Substance Abuse Service Utilization under Managed Care: HMOs versus Carve-Out Plans

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Abstract

Managed behavioral health care organizations are increasingly managing Americans' substance abuse by using carve-outs, but little information is available about how this has affected service utilization and costs when compared to HMOs. One employer's claims for substance abuse services delivered under a carve-out arrangement are compared to prior HMO claims information. Under the carve-out arrangement, inpatient and outpatient service utilization are found to decrease, but intermediate service utilization dramatically increases. Costs per unit service decrease for all services. The pattern of changes is different from that seen for mental health services, suggesting that different factors may be applicable to substance abuse services.

The increasing growth of managed care in the past decade has caused a dramatic shift in the practice of medicine in the United States. Whereas once, most insured Americans received their medical coverage under a fee-for-service insurance plan, the majority are now covered under some type of managed care plan.[1] When this transition first started, managed care frequently meant participation in a health maintenance organization (HMO), but this too has changed with the development of many different types of managed care organizations that administer patients' health care benefits.

Recent estimates are that more than 160 million Americans now have their behavioral health care (mental health and substance abuse) managed by some type of managed behavioral health care organization (MBHO).[2] An increasingly common—and by now the dominant—approach to managed care has been the development of behavioral health care carve-outs,[2] so named because the management of mental health and substance abuse benefits are separated (carved out) from other health care benefits. Only recently have researchers begun studying the effect of these changes on the costs and utilization of behavioral health care services.[3-8] This research has focused primarily on mental health services, either excluding substance abuse services or examining all behavioral health care together, which provides only limited information about substance abuse services because these services account for a small percentage of all behavioral health care.[7,8] Moreover, no study to date has contrasted substance abuse care under carve-outs and HMOs in the private sector. To provide more information about this issue, this study compares substance abuse service patterns in HMOs versus a behavioral health care carve-out using a pre-post design.

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Method

Substance abuse claims data generated from the experience of one large Midwestern employer were used to investigate the effects of switching its employees, initially receiving care in 23 different HMOs, to one behavioral health care carve-out. In 1994, the employer decided to switch all behavioral health care to one carve-out, and the transition occurred in 1995. The HMO utilization information for 1993 was calculated by a consulting firm for the employer. All HMOs imposed some type of annual limit on substance abuse and mental health services, typically a maximum of 30 outpatient sessions and/or 30 inpatient days. Copayments for outpatient care ranged from no copayment to $25 per session, sometimes dependent on prior use, and one HMO required patients to pay 20% of the charges. Copayments for inpatient services ranged from no copayment (about half the HMOs) to a $25 copayment or even a 20% copayment. Beginning in 1995, all HMO members had their behavioral health care benefits managed by United Behavioral Health (UBH) (formerly known as U.S. Behavioral Health) with unlimited benefits. The population over this time period (1993-1996) remained stable, with less than 1% growth in the HMO membership. Beginning in 1995, copayments were $100 per inpatient episode and $10 per outpatient session. UBH's authorization decisions concerning substance abuse care are all made by licensed care managers under the supervision of a board-certified psychiatrist. Decisions are made following level-of-care guidelines that are comparable to the guidelines established in the American Society of Addiction Medicine Patient Placement Criteria,[9] and are guided by the individual patient's clinical presentation, plan benefits, and resource availability. Data from the first two years after the carve-out were used for the analysis.

For analysis, substance abuse patients were identified based on the primary ICD-9 diagnostic code. Services received by these patients were then categorized as inpatient, intermediate, or outpatient based on claims data, which individually identifies services received by each patient. For descriptive purposes, intermediate services are subdivided into overnight and ambulatory service. The inpatient category includes both inpatient detoxification as well as inpatient hospitalization for substance abuse treatment. The intermediate category covers a range of services including overnight services, such as residential treatment and recovery homes, and ambulatory services, including partial hospitalization, day treatment programs, and intensive outpatient programs. The outpatient category includes both individual and group outpatient therapy. The mean utilization rates and costs were calculated, and bootstrapping was used in Stata version 5.0[10] to calculate a 95% confidence interval. These results are compared to the HMO numbers provided by the consulting firm, and the analysis is confined to the broad categories referred to in the consultant report since individual-level data for the HMOs are not available.

Results

Tables 1 and 2 show the changes that occurred in substance abuse service utilization and costs as benefit management changed from HMOs to a behavioral health care carve-out. There was a dramatic shift in the category of service being provided as management of care shifted from HMOs to the carve-out. The use of inpatient services per 1,000 members significantly decreased from 10.6 (95% confidence interval: 11.9-9.4) to 5.5 (7.5-3.6) in the first year following the change to the carve-out and continued to decrease to 2.5 (4.1-1.6) in the second year. Outpatient service utilization followed a similar pattern, decreasing from 45.7 (47.6-44.0) under the HMO to 15.7 (19.5-12.0) in the first carve-out year and 12.1 (15.0-9.5) in the second. However, intermediate services increased from 7.7 (11.8-1.2) to peak at 41.7 (52.5-30.2) in the first year and then decreased in the second year of the carve-out to 26.7 (32.1-20.3). Overnight services comprised 27% of all intermediate services in the first carve-out year and 23% in the second year. Total service utilization (the sum of inpatient, intermediate, and outpatient services) showed little change in the first carve-out year but declined in the second year.

Table 1
Substance Abuse Service Utilization

	HMO 1993	Carve-Out Year 1 (1995)	Carve-Out Year 2 (1996)
Inpatient	10.6 (11.9-9.4)	5.5* (7.5-3.6)	2.5* (4.1-1.6)
Intermediate	7.7 (11.8-1.2)	41.7* (52.5-30.2)	26.7* (32.1-20.3)
Overnight	NA	11.2 (18.4-5.9)	6.2 (8.2-4.0)
Ambulatory	NA	30.5 (28-22.6)	20.5 (26.1-15.7)
Outpatient	45.7 (47.6-44.0)	15.7* (19.5-12.0)	12.1* (15.0-9.5)
Total	64 (73.7-56.0)	62.9 (78.4-48.6)	41.3*† (46.9-35.1)

NOTE: Utilization is for 1,000 members per year; 95% confidence interval shown in parentheses. Units of service are days for inpatient and overnight categories; units of service are sessions for ambulatory and outpatient categories.
*$p < .05$ from HMO. †$p < .05$ from carve-out year 1.

The changes in cost per unit service are shown in Table 2. The first year of the carve-out saw a reduction in costs per unit service in all three treatment categories from costs under the HMO, while costs in the second year of the carve-out continued to decrease for inpatient and outpatient services but showed little change for intermediate services.

Limitations

A potential limitation to this analysis may arise from how visits are coded in the claims data. All visits coded as substance abuse visits are identified in both the HMO and UBH data, although the percentages of substance abuse treatment provided by behavioral health care specialists and primary care physicians are unavailable. Primary provider care for substance abuse services under either the HMO or the carve-out that was consistently not coded as such would not bias the results, nor would primary care physicians providing substance abuse services under either the HMO or the carve-out who coded these services.

Still, a possibility exists that primary care providers coding visits as treatment for substance disorders under an HMO, but not post carve-out, might be an issue. The data do not allow this to be explored directly, but it is unlikely to substantially bias the results. Although primary care providers are the sole source of treatment in some behavioral health disorders, such as depression, treatment of these disorders is frequently not coded as the reason for the physician visit.[11] Compared to depression, substance use disorders are probably less likely to be coded as the reason for a visit because pharmacological interventions are ineffective without nonpharmacological treatment, substance abuse treatment guidelines for primary care provider treatment do not exist,[12] and primary care providers are unlikely to screen or treat substance use disorders without additional support and training.[13,14]

The data are also limited to one firm's experience, and other firms may administer substance abuse benefits under a carve-out differently than UBH does, resulting in different utilization patterns and costs. Also, the study cannot account for other factors coincident with the shift to a carve-out, such as changes in the population receiving coverage, due to its pre-post observational design. Nor can it provide any insight about the clinical appropriateness of services delivered due to the lack of clinical information available in the administrative data set.

Table 2
Cost of Substance Abuse Services: Dollars per Unit of Service

	HMO 1993	Carve-Out Year 1 (1995)	Carve-Out Year 2 (1996)
Inpatient	412 (430-394)	353 (395-309)	306.5* (363-242)
Intermediate	142 (152-133)	124 (139-109)	123 (136-108)
Overnight	NA	297 (467-200)	213 (248-174)
Ambulatory	NA	106 (118-94)	104 (117-94)
Outpatient	68 (70-68)	62 (66-57)	51.5*† (55-47)
Annual cost/ 1,000 members	7.32 (8.72-7.80)	8 (9.2-6.4)	4.90*† (6.2-3.6)

NOTE: Ninety-five percent confidence interval shown in parentheses. Units of service are days for inpatient and overnight categories. Units of service are sessions for ambulatory and outpatient categories.
*$p < .05$ from HMO. †$p < .05$ from carve-out year 1.

Discussion

The rapid changes that have occurred in the behavioral health care marketplace in the past decade have resulted in the majority of insured Americans having their mental health and substance abuse care managed by an MBHO under a carve-out arrangement. Prior research has found that these changes have resulted in significant differences in the costs and utilization of mental health services when shifting from traditional indemnity plans to carve-out managed care.[3,4,7] This article shows that even switching between different types of managed care may lead to a major change in substance abuse service delivery, which may continue as the carve-out matures. These findings differ in one significant aspect from prior research on behavioral health care, which either found a decline in all services[3] or a substantial decrease in more intensive levels of treatment (such as inpatient and intermediate) and an increase in outpatient treatment.[4,5] This analysis of substance abuse patients finds an overall decrease in utilization by the second year. However, an increase in intermediate service utilization was seen, while both inpatient and less expensive outpatient services declined. In all these studies, benefits for behavioral health were increased with the switch to a carve-out (e.g., reduction in copayments or removal of deductibles or limits).

The change in management of behavioral health care from an HMO to a carve-out arrangement also resulted in a trend toward decreasing cost per unit service. This results in the costs per unit service by the second year of the carve-out being approximately 30% less than the costs of the same service under HMOs for inpatient and outpatient services, and 15% less for intermediate services, with much of this change the result of decreased costs of overnight intermediate services.

The findings are significant, not only for the information they provide about substance abuse services under a carve-out but also for how substance abuse services may differ from mental health services. The decrease in cost per unit service is similar to what has been seen in mental health services under a carve-out arrangement.[3] This is generally thought to result from both changes in provider contracts and the utilization of less expensive providers (i.e., social workers and psychologists rather than psychiatrists); however, recent research has suggested that there is generally no shift to less expensive providers in carve-out plans.[15] It is unclear to what extent these findings are generalizable to substance abuse treatment since psychiatrists and other physicians are often involved to a much lesser extent in the provision of substance abuse services than mental health services. Further research is also needed to explore the relationship of decreased cost per unit service in carve-outs on outcomes of substance abuse patients, an important topic about which little is known. Analysis of different cost-containment mechanisms suggest that although in many cases they are not associated

with worse outcomes, poor people and individuals with greater psychological distress may achieve worse outcomes under greater cost containment.[16]

The finding of an increase in intermediate service utilization also suggests that factors might be affecting substance abuse service utilization differently than they affect mental health service utilization. The increased availability and diversity of intermediate treatment options may provide a clinically more appropriate treatment option to many individuals than had been previously available. One example might be patients who require a more intensive level of care than outpatient treatment but for whom the only previous alternative was inpatient care. Some of the observed shift from inpatient and outpatient to intermediate services, therefore, may have resulted from the opportunity for treatment at a more appropriate level of care. Alternatively, the increase in intermediate service utilization may have been driven primarily by the carve-out's management of care, which often emphasizes the use of intermediate levels of care.[3]

The finding of a decrease in utilization and costs between the first and second year of the carve-out suggests that, similar to mental health, substance abuse services undergo a period of change when managed by a carve-out. Future research is needed to determine to what extent this period of change is the result of carve-outs learning how best to administer substance abuse benefits and to what extent the transition period is the result of providers learning how to best provide services within the constraints of a concurrent review.

Implications for Behavioral Health Services

Managed care is growing dramatically in the public sector, and 47 states are now implementing managed behavioral health programs. Most of those programs are new and have not yet been evaluated, and there is little experience with managed care in the public sector. In the past, managed care was often synonymous with prepaid, capitated arrangements, often involving primary care gatekeeping under HMOs, and discussions of managed care's impact on resource allocation for psychiatric disorders have focused on these arrangements.[11] However, public health administrators need to be aware that different arrangements with for-profit private sector firms could lead to very different utilization patterns. This article shows how switching the same population from HMOs to MBHOs leads to a substantial change in utilization patterns, in particular an increased reliance on intermediate types of services.

Further research is also needed to better understand the causes of the increase in intermediate service utilization for substance abuse patients under a carve-out arrangement and how these increases in intermediate services vis-à-vis more traditional inpatient and outpatient services affects the clinical outcomes of patients who require substance abuse services.

Acknowledgments

Financial support was provided by the National Institute on Drug Abuse (grant DA11832), the Robert Wood Johnson Foundation, and the Robert Wood Johnson Clinical Scholars Program. We are grateful to United Behavioral Health, and especially to William Goldman and Joyce McCulloch, for their help. We are especially grateful to Maria Orlando and Winnie Zhang for providing assistance with data management.

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