

**Methods for Systematically Reviewing the Evidence on
Systems Reforms: Medicaid Managed Behavioral Health Care**

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Introduction

This report describes the first stage of the Public Sector Managed Behavioral Health Care Evaluation Tracking Project, which is being carried out by The Evaluation Center at the Human Services Research Institute (HSRI). The goal of the project is to develop a scientific database that will provide comprehensive information about all research and evaluation studies of public sector managed care programs, including details about the plans, the design of the research, and a synthesis of the findings. The purpose of the project is first to encourage quality and consistency in the study of public-sector programs generally and Medicaid managed behavioral health programs specifically. The second purpose is to provide a resource to interested parties, especially policy makers who may be contemplating the development, expansion or modification of these programs.

Evaluating Medicaid Managed Care

The impetus for evaluating the impact of Medicaid managed care stems from a variety of sources including government agencies, private foundations, private and academic research centers, and investigator-initiated research. One reason for the variety and complexity of research and evaluation in this area is the fact that the federal government has actively encouraged state-level experimentation in the Medicaid program, first by allowing the states considerable latitude in the design of the program originally, and then with waiver process through which they are able to introduce managed care initiatives (Hurley, Freund, & Paul,

1993). As the review of research findings presented below indicates, the results have been scattered and inconsistent.

The Health Care Financing Administration (HCFA), the federal agency overseeing both the Medicaid and Medicare programs, grants two type of waivers, known according to the section of the Social Security Act which provides congressional authorization. These are Section 1915b “freedom of choice” waivers and Section 1115 “demonstration” waivers. The first, among other things, waives the freedom-of choice requirement that allows Medicaid recipients to choose any provider willing to accept Medicaid reimbursement. The second is more flexible, including all the provisions of the 1915b waiver with additional options, notably that of allowing the states to include other uninsured poor in their Medicaid managed care program (Holahan, 1995).

HCFA imposes certain requirements on the states receiving waivers, including that the modifications be “budget neutral” and that the states contract for independent evaluations of the programs at specified times (Rowland, Rosenbaum, Simon, & Chait, 1995). These evaluations are required to examine only “cost, quality and access to care” with very little direction on how they are to be conducted. As a result, they vary considerably in design, methods and quality, and they have not been widely disseminated.

Welfare Reform and Medicaid Managed Care

One potentially significant, and still uncertain, impact of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA) is the effect on access to medical care through the Medicaid program (Rosenbaum & Darnell, 1996). The changes in Medicaid eligibility imposed by PRWORA are likely to affect three groups. The largest of these whose

health and behavioral health care benefits may be affected in unpredictable ways consists of adults and children who previously qualified for Medicaid through eligibility for Aid to Families with Dependent Children (AFDC), restructured and renamed as Temporary Assistance to Needy Families (TANF) (Greenberg, 1998). The second group, smaller but still important for considerations of behavioral health care, are those in the Disabled category of Medicaid eligibility, including adults and children whose disability consists of serious and persistent mental illness (Ku & Coughlin,). Finally, the third group consists of immigrants, who may gain eligibility in several ways (Ellwood & Ku, 1998).

Space does not allow a detailed discussion of these very complex changes or their actual and potential impact on access to Medicaid. The essential point is that with the implementation of PRWORA, Medicaid and welfare (i.e. TANF) were “delinked,” the purpose being to insure that poor people did not lose health benefits as a consequence of being transitioned out of the TANF program. To prevent this from occurring, Medicaid eligibility is now to be determined according to the criteria in place for the AFDC program (rather than the new, more restrictive criteria for TANF).

Although this measure was designed to support access to Medicaid, preliminary but increasingly persuasive evidence suggests that the opposite is occurring for adults, children and immigrants (Greenberg, 1998). There are multiple possible reasons for this potential unintended result, and the explanation is far from clear. In any case, this phenomenon heightens the importance of evaluating Medicaid managed care, especially in the domain most difficult to measure, that of access.

Balanced Budget Amendment

Despite the limited and inconclusive findings from the federal government's oversight process and other research activities, and the potential for additional problems due to welfare reform, the requirements for evaluation have been relaxed even further. This is primarily a consequence of devolution, specifically, the Balanced Budget Amendment (BBA) of 1997, which allows the states to enroll recipients in Medicaid-only HMO's, and to otherwise limit provider choice without obtaining waivers (Schneider, 1997). Thus, the BBA allows most of the important features of the Section 1915(b) and 1115 waivers without even the limited the federal oversight which the waiver process insured through the required evaluation.

Persons with Serious Mental Illness in Medicaid Managed Care

Although Medicaid has become an important source of financing services for people with serious mental illness, the exact number of this group in the program is unknown. People with disabilities are automatically eligible for Medicaid if they qualify for Supplemental Security Income (SSI), which is based on a combination of low income and inability to work. Serious mental illness is one form of disability by which an individual may qualify for SSI, and thereby for Medicaid as well. But the proportion of the Disabled category that have mental illness (as opposed to a physical or developmental disability) is unknown since Medicaid does not differentiate enrollees by diagnosis. Moreover, the AFDC/TANF category also contains a considerable, but similarly unknown, proportion of people with serious mental illness who establish eligibility on other grounds. In the absence of specific identifiers for persons with serious mental illness, the Disabled category, however imprecise, has become a common proxy.

The Disabled category represents 16 percent of Medicaid enrollees. Because this group uses more services than AFDC/TANF and other categories, however, it accounts for 37 percent of total expenditures (Regenstein & Schorer, 1998). The rapid increase in Medicaid expenditures between 1988 and 1992, that prompted many states to turn to managed care as a cost containment measure, was due in large measure to increased enrollment in the Disabled category

Although persons in the Disabled category are logical candidates for managed care approaches because of their high utilization rates, the states have been somewhat slower to enroll them. This is partly due to the challenge of insuring access and quality under managed care for those with complex health and social service needs, and also due to the difficulty of establishing appropriate capitation rates. Despite the slow start and the existing obstacles, however, enrollment of the disabled in managed care is picking up pace: currently one-fourth of the non-elderly disabled Medicaid recipients are enrolled in managed care programs, and six states now enroll more than 75 percent of this group in managed care (Kaiser Commission on Medicaid and the Uninsured, 1999).

Review of Medicaid Managed Behavioral Health Care Evaluation and Research

The following is the result of a systematic literature search and synthesis of findings from existing reports on evaluations of public-sector programs conducted to date. To obtain these, we conducted an electronic search of literature databases according to a specified protocol, with inclusion and exclusion criteria (these are available from the authors). We supplemented the results of this search with several unpublished reports previously obtained.

The search produced 21 published articles or reports on findings of research evaluations of public-sector managed behavioral health programs (eighteen published articles, two unpublished reports and one article in press). These reports were the products of 15 separate studies, involving eight different managed care plans.

We conducted a systematic review of the reports with the goal of synthesizing findings along specified dimensions to the extent that this was possible given the variability of research design and reporting. These dimensions were: characteristics of the managed care plan evaluated, characteristics of the evaluation, and results of the evaluations.

Characteristics of managed care plans:

The reported studies involved eight managed care plans in the following states: Arizona, California, Colorado, Massachusetts, Minnesota, New York, Wisconsin and Utah. These plans were implemented between 1987 (3 plans) to 1995 (1 plan). Thus, they represent a relatively early phase in the development of public sector managed care, which is evident as well from the characteristics we identified. In our review, we differentiated plan structures, as full carve-out (five plans), fully-integrated (3 plans). No plan fell into the intermediary category of partial carve-out (i.e. subcontracting with specialty behavioral health providers), a variation which might be expected among plans implemented more recently.

We also differentiated between arrangements for risk bearing, to the extent that this was possible from information given in the reports. Accordingly, we found that the primary managed care organization (MCO) bore some degree of risk in six of the eight plans, and for the remaining two it was not reported whether the arrangement involved risk for the MCO. Whether or not providers or MCO subcontractors shared risk was not reported for any of the plans.

Characteristics of the Evaluations:

Of the 15 research reports reviewed, eight were investigator initiated, four were funded by the states, and three were HCFA-mandated evaluations conducted by outside evaluators as a condition of a waiver. The source of funding was similarly diverse, with seven funded by grants from NIMH, five by states, two by private foundations, one by HCFA and three from other sources.

All fifteen of the reports involved comparison between managed care and fee for service systems; none compared different types of managed care organization.

The studies also varied considerably in the type of research design. Only five of the fifteen utilized a true experimental (random assignment) design. Another four involved non-equivalent comparison groups (quasi-experimental design). Five were multiple cross-sectional cohort studies and one was a single group pre-post study.

The studies relied predominately on secondary data, either claims or encounter data (nine studies) or other administrative records (eight studies). Five included data from some form of consumer survey, another two from family surveys and one from a survey of providers. Four obtained data from clinician or staff ratings and two from medical records. (These total more than fifteen, because some studies used multiple forms of data.)

We grouped dependent variables into 11 categories. Consistent with the reliance of many studies on administrative data, the most commonly studied variables were service utilization (11 studies), cost (nine studies). Other dependent variables were: quality (seven studies), access (five studies), consumer functioning (five studies), consumer symptoms (four studies), consumer satisfaction (two studies), health status (two studies) family experiences (two studies), provider

satisfaction (one study), and other (two studies). Ten of the fifteen studies employed some form of risk adjustment in the analysis.

Results of the Evaluations

We emphasize that the following synthesis of results from these studies should be interpreted with caution, due to the many limitations of the existing research. The purpose at this stage of the project is less to report on the results of managed care, than to demonstrate the limitations of the existing knowledge base and the need for improvements in order for it to serve as a practical guide for policy makers to follow in developing programs for their own locale.

Figure 1 represents the findings from the fifteen studies reviewed here. It is evident that the most consistent finding is decreased utilization of inpatient services and decreased cost, especially in the area of inpatient services. Of note are the more equivocal findings related to both costs and utilization of inpatient services since a goal of high quality managed care is usually not to reduce services across the board but to shift the locus of care from inpatient to less-intensive outpatient services. This impression is echoed in the similarly equivocal findings related to access, quality and consumer outcomes.

The fact that relatively few studies focused on access, quality and outcomes, as opposed to utilization and cost, is perhaps because these studies represent a relatively early stage in the evaluation of managed behavioral health. We found also that measures of quality, for example varied considerably from one study to another and few of them had well-demonstrated validity and reliability. The studies that did focus on quality often included multiple measures, resulting in the high number of mixed findings.

Figure 1. Summary of findings from 15 studies of public-sector managed behavioral health care programs.

Dependent Variable	Effect of Managed Care (Number of Studies)			
	Increase	Decrease	Mixed	No Effect
Utilization				
Inpatient	2	8		1
Outpatient	2	2		3
Costs/Expenditures				
Inpatient	1	3		1
Outpatient	2	2		1
Total (e.g. medical, social)	2	6		1
Access	3			2
Quality		1	4	2
Consumer Outcomes	1		2	1

Next steps for the Evaluation Tracking Project

We intend first to expand our search to identify and obtain any unpublished reports of evaluations of public sector managed care programs, and further refine the synthesis of findings using meta-analytic methods as appropriate. We will further analyze the state of the art regarding research design, methods and reporting as a means of enhancing the utility of these efforts. Following this, we will develop a database to provide ongoing reports on current evaluation activities and findings in this area, which will be available to policy makers and other interested persons. To that end, we welcome any information from readers of this report about completed or ongoing evaluations.

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Ellwood, M., & Ku, L. (1998). Welfare and Immigration Reforms: Unintended Side Effects for Medicaid. Health Affairs, 17(3 (May/June), 137-141.

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Holahan, J. (1995). Insuring the Poor through Medicaid 1115 Waivers. Health Affairs, Spring, 200-218.

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Ku, L., & Coughlin, T. How the New Welfare Reform Law Affects Medicaid (A-5 in Series, Assessing New Federalism: Issues and Options for States). Washington, D.C.: Urban Institute.

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Rosenbaum, S., & Darnell, J. (1996). An Analysis of the Medicaid and Health-Related Provisions of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 . Washington, D.C.: Kaiser Commission on the Future of Medicaid.

Rowland, D., Rosenbaum, S., Simon, L., & Chait, E. (1995). Medicaid and Managed Care: Lessons from the Literature . Washington, D.C.: Kaiser Commission on the Future of Medicaid.

Schneider, A. (1997). Overview of Medicaid Managed Care Provisions in the Balanced Budget Act of 1997 : Kaiser Commission on the Future of Medicaid.

Appendix A: Annotated Bibliography of Evaluations of Managed Behavioral Health Care

- 1. Callahan, J.J., Shepard, D.S., Beinecke, R.H., Larson, M.J. & Cavanaugh, D. (1995) “Mental health/substance abuse treatment in managed care: the Massachusetts Medicaid experience.” Health Affairs, 14(3):173-184.**

Massachusetts was the first state to introduce a statewide specialty mental health managed care plan for its Medicaid program. This study assesses the impact of this program on expenditures, access, and relative quality. Over a one-year period, expenditures were reduced by 22 percent below predicted levels without managed care, without any overall reduction in access or relative quality. Reduced lengths-of-stay, lower prices, and fewer inpatient admissions were the major factors. However, for one population segment--children and adolescents--readmission rates increased slightly, and providers for this group were less satisfied than they were before managed care was adopted. Less costly types of twenty-four-hour care were substituted for inpatient hospital care. This experience supports the usefulness of a managed care program for mental health and substance abuse services, and the applicability of such a program to high-risk populations.

- 2. Chandler, D., H. Teh wei, et al. (1997). “Mental health costs, other public costs, and family burden among mental health clients in capitated integrated service agencies.” Journal of Mental Health Administration 24(2): 178-188.**

This articles explores the cost implication of the capitated integrated service agency (ISA) model for persons with severe and persistent mental illness. Two demonstration sites in California were chosen for a randomized comparison between an ISA model and usual care under the existing county service system. Each ISA demonstration program assumed fiscal and service responsibility for approximately 100 clients. Cost information was collected during a 3-year study period. The capitated ISAs reduced the previously skewed distribution of resources to clients and reduced family economic burden (in one site). However, they did not reduce law enforcement, health, and other nontreatment public costs. Although capitated funding enabled programmatic effectiveness and the shifting of services toward rehabilitation, it did not itself ensure such results.

3. **Christianson J.B., Manning, W., Lurie, N., Stoner, T.J., Gray, D.Z., Popkin, M. & Marriott, S. (1995) "Utah's Prepaid Mental Health Plan: the first year." Health Affairs, 14(3):160-72.**

This DataWatch analyzes the effect of the Utah Prepaid Mental Health Plan (UPMHP) on use of mental health services by and mental health treatment expenditures for Medicaid beneficiaries from July 1991 to June 1992. During this period three community mental health centers (CMHCs) provided mental health services to Medicaid beneficiaries in their catchment areas in return for capitated payments. Utilization and expenditure rates per beneficiary per month were analyzed using a "fixed-effects" statistical modeling approach, controlling for categories of beneficiary, time trends, seasonal effects, and CMHC grouping (capitated urban, capitated rural, noncapitated urban, and noncapitated rural). The results of the analysis suggest that the UPMHP reduced admissions for inpatient mental health treatment, inpatient mental health expenditures, and total mental health expenditures for Medicaid beneficiaries. These findings must be regarded as preliminary because of the relatively short time period covered by the data.

4. **Christianson J.B., Lurie, N., Finch, M., Moscovice, I.S. & Hartley, D. (1992) "Use of community-based mental health programs by HMOs: evidence from a Medicaid demonstration." American Journal of Public Health, 82(6):790-796.**

BACKGROUND. Proposals to enroll Medicaid beneficiaries in health maintenance organizations (HMOs) have raised concerns that community-based mental health treatment programs would be adversely affected. **METHODS.** In Hennepin County (Minnesota) 35% of Medicaid beneficiaries were randomly assigned to prepaid plans. Random samples of individuals with severe mental illness with selected from the prepaid enrollees and from beneficiaries remaining with traditional Medicaid. The two groups were compared with respect to their use of community treatment programs and the write-off (the proportion of patient charges for which payment was not received) experienced by those programs for members of the study sample. **RESULTS.** There was no strong evidence that Medicaid beneficiaries with severe mental illness who were randomly assigned to prepaid plans used community-based mental health treatment programs differently than did other Medicaid beneficiaries. However, write-offs were consistently higher for enrollees in prepaid plans. **CONCLUSIONS.** In the short run, the use of community-based mental health treatment programs need not be affected by enrollment of Medicaid beneficiaries in prepaid plans, providing that Medicaid program administrators take steps to minimize the disruption of ongoing treatment, offer beneficiaries a choice among prepaid plans, and encourage community treatment programs to contract with plans to serve beneficiaries.

5. Cole, R., S. Reed, et al. (1994). “A mental health capitation program: I. Patient outcomes.” Hospital and Community Psychiatry 45(11): 1090-1096.

OBJECTIVE: The Monroe-Livingston demonstration project’s capitation payment system (CPS) was evaluated to determine whether capitated funding of mental health care, compared with fee-for-service funding, could reduce hospitalization rates and improve functioning and symptoms for severely and persistently mentally ill adults without increasing the total cost of care. **METHODS:** The experiment was a communitywide prerandomized clinical trial involving 422 patients. Patients who were randomized into the experimental group were eligible for enrollment in a capitated-funding program administered by one of five community mental health centers. Those randomized into the control group received standard fee-based services. Follow-up interviews with patients one and two years after enrollment in the study assessed changes in symptoms and functioning. Data files of the membership corporation that coordinated community mental health services for the CPS provided measures of study patients’ use of inpatient mental health services. **RESULTS:** During the two-year follow-up period, patients in the experimental group had significantly fewer hospital inpatient days than patients in the control group, but the two groups had no significant differences in functioning or level of symptoms. **CONCLUSIONS:** The CPS successfully maintained severely ill patients in the community but did not improve their functioning or level of symptoms.

6. Colorado Department of Human Services (1997) “Colorado Mental Health Capitation Pilot Program Final Report,” available at <http://www.cdhs.state.co.us/ohr/mhs/report/contents.html>

7. Dickey, B., S. Normand, et al. (1996). “Managing the care of schizophrenia.” Archives of General Psychiatry 53(Oct): 945-952.

BACKGROUND: In 1992, Massachusetts launched a state-wide managed care plan for all Medicaid beneficiaries. **METHODS:** This retrospective, multi-year, cross-sectional study used administrative data from the Massachusetts Division of Medical Assistance and Department of Mental Health, consisting of claims for 16,400 disabled adult patients insured by Medicaid in Massachusetts between July 1, 1990, and June 30, 1994. The main outcome measures include annual rates of hospitalization, emergency department utilization, and follow-up care 30 days after discharge; length of inpatient stay; and per-person inpatient and outpatient expenditures. **RESULTS:** Between 1991 and 1994, the likelihood of an inpatient admission decreased from 29% to 24% and was accompanied by a slight reduction in length of stay (median number of bed-days per admission dropped by 3.3 days). There was a slight decrease in the number of patients who sought care in general hospital emergency department utilization. However, there was a small increase in the fraction of patients readmitted within 30 days of discharge. Medicaid and Department of Mental Health expenditures for mental health per treated beneficiary decreased slightly, from \$11,060 to \$10,640, during the 4-year study period. **CONCLUSION:** Although per-person expenditures dropped and most patient patterns of

care remained the same, longer-term study is recommended to assess whether the trends can be maintained.

- 8. Dobmeyer, T.W., McKee, P.A., Miller, R.D. & Westcott, J.S. (1990) “The effect of enrollment in a prepaid health plan on utilization of a community crisis intervention center by chronically mentally ill individuals.” Community Mental Health Journal, 26(2):129-137.**

When a prepaid Medicaid Demonstration Project was initiated in Hennepin County, Minnesota, concerns were raised that the new system might place an additional service burden on County-funded mental health agencies responding to underprovision of mental health services by prepaid health plans. This study examined the use of a single County mental health services agency, the Crisis Intervention Center, by a group of vulnerable and frequent users, the chronically mentally ill. The study found that use of the Center by persons enrolled in a prepaid plan declined after enrollment and was different and lower for the prepaid group than for a comparison group of fee-for-service system users during the same time periods. The difference did not meet conventional levels of statistical significance. This finding is nonetheless important since it may be an indication of successful case management by prepaid health plans in serving chronically mentally ill individuals.

- 9. Frank, R. G. and T. G. McGuire (1997). “Savings from a Medicaid carve-out for mental health and substance abuse services in Massachusetts.” Psychiatric Services 48(9): 1147-1152.**

OBJECTIVE: The study examined the financial performance of a managed behavioral health care organization responsible for mental health and substance abuse services under the Massachusetts Medicaid program. Financial performance is considered in light of incentives in the contract between the managed care firm and Medicaid.

METHODS: Data on the financial performance of the managed care organization were obtained from documents related to a recent rebidding of the contract and other publicly available documents. Financial incentives associated with claims costs and administrative services are also reported.

RESULTS: Spending by the managed care organization was about 25 percent lower than projected expenditures adjusted for inflation. Explicit financial incentives associated with cost reduction did not give the managed care organization strong inducements to attain these savings. The profit and loss features based on cost targets were quite limited. The organization had a much greater incentive and opportunity to make profits by conserving its administrative costs rather than by controlling Medicaid claims costs.

CONCLUSIONS: In light of the contract's weak cost-saving incentives, it may be surprising that so much was saved. One explanation is that it was easy to achieve such savings in a state with high expenditures. However, in examining the particular amounts saved, it is clear that the organization came close to contract targets even when incentives to achieve them were weak. The authors label this behavior "managing to the contract" and discuss some reasons why a managed care organization might behave in this way and the implications this behavior has for contract design.

10. Human Services Research Institute (1998) Wisconsin Special Care Initiative Project: Evaluation of Independent Care (ICare), Submitted to State of Wisconsin.

11. Leff, H., V. Mulkern, et al. (1994). "The effects of capitation on service access, adequacy and appropriateness." Administration and Policy in Mental Health 21(3): 141-160.

Describes an evaluation of the influences of capitation on service access, adequacy, and appropriateness in 4 capitated public mental health programs for seriously mentally ill clients. Research was based on a functional level and consensus panel approach to estimating service need. Access, adequacy, and appropriateness were higher than the fee-for-service programs, suggesting that the financial incentive in capitation was not a significant limiting factor. Access and adequacy were also limited by new program effects as well as by case manager and client preferences. ((c) 1997 APA/PsycINFO, all rights reserved)

12. Leff, S., M. Lieberman, et al. (1996). "Outcome Trends for Severely Mentally Ill persons in Capitated and Case Managed Mental Health Programs." Administration and Policy in Mental Health 24(1): 3-23.

The long-term outcomes of 628 severely mentally ill adults (mean age 41.3 yrs) treated in capitation mental health programs were compared to those of 217 severely mentally ill adults (mean age 44.5 yrs) treated in fee- for-service programs. Data were collected by independent raters and case managers. The effects of capitation on linear trends for symptoms, social conflict and functioning were examined using analysis of covariance (ANCOVA) and regression, controlling for sociodemographic and clinical variables. Patients in capitated programs had slightly better outcomes on 2 measures: social conflict and global functional level. Initially more disturbed patients had slightly better outcomes under capitation than under fee for service funding on symptoms and social conflict, while less disturbed patients had equal or poorer outcomes. Implications of these findings for program planning and future research are discussed.

13. Lurie, N., Moscovice, I.S., Finch, M., Christianson, J.B. & Popkin, M.K. (1992) “Does capitation affect the health of the chronically mentally ill?” Journal of the American Medical Association, 267(24): 3300-3304.

OBJECTIVE--To determine the effect on health outcomes of enrollment of chronically mentally ill Medicaid recipients in prepaid plans vs traditional fee-for-service Medicaid. DESIGN--A randomized controlled trial. Clients who were randomly assigned to prepaid care were then permitted to choose among four capitated health plans. Clients returned to fee-for-service care at the end of the demonstration. SETTING--The Medicaid Demonstration Project in Hennepin County, Minnesota, the urban center of which is Minneapolis. PATIENTS--Seven hundred thirty-nine Medicaid clients who were classified as having chronic mental illness on the basis of Medicaid claims. Clients were interviewed at baseline (time 1) and at two follow-up points. Data were available for 96% of participants at the end of the intervention (time 2). Average duration of follow-up was 11 months. A subset of 370 clients with schizophrenia was followed up 11 months after the return of the prepaid group to fee-for-service care (time 3). MAIN OUTCOME MEASURES--General health status, physical functioning, social functioning, and psychiatric symptoms, assessed using the Schedule of Affective Disorders and Schizophrenia-Change version, the Global Assessment Scale, and indicators of community function. RESULTS--No significant differences between prepaid and fee-for-service groups in general health or psychiatric symptoms from baseline to time 2. After regression adjustment, 12% fewer clients in the prepaid group reported being victimized (P less than .01). At the end of time 3, the regression-adjusted Global Assessment Scale scores had worsened by 7.6 points more in the prepaid group in comparison with the fee-for-service group (P less than .02). CONCLUSION--There was no consistent evidence of harmful effects of enrolling chronically mentally ill Medicaid clients in prepaid care, at least in the short run. The generalizability of these findings may be limited to plans that control utilization by methods similar to those used in this study setting. Longer-term outcome studies should be undertaken to clarify the strength of the findings.

14. Moscovice, I., Lurie, N., Christianson, J.B., Finch, M., Popkin, M. & Akhtar, M.R. (1993) “Access and use of health services by chronically mentally ill Medicaid beneficiaries.” Health Care Financing Review, 14(4): 75-87.

This article has two objectives: to quantify the access and utilization of services received by chronically mentally ill Medicaid recipients, and to compare service utilization and access under prepayment and fee-for-service (FFS) payment. The study setting is Hennepin County (Minneapolis), Minnesota, where 35 percent of Medicaid recipients were randomly assigned to receive services from prepaid plans. An algorithm was developed to identify recipients with chronic mental illness, resulting in 739 study participants, split approximately evenly between prepayment and FFS Medicaid. Data were collected through in-person surveys at baseline, and after 1 year. We found slight improvements in the majority of access measures studied and no significant decreases in the use of inpatient or outpatient services for enrollees in prepaid health plans. The results support efforts to expand the use of prepaid health plans to meet the needs of non-institutionalized chronically mentally ill Medicaid beneficiaries.

15. Norton, E., R. Lindrooth, et al. (1997). "Cost-shifting in a mental health carve-out for the AFDC population." Health Care Financing Review 18(3): 95-108.

This study tests whether the managed care vendor shifted costs to Medicaid-reimbursed medical care after the start of the mental health carve-out for the Aid to Families with Dependent Children (AFDC) population in Massachusetts. We used claims data over a 4-year period to estimate expenditures for four types of health services, two of which were paid for by the managed care vendor and two by Medicaid. Total per person public expenditures declined by only about 3 percent. Inpatient psychiatric services were replaced by outpatient psychiatric services and some pharmaceuticals, but overall there was little or no evidence of cost shifting to the medical sector. These results are in contrast to what was found in a sample of Medicaid beneficiaries eligible due to a mental health disability.

16. Popkin, M., N. Lurie, et al. (1998). "Changes in the process of care for Medicaid patients with schizophrenia in Utah's prepaid mental health plan." Psychiatric Services 49(4): 518-23.

OBJECTIVE: Changes in the process of psychiatric care received by Medicaid beneficiaries with schizophrenia were examined after the introduction of capitated payments for enrollees of some community mental health centers (CMHCs) under the Utah Prepaid Mental Health Plan. **METHODS:** Data from the medical records of 200 patients receiving care in CMHCs participating in the prepaid plan were compared with data from the records of 200 patients in nonparticipating CMHCs, which remained in a fee-for-service reimbursement arrangement. Using the Process of Care Review Form, trained abstracters gathered data characterizing general patient management, social support, medication management, and medical management before implementation of the plan in 1990 and for three follow-up years. Using regression techniques, differences in the adjusted changes between third-year follow-up and baseline were examined by treatment site. **RESULTS:** By year 3 at the CMHCs participating in the plan, psychotherapy visits decreased, the probability of a patient's terminating treatment or being lost to follow-up increased, the probability of having a case manager increased, the probability of a crisis visit decreased (but still exceeded that at the nonplan sites), and the probability of treatment for a month or longer with a suboptimal dosage of antipsychotic medication increased. Only modest changes in the process of care were observed at the nonplan CMHCs. **CONCLUSIONS:** Change in the process of psychiatric care was more evident at the sites participating in the plan, where traditional therapeutic encounters were de-emphasized in response to capitation. The array of changes raises questions about the vigor of care provided to a highly vulnerable group of patients.

17. Reed, S., K. Hennessy, et al. (1994). "A mental health capitation program: II Cost-benefit analysis." Psychiatric Services 45(11): 1097-1103.

OBJECTIVE: Total monetized and nonmonetized costs and benefits to society of the Monroe-Livingston demonstration project's capitated payment system (CPS) were

analyzed. **METHODS:** Total costs and benefits of care for individuals who were prerandomized to an experimental group (of whom about 57 percent were enrolled in the CPS) were compared with those for a control group who received traditional fee-for-service care. Separate two-year results are presented for continuous patients, who were enrolled in a comprehensive CPS plan (N = 201) and for intermittent patients, who were enrolled in a partial plan (N = 155). **RESULTS:** All groups showed improvements on many psychosocial measures over the two years. Continuous patients in the experimental group experienced less hospitalization, more case management and transportation services, and higher levels of victimization and were more likely to live in unsupervised settings than continuous patients in the control group. Total annual per patient costs for care of continuous patients ranged from \$74,000 to more than \$100,000, largely reflecting differences in rates of hospitalization. Experimental subjects in the partial capitation condition differed from the control group in this plan on fewer measures; both groups reported high levels of case management and social support services and relatively lower levels of supervised housing. **CONCLUSIONS:** The CPS resulted in major improvements in the community's services for persons with serious mental illness and reduced the proportion of care provided in the state hospital.

18. Stoner, T., Manning, W., Christianson, J., Gray, D, & Marriott, S. (1997). "Expenditures for mental health services in the Utah Prepaid Mental Health Plan." Health Care Financing Review, 18(3): 73-93.

This article examines the effect of a mental health carve-out, the Utah Prepaid Mental Health Plan (UPMHP), on expenditures for mental health treatment and utilization of mental health services for Medicaid beneficiaries from July 1991 through December 1994. Three Community Mental Health Centers (CMHCs) provided mental health services to Medicaid beneficiaries in their catchment areas in return for capitated payments. The analysis uses data from Medicaid claims as well as "shadow claims" for UPMHP contracting sites. The analysis is a pre/post comparison of expenditures and utilization rates, with a contemporaneous control group in the Utah catchment areas not in the UPMHP. The results indicate that the UPMHP reduced acute inpatient mental health expenditures and admissions for Medicaid beneficiaries during the first 2 ½ years of the UPMHP. In contrast, the UPMHP had no statistically significant effect on outpatient mental health expenditures or visits. There was no significant effect of the UPMHP on overall mental health expenditures.

19. Stroup, T.S. & Dorwart, R.A. (1995). "Impact of a managed mental health program on Medicaid recipients with severe mental illness." Psychiatric Services 46(9): 885-889.

20. Warner, R. and P. Huxley (1998). "Outcome for people with schizophrenia before and after Medicaid capitation at a community agency in Colorado." Psychiatric Services 49(6): 802-7.

OBJECTIVE: To investigate the effect of a capitated funding mechanism for the psychiatric care of Medicaid recipients, a study of outcome, satisfaction, and service

utilization among adults with schizophrenia and schizoaffective disorder was conducted at a Colorado agency before and after the introduction of the new funding mechanism. METHODS: Two random samples of 100 clients each were selected, one a year before capitation was introduced and one a year after. Subjects were interviewed about their quality of life, needs, and service satisfaction. Psychopathology and service utilization were also measured. RESULTS: Psychopathology was lower after capitation in most dimensions. The number of subjects admitted to the hospital during a six-month period beginning a year after capitation was 57 percent lower than that in the equivalent period before capitation, with no increase in the amount of outpatient treatment provided. Subjects reported improved quality of life in the domains of work, finances, and social relations. Significant changes in needs or service satisfaction were not detected. CONCLUSIONS: No evidence was found that Medicaid capitation had an adverse effect on the client population after one year. Findings suggested that capitation led to an efficient use of treatment resources.

21. Wieman DA, Dorwart RA (in press) “A comparison of public and privatized approaches to managed behavioral health care for persons with serious mental illness.” Journal of Mental Health Services Research

This study compares public and privatized approaches to managed behavioral health care for persons with serious mental illness in Massachusetts. Data from the Department of Mental Health for 247 patients receiving care managed by DMH and 312 in a Medicaid carve-out were compared. Repeated measures multivariate analysis of variance models were used to examine adjusted changes in number of admissions, bed days and facilities used from a baseline year before program implementation in 1992, through two follow-up years. Results were comparable for the two programs with similar reductions in the number of people receiving inpatient care but increases in admissions and bed days. Possible problems with continuity of care, indicated by individuals using multiple facilities, were identified for both. Given the evidence of comparable results, the choice between the two approaches is likely to be dictated by various pragmatic and subjective factors other than their demonstrated effectiveness.