

Consumer Experiences and Provider Perceptions of the Quality of Primary Care: Implications for Managed Care

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BACKGROUND. The purpose of this study was to determine the extent to which consumer and provider reports of primary care differ according to particular characteristics of the primary care setting.

METHODS. A random sample of consumers was surveyed by telephone in a defined geographic area of Washington, DC, to determine their experiences with care provided to a randomly chosen child. The primary care provider of each respondent was sent a parallel survey. Scores were obtained for each of two subdomains in the four cardinal primary care domains (first contact, longitudinality, comprehensiveness, and coordination) and for three related domains (family centeredness, community orientation, and cultural competence). Differences between settings that did or did not impose limitations on autonomy for referrals and between fee-for-service and capitated settings were ascertained.

RESULTS. Both consumers and their providers in settings characterized by high degrees of limitation on physician autonomy or by capitation reported better first-contact accessibility and a greater range of services available than did consumers in settings with low degrees of limitation, or by fee-for-service reimbursements to physicians. Consumers but not providers reported better family centeredness in these settings. Most other differences favored these settings as well, but these were not consistently statistically significant for *both* providers and consumers in both types of settings.

CONCLUSIONS. The quality of primary care services in different settings can be ascertained by using an instrument with demonstrated reliability and convergent validity. Although certain types of settings, in the particular geographic area studied, appear to perform better in several key aspects of primary care, replication of the study in other areas would be useful before judging the performance of the newer types of settings to be superior to more conventional care for general populations.

KEY WORDS. Primary health care; managed care programs; health care quality assessment; consumer satisfaction. (*J Fam Pract* 1998; 46:216-226)

Despite its rapid growth, the current incarnation of organizations characterized by certain aspects of "managed care" has not yet demonstrated superiority in improving the quality of care. Many of the purported advantages of organized

health care delivery systems are based on studies from a prior incarnation in the form of prepaid group practice or staff-model health maintenance organizations (HMOs).¹ An updated review published in 1994, while more cautious in its conclusions, suggested that HMOs (one form of managed care) had lower hospitalization rates, shorter lengths of hospital stay, the same or more physician office visits per enrollee, greater use of preventive services, lower enrollee satisfaction with services but greater satisfaction with costs, and mixed results on health outcomes.²

However, the relevance of these earlier studies to the late 1990s is unclear, because the newer forms of care differ from the HMO prototype in several

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respects. Physicians are still paid predominantly by fee for service rather than capitation³; the aegis of organized health care is increasingly a profit-making entity rather than nonprofit; and much of it does not take place in group settings with integrated services, such as had been the case up until the past few years.¹ Furthermore, capitation is not synonymous with managed care, and much of fee-for-service care may involve a high degree of management. For example, primary care case management and preferred provider organizations may involve an extensive degree of management without necessarily involving capitation, at least to the individual provider or provider group. The literature is sparse on the evaluation of those forms of care.

At least some of the justification for the provision of care in organized settings rests on the implicit assumption that it fosters primary care because it is commonly associated with the gatekeeper function. Health systems with better primary care infrastructures have been shown to have better outcomes and lower costs,⁵ but the extent to which the newer forms of organization are oriented toward primary care is unclear.⁶ Several aspects of the current competitive scene do not appear to be conducive to achieving the cardinal features of primary care.^{7,8} Encouragement of first-contact care may be thwarted by access limitations on utilization.^{9,10} Ongoing relationships may be compromised by frequent changes in contracts that are not under the control of the individual subscriber¹⁰ or by physician changeover resulting from canceled contracts.¹¹ Comprehensiveness may be incomplete due to restrictions in benefit packages¹² or through limitations on referral to specialists.¹³ Coordination may not be achieved when the managed care organization does not make specific efforts to encourage it,¹⁴ especially when the organization contracts separately for the care of specific diseases or types of problems.¹⁵

This study was designed to determine the extent to which practices with varying levels of certain characteristics often associated with managed care achieve the goals of primary care, particularly when compared with other forms of organization, as determined by the reported experiences of people enrolled or working in them. It was part of a larger effort to develop and validate an instrument designed to ascertain the experiences of people with their health care provider, specifically the quality of

primary care delivered to children. It included a survey of a random sample of households as well as a survey of providers identified as the source of primary care by the respondents in the household survey. Since the survey was explicitly designed to quantitatively address achievement of the cardinal features of primary care, and since we had information from the provider that enabled us to characterize certain aspects of the practice, we were able to determine how well two different types of practice achieve primary care, both from the provider and consumer viewpoints. The study is thus pursuant to the Institute of Medicine's (IOM) recent recommendation that the performance of health care systems be monitored to assess their adequacy in delivering primary care.⁷

METHODS

Our approach to assessing the quality of primary care is based on the definition of primary care as proposed by the IOM⁷ and others.⁸ In the IOM definition, primary care is the provision of integrated, accessible, health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of community and family. It follows in the line of prior conceptualizations of primary care as longitudinal and person-focused (rather than disease-focused), comprehensive in addressing relatively common problems, and coordinated to "connect within and across" the various services that people need from time to time.⁷ Although the IOM did not include the "first contact" aspect of care that is generally considered critical to primary care,¹⁶ it recognized that "self-referral defeats coordination of care and 'global' professional management, risks picking the wrong type of clinician and receiving less than optimum care, may result in inappropriate referrals by specialists to other specialists, and increases the cost of medical care."⁷ Thus, the approach taken in this paper includes first-contact care as an important domain of primary care.

The approach also considers the assessment of high-quality primary care delivery to require two components for each defining feature (domain) of primary care. One domain concerns structural characteristics of the facility or provider that reflect a capacity to achieve each of the functions of primary

care, and the other assesses performance (processes of care), which indicates the achievement of the function in actual practice.⁵

The capacity to provide first-contact care was assessed by means of answers to questions regarding ease of accessing care (*First contact: accessibility*), and was asked of both consumers and providers. The performance component of first contact (*First contact: use*) was assessed by answers to three questions concerning where care was last sought for each of three different types of reasons (routine care, immunizations, and illness care), and was asked only of consumers. The structural component of longitudinality (*Longitudinality: extent of affiliation*) was assessed by determining the extent to which the provider identified as the regular source of care was also the provider who knows the person best and the place from which care would be sought for a new problem. The question was asked only of consumers. The component that assessed the capacity for comprehensiveness (*Comprehensiveness: services available*) was assessed by determining the availability of 11 different types of services, and was asked of both consumers and providers. The performance component of comprehensiveness (*Comprehensiveness: services provided*) was assessed by means of responses to five questions inquiring about the receipt (consumers) or provision (providers) of five age-relevant services important in primary care. The capacity for achieving coordination (*Coordination: medical record continuity*) was assessed by means of responses to six questions concerning those characteristics of the medical record system that foster coordination of care. These were asked only of providers. The performance of coordination (*Coordination: integration of care*) was assessed by answers to questions regarding characteristics of care when referrals to specialists or specialty services were required; these were asked of both consumers and providers.

Three additional aspects of primary care (family centeredness, community orientation, and cultural competence) were also assessed by both consumers and providers. *Family centeredness* addressed the role of the family in the child's primary care. *Community orientation* concerned the provider's knowledge of and involvement in the community. *Cultural competence* addressed adaptations that would facilitate relationships with populations hav-

ing special cultural characteristics or beliefs.

Table 1 describes the types of questions used to assess each component of the seven domains.

All scales (except for *Cultural competence* in the consumer survey) had four response options. For consumers, these options were in the form of definitely (score=4), probably, probably not, definitely not (score=1) and, for providers, always (score=4), usually, sometimes, or rarely/never (score=1). The response options are worded differently for the consumer scale than they are for the provider scale because providers were reporting the consistency within their entire practice, whereas consumers were reporting their own experiences, with greater or lesser degrees of certainty. "Don't know" responses were given a score of zero in the consumer survey, on the assumption that consumers should have knowledge about important aspects of their primary care source and not having it signifies a failure of information transfer about available services. However, for *Cultural competence* in the consumer survey, "don't know" responses were coded at midpoint (3), with "definitely" coded as a 5 and definitely not coded as a 1, since these items were primarily opinion rather than informational, and a "don't know" response is neutral. For the provider survey, "don't know" responses were also coded as 0, on the assumption that providers should be expected to know the characteristics of their practice, if for no other reason than to answer questions posed by patients.

CONSUMER SURVEY

Washington, DC, was chosen as the site for testing of the instrument, since the city health department's strategic plan included an assessment of primary care. The city was particularly interested in child health services and requested that the survey be targeted at primary care for children and conducted in a political subdivision that represented a cross-section of the city's population. The study site had a population of 72,118, with 12,961 persons younger than 18.

An analysis of the frequency of telephone exchanges in the target census tracts showed that five exchanges accounted for almost 75% of the numbers for those census tracts. Seventy-five percent of the telephone numbers for the study were randomly generated using these exchanges; telephone listings were used for the remaining 25% for

TABLE 1

The Types of Questions in Each Primary Care Domain from the Questionnaire Used to Assess the Providers' Capacity to Supply Care and Services

<i>First contact: accessibility</i>	Questions address health system characteristics that facilitate access, eg, if facility is closed on weekend days would the patient be seen by a practitioner from the facility?
<i>First contact: use (consumer only)</i>	Questions address the use of primary care facility for each new need (regular check-up, immunization, an acute illness).
<i>Longitudinality: extent of affiliation (consumer only)</i>	Questions address the extent of the relationship with a specific provider, eg, the degree to which the provider identified as the regular source of care also knows the individual best and is the provider from whom care would be sought for a new problem.
<i>Longitudinality: relationship</i>	Questions address the "person orientation" of practitioner-patient interactions, eg, the degree of interest the doctor has in the individual as a person, rather than as someone with a medical problem.
<i>Comprehensiveness: services available</i>	Questions address the availability of 11 specific services, eg, family planning.
<i>Comprehensiveness: services provided</i>	Questions address the services received from the primary care source, eg, discussions of ways to stay healthy.
<i>Coordination: medical record continuity (provider only)</i>	Questions address the methods of recordkeeping, eg, Do you use flow sheets to assure that needed services are provided? (Also, printed practice guidelines, periodic medical audits, problem lists, medication lists.)
<i>Coordination: integration of care</i>	Questions address the quality of the interface between primary care and specialist services, eg, Did the primary care practitioner know that you made a visit to a specialist?
<i>Family centeredness</i>	Questions address the consideration of the family in the patients' treatments, eg, Does the doctor ask about opinions of family members when planning treatment and care?
<i>Community orientation</i>	Questions address the doctor's knowledge of the community, eg, Does the doctor know about important health problems of the neighborhood?
<i>Cultural competence</i>	Questions address the doctor's knowledge of the patient's culture, eg, Would you recommend doctor to someone who currently uses folk medicine or has special beliefs about health care?

Answers were obtained from both consumer and provider unless otherwise noted.

efficiency in assuring that contacts were in the target area. One third (33.2%) of all contacts resulted in 450 completed surveys. The sociodemographic distributions of the 450 surveys closely reflected that of the chosen geographic area as reflected in census data.

Cost considerations dictated telephone administration rather than in-person interviews. Interviewers included nursing students, graduate students in public health, and community members active in various community projects. An interview-

er training manual was developed and included the purpose of the survey, the concept and domains of primary care,^{7,8} procedures for selection of individuals to be interviewed, the role of the interviewer, ethics and confidentiality, survey format and instructions for completing the survey form, strategies for conducting successful telephone surveys, and appropriate answers to frequently asked questions. The survey instrument and procedures were approved by The Johns Hopkins University Office for Research

Subjects and the Washington, DC, Institutional Review Board for Public Health. Interviewers inquired as to who was the best person to answer questions about the health care of the randomly selected child. That person was then interviewed either then or at a time that was more convenient for the respondent. Almost three quarters (73%) of respondents were mothers; 14% were fathers; 9% were grandparents. Respondents were not compensated for their participation.

An algorithm based on responses to three questions (who is the usual source of care? who is the provider who knows the child best? and who would be the provider of care for new problems?) identified the likely source of primary care (Appendix). Consumers who identified places rather than individuals were asked if there was a specific individual at the place; where there was not, the place was considered the source of primary care. All subsequent questions inquired about this person or place.

In this paper, we report only on the experiences of consumers whose providers also provided information about their practices. The designation of managed care depended on this information from providers, since consumers were not expected to know the extent to which their provider was engaged in managed care arrangements or restrictions on their practice.¹⁷

PROVIDER SURVEY

Survey packets were mailed to the 101 individual providers or facilities identified by the consumer respondents as their source of primary care. All providers and facilities not responding within 2 weeks were sent a reminder postcard; at 3 to 4 weeks, they were contacted by telephone. The final response rate was 46.5% (n=47): 31/75 (41%) surveys sent to individual providers and 16/26 (62%) of the surveys sent to facilities were returned. Completed surveys from these individual providers and facilities provided information for 240 (53%) of the total number (450) of consumers in the main survey. One individual provider was eliminated because the respondent had changed practice venue and answered from the perspective of the new site rather than the one identified by the consumer. Thus, there were 46 unduplicated responses from the individual providers and facilities. The 46 responses actually represented only 39 different sites. Five sites had two respondents each because consumers named

two providers at each site. One site had three respondents because consumers named three providers at that site.

In the absence of a well-validated method to characterize facilities as providing a managed care setting or not, we developed our own way of reflecting at least some aspects of managed care. We tested two methods, one based on capitation compared with fee for service and one based on limitations on autonomy. The first dealt with responses to a question about the approximate percent of patients in the practice who were in fee-for-service compared with capitated plans. The second was based on responses to a question about the approximate percentage of patients in the practice who "have health coverage that limits referrals, limits to whom (you) can refer, or requires approval for referrals." We designated those facilities with capitation payments for more than 50% of patients as capitated, and those with a referral limitation of greater than 80% as having limited physician authority. We also tested a third method, based on an algorithm using both the question on limitations on referrals and a question on limitations on autonomy in hospitalization decisions. This latter method provided four categories instead of two: limited physician authority (>80% of patients with limitations on autonomy for both referrals and hospitalizations); partial limited authority (>80% of patients with limitations on autonomy for referrals); little limited authority (60% to 80% of patients with limitations on autonomy for both referrals and hospitalizations); and no limited authority. This latter method, when dichotomized, gave essentially the same findings as the first, so is not reported separately.

Differences between mostly capitated and mostly fee-for-service practices and between those with more and less restriction on autonomy were tested for significance using the Kruskal-Wallis one-way analysis of variance procedure.¹⁸

RESULTS

The 240 consumers whose providers returned the provider survey did not differ from the remainder of the consumer sample (n=210) with respect to child age, household income, type of insurance (HMO, private, medical assistance, other), or child health status; they were slightly more likely to be white. They were also slightly more likely to cite an HMO as their

TABLE 2

Primary Care Scores by Managed Care Designation: Provider Responses (N = 46)

Primary Care Domain (No. of questions)	Limitation on Referral Authority		Capitation or Salary (n=21)	Fee for Service (n=19)
	>80% (n=21)	≤80% (n=25)		
<i>First contact: accessibility</i> (7)	2.95† *	2.38	2.99 *	2.40
<i>Longitudinality: relationship</i> (7)	2.99 **	2.63	2.91	2.75
<i>Comprehensiveness: services available</i> (11)	2.68	2.32	2.65 ***	2.14
<i>Comprehensiveness: services provided</i> (5)	3.24	2.92	3.27	2.90
<i>Coordination: medical record continuity</i> (6)	2.83	2.59	2.68	2.66
<i>Coordination: integration of care</i> (5)	2.87	3.15	2.94	3.11
<i>Family centeredness</i> (13)	2.61	2.58	2.65	2.46
<i>Community orientation</i> (22)	2.02	1.77	2.07 ***	1.66
<i>Cultural competence</i> (13)	2.14	2.10	2.41 **	1.79

† Higher values indicate better scores.

* $P < .01$ between pairs represented.

** $P < .02$ between pairs represented.

*** $P < .05$ between pairs represented.

source of primary care, probably because the staff models among the HMOs are larger and therefore have more consumers relating to them than the other facilities. The findings on their experiences with primary care were the same for both groups of consumers with one exception, as noted below.

Twenty-one providers fit the criterion for more limited referral authority practices and 25 for less limited physician authority. Twenty-one practices provided capitated or salaried care for more than 50% of their patients, 19 provided fee-for-service, and the remaining 6 had other predominant modes of payment and were eliminated from this particular comparison. One designation did not necessarily imply the other; there were two "limited authority," fee-for-service facilities whose population was characterized by providers as primary care case managers. Conversely, there were facilities that reported being capitated with only 61% to 80% limitations on physician referral authority. Thus, capitation is usually consistent with limitations on physician authority, but that is not always the case.

Psychometric properties (including content valid-

ity, internal consistency reliability, and test/retest stability) for the entire consumer survey (N=450) are reported in a separate communication (Cassady et al, unpublished data, 1997). The internal consistency reliability of the eight primary care components for the 240 consumers and of the nine components on the provider survey that were considered to be scales are available from the authors.

Tables 2 and 3 present the comparisons among the different types of settings, as reported by the providers and the consumers, respectively. Findings for the full set of questions posed to the consumers and providers respectively are presented. The number of questions that were identical on both the consumer and provider surveys were 6, 3, 11, 5, 0, 4, 4, 2, 2, respectively, for the subdomains listed in the left column on Table 2. The results that showed significant differences by type of setting generally showed a similar difference for both the identical subsets and the full set. In the domains where the subset contained only a few questions, neither the full set nor the subset showed significant differences by type of setting.

TABLE 3

Primary Care Scores by Managed Care Designation: Consumer Responses (N=240)

Primary Care Domain (No. of questions)	Limitation on Referral Authority		Capitation or Salary (n=105)	Fee for Service (n=107)
	>80% (n=102)	≤80% (n=138)		
<i>First contact: accessibility</i> (6)	3.25† *	2.42	2.92	2.76
<i>First contact: use</i> (3)	2.84	2.85	2.85	2.84
<i>Longitudinality: extent of affiliation</i> (3)	3.84 *	3.45	3.76	3.53
<i>Longitudinality: relationship</i> (4)	3.45	3.56	3.54	3.47
<i>Comprehensiveness: services available</i> (11)	2.97 *	2.60	2.98	2.55 *
<i>Comprehensiveness: services provided</i> (5)	2.87	2.91	2.90	2.90
<i>Coordination: integration of care</i> (7)	2.89	2.96	2.86	2.97
<i>Family centeredness</i> (6)	2.36 *	2.03	2.36	2.03 *
<i>Community orientation</i> (3)	1.60	1.79	1.58	1.79
<i>Cultural competence</i> ‡ (3)	4.14 **	3.80	3.94	4.03

* $P < .01$ between pairs represented.** $P < .05$ between pairs represented.

>† Higher values indicate better scores.

‡ Generally higher scores due to scoring on a 5-point scale rather than a 4-point scale for the other domains.

Table 2 presents the findings from the provider questionnaire. Providers in settings with referral limitations and in which the majority of patients were capitated reported significantly greater accessibility of their services (*First contact: accessibility*). This group also scored significantly higher on *Longitudinality: relationship*. Settings in which the reimbursement method was primarily capitation also did significantly better than fee-for-service settings with regard to *Comprehensiveness: services available*, *Community orientation*, and *Cultural competence*. All but one of the other differences in Table 2 favored the restricted referrals or capitated settings, but these differences did not reach statistical significance.

Findings from the consumer survey (Table 3) were similar. *Comprehensiveness: services available* and *Family centeredness*, were reported as significantly better by consumers associated with facilities that limited physician referral authority or were primarily capitated. *First contact: accessibility* and *Longitudinality: extent of affiliation* were signifi-

cantly better in the restricted referral settings, but did not reach statistical significance in settings with a majority of capitated patients.

Only for *Community orientation* did the consumer and providers differ in the direction of significant differences.

DISCUSSION

This study suggests the existence of differences in achievement of primary care characteristics by different types of settings. To our knowledge, this study is the first to be conducted from a general population perspective, the first to systematically measure those facets of the delivery of services that are specifically relevant to primary care, and among the very few to include a characterization related to certain aspects of managed care. Since primary care physicians are increasingly recognized as the cornerstone of a health services system and both as the entry point and as the integrator of all other services, patients' experiences with primary care are impor-

tant in achieving improved health levels.⁷ Our study is unusual in its focus on consumers' experiences with health delivery characteristics rather than satisfaction with them. Although satisfaction with services provides an important tool for marketing,¹⁹ information on specific experiences with various aspects of care is needed in order to know how services should be altered to improve the quality of care.

Although caution is required in interpreting the measuring of statistical significance (because of the number of comparisons), the consistency of the findings provides some confidence in their robustness. The direction of differences was similar both for consumer judgments based on their experiences and for characteristics as reported by the providers themselves for almost all primary care components. Thus, although there is no assurance that either consumer or provider responses were valid, the consistency of the findings suggests that they are likely to be.

One other study examined the achievement of primary care characteristics as reported by adult patients in ongoing care for one of several chronic illnesses in selected fee-for-service or HMO (capitated) settings.²⁰ In that study, patients in the fee-for-service settings reported better access, continuity, and interpersonal accountability, but patients in HMOs reported better financial access and coordination. *Comprehensiveness* was found to be worse in HMOs, but the measure of comprehensiveness was not comparable in concept to the measure used in our study.

Our findings suggest that characteristics of capitated settings are not necessarily the same as those for managed care without capitation. For some components of primary care, capitated settings perform differently than settings characterized by limitations on physician authority. For example, settings with limited referral authority were rated significantly higher by consumers on *Cultural competence*, but capitated settings were rated higher (though not significantly so) on *Longitudinality: relationships*.

Although there is little in the published literature on the performance of settings with characteristics of managed care as compared with more conventional settings, earlier studies indicated that managed care increased access to care for those who did not previously have it.²¹⁻²⁶ The one exception was a study that demonstrated greater difficulties in

obtaining care for a sick child in a managed care setting.⁹ Medicaid managed care enrollees have reported an increase in off-hours availability.²⁷ There is little evidence of the impact of managed care on the nature of patients' interactions with their providers, although there are indications that affiliations with particular providers are threatened by changing eligibility determinations and changing contracts between insurers and medical care organizations.^{21,27} In our study, there were no differences between the two types of settings in the relationship with the primary care provider. However, consumers in practices with limited physician referral authority reported a significantly higher extent of affiliation with the provider, which may be a reflection of the gatekeeping function in these settings.

No evidence is available on the extent of benefit packages in managed care as compared with more conventional indemnity policies, although compliance with Early, Periodic, Screening, Detection, and Treatment (EPSDT) mandates appears compromised in managed care arrangements for children on Medicaid.^{12,22} In our study, we found clear and consistent evidence of the superior performance of managed care regarding the availability of a range of services, as well as evidence of better performance on services actually received by consumers. One study reported less communication with specialists regarding specific referrals in managed care¹⁴; in our study there were no differences by type of setting or source of information.

There are limitations to our data and their interpretation. First, the number of providers (46) was small; although they represented care received by more than half of the population in the sample, they may not represent the universe of providers available to the population in that area. As noted above, the sample of 240 consumers for whom provider responses were received were similar to the 210 others, with the exception that they reported more family-centeredness of their provider (2.17 vs 2.02, a difference of borderline significance.) Second, the questionnaire was long as a result of the developmental nature of the study, which was designed to validate a primary care questionnaire as well as to evaluate care provided to a population. The questionnaire has since been revised to make it more concise.

Third, it is possible that some patients were characterized as being assigned to facilities with limited

physician referral authority when they might have been one of the up to 20% of patients whose care was not subject to such limitations. However, the fact that the alternative method described above gave the same findings suggests that the method is likely to be robust and, if anything, that the misclassifications minimize rather than enhance actual differences.

Fourth, the study was conducted in only one geographic area (albeit one with a good representation of social classes and types of health insurance) and households without telephones were omitted from the survey. To the extent that their experiences with managed care compared with nonmanaged care may differ from those of the respondents, the survey findings might not be generalizable to the whole population of that geographic area. Moreover, the types of managed care organizations in this geographic area may be atypical of those in the nation as a whole. If the organizations in this geographic area overrepresent older forms of managed care in the form of non-profit prepaid group practice (with its demonstrated superior performance³), the findings will not be generalizable to the current generation of managed care.

Fifth, it is possible that the differences between the types of settings are due to some unmeasured characteristic. In this regard, it is of interest that consumers in the two types of settings did not differ with regard to the proportion with very low income (<\$10,000 income per year), low income (\$10,000 to \$36,000 per year) and higher income (>\$36,000 per year), so that findings are not likely to be a result of selection by income level into the different types of providers.

Sixth, the ability of this particular survey for detecting the experiences of very ill children in different settings was limited since they are uncommon in general population samples. Instruments, such as PROSPER,²⁹ which obtain information from subpopulations with a higher likelihood of chronic or mental problems (such as those selected from among users of facilities), are able to obtain such information more readily. Nevertheless, the revision of our instrument will broaden the time frame for elucidation of these types of problems, and the application of the instrument to adults, who have a higher probability of chronic and mental problems, will also provide greater opportunity to elicit experiences with gatekeeping.

It should also be noted that our approach

addressed the quality of primary care delivery and not the quality of care as represented by health care outcomes. Most studies of the impact of managed care on outcomes are limited to prenatal outcomes or preventive care received, and involve only Medicaid beneficiaries. In two studies, prenatal care outcomes were shown to be at least equal or better^{30,31}; other studies suggested that rates of preventive care were lower.^{27, 32-34} The evidence on differences in the quality of care for clinical diagnoses is sparse and limited to managed care settings of the HMO-type (prepaid group practice or independent practice associations) and to adult populations. Some studies showed no difference in outcomes between fee-for-service and HMO settings,^{35,36} whereas others showed better outcomes in fee-for-service settings, but only for the elderly who are very ill or poor.³⁷ However, most of these studies showed differences across settings, which suggests that an understanding of the processes of care, most particularly regarding those related to primary care, could be helpful in providing explanations. Until now, the absence of an adequate instrument to measure primary care has hampered research on the relationship between important structures and processes of care and outcomes.

Encouraged by our preliminary success in measuring the key domains of primary care with reliability and a consistency that suggests validity, and by our ability to detect systematic differences across various types of facilities, we suggest that both the consumer and the provider survey tools are appropriate for assessing performance of provider organizations, with regard to primary care delivery. At least one state plans to use the provider survey, and one other is using the consumer survey to evaluate managed care programs. The survey is copyrighted by The Johns Hopkins University and is available on request. The revised questionnaire will be suitable for adults as well as children. The generalizability of our specific conclusions regarding the performance of different types and degrees of primary care will depend on replications in different areas and over time.

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REFERENCES

- Luft HS. Health Maintenance Organizations: Dimensions of Performance. New York, NY: John Wiley & Sons; 1981.
- Miller R, Luft H. Managed care plan performance since 1980: a literature analysis. *JAMA* 1994; 271:1512-19.
- Gold M, Hurley R, Lake T. Arrangements between managed care plans and physicians. Results from a 1994 survey of managed care plans. Report submitted to Physician Payment Review Commission. Washington, DC: March 1995.
- Hasan M. Let's end the nonprofit charade. *N Engl J Med* 1996; 34:1055-57.
- Starfield B. Primary care: is it essential? *Lancet* 1994; 344:1129-33.
- Starfield B. Primary care. *J Ambulatory Care Manage* 1993; 16:27-37.
- Institute of Medicine (IOM). Primary care: America's health in a new era. Washington, DC: National Academy Press; 1996.
- Starfield B. Primary care: concept, evaluation, and policy. New York, NY: Oxford University Press; 1992.
- Kirkman-Liff BL. Refusal of care: evidence from Arizona. *Health Aff Winter* 1985; 4:15-24.
- Davis K, Collins K, Schoen C, Morris C. Choice matters: enrollees' views of their health plan. *Health Aff (Millwood)* 1995; 14(2):99-112
- National Committee for Quality Assurance (NCQA). Technical report: report card pilot project. Washington, DC: National Committee for Quality Assurance; 1995.
- Fox HB, Wicks LB, Newacheck PW. State Medicaid Health Maintenance Organization policies and special-needs children. *Health Care Financing Review* 1993; 15:25-37.
- Cartland J, Yudkowsky B. Barriers to pediatric referral in managed care systems. *Pediatrics* 1992; 89:183-8.
- Roulidis ZC, Schulman KA. Physician communication in managed care organizations: opinions of primary care physicians. *J Fam Pract* 1994; 39:446-51.
- Frank RG, McGuire TG, Newhouse JP. Risk contracts in managed mental health care. *Health Aff (Millwood)* 1995; 14:51-64.
- Franks P, Clancy C, Nutting P. Gatekeeping revisited — protecting patients from overtreatment. *N Engl J Med* 1992; 327:424-9.
- Woolhandler S, Himmelstein D. Extreme risk—the new corporate proposition for physicians. *N Engl J Med* 1995; 333:1706-8.
- Siegel S, Castellan N Jr. Non-parametric statistics for the behavioral sciences, 2nd edition. New York, NY: McGraw-Hill; 1988.
- Gold M, Woolridge J. Surveying consumer satisfaction to assess managed-care quality: current practices. *Health Care Financing Review*. 1995; 16:155-73.
- Safran D, Tarlov A, Rogers W. Primary care performance in fee-for-service and prepaid health care systems: results from the medical outcomes study. *JAMA* 1994; 271:1579-86.
- Freund DA, Hurley RE. Medicaid managed care: contribution to issues of health reform. *Ann Rev Public Health* 1995; 16:473-95.
- Rosenbaum S, Serrano R, Wehr E, Spornak S. Negotiating the new health system: an analysis of provider contracts between managed care organizations and primary care group practices. A report of the Center for Health Policy Research, Washington, DC: George Washington University Medical School; 1995.
- Freeman HE, Kirkman-Liff BL. Health care under AHCCCS: an examination of Arizona's alternative to Medicaid. *Health Serv Res* 1985; 20:245-66.
- McCall N, Jay E, West R. Access and satisfaction in the Arizona health care cost containment system. *Health Care Financing Review*. 1989; 11:63-7.
- Wallack S. Managed care: practice, pitfalls and potential. *Health Care Financing Review (suppl)* 1991; 27-34.
- Temkin-Greener H, Winchell M. Medicaid beneficiaries under managed care: provider choice and satisfaction. *Health Serv Res* 1991; 26:509-27.
- Freund DA, Rossiter LF, Fox PD, et al. Evaluation of Medicaid competition demonstrations. *Health Care Financing Review* 1989; 11(2):81-97.
- Commonwealth Fund: Report on the results of a 1994 survey of patients' experiences with managed care. New York, NY: Commonwealth Fund; 1995.
- Zapka J, Palmer RH, Hargraves JL, Nerenz D, Frazier H, Warner C. Relationships of patient satisfaction with experience of system performance and health status. *J Ambulatory Care Manage* 1995; 18:73-83.
- Krieger JW, Connell FA, LoGerfo JP. Medicaid prenatal care: a comparison of use and outcomes in fee-for-service and managed care. *Am J Public Health* 1992; 82:185-90.
- Freund D, Lewit E. Managed care for children and pregnant women: promises and pitfalls. *Future Child* 1993; 3: 92-122.
- Heinen L, Fox PD, Anderson MD. Findings from the Medicaid competition demonstrations: a guide for states. *Health Care Financing Review* 1990; 11:55-67.
- National Health Law Program. Warning signs: a fact sheet on the Dayton area health plan. Dayton, Ohio: Legal Aid Society of Dayton; 1992.
- Rosenbach ML. The impact of Medicaid on physician use by low-income children. *Am J Public Health* 1989; 79:1220-6.
- Yelin E, Criswell L, Feigenbaum P. Health care utilization and outcomes among persons with rheumatoid arthritis in fee-for-services and prepaid group practice settings. *JAMA* 1996; 276:1048-53.
- Greenfield S, Rogers W, Mangotich M, Carney M, Tarlov A. Outcomes of patients with hypertension and non-insulin-dependent diabetes mellitus treated by different systems and specialties. Results from the Medical Outcomes Study. *JAMA* 1996; 274:1436-44.
- Ware J Jr, Bayliss M, Rogers W, Kosinski M, Tarlov A. Differences in 4-year health outcomes for elderly and poor, chronically ill patients treated in HMO and fee-for-service

APPENDIX

Algorithm for designating a primary care source and for obtaining the score for *Longitudinality: extent of affiliation*.

- P₁* Is there a doctor's office or place (particular clinic, hospital, health center, doctor's office, or other place) where the child usually goes if he is sick or needs advice about his health?
- P₂ What is the name of the doctor or place?
- P₃ What is the name of the doctor or place that knows the child best as a person, aside from any special health problem that he has?
- P₄ What is the name of the doctor or place where you would take the child if he developed a completely new health problem that was not an emergency?

Algorithm Score	Number of Respondents			
	Total Consumer Sample (N=450)		Sample Subset (n=240)	
	No.	(%)	No.	(%)
Score = 4 (P ₂ = P ₃ = P ₄)	313	(70)	176	(73)
Score = 3 (P ₂ = P ₃ not P ₄)	51	(11)	15	(6)
Score = 2 (P ₃ = P ₄ not P ₂)	19	(4)	9	(4)
Score = 2 (P ₂ = P ₄ not P ₃)	35	(8)	26	(11)
Score = 1 (three different places)	24	(5)	10	(4)
Score = 0 (No P ₂)	8	(2)	4	(2)

* Note that the widely used method of identifying the place of primary care (or "regular source") reflects the existence of a strong primary care source only approximately 70% of the time.