mental health and substance abuse benefits in insurance. Costs are predicted for two employers under alternative benefit plans

that contain some of the features proposed under national health reform. The cost of a given benefit differs greatly across population groups. In order to make accurate cost forecasts, data on the group's experience must be combined with research data on the impact of plan changes. Application of employers' experience and research from mental health economics can contribute to better public and private decisions, including those that are part of current health reform.

McGuire, T.G., & Shatkin, B.F. (1991). Forecasting the cost of drug abuse treatment coverage in private health insurance. W.S. Cartwright & J.M. Kaple, (Eds.), Economic costs, cost-effectiveness, financing and community-based drug treatment (pp. 175-189). Rockville, MD: National Institute on Drug Abuse.

The authors focus on the difficulties of estimating the cost of health insurance for drug treatment. The cost of drug treatment has been perceived as rising rapidly and requiring special attention to manage the cost on insurance. State and Federal laws attempt to meet social goals by imposing mandates and minimal requirements on the benefits and insurance contracts that may be written in a state, which in turn increases costs to others elsewhere in the economy. Estimates of these costs are a critical component in evaluating the trade-offs in achieving social goals. Two studies examine the impact of providing drug treatment on health insurance premiums and the impact of state mandates to provide drug treatment benefits. They call for studies that can exploit large data sets of insurance claims to examine the response to different reimbursement policies and for studies that focus on determinants of health insurance coverage for drug treatment. (NCADI abstract)

McLellan, A T., Woody, G.E., & Metzger, D. (1996). Evaluating the effectiveness of addiction treatments: Reasonable expectations, appropriate comparisons. Milbank Quarterly, 74, 51-85.

Problems of alcohol and drug dependence are costly to society in terms of lost productivity, social disorder, and avoidable health care utilization. The dollar costs of alcohol and drug use run into the billions of dollars, and from one-eighth to one-sixth of all deaths can be traced to this source. However, the efficacy of treatment for addiction is often questioned. A rationale for reasonable expectations of addiction treatment is offered, from which are derived three outcome criteria for judging the effectiveness of treatments: reduction in substance use; improvement in personal health and social function; and reduction in public health and safety risks. Based on these criteria, treatment was shown to be effective, especially when compared with alternatives like no treatment or incarceration. These evaluations, which were conducted in a scientific manner, support the continued value of public spending for carefully monitored treatment of addiction. (Author abstract)

Miller, A.B. (1990). Employee utilization of addiction treatment. Employee Assistance Quarterly, 5, 13-31.

The costs of treating employee alcohol and drug dependence are rising. Several trends are contributing to the escalation of treatment costs. Among these is the expansion of the addiction treatment industry. Many treatment purchasers are being encouraged to overbuy services despite the lack of evidence that the more dollars spent on treatment, the more effective it will be. Employers who seek to determine the most cost-effective method of addiction treatment must recognize that not all employees require the same treatment pattern. There are distinct gender and ethnic variations in general mental health service utilization that suggest that addiction treatment utilization is also sensitive to patient characteristics such as gender and race. There are also numerous psychological and organizational barriers to the use of employer-sponsored treatment that must be considered. The evaluation of the cost-effectiveness of treatment must always be underscored by a deep understanding of its utilizations: Which employees use which forms of treatment and what variables actually affect their utilization patterns? It is time for a concerted and humane effort to answer these questions. (NCADI abstract)

Miller, T.R., Galbraith, M.S., & Lawrence, B.A. (1998). Costs and benefits of a community sobriety checkpoint program. Journal of Studies on Alcohol, 59, 462-468.

Alcohol-involved crashes cost society more than $100 billion a year. Sobriety checkpoints are effective in apprehending drunk drivers. This article compares the costs and the estimated monetary benefits from a hypothetical community sobriety checkpoint program. The analysis is constructed around a hypothetical community with 100,000 licensed drivers. A literature review suggests that a generously funded intensive checkpoint program (156 checkpoints per year) can be expected to reduce alcohol-attributable crashes by about 15 percent. The benefits (cost savings) of the checkpoint program are calculated using 1993 alcohol-involved crash incidence from the National Highway Traffic Safety Administration. Costs per alcohol-involved crash and the percentage of alcohol-involved crashes attributable to alcohol are updated from published studies. Estimated annual savings to the hypothetical community total $7.9 million. This includes $3.1 million for averted fatalities, $4.5 million for averted non-fatal injuries, and $0.3 million for averted property damage. Every $1 spent on a sobriety checkpoint program an be expected to save the community more than $6, including $1.30 of insurer costs. An intensive sobriety checkpoint program can save a community more in automobile crash costs than the program costs. (Author abstract modified)

Nas, T.F. (1996). Cost-benefit analysis: Theory and application. Thousand Oaks, CA: Sage Publications.

Offering a theoretical overview, the author discusses the technical terminology used in similar texts on cost-benefit analysis. It provides a foundation of relevant economic theory and outlines the steps involved in a typical cost-benefit analysis, including topics such as consumer surplus, compensating variation, equivalent variation, shadow pricing, and income distribution. The author provides practice examples, case studies, and study questions to guide the process at each state of analysis. (Author abstract modified)

Nathan, P.E., Langenbucher, J.W., Frenkenstein, W., & McGrady, B.S. (1991). Annual review of addictions research and treatment (Vol. 1). Elmsford, NY: Pergamon Press.

Developments in the treatment of addictive behaviors are examined. Discussion is organized around six areas of scientific developments that are contributing to this treatment. These include: motivation for change; brief intervention; processes of change; cost-effectiveness; treatment modalities; and client-treatment matching. (NCADI abstract)

National Institute on Drug Abuse. (1991). Background papers on drug abuse financing and services research: Drug abuse services research series (Vol. 1). Rockville, MD: National Clearinghouse for Alcohol and Drug Information.

Current methodological developments and research findings on the drug abuse service delivery system are discussed. The critical areas of drug services research are identified as: client, treatment services, treatment cost, financing, drug abuse services in context, and services research infrastructure. Topics discussed include the importance of standardized and meaningful definitions of treatment; issues relating to current drug treatment capacity; cost effectiveness analysis; the importance of the workplace in dealing with the drug abuse problem; workplace policies on employee assistance programs; insurance coverage; drug testing; and the state of knowledge, policy issues, and research questions about drug abuse treatment for pregnant women. (NCADI abstract)

O'Farrell, T., Choquette, K., Cutter, H., Floyd, F., Bayog, R., et al. (1996). Cost-benefit and cost-effectiveness analyses of behavioral marital therapy as an addition to outpatient treatment. Journal of Substance Abuse, 8, 145-166.

Thirty-six married male alcoholics newly abstinent from alcohol, who had recently begun outpatient individual alcoholism counseling, were randomly assigned to a no-marital-therapy control group or to 10 weekly sessions of a behavioral marital therapy (BMT) or an interactional couples group. The cost-benefit analysis of BMT plus individual alcoholism counseling showed (a) decreases in health care and legal cost in the 2 years after as compared to the year before treatment, (b) a positive cost offset, and (c) a benefit-to-cost ratio greater than 1 indicating that health and legal system cost savings (i.e., benefits) exceeded the cost of delivering the BMT treatment. None of the positive cost-benefit results observed for BMT were true for participants given interactional couples therapy plus individual alcoholism counseling for which posttreatment utilization costs increased. Thus, adding BMT to individual alcoholism counseling produced a positive cost benefit, whereas the addition of interactional couples therapy did not. Individual

counseling both alone and with BMT added showed substantial and significant cost savings from reduced utilization that substantially and significantly exceeded the cost of delivering the treatment; two treatments did not differ significantly on these cost savings and cost offsets. Individual counseling alone did have a significantly more positive benefit-to-cost ratio than BMT plus individual counseling due to the lower cost of delivering the individual counseling, which was about half the cost of delivering BMT plus individual counseling. Cost- effectiveness analyses indicated that BMT plus individual counseling was less cost effective than individual counseling alone and modestly more cost effective than interactional therapy in producing abstinence from drinking. When marital adjustment outcomes were considered, the three treatments were equally cost effective except during the active treatment phase when BMT was more cost effective than interactional couples therapy. Study limitations are discussed.

Office of Technology Assessment. (1994). Identifying health technologies that work: Searching for evidence. Washington, DC: Author.

Contents include effectiveness research, health technology assessment and clinical practice guidelines, changing clinical practice, options for advancing the Federal effort, filling the gaps in effectiveness and cost-effectiveness research, clarifying the Federal role in health technology assessment, improving clinical practice guideline development, directing and coordinating the overall Federal effort, the need for evidence, the framework for evaluation, the shaping of effectiveness research, geographic variation in medical practice, outcomes in patient care, appropriateness of care, the Federal medical treatment effectiveness program, expectations in the context of national health reform, issues in improving effectiveness research, the state of cost-effectiveness analysis, the Federal role in health technology assessment, the development of clinical practice guidelines, and the impact of clinical guidelines.

Partnership for a Drug-Free America. (1994, February). Impact of illegal drugs on America and our most critical domestic issues. New York: Author.

The Partnership for a Drug-Free America has released a report that documents the impact of drugs on violence, crime, and the United States' pressing domestic issues. According to the report, drugs play a part in nearly half of all homicides and violent crimes in this nation, and drugs have a major impact on the country's most pressing domestic issues. The report also examines the impact of drugs on health care costs, urban decay, children and families, education, AIDS, homelessness, and the economy. Expanded drug prevention and treatment are cost-effective strategies that are needed urgently, according to the report. The report makes note of a number of innovative and effective anti-drug programs operating around the nation. (NCADI abstract)

Peele, S. (1990). Research issues in assessing addiction treatment efficacy: How cost effective are Alcoholics Anonymous and private treatment centers? Drug and Alcohol Dependence, 25, 179-182.

This article discusses research issues in assessing addiction treatment efficacy. According to Miller and Hester, in the United States, present policies entail few conditions of accountability for quality or effectiveness in treatment programs. Instead, treatment practices in the United States are based on historical traditions and folk beliefs that owe more to religion and temperance movements than to research. To decide whether a treatment does anything, similar patients who have not received the treatment must be analyzed. Failure to subject treatment approaches to systematic evaluation will not benefit addicts in the way advocates of private hospital treatment seem to hope, but will only make it harder to discover the best treatment for each patient. (NCADI abstract)

Phibbs, C.S., Bateman, D.A., & Schwartz, R.M. (1991). The neonatal costs of maternal cocaine use. Journal of the American Medical Association, 266, 1521-1526.

This article examines the added neonatal cost and length of hospital stays associated with fetal cocaine exposure. Subjects included 335 infants from a large, public, inner-city hospital from 1985 to 1986 compared with a random sample of 199 other infants. All infants were routinely tested for illicit substances, records were reviewed for maternal histories of substance abuse, and all known cocaine-exposed singleton infants were included. Regression analysis was used to control for the independent effects of maternal age, smoking, alcohol consumption, prenatal care, race, gravidity, and sex of the infant. The cost and length of stay until each infant was medically cleared for hospital discharge was measured against the cost and length of stay until each infant was actually discharged from the hospital. The neonatal hospital cost up to medical discharge clearance was $5,200 more for cocaine-exposed infants than for unexposed infants. The period of boarding the babies while awaiting home and social evaluation for foster care placement increased this difference by an additional $3,500. Exposure to crack cocaine and crack in addition to other illicit substances increased these costs by up to an additional $1,500. At a present estimate of $500 million annually, effective treatment programs for maternal cocaine abusers, now rarely available, would yield savings within the first year of operation. (Author abstract modified)

Pinkerton, S.D., Holtgrave, D.R., DiFranceisco, W.J., Stevenson, L.Y., et al. (1998). Cost-effectiveness of a community-level HIV risk reduction intervention. American Journal of Public Health, 88, 1239-1242.

The authors evaluated the cost-effectiveness of a community-level HIV prevention intervention that used peer leaders to endorse risk reduction among gay men. A mathematical model of HIV transmission was used to translate reported changes in sexual behavior into an estimate of the number of HIV infections averted. For this intervention, the cost of HIV prevention was offset by savings in averted future medical care costs. Community-level interventions to prevent HIV transmission that use existing social networks can be highly cost-effective. (Author abstract modified)

Reilly, J. (1997, September 29). From the field: Tackling the complexities of outcome evaluation in New York. Alcoholism and Drug Abuse Weekly, 5.

The Treatment Outcome Study is based on the first three phases of a four-phase plan to evaluate the delivery of public alcoholism and drug abuse treatment services launched by the New York State Office of Alcoholism and Substance Abuse Services (OASAS). These three phases focused on measuring the efficiency and effectiveness of treatment services, with phase one developing a consolidated client data system so that treatment programs could report consistent information, phase two constructing annual performance targets, and phase three establishing an integrated system for program monitoring and evaluation that compares each participating program's performance with programs that have similar case mixes and treatment modalities. Those programs in phase two or phase three that fall below accepted standards are flagged for follow-up by OASAS staff and an action plan is implemented to improve their performance. More than 10,000 patients from over 100 randomly selected treatment programs will participate in phase four, the outcome study. A modified Addiction Severity Index (ASI) will be administered to patients within a week of admission, and a short form of the ASI will be administered at 3-month intervals during treatment to elicit data on client progress. These patients will be followed through treatment and contacted 6 months after discharge. The goals of this study are to examine the relationship between types and intensity of services and client outcomes, assess the effectiveness of different types of programs in producing positive outcomes for clients presenting with similar problems, and examine cost-benefit ratios of the New York drug and alcohol treatment system.

Riccio, P. (1997, November-December). Prevention dollars at work: New and improved version. Prevention Pipeline, 31-32.

Prevention Dollars at Work is easy-to-use software created by the Center for Substance Abuse Prevention (CSAP) to demonstrate the cost-effectiveness of prevention programs. The model uses a results ladder concept: motivation (drawing attention to the problem); focusing (encompasses knowledge, skills, and methods); environmental shift (changes in the environment, such as laws, policies, and resource allocations); behavior change (the practice of healthier behaviors); and impact (the reduction in problems associated with risky behaviors). Users enter data on their project's desired impact, activities, expenses, and the number of people reached. Based on the impact statement generated, they are able to estimate the potential savings their program can have if their project reduces substance abuse related problems. In an age of managed care and cost cutting, this can be essential to the life of a program. Prevention Dollars at Work also can determine how prevention outcomes help reduce alcohol, tobacco, and drug problems, help people calculate the costs of program activities, estimate the costs of alcohol, tobacco, and drug problems to the community and the potential savings the prevention program might produce, and print facts and graphics about alcohol, tobacco, and drug problems in a specific community.

Ridgely, M.S., & Jerrell, J.M. (1996). Analysis of three interventions for substance abuse treatment of severely mentally ill people. Community Mental Health Journal, 32, 561-572.

Describes the three program models (Intensive Case Management, Behavioral Skills Training, and 12-Step Social Recovery) investigated in a larger study of the cost-effectiveness of these models, their implementation in four community mental health centers over 18 months, and the implications of these findings for clinical managers. Ss were individuals diagnosed as having DSM-III-R Axis I psychotic or major affective disorder, co-occurring substance abuse, and meeting at least two additional disability criteria. Data indicate that, in addition to adequate amounts of specialized training and consultation provided periodically over time, staff serving the dually diagnosed need to be motivated to work with very difficult clients and need to have dedicated time set aside for working with this group of high-risk clients. Elongated periods of treatment are necessary for dealing with clients, frequent relapse and strong denial of mental and substance abuse disorders. (APA Abstract)

Rigaud, M.C., & Newman, F.L. (1990). A case mix procedure for matching the clinical characteristics of patients with dual disorders to planned treatment and treatment costs. Journal of Mental Health Administration, 17, 200-206.

A procedure for matching the clinical characteristics of patients with a dual substance abuse psychiatric disorder to planned treatment resource consumption is described. The procedure uses current standards and practices on dually diagnosed patients, providing an empirical basis for quality assurance, utilization review, and program evaluation. These procedures permit an empirical linking of clinical service performance to the costs of clinical resources, thereby providing a means of evaluating program costs in terms of the specific clinical characteristics of patients and planning budgets based on the patients' clinical needs. The methods are sufficiently flexible so that as new clinical research recommend changes in assessment and treatment, the case mix definitions and evaluation procedures can be easily modified.

Rosenbach, M.L., & Huber, J.H. (1994). Utilization and cost of drug abuse treatment under Medicaid: An in-depth study of Washington state. In G. Denmead & B.A. Rouse, (Eds.), Financing drug treatment through state programs. (Services Research Monograph No. 1, pp. 51-94). Rockville, MD: National Institute on Drug Abuse.

This report is a case study of Medicaid utilization in Washington State. Using the Medicaid Statistical Information System (MSIS), the report describes the substance abuse treatment system in Washington State, and quantifies the extent of Medicaid spending for drug treatment services. The author discuss several reasons why spending is limited for substance abuse services. The authors sought to fill information gaps in terms of Medicaid funding of drug abuse services through an in-depth analysis of Medicaid costs and utilization of drug abuse services in Washington State. The study addressed the following areas: amount spent, population served, providers, and unit costs. The first section of the report describes the Washington State system

for financing drug abuse treatment services. The MSIS data source is described in the second section, along with methods used to construct the analytic file. Results of the claims analysis are presented in the third section. The final section discusses the policy implications and caveats the authors' results. (NCADI abstract)

Rouse, J.J. (1991). Evaluation research on prison-based drug treatment programs and some policy implications. International Journal of the Addictions, 26, 29-44.

Prison-based drug treatment programs in the United States have been in existence for over 20 years. However, it is only in the last few years that they have been available on a large scale. The effects of these programs on recidivism rates tend to be mixed. Given the relatively modest costs, prison administrators may feel the costs are justified even when marginal results are obtained.

Samet, J.H., Saitz, R., & Larson, M.J. (1996). A case of enhanced linkage of substance abusers to primary medical care. Substance Abuse, 17(4), 181-192.

Although experts have advocated linking substance abusers with primary medical care to help achieve both individual and public health goals, few successful and generalizable methods for linkage have been developed. Specific potential benefits for such linkage include HIV testing and initiation of therapy, treatment of tuberculosis and sexually transmitted diseases, appropriate immunizations, cervical cancer screening, promotion of healthy behaviors regarding sexual and drug practices, and encouragement of cessation of substance use. Decentralized models linking patients receiving addiction treatment to primary medical care services need evaluation, as they may be more generalizable and cost-effective compared with on-site integrated programs. Health care providers and policy makers need to explore innovative approaches to bring substance abusers into a medical care system in a way that will provide continuity, comprehensiveness, and prevention to improve health care utilization patterns and reap the benefits of improved addiction, behavioral, and health outcomes. (Author abstract modified)

Sarvela, P.D., & McDermott, R.J. (1992). Cost analysis. In P.D. Sarvela & R.J. McDermott, (Eds.), Health education evaluation and measurement: Practitioner's perspective (pp. 201-219). Madison, WI: WCB Brown and Benchmark.

The purposes of various forms of cost analysis are discussed. The ways evaluators assess different types of costs and four different methods of cost analysis are described: cost-identification, cost-benefit, cost-effectiveness, and cost-utility. In addition, several ethical decisions related to cost analyses are discussed. Cost-analytic techniques are powerful and important evaluation tools; however, it is important that evaluators have a solid understanding of both evaluation and cost analysis techniques before they attempt such complex analyses. Evaluators should assess all programs in terms of the overall impact with respect to the resources spent on the program. It also is important that evaluators conduct evaluations and cost analyses

using the best evaluation methodologies available; otherwise, the results of the analysis will be suspect. (NCADI abstract)

Scanlon, W.F. (1994, January-February). Service outranks cost in selecting treatment providers. EAP Digest, 30-31.

In an independent survey of New York City employers, labor unions, and other purchasers of inpatient chemical dependency treatment services, cost of treatment ranked well below quality care and good service. The purpose of the survey was to determine which treatment program features have the most influence on a referral source's decision to refer. Based on a level-of-importance ranking from one to five, it was assumed that cost would rank near the top. The findings of the survey reinforce the importance of good care and service and in not compromising these values for the sake of cost containment. While it is stressed that cost must also be considered, the survey places cost considerations in perspective. (NCADI abstract)

Schmidt, L., & Weisner, C. (1993). Developments in alcoholism treatment. In M. Galanter, (Ed.), Recent developments in alcoholism: Vol. 11. Ten years of progress (pp. 369-396). New York, NY: Plenum Press.

Alcohol treatment systems expanded and diversified considerably over the past decade. This reflects adaptation to a variety of forces, including developments in national health care financing and policy, changes in other health care systems with which alcohol treatment had strong ties, the more diffuse effects of social movements and a "drying trend" in American public opinion, as well as agitation by advocacy and provider groups within the alcohol field. Drawing on national monitoring data, this chapter reviews developments at the levels of financing policy, organizations, client populations, and treatment modalities, documenting expansion in private sector alcohol treatment units, a growing emphasis on providing outpatient treatment, a merger between services for alcohol and drugs at the organizational and conceptual levels, increases in service delivery to coerced populations, as well as demographic change in alcohol treatment caseloads during the 1980s.

Schneider, R., Mittelmeier, C., & Gadish, D. (1996). Day versus inpatient treatment for cocaine dependence: An experimental comparison. Journal of Mental Health Administration, 23, 234-245.

This study was designed to explore the question of whether day treatment is a viable alternative to inpatient treatment for cocaine-dependent patients. Inpatient subjects were compared with day treatment subjects in a randomized, prospective study design. Treatment outcome was evaluated at 3 and 6 months post treatment. At 3 months post treatment, the inpatient group had a statistically significant higher rate of total abstinence than the day-treatment group, but the difference at 6 months was not statistically significant. The two groups also were statistically

comparable at 6 months post treatment in terms of current abstinence and in terms of other measures. Average costs for day-treatment subjects was 48 percent to 61 percent of the cost for inpatient subjects. The results of this study support the use of day treatment as a clinically and economically effective alternative to inpatient treatment for many cocaine-dependent patients, especially when steps are taken to minimize drop out. (Author abstract modified)

Schneider, R.J., & Herbert, M. (1992, Spring). Substance abuse day treatment and managed health care. Journal of Mental Health Administration, 19, 119-124.

Day treatment for substance abusers has been viewed by many as a viable treatment modality, particularly in light of the success of psychiatric day treatment programs. The available research also supports the efficacy of day treatment versus inpatient treatment for substance abusers. Nevertheless, day treatment programs for substance abusers have had difficulty gaining acceptance with treatment providers and patients alike. This paper offers several explanations for this lack of acceptance and proposes that managed care settings are ideally suited to pioneer substance abuse day treatment programs. Practical suggestions will also be offered to help market this treatment modality and minimize patient resistance.

Schuckit, M. A. (1996). Are the costs of alcoholism treatment justified? Drug Abuse and Alcoholism Newsletter, 25(1), 1-4.

Alcoholism treatment is often viewed as an investment. If treatments are not effective, or if the costs of rehabilitation far outweigh the potential benefits, it will be difficult to convince policy makers to continue to reimburse treatment efforts in this area. This issue of this newsletter synthesizes information on the cost effectiveness of alcohol treatment. Even if society focuses on only the most methodologically sound investigations, and even if society ignores potential benefits in the lifestyles and functioning of alcoholics and those around them, there is evidence that for every dollar spent in alcoholism treatment there is a substantial savings regarding health care costs over the next several years. (Author abstract modified)

Sockwell, A. (1993, Spring). Cost versus benefit: The legal and economic implications of different approaches to drug treatment. Clearinghouse for Drug Exposed Children Newsletter 1, 7.

Two basic issues of the problem of drug-addicted pregnant women are the amount of responsibility that should be placed on the mother and whether it is more economically efficient to spend money for the treatment on the pregnant women or on the drug-exposed children after birth. The Reagan and Bush administrations' war on drugs favored the punitive approach, which focused on punishing the drug-addicted mother, rather than treating her addiction. It is inappropriate to prosecute drug-addicted mothers because the threat of punishment is not an

effective deterrent and this approach ignores the health of the child. Moreover, this approach is expensive because it overburdens the criminal justice system with individuals who could best be helped by treatment and education and because prenatal care is more cost effective than the care of the drug-exposed infants. Sex and racial discrimination can also be seen in this approach and in attitudes toward addicted pregnant women. The creation of a more cost effective and fair system that emphasizes prenatal care will require changes in attitude, policy, and laws. The view that care and treatment will serve to not only reduce costs, but contribute to stronger, healthier families, should be adopted. (NCADI abstract)

Stein, S.L., Garcia, F., Marler, B., Embree-Bever, J., Garrett, C.J., Unrein, D., Burdick, M.A., & Fishburn, S.Y. (1992). A study of multiagency collaborative strategies: Did juvenile delinquents change? Journal of Community Psychology, 88-105.

Fifty-one Colorado juvenile delinquents who were committed to the Department of Institutions participated in the Colorado OSAP Project. The services provided focused on affective education, drug-free alternatives, prosocial bonding, self-competency development, and transition skills. An emphasis was placed on multiagency collaboration. The project began as a collaboration between agencies in juvenile justice and substance abuse. The Colorado OSAP Management Team was expanded to include the evaluation and direct service agencies. The team managed the project through exchanging information, solving problems, and documenting the results. Not all participants demonstrated positive changes; some ran away from the community-based unsecured residential project; some were terminated for substance use or other criminal behaviors. The evaluation of the Colorado OSAP Project documented the implementation and effectiveness of the intervention strategies. (Author abstract modified)

Stout, R.L., Rubin, A., Zwick, W., Zywiak, W., & Bellino, L. (1999). Optimizing the cost-effectiveness of alcohol treatment: A rationale for extended case monitoring. Addictive Behaviors, 24(1), 17-35.

There has been much research on, and debate about, the appropriate length of acute treatment for alcohol problems. In the United States, the lengthy and costly treatment programs of only a few years age have been supplanted by ever-shorter and less intensive protocols, with little evidence that this trend will soon end. In this paper, the authors argue that, because of the chronic, recurrent nature of alcohol problems, an optimal system for delivering treatment services to alcoholics should focus on long-term engagement with clients. There is evidence from studies on research reactivity and telephone follow-up protocols that low-intensity, long-term protocols for maintaining contact with clients over time spans measured in years may results in better long-term clinical outcomes and reduced long-term health care utilization and costs. The authors describe a flexible, long-term, low-intensity follow-up protocol for alcohol abusers called “case monitoring.” This protocol is specifically designed to minimize long-term health care use. The authors predict that such an intervention should be especially efficacious for women, persons with comorbid Axis

I disorders, and persons lower in sociopathy. The design of a study to determine the clinical and health service effects of this intervention is also described. (Author abstract modified)

Svikis, D., Golden, A., Huggins, G., Pickens, R., McCaul, M., et al. (1997). Cost effectiveness of treatment for drug-abusing pregnant women. Drug and Alcohol Dependence, 5, 105-113.

Neonatal intensive care unit (NICU) and drug treatment costs were compared in two groups of pregnant drug abusing women: 100 admissions to a multidisciplinary treatment program and active in care at the time of delivery and 46 controls not entering drug treatment. Clinical measures included urine toxicology at delivery; infant birth weight; Apgar scores; and need for, and duration of, NICU services. Cost measures included drug treatment and NICU costs. Treatment patients showed better clinical outcome at delivery, with less drug use and higher infant estimated gestational age, birth weight, and Apgar scores. Infants of treatment patients were also less likely to require NICU services and, for those that did, had a shorter stay. When total cost was examined (including drug treatment), mean net savings for treatment subjects was $4,644 per mother/infant pair. The study demonstrates the cost-effectiveness of treatment for pregnant drug-abusing women, with savings in NICU costs exceeding costs of drug treatment.

Swan, N. (1995). California study finds $1 spent on treatment saves taxpayers $7. NIDA Notes, 10(2), 14.

This article reports on a 1991-1992 study by the University of Chicago's National Opinion Research Center. The study found that every dollar spent on AOD treatment saves the public $7. The savings are largely through reduced crime. Researchers surveyed 1,850 program participants selected through random sampling of the 146,515 people treated for drug abuse in California during the study period. The only loss was among those patients who lost income while they were undergoing drug abuse treatment. (NCADI abstract)

Tobler, N. (1994). Meta-analytical issues for prevention intervention research. Advances in data analysis for prevention intervention research, (NIDA Research Monograph No. 142, pp. 342-403). Rockville, MD: National Institute on Drug Abuse.

Lack of systematic methods for comparing diversified programs has limited the use of research results, a situation that leads to the supposition that programs do not work. Meta-analytical methods have successfully resolved problems of conflicting results and are a cost-effective method for building a knowledge base. Using both qualitative and quantitative methods, meta-analysis applies all of the scientific rigor of primary research to the integration of this research. Quantitative synthesis is accomplished by computing an effect size, which, unlike significance tests, allows comparisons across studies having varied sample sizes. One advantage for drug prevention intervention research, which seldom shows statistically significant results, is the powerful findings produced when small positive effect sizes are consistent across many studies.

Generalizability is possible through meta-analytic aggregation, as a large body of studies contain all the exigencies of real-world research. Troublesome areas that can distort conclusions are presented to alert readers of literature reviews so they are able to interpret meta-analytic reviews accurately. Specific problematic issues are introduced, such as preexisting differences, combining efficacy and implementation studies, and the use of the weighted effect size with a group of studies that has a large range in sample sizes. Meta-analytic procedures are illustrated by comparing the results of 114 experimental and quasi-experimental school-based adolescent drug prevention programs with a selected subset of 56 higher quality experimentally evaluated programs.

Tolley, K., & Rowland, N. (1991). Identification of alcohol-related problems in a general hospital setting: A cost-effectiveness evaluation. British Journal of Addiction, 86, 429-438.

This study examines the costs of screening patients for alcohol problems. Over a 21-month period, doctors, nurses and a specialist worker screened medical and orthopedic admissions to the York District Hospital. A cost-effectiveness analysis of screening data was carried out. Costs were measured by time taken to screen and the relative costs of employing different occupational groups. Effects included the screening rates of each occupational group and those identified as at risk. Results suggested a greater positive case identification rate could be achieved by employing a specialist worker, but at greater cost. The cost-effectiveness evaluation helps clarify the resource consequences of a screening program and can be a useful aid in the decision-making process.

Treatment works! Largest, most comprehensive study ever makes it official. (1990, May). Common Ground, 1-3.

A comprehensive study was conducted on the effectiveness of drug abuse treatment. The study finds treatment is cost effective, reduces crime, reduces individual and societal costs of health care, and reduces the demand for drugs. The study also proved that residential treatment allowed the greatest returns per day spent in treatment, both for the inpatient treatment record and the year after treatment. (NCADI abstract)

Trent, L.K. (1998). Evaluation of a four- versus six-week length of stay in the Navy's alcohol treatment program. Journal of Studies on Alcohol, 59, 270-279.

Attempts to balance escalating health care costs with resource downsizing have prompted alcohol treatment directors in the U.S. Navy to consider reducing the standard length of stay in treatment. The objectives of this study were to determine whether a 4-week inpatient treatment program is as effective as a 6-week program, and explore the potential for matching patients to a 4- or 6-week program according to the severity of their condition at intake. A total of 2,823

active-duty alcohol-dependent inpatients (2,685 men, 138 women) at 12 Navy treatment facilities participated in the evaluation. All facilities conducted a 6-week program until data had been collected for 1,380 participants: they then switched to a 4-week program (n = 1,443). Background information and clinical profile were obtained when patients entered treatment; 1-year outcome data (e.g., alcohol use, behavior problems, job performance, quality of life) were obtained from participants, work supervisors and aftercare advisors. Hierarchical multiple regression analyses were used to assess the effect of length of stay on outcome and to examine patient-program interactions. The single best predictor of success at 1 year was months of aftercare attendance. Program membership failed to explain any of the observed differences in the criterion measures, once the effects of other predictors had been taken into account. Severity of condition and patient-program interactions were likewise nonsignificant. It was concluded that a reduction in length of stay from 6 weeks to 4 weeks in the Navy's inpatient alcohol treatment program would not have an adverse effect on outcome. (Author abstract modified)

U.S. Department of Health and Human Services. (1994). Cost of addictive and mental disorders and effectiveness of treatment. Rockville, MD: National Clearinghouse for Alcohol and Drug Information.

Addictive and mental disorders extract an enormous economic and social cost from society, including the breakup of families, violence in neighborhoods, and homelessness in the streets. The economic and social costs of untreated addictive and mental disorders are very high to individuals and to society. Effective treatments for many of these disorders are well documented. In the context of managed health care, with quality standards maintained, treatment costs can be both affordable and controllable. Treatment of substance abuse and mental illness provides substantial costs savings in other medical care areas. (NCADI abstract)

Wagstaff, A., & Maynard, A. (1990). Economics of drug addiction. In V. Berridge, (Ed.), Drugs research and policy in Britain (pp. 195-218). Brookfield, VT: Gower.

The contribution of economics to the formation of public policy in the illicit drug field is examined. An overview is provided of the literature in this area. The areas of future research are outlined. Econometric studies of demand are needed using both cross-sectional individual level data and a pooled sample of aggregate-level cross-section and time-series data. Econometric models of the illicit drug market also might be constructed to examine the effects of alternate drug control policies on drug consumption. Evaluation studies are needed to decide the most cost-effective treatment and prevention programs. Though there is already an extensive amount of theoretical literature, there are areas where some research effort could be profitable. The theory of demand for addictive commodities is just beginning to incorporate the notions of withdrawal costs and health hazards. There are unresolved issues surrounding the implications of addiction

and ignorance of health risks for the valuation of the private costs and benefits of drug consumption; these issues should be resolved if an efficient public policy is to be made. (NCADI abstract)

Wing, D.M., & Gay, G. (1990). Determining alcoholism treatment outcomes: A cost-effectiveness perspective. Nursing Economics, 8, 248-255.

Alcoholism treatment outcome is discussed, with a focus on a model for determining cost effectiveness of treatment programs for alcoholism. Topics in this literature review include: reimbursement policies relevant to alcoholism treatment programs; relevant studies; determining treatment costs and benefits; assessing costs and benefits; a hypothetical case study; assessing long-range costs or benefits; cost-benefit and cost-effectiveness analyses; and evaluation. A guide for interviewing, a worksheet for estimating costs for each alcohol treatment alternative, a worksheet for estimating benefits of each alcohol treatment alternative, hypothetical costs and benefits of alcohol treatment alternatives, hypothetical attributes of Sobriety Index (SI), and cost-effectiveness results for hypothetical alcohol treatment alternatives are presented in tabular form.

Woodward, R.S., Boxerman, S.B., Schnitzler, M.A., & Dunagan, W.C. (1996). Optimum investments in project evaluations: When are cost-effectiveness analyses cost effective? Journal of Medical Systems, 20, 385-393.

This manuscript extends the classical models of the value of information to ask whether a hospital's net financial return is ever maximized by a cost-effectiveness analysis of retrospective data when watchful waiting and a full randomized clinical trial are alternative methodologies. The manuscript demonstrates that affect net income and under some conditions, larger-scale retrospective analyses may maximize net income. The manuscript also suggests that risk aversion increases the value of information and therefore the optimum expenditure on a project evaluation.

World Health Organization, Expert Committee on Drug Dependence. (1998). Thirtieth report. World Health Organization Technical Report No. 873. Geneva: Author.

The scale of drug dependence has grown dramatically in the past quarter-century. Preventing dependence and reducing the harm associated with the use of psychoactive substances is a challenge for health services and governments the world over. This report of a WHO Expert Committee categorizes the different types of harm that can result from psychoactive substances, whether illicit or legally available, and describes the steps that can be taken to treat health problems and stop them from occurring. The report looks at the cost and effectiveness of various treatment methods, drawing on evidence from research findings, and gives a detailed outline of the elements needed for an effective national treatment system. It addresses the question of whether dependent persons should be given a "controlled supply" of drugs and proposes for further review several substances that have potential for abuse. The Expert Committee's

recommendations cover drug policies and treatment services, as well as training, information needs and research. The report lays the foundation for realistic but sound strategies in national and international efforts to reduce the health damage caused by the use of psychoactive substances.

Wright-De Aguero, L., Gorsky, R., & Seeman, M. (1996). Cost of outreach for HIV prevention among drug users and youth at risk. Multicultural AIDS Prevention Programs, 9, 185-197.

Economic evaluation has become an increasingly important component in determining the effectiveness of HIV prevention programs. One type of intervention that governmental and non-governmental organizations have supported to prevent the spread of HIV is outreach. We conducted a cost analysis at eight sites that provide outreach services to two populations at high risk for HIV infection: injection drug users and street youth. We assessed the potential benefit of HIV prevention through outreach services by comparing outreach costs with the medical costs of treating an HIV infection individual. The average cost of outreach services was $13.30 per contact. The cost per contact for services to street youth was 78 percent higher than for drug users. Comparing the cost per contact with HIV treatment costs, if only two in 10,000 contacts reduce their high-risk behavior so as to avoid transmission of HIV, outreach would yield a net benefit. These results provide evidence that outreach programs compare favorably to other HIV prevention strategies in terms of cost.

Yin, R.K. (1993). How can cost-benefit analysis help? Washington, DC: Cosmos Corporation.

The author voices concern that before prevention has a chance to prove its value in real terms, support for prevention services may erode. He makes four suggestions for using cost-benefit analysis to help decision makers confront and make choices on prevention: focus on policy issues and communicate in simple terms; make sure we learn more about prevention than we do about cost-benefit methodology; decide whether treatment is a companion or a competitor; and advocate for full inclusion in health care reform. (NCADI abstract)

Zarkin, G.A., French, M.T., Anderson, D.W., & Bradley, C.J. (1994). Conceptual framework for the economic evaluation of substance abuse interventions. Evaluation and Program Planning, 17, 409-418.

Substance abuse treatment directors and policy makers often must allocate limited budgets among several alternative substance abuse treatment programs. Decision makers can gain insight on these difficult budgeting decisions by using economic evaluation techniques. To aid in the economic evaluation, a conceptual framework based on a decision-tree model was developed. The framework describes substance abuse addiction and treatment dynamics and highlights important therapeutic and economic endpoints. Within this framework, the authors describe how

cost-effectiveness and benefit-cost analyses can be used to compare the costs and outcomes of alternative substance abuse intervention programs. Implementation of the conceptual framework requires detailed information on the parameters of the substance abuse addiction and treatment process that does not yet exist. But the paper includes a detailed example of how the conceptual framework can be used to perform economic evaluation of alternative substance abuse intervention programs. The paper demonstrates how economic evaluation can be used in conjunction with a decision-tree model to provide researchers and policy makers with the tools to make informed decisions about the allocation of scarce resources.

II. Cost Benefit of Substance Abuse Treatment: Selected Bibliography

II. COST BENEFIT OF SUBSTANCE ABUSE TREATMENT: SELECTED BIBLIOGRAPHY

Anderson, D.W. (1995). Economic analysis of substance abuse treatment. Research Triangle Park, NC: Research Triangle Institute.

Baker, J.J. (1998). Activity-based costing and activity-based management for health care. Gaithersburg, MD: Aspen.

Bartlett, J.C., Miller, L.S., & Rice, D.P. (1994). Medical care expenditures attributable to cigarette smoking—United States, 1993. Morbidity and Mortality Weekly Report, 43, 469-472.

Bukoski, W.J. & Evans, R.I. (Eds.) (1998). Cost-benefit/cost-effectiveness research of drug abuse prevention: Implications for programming and policy (NIDA Research Monograph Number 176). Rockville, MD: National Institutes of Health.

Curry, S.J., Grothaus, L.C., McAfee, T., & Pabiniak, C. (1998). Use and cost effectiveness of smoking-cessation services under four insurance plans in a health maintenance organization. New England Journal of Medicine, 339, 673-679.

Cummings, J.E., Hughes, S.L., Weaver, F.M., Manheim, L.M., Conrad, K.J., Nash, K., Braun, B., & Adelman, J. (1990). Cost-effectiveness of Veteran's Administration hospital-based home care. A randomized clinical trial. Archives of Internal Medicine, 150, 1274-1280.

DiNardo, J. (1992). A critical review of the estimates of the "costs" of alcohol and drug use. Irvine, CA: University of California, Irvine and Drug Policy Research Center/RAND Corporation.

Freeborn, D.K., Beaudet, M., Mullooly, J., Boehm, R., & Brenes, J. (1991). Adolescent chemical treatment in an HMO. HMO Practice, 5(2), 44-50.

Gold, M.R., Siegel, J.E., Russell, L.B., & Weinstein, M.C. (Eds.) (1996). Cost-effectiveness in health and medicine. New York: Oxford University Press.

Gomel, M.K., Wutzke, S.E., Hardcastle, D.M., Lapsley, H., & Reznik, R.B. (1998). Cost-effectiveness of strategies to market and train primary health care physicians in brief intervention techniques for hazardous alcohol use. Social Science and Medicine, 47, 203-211.

Gourevitch, M.N., Alcabes, P., Wasserman, W.C., & Arno, P.S. (1998). Cost-effectiveness of directly observed chemoprophylaxis of tuberculosis among drug users at high risk for tuberculosis. International Journal of Tuberculosis and Lung Disease, 2, 531-540.

Harwood, H. (1991). Economics and drugs: promises, problems, and prospects. In W.S. Cartwright & J.M. Kaple (Eds.), Economic costs, cost-effectiveness, financing and community-based drug treatment (NIDA Research Monograph No. 113, pp. 46- 55). Rockville, MD: National Institute on Drug Abuse.

Harwood, H., Fountain, D., Carothers, S., Gerstein, D., & Johnson, R. (1998). Gender differences in the economic impacts of clients before, during and after substance abuse treatment. Drugs and Society, 13, 251-269.

Hargreaves, W.A. (1998). Cost-outcome methods for mental health. San Diego: Academic Press.

Kenkel, D. (1998). Guide to cost-benefit analysis of drunk-driving policies. Journal of Drug Issues, 28, 795-812.

Manning, W.G., Keeler, E.B., Newhouse, J.P., Sloss, E.M., & Wasserman, J. (1991). The costs of poor health habits. A RAND study. Cambridge, MA: Harvard University.

McCarthy, P., Kissling, G., & Dirkers, J. (1993). How many people need substance abuse treatment in North Carolina and how much does it cost? North Carolina Medical Journal, 54, 209-212.

Moos, R.H., Finney, J.W., & Cronkite, R.C. (1990). Alcoholism treatment: Context, process and outcome. New York: Oxford University Press.

Niemiec, R.P., Hartz, R., & Walberg, H.J. (1992). Improving cost-benefit analysis of training. Evaluation Practice, 13, 51-52.

Powers, K.I., Hanssens, D.M., Hser, Y., & Anglin, M.D. (1993). Long-term time-series forecasting of social interventions for narcotics use and property crime. Mathematical and Computer Modeling, 17, 89-107.

Rice, D.P. (1993). The economic cost of alcohol abuse and alcohol dependence. Alcohol Health and Research World, 18(3), 10-11.

Rice, D.P., Kelman, S., & Miller, L.S. (1991). Economic costs of drug abuse. In W.S. Cartwright & J.M. Kaple (Eds.), Economic costs, cost-effectiveness, financing and community-based drug treatment (NIDA Research Monograph No. 113, pp. 10-32). Rockville, MD: National Institute on Drug Abuse.

Rice, D.P., Kelman, S., Miller, L.S., & Dunmeyer, S. (1990). The economic cost of alcohol and drug abuse and mental illness 1985. Report submitted to the Office of Financing and Coverage Policy of the Alcohol, Drug Abuse, and Mental Health Administration. San Francisco, CA: Institute for Health and Aging, University of California.

Shepard, D.S. & Maynard, D.B. (1997). Empirically based assignment of clients to alternative substance abuse treatments: an application of multivariate cost-effectiveness analysis. Abstract Book/Association of Health Services Research, 14, 34.

Sindelar, J.L. (1991). Economic cost of illicit drug studies: critique and research agenda. In W.S. Cartwright & J.M. Kaple (Eds.), Economic costs, cost-effectiveness, financing and community-based drug treatment (NIDA Research Monograph No. 113, pp. 33-45). Rockville, MD: National Institute on Drug Abuse.

Snowden, L.R. (1993). Emerging trends in organizing and financing human services: Unexamined consequences for ethnic minority populations. American Journal of Community Psychology, 21, 1-13.

Vaughn, T., Vaughn, M., Borders, T., & Hall, J. (1998). Six-month cost effectiveness of case management for substance abuse treatment. Abstract Book/Association of Health Services Research, 15, 302-303.

World Health Organization, Programme on Substance Abuse. (1996). Costs and effects of treatment for psychoactive substance use disorders: A framework for evaluation. Geneva: Author.

The perspective offered in this document is solely that of the author(s) and does not reflect the policies or views of the Federal government, or any of its Departments or Agencies.