

Does Managed Care Restrictiveness Affect the Perceived Quality of Primary Care?

A Report from ASPN

Susan A. Flocke, PhD; A. John Orzano, MD; H. Andrew Selinger, MD; James J. Werner, MS; Laurie Vorel, MSPH; Paul A. Nutting, MD, MSPH; and Kurt C. Stange, MD, PhD
Cleveland, Ohio; New Brunswick, New Jersey; Bristol, Connecticut; and Denver, Colorado

BACKGROUND. The competitive managed care marketplace is causing increased restrictiveness in the structure of health plans. The effect of plan restrictiveness on the delivery of primary care is unknown. Our purpose was to examine the association of the organizational and financial restrictiveness of managed care plans with important elements of primary care, the patient-clinician relationship, and patient satisfaction.

METHODS. We conducted a cross-sectional study of 15 member practices of the Ambulatory Sentinel Practice Network selected to represent diverse health care markets. Each practice completed a Managed Care Survey to characterize the degree of organizational and financial restrictiveness for each individual health care plan. A total of 199 managed care plans were characterized. Then, 1475 consecutive outpatients completed a patient survey that included: the Components of Primary Care Instrument as a measure of attributes of primary care; a measure of the amount of inconvenience involved with using the health care plan; and the Medical Outcomes Study Visit Rating Form for assessing patient satisfaction.

RESULTS. Clinicians' reports of inconvenience were significantly associated ($P < .001$) with the financial and organizational restrictiveness scores of the plan. There was no association between plan restrictiveness and patient report of multiple aspects of the delivery of primary care or patient satisfaction with the visit.

CONCLUSIONS. Plan restrictiveness is associated with greater perceived hassle for clinicians but not for patients. Plan restrictiveness seems to be creating great pressures for clinicians, but is not affecting patients' reports of the quality of important attributes of primary care or satisfaction with the visit. Physicians and their staffs appear to be buffering patients from the potentially negative effects of plan restrictiveness.

KEY WORDS. Family practice; primary health care; managed care programs; patient satisfaction; physicians' role; practice management. (*J Fam Pract* 1999; 48:762-768)

Managed care has become the predominant approach to health care financing in the United States.¹ This explosive growth has been accompanied by an increasingly complex array of types of managed care plans and a growth in the use of restrictions and financial incentives to influence physician practice behavior.² Contributing to the diversity and complexity of

managed care are new incentive systems, strategies to manage patterns of care,^{3,4} and a shift toward national investor-owned plans. In addition, many practicing physicians are participating in new business relationships, including physician hospital organizations, medical service organizations, and risk-sharing arrangements. The treatment of all managed care plans as a single entity for comparison with fee-for-service plans is no longer adequate to capture the effect of the health care context on the delivery of care or health outcomes.⁵ A typology of features that represents a plan's organizational and incentive features would facilitate understanding of what specific aspects affect outcomes of care across the nation.^{6,7} The Managed Care Survey was developed for use in this study to build on previous work by measuring specific attributes of different managed care plans that may affect both physician and patient outcomes.

Managed care organizations traditionally position primary care clinicians as the cornerstones of their delivery system⁸; however, the effect of the restrictiveness of managed care plans on the patient-physician relationship and the delivery of important attributes of primary care (as described by the Institute of

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From the Department of Family Medicine at Case Western Reserve University, Ireland Cancer Center at Case Western Reserve University and University Hospitals of Cleveland, and Research Center to Investigate the Value of Family Practice (S.A.F., K.C.S.); the Department of Family Medicine, Robert Wood Johnson Medical School, New Brunswick (A.J.O.); Medical Management Team of Prohealth Physicians MSO Inc, Bristol, Connecticut (H.A.S.); Ambulatory Sentinel Practice Network and the Department of Family Medicine, University of Colorado Health Sciences Center, Denver (J.J.W., L.V.); the Center for Research Strategies, Denver, Colorado (P.A.N.); and the departments of Epidemiology & Biostatistics and Sociology at Case Western Reserve University (K.C.S.). Reprint requests should be addressed to Susan Flocke, PhD, Department of Family Medicine, Case Western Reserve University, 11001 Cedar Road, Room 306, Cleveland, OH 44106-7136.

Medicine⁹) are poorly understood. A common assumption is that managed care fosters primary care because of its gatekeeper and first-contact functions.⁸ Since health systems organized around primary care have been shown to have better population-level outcomes,¹⁰ one might expect similar results from managed care systems.¹¹⁻¹³ Several aspects of the current competitive managed care marketplace, however, do not appear to be conducive to achieving the goals of primary care.^{14,15} The restrictions on clinicians' and patients' choices have raised concerns about the potential detrimental effect of managed care on the patient-physician relationship.¹⁶ In addition, the practice of annual re-bidding of managed care contracts can cause a forced disruption in continuity of care¹⁷ with detrimental effects on patients.^{15,18} For these reasons, the Institute of Medicine recommends monitoring the performance of health care systems to assess the adequacy of the delivery of attributes of primary care.⁹

The restrictions and incentives imposed by managed care organizations that are designed to modify physician practice behavior may inadvertently effect other valued aspects of patient care. The purpose of our study is to evaluate the association of managed care restrictiveness with specific attributes of primary care, visit-based patient satisfaction, and perceived inconvenience (or "hassle") of using the plan.

METHODS

STUDY DESIGN, SITES, AND SAMPLE

A cross-sectional design was used to collect data from 15 member practices of the Ambulatory Sentinel Practice Network (ASPN). ASPN, composed of 752 community-based practicing clinicians, was established in 1982 to conduct practice-based research. Its 122 practices in 34 states have been shown to serve a nationally representative patient population and provide access to health care markets with a wide range of penetration and maturity of managed care.¹⁹ We solicited volunteer practice sites and chose 15 US ASPN sites to represent high-, medium-, and low-levels of managed care penetration in both urban and rural areas. Clinician and practice characteristics, including the clinicians' estimate of the proportion of managed care in the practice, were obtained from the ASPN member database, which is updated annually. All 15 sites that were invited to participate in the study agreed to complete it.

DATA COLLECTION

The ASPN central office recruited and trained participating practice personnel and coordinated project implementation. Between April and August 1997, practices were sent explicit protocol instructions and copies of the Managed Care Survey and the patient survey and were instructed to choose a start date for administering surveys to 50 consecutive patients of each participating

clinician. Patients were asked to complete the survey before leaving the office. A preassigned number corresponding to the patient's insurance plan was written on the survey before it was given to the patient. The staff also kept track of the age, sex, and insurance plan of those patients who declined to participate, so that any nonparticipation bias could be evaluated.

In addition, for each practice a single Managed Care Survey was completed jointly by a physician and office manager to characterize each individual managed care health care plan with a minimum of 5% of all patients. Each insurance plan on the survey was identified by the same number that was used on the corresponding individual patients' health care plans on the patient survey.

MEASURES

Managed care was conceptualized as a set of organizational restraints and financial incentives that are intended to focus and limit clinicians' use of health care resources. The Managed Care Survey was designed to characterize managed care plans along several dimensions. The survey was developed by the ASPN Task Force on Managed Care, which consisted of 6 family physicians from the United States and 1 from Canada representing diversity in gender, geographic location, organization of practice, managed care market, and years in practice. Group consensus was used to identify and define the key managed care features that represent organizational restraints, financial incentives, and other aspects affecting the restrictiveness of plans.

The plan features measured by the managed care survey included the proportion of each practice's patients in the plan, the plan's financial restrictiveness and organizational restrictiveness, and the level of hassle associated with it. The financial restrictiveness portion of the survey included the type of reimbursement (capitation global risk, capitation professional risk, capitation primary care risk, discounted fee-for-service, or fee-for-service) and whether the plan carried a clinician-withhold fund or an incentive-bonus fund. The organizational restrictiveness part of the survey included plan characterization on the following features: mental health carve-out, laboratory services, formulary, preauthorization for diagnostic or treatment procedures, preauthorization for physician referrals, specialty network, and procedure (site of service) constraints. The managed care survey features and their definitions are listed in Appendix A.*

Some plan features were viewed as more important than others for describing a plan's financial and organizational restrictiveness. Each member of the ASPN Managed Care Task Force assigned a value of importance for each feature (using a Likert scale where 1 = somewhat important; 10 = very important). The group mean assigned weight for each feature was used to calculate the 2 weighted summary scores representing the

*The appendices for this paper can be found on the *Journal's* Web site at www.jfampract.com.

financial and organizational restrictiveness of each plan.

In addition to the managed care plan features, clinicians completing the survey were asked to rate the degree of hassle, defined as the degree of time-consuming interference with routine practice activities perceived to be associated with the plan, on a scale of 1 to 5. Additional items on the Managed Care Survey included questions about the type of practice (solo, multispecialty group, and so forth), political/business affiliations, recent mergers/buyouts, and type of clinician compensation.

The attributes of delivery of primary care were measured by the revised Components of Primary Care Instrument (CPCI)^{20,21} which measures key attributes of the patient-provider relationship based on the recent Institute of Medicine definition of primary care.⁹ The CPCI assesses interpersonal communication, comprehensive care, continuity of care, coordination of care, provider's accumulated knowledge about the patient, family orientation, community orientation, advocacy, and patient preference for their usual provider. Each attribute is measured from the patient's perspective of the patient-provider relationship. Descriptive statistics, internal consistency reliabilities, and scale content are displayed in Appendix B.* Missing data on the CPCI scale scores were handled by setting a maximum number of missing values allowed per scale and computing a score using individual responses to the remaining scale items. Questionnaires missing more data than the maximum allowed were given no score for that scale. Therefore, the total number of patients with complete data per scale, and the sample size for analyses, varies by scale.

Patient satisfaction with the visit was measured using the Medical Outcomes Study 9-Item Visit Rating Form.²² Two scores were computed, patient satisfaction with the physician and with practice operation.²³ Another specific patient item (satisfaction with the amount of time spent with the physician) was also assessed separately. Eight items were written to assess the patient's perceived hassle in obtaining health care, and a summary scale score was computed (internal consistency reliability = .80). Additional items on the patient survey included patient age, sex, 2 reports of health status, whether today's physician is the patient's regular physician, and if no, whether the patient's regular physician is a member of the office. Standard demographic items were included on the abbreviated survey for new patients. Also included were questions regarding whether that visit was for well-care or serious illness, and whether they had been forced to change physicians in the past 2 years.

ANALYSES

Data from the Managed Care Survey and the

patient survey were linked by a unique identifier on the basis of site and site-specific health care plan. Patient surveys that could not be linked (eg, because of a missing plan identifier or because the plan was not rated on the Managed Care Survey) were included in the descriptive statistics of the study sample, but are excluded from the analyses involving the managed care features. Descriptive statistics of the sites, clinicians, and plan features are calculated. We used chi-square tests to compare the data available from the nonresponders with the data from the responders to assess bias.

We used the Pearson correlation to test the association of the plans' financial and organizational restrictiveness scores with the clinicians' reports of hassle. The association of the managed care plan restrictiveness scores with each of the CPCI scale scores, patient satisfaction with the visit, and patient perceived hassle was tested with multilevel modeling techniques using hierarchical linear regression software.²⁴ Multilevel modeling is an analysis technique that accounts for the nested structural context of the data. Two potential confounding variables, patient age and health status, were included as covariates in these analyses.

RESULTS

All 15 sites returned a completed Managed Care Survey. Practice characteristics are displayed in Table 1. One fourth of the practices had experienced a recent professional merger and one third had undergone a recent purchase or buyout. The average number of managed care plans in each practice ranged from 1 to 25, with an aver-

TABLE 1

Characteristics of the 15 Practice Study Sites

Characteristic	Percent or Mean (SD)
Region	
Eastern	53
Central	27
Pacific	20
Geographic location	
Rural	33
Urban	13
Suburban	53
Practice type	
Solo	20
Single-specialty group	27
Multispecialty group	20
HMO staff model	7
Academic practice	26
Recent merger (% yes)	25
Recent buyout (% yes)	33
Average no. of managed care plans	13.3 (7.7)
Average % of patients in managed care plans	51.1 (24.9)

SD denotes standard deviation.

TABLE 2

Characteristics of the 41 Clinicians in the Study Sample

Characteristic	Percent or Mean (SD)
Men	66
Age, years	42 (7)
Degree	
MD	96
DO	2
FNP	2
Resident	15
Time spent in patient care	90*
Mode of compensation	
Net revenues	30
Salary and bonus	52
Straight salary	18

SD denotes standard deviation; MD, doctor of medicine; DO, doctor of osteopathy; FNP, family nurse practitioner.

*Range = 30% to 100%.

age of 13.3 plans. The average proportion of patients in a managed care plan per site was 51% (range = 21% to 100%). The 41 clinicians participating in the study are characterized in Table 2. The vast majority of clinicians had MD degrees, and 66% were men. On average, clini-

TABLE 3

Characteristics of the 1475 Patients in the Study Sample

Characteristic	Percent or Mean (SD)
Age, years	
18 to 25	11
26 to 35	20
36 to 45	22
46 to 55	18
56 to 65	10
66 to 75	10
>75	9
Sex, % women	66
Health status*	
Today	2.9 (1.1)
In general	2.6 (1.0)
Saw regular doctor today	84
Made well-care visit in past 2 years	56
Been treated for a serious illness in past 2 years	25
Insurance plan type	
Traditional commercial	11
Medicare	15
Medicaid	6
Self-pay	7
Other	2
Managed care plan	59

Note: This table contains weighted data.

SD denotes standard deviation.

*Measured on a Likert scale, where 1 = excellent and 5 = poor.

cians spent 90% of their time on patient care.

The patient response rate was also excellent. Of the 1922 patients approached, 1839 (96%) agreed to complete the patient survey. One hundred and six patients returned a blank survey and represent passive refusers. Of the 1733 patients returning a survey at least partially completed, 1503 were established patients, and 230 were new patients. Twenty-eight established patients did not see their regular physician, and that physician was not a member of the office they were visiting that day. These patients were excluded, bringing the final patient sample size to 1475.

Patient characteristics are reported in Table 3. The majority of patients were women, and health status, on average, was good. Most patients (84%) saw their regular physician, approximately half had a well-care visit within the past 2 years, and approximately one fourth were treated for a serious illness within the past 2 years. Fifty-nine percent of established patients had some type of managed care insurance. Standard Medicare and Medicaid insurance accounted for 21% of patients, and only 11% were categorized as having traditional commercial insurance. Established patients who declined to complete the patient survey ($n = 41$) were similar in average age and type of insurance but were more likely to be men than the patients who completed the survey.

Table 4 displays the frequency of the different managed care features measured by the Managed Care Survey. Laboratory services, preauthorization, specialty networks, and site of service were features of more than 50% of the 199 managed care plans characterized. Physicians rated plans with a restrictive feature as generating greater hassle on average than plans without restrictive features. The 2 exceptions to this trend were plans with point-of-service and withhold features.

We investigated the association of managed care plan restrictiveness with each of the CPCI scale scores and patient satisfaction with the visit. Of the 870 patients with a type of managed care insurance, 786 patients had complete data for this analysis. For ease of interpretation, the managed care restrictiveness scores were divided into low (27%), medium (46%), and high (27%).²⁵ This categorization of the restrictiveness scores has 3 advantages: interpretation of 3 group means versus a β coefficient is easier; a nonlinear association is readily determined; and the distributions of the outcome measure for the high and low groups can be shown to be nonoverlapping. If no statistically significant difference is found between these 2 distinctly different extreme groups, this can be taken as evidence for not rejecting the null hypothesis of no association.

As indicated in Table 5, the mean of the different CPCI, hassle, and patient satisfaction scores were very similar across each level of managed care plan financial restrictiveness. Similarly, organizational restrictiveness was not significantly associated with any of the CPCI scale scores, patient report of hassle, or the satisfaction

TABLE 4

Frequency of Features of 185 Managed Care Plans

Characteristic	Percent	Physician Perceived Plan Hassle with the Feature*	Physician Perceived Plan Hassle Without the Feature*	P
Specialty network	87	2.91	2.07	.002
Preauthorization	61	3.40	1.87	<.001
Site of service	58	3.45	1.97	<.001
Laboratory	54	3.20	2.37	<.001
Formulary	40	3.41	2.39	<.001
Preauthorization for referral	36	3.38	2.51	<.001
Mental health carve-out	33	3.54	2.37	<.001
Point of service	23	2.85	2.77	ns
Bonus	13	3.74	2.63	<.001
Withhold	9	2.83	2.78	ns

*Physicians rated each plan in terms of perceived ease of use on a scale of 1 to 5, where 5=most hassle.

scores. These analyses were adjusted for patient age and health status and the nested effect of the data.

DISCUSSION

We used innovative measures and a unique practice-based laboratory to assess the impact of specific aspects of managed care on the delivery of important attributes of primary care. The findings suggest that the restrictiveness of managed care plans does not affect patients'

perceptions of multiple attributes of primary care or their satisfaction with the visit. However, both financial and organizational restrictiveness were associated with greater clinician-reported hassle. These findings may not conform to the widespread belief by practicing clinicians that plan characteristics affect patients in a direct way,^{8,26} and clinicians may be reassured to find that they are able to maintain good primary care relationships with patients amidst the challenges they experience.

Clinician hassle was rated in terms of the time required for insurance-mandated administrative activities generated by the plan (eg, the length and repetition of required forms and written or verbal requirements). Other studies have reported specific physician-reported hassles associated with particular plans.^{8,27} Most of the hassles can be attributed to an added administrative burden, such as the need to make phone calls, write letters, and gather information from medical records in response to denial of payment, requests for patient information, or precertification of

TABLE 5

Mean Components of Primary Care, Hassle and Satisfaction Scores by Level of Managed Care Plan Restrictiveness

Patient Report of Care Characteristics	Financial Restrictiveness			P	Organizational Restrictiveness			P
	Low (n=332)	Med (n=213)	High (n=241)		Low (n=204)	Med (n=312)	High (n=270)	
Components of primary care								
Comprehensive care	5.15	5.08	5.18	ns	5.25	5.12	5.09	ns
Accumulated knowledge	4.64	4.45	4.72	ns	4.80	4.77	4.53	ns
Communication	5.05	4.83	5.06	ns	4.94	5.01	4.81	ns
Preference for regular doctor	5.31	5.20	5.32	ns	5.26	5.28	5.26	ns
Coordination of care	4.84	4.74	4.99	ns	4.92	4.91	4.74	ns
Advocate	5.18	5.11	5.23	ns	5.06	5.09	5.15	ns
Family orientation	4.47	4.12	4.24	ns	4.54	4.46	4.20	ns
Community orientation	4.50	4.00	4.40	ns	4.20	4.40	4.20	ns
Duration	3.03	3.13	2.92	ns	3.06	2.86	2.97	ns
Continuity of care (UPC index)	0.64	0.64	0.64	ns	0.65	0.66	0.65	ns
Hassle	2.30	2.25	2.18	ns	2.46	2.23	2.24	ns
Satisfaction								
Site	3.84	3.77	3.83	ns	3.64	3.83	3.84	ns
Clinician	4.41	4.26	4.37	ns	4.35	4.36	4.29	ns
Time spent with clinician	3.97	3.88	4.08	ns	3.93	3.97	4.01	ns

services.²⁷ Our findings that clinicians reported increased administrative burden with more restrictive plans reinforce the idea by Freberg²⁸ that it is difficult to know whether managed care plans are cost effective or merely add to the hidden cost of administrative overhead. Future studies should investigate the amount of effort required for additional administrative burdens relative to the cost savings of the plan.

The lack of association between patient-perceived hassle and plan restrictiveness indicates that the burdens of plan restrictiveness fall squarely on the shoulders of clinicians and staff. It is also likely that patients who are less concerned about plan restrictions may have self-selected a restrictive plan for cost savings or other perceived benefits. For these patients, the benefits (eg, lower deductibles, coverage of health maintenance visits) may outweigh the disadvantages (eg, restricted freedom of choice, increased personal cost incurred to opt for out-of-plan services).

Concerns have been raised about conflict of interest, the effect of financial incentives on physician behavior, the quality of the patient-physician relationship and decision making, time constraints, and the potential for underservice with managed care systems.^{16,26,29-34} Grumbach and colleagues²⁶ found that 57% of physicians surveyed reported that they felt pressure from the managed care organization to limit referrals; 75% felt pressure to see more patients per day; and 17% and 24%, respectively, felt that limiting referrals and seeing more patients per day compromised patient care. In our study, patients in highly restrictive managed care plans did not perceive their physician to be any less of an advocate for their health care than patients in the low- or medium-restrictiveness groups. Thus, this sample of primary care clinicians continued to engage in trusting relationships with their patients despite the potential conflict of interest that could arise from managed care plans' financial incentives to restrict care.

In our sample of patients, as well as in others,²¹ the CPCI assessed important aspects of primary care with good internal consistency. The instrument's scale scores have been shown to be associated with patient satisfaction²¹ and delivery of preventive services,³⁵ and have been shown to detect differences in the delivery of primary care to patients who faced forced discontinuity of care and those who remained with their regular physician.¹⁵ The CPCI should be sensitive to many of the potential ill effects of managed care on the patient-physician relationship and delivery of primary care. The lack of association between plan restrictiveness and patient report of primary care is striking, and there is strong evidence that the clinicians and office staff who report being hassled by these restrictions are not allowing those hassles to interfere with their delivery of patient care.

Others²⁶ have evaluated physician satisfaction with specific plan features and physician-rated quality of spe-

cific health care plans.³⁶ We asked physicians to objectively report the presence or absence of specific organizational and financial features of each of the managed care plans in their practices. Using the Managed Care Survey to characterize specific organizational and financial aspects of plans is a major advance in being able to test the importance of these features on physician behavior and processes of care and patient outcomes.

LIMITATIONS

The main potential threat to the internal validity of the study is patient nonresponse. The nonrespondents were more likely to be men than patients who completed the survey. It is possible that these patients may have been less satisfied with care and may have reported lower scores on the CPCI. However, nonrespondents represent only 10% of those approached, and it is unlikely that the findings of the study would have changed if they had been included. We are also unable to comment on how long a patient had been with their current insurance plan. Length of exposure and actual experience with the features of a plan could potentially affect the association of plan restrictiveness with perceived delivery of primary care. However, consecutive patients were enrolled, which should reduce the likelihood of a selection bias of such a variable.

Replication of this study in a larger number of community-based practice sites and in a general community sample would add to the generalizability of the findings. In these times of increased business interest in medicine,³⁷ it is important to continue to monitor and evaluate the immediate, long-term, intended, and unintended outcomes of specific features of managed care.

CONCLUSIONS

Managed care plan restrictiveness does not appear to be affecting the delivery of primary care as measured from the perspective of the patient. However, the financial and organizational restrictiveness of managed care plans does lead to greater clinician hassle. We interpret these results to suggest that primary care clinicians are able to effectively buffer the effects of health plan structure on their patients. These findings raise questions about the effect of plan restrictiveness on efficient use of clinician time and the clinician's ability to continue to deliver quality primary care amidst competing administrative demands.

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