

Type of Health Insurance and the Quality of Primary Care Experience

ABSTRACT

Objectives. This study examined the association between type of health insurance coverage and quality of primary care as measured by its distinguishing attributes—first contact, longitudinality, comprehensiveness, and coordination.

Methods. The household component of the 1996 Medical Expenditure Panel Survey was used for this study. The analysis primarily focused on subjects aged younger than 65 years who identified a usual source of care. Logistic regressions were used to examine the independent effects of insurance status on primary care attributes while individual sociodemographic characteristics were controlled for.

Results. The experience of primary care varies according to insurance status. The insured are able to obtain better primary care than the uninsured, and the privately insured are able to obtain better primary care than the publicly insured. Those insured through fee-for-service coverage experience better longitudinal care and less of a barrier to access than those insured through health maintenance organizations (HMOs).

Conclusions. While expanding insurance coverage is important for establishing access to care, efforts are needed to enhance the quality of primary health care, particularly for the publicly insured. Policymakers should closely monitor the quality of primary care provided by HMOs. (*Am J Public Health.* 2000;90:1848–1855)

Leiyu Shi, DrPH, MBA

A growing body of literature at both the individual and ecologic levels has demonstrated the association between primary care and improved health outcome.^{1–9} Substantial research has also linked health insurance to increased access to health care.^{10–14} However, with few exceptions,^{15–17} studies have not examined the relation between health insurance and the quality of primary care experience, in particular the type of insurance coverage and the important attributes of primary care. Given the well-known relation between primary care and health outcome, it is important to identify significant predictors of quality primary care experience. Given as well the established relation between insurance and access, health insurance in general and the type of insurance coverage in particular are expected to significantly influence primary care experience.

The Institute of Medicine listed the attributes of primary care as accessibility, comprehensiveness, coordination, continuity, and accountability.¹⁸ Its 1994 report further defined primary care as “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 family and the community.”^{19(p1)}

Even though numerous attempts have been made to operationalize the attributes of primary care,^{7–9,25} no consensus has been reached. For the purpose of this study, Starfield’s conceptualization of the distinguishing attributes of primary care was used—first contact, longitudinality, comprehensiveness, and coordination. As defined by Starfield,² first contact implies access to and use of services for each new problem for which people seek health care. Longitudinality presupposes the existence of a regular source of care and its use over time. Comprehensiveness implies that primary care facilities must be able to arrange for all types of health care services. Coordination requires some form of continuity, of practitioners, medical records, or both, as well as problem recognition.

These attributes were selected for 3 reasons. First, a multidimensional definition will capture primary care more adequately than unidimensional proxies such as a clinician’s medical specialty. Second, the attributes identified by Starfield are generally accepted as essential and unique to primary care. Third, most essential primary care features identified in the literature can be grouped under these 4 domains. For example, measures of accessibility and clinical interaction may be grouped under first contact; measures of continuity, regular source of care, interpersonal treatment, patient–physician relationship, and trust under longitudinality; measures of knowledge of the patient and preventive counseling under comprehensiveness; and measures of referral and integration of care under coordination.

The purpose of this study was to examine the association between the type of health insurance coverage and the quality of primary care. While the relation between having health insurance and having access to care is well known, few studies have examined the quality of primary care experienced by those with different insurance statuses. In the foreseeable future, health care financing in the United States is likely to continue in the pluralist mode, with a combination of public and private approaches and the continued expansion of managed care in both private and public sectors. Given the continual trend toward a managed care transformation for both the privately and publicly insured and the increased role of primary care, it is important to monitor the quality of care under managed care so that preoccupation with

The author is with the Department of Health Policy and Management, Johns Hopkins School of Public Health and Hygiene, Baltimore, Md.

Requests for reprints should be sent to Leiyu Shi, DrPH, MBA, The Primary Care Policy Center, Department of Health Policy and Management, Johns Hopkins School of Public Health and Hygiene, 624 N Broadway, Room 409, Baltimore, MD 21205-1996 (e-mail: lshi@jhsph.edu).

This article was accepted March 2, 2000.

gatekeeping and cost containment does not detract from the quality of primary care. Understanding the type of insurance coverage most associated with high-quality primary care is critical to policymakers who must justify the appropriate mix of public vs private approaches and the level of managed care involvement in the face of a managed care backlash.^{26–28} Knowledge of the impact of insurance on the quality of primary care will broaden our understanding of access issues and contribute to policies that improve access.

Methods

Data

The household component of the 1996 Medical Expenditure Panel Survey (MEPS) was used for this study. MEPS is a nationally representative survey of the US noninstitutionalized civilian population, cosponsored by the Agency for Healthcare Research and Quality (formerly known as the Agency for Health Care Policy and Research) and the National Center for Health Statistics. The survey uses an overlapping panel design in which data are collected through a preliminary contact followed by a series of 6 rounds of interviews over a 2 1/2-year period. A sample of 10 500 households was drawn from the National Health Interview Survey sampling frame for the initial 1996 MEPS household component panel. Detailed discussion of the complex design of MEPS has been published elsewhere.^{29,30} The current study used those respondents younger than 65 years who completed the first 2 rounds of the survey ($n=20\,469$). The elderly population, those 65 years and older ($n=2\,508$), was excluded because of its near-universal coverage by Medicare.

Measures

The household component of MEPS collects detailed data on demographic characteristics, health conditions, health status, use of medical care services, charges and payments, access to primary care, satisfaction with care, health insurance coverage, income, and employment.³⁰ For this study, measures of primary care attributes (dependent variables), insurance status (independent variables), and individual characteristics (covariates) that have potentially confounding effects on the experience of primary care were used.

Primary care attributes. In accordance with the work on primary care by Starfield and others,^{1,2,8,9,16,20} the 4 distinguishing attributes or domains of primary care—first contact, longitudinality, comprehensiveness, and coordination—were operationalized on the basis of

the questions from MEPS. Since conceptually the primary care attributes are related to individuals who already have a usual source of care (USC), the measures were selected primarily from a subset of the sample that identified a USC. All of the questions related to children were answered by their parents (typically, mothers), who presumably took their children to their USC and were in a good position to provide reasonably accurate proxy reports. The final sets of measures were also based on the comments and suggestions made by numerous reviewers, including input from 3 anonymous reviewers on an early draft of this article. It is possible that some measures are classified under a different domain.

Ten questions were selected from MEPS that pertained to “first contact.”^{8,20} These questions addressed (1) whether the subject has a USC, (2) provider type of the USC, (3) provider specialty of the USC, (4) location of the USC, (5) whether the subject has an appointment or walks in when seeing the USC, (6) how difficult it is to get an appointment with the USC, (7) with an appointment, how long it is until the subject is seen by the USC, (8) how difficult it is to contact the USC by phone, (9) whether the USC has office hours at night and on weekends, and (10) whether the subject is confident that his or her family can obtain care from the USC. The first 4 questions describe whether a respondent has a USC and the type of USC in terms of the extent of primary care orientation. It should be pointed out that in addition to primary care researchers, health services researchers have frequently used “has a USC” as both a measure and a determinant of access.^{31–35} Aday and Andersen^{33–35} have used “has a USC” as a structural component of the health care system that reflects an individual’s entry into the system. The next 5 questions are specific attributes of accessibility to USC. The last question is a general assessment of access to care.

For longitudinality, 6 questions were identified that reflect continuity of care, interpersonal treatment, trust, and satisfaction.^{1,16,20} These questions addressed (1) whether the subject had a USC in the last year, (2) whether the subject changed his or her USC in the last year, (3) whether the USC provider listens, (4) whether the subject has confidence in the USC provider’s ability, (5) whether the subject is satisfied with the USC staff, and (6) whether the subject is satisfied with the quality of care provided by the USC. The first 2 questions refer to continuity of care. The third question indicates interpersonal treatment. The last 3 questions reflect trust. The last 2 questions also provide an overall assessment of the physician–patient relationship. The more patients are satisfied with the quality of care and the USC staff, the more likely they are to maintain their

relationship with the USC over an extended period of time.

For comprehensiveness, 1 question was used to reflect preventive services received from the primary care source^{1,20}: whether the subject goes to the USC for preventive health care. Finally, for coordination, 1 question was found that addresses a provider’s knowledge of care received at other places (provider asks about other treatments),⁹ and another was found that addresses the interface between primary care and specialist services (subject goes to the USC for referrals).^{8,20}

Insurance coverage. The questions on health insurance were used to determine an individual’s insurance status. The final coding of insurance consisted of 4 categories: those with private health maintenance organization (HMO) coverage, those with other private fee-for-service (FFS) insurance, those with public insurance only (predominantly Medicaid, a means-tested entitlement program financed by the federal and state government), and those without insurance. Individuals with Medicare or CHAMPUS (Civilian Health and Medical Program of the Uniformed Services) were excluded from the analysis, because these programs are associated with entitlement or military status and are different in nature from other public insurance programs. The final analytic sample included 20 052 subjects younger than 65 years followed over 2 rounds.

Individual characteristics. Aday and Andersen’s access-to-care framework^{33–35} was used in the selection of individual covariates that are potentially related to the experience of primary care. These covariates comprise the following predisposing characteristics: age (younger than 5, 5–17, 18–24, 25–44, 45–64 years); sex; race/ethnicity (American Indian, Asian, Black, Hispanic, White, other); education (no degree, general equivalency diploma, high school diploma, bachelor’s degree, master’s degree, doctorate degree, other, younger than 16 years); and employment status (employed, not employed); and the following enabling characteristics: hourly wages (unemployed, <\$5, \$5–\$9.99, \$10–\$14.99, \$15–\$19.99, \$20), metropolitan statistical area, and census region (Northeast, Midwest, South, West). The covariates also comprise the following need characteristics: perceived health status (excellent, very good, good, fair, poor); perceived mental health status (excellent, very good, good, fair, poor); and whether respondent needs help with activities of daily living (ADLs) such as dressing and eating (yes, sometimes, no) or help with instrumental activities of daily living (IADLs) such as managing money and shopping for personal items (yes, sometimes, no).

Since many of the health status measures were collected for both rounds of interviews, composite measures were computed to cap-

ture a more stable state of health status. Health status was considered “excellent” if it was self-reported as excellent in both interviews, “very good” if reported as very good in one interview and very good or better in the other, “good” if reported as good in one interview and good or better in the other, “fair” if reported as fair in one interview and fair or better in the other, and “poor” if reported as poor in one interview and poor or better in the other. The IADL and ADL measures were coded “yes” if respondent indicated IADL or ADL limitations in both rounds of interviews, “sometimes” if respondent indicated IADL or ADL limitations in 1 round, and “no” if respondent indicated no IADL or ADL limitations in both rounds.

Statistical Analysis

Data analysis was performed with SU-DAAN (Research Triangle Institute, Research Triangle Park, NC) because of the multistage, stratified cluster sampling of MEPS. All analyses accounted for both the design effect and the sampling weights. Simple bivariate comparisons were made between an individual’s insurance status and primary care attributes. Bonferroni adjustments were made to achieve a joint significance level of $\alpha < .05$ for multiple comparisons within each primary care domain. For example, since 10 comparisons were made to test the hypothesis that first contact differs, to keep the overall null error rate to 5% each P value of the comparison has to be less than .005 (0.05/10). Because many of the individual characteristics are significantly associated with primary care experience, logistic regressions were used to control for these potentially confounding effects and to examine the independent effects of insurance status on primary care attributes.

Although estimates presented in the text and tables were weighted to reflect national totals of the population younger than 65 years, the relevant population varied by model because the sample size used for each regression model differed owing to the skip pattern of the questions and the amount of missing or nonapplicable values. The complete sample (after missing values were deleted) was used for 3 questions (whether subject has USC, whether subject has changed USC in the last year, and whether subject is satisfied that family can get care). All other analyses were limited to those respondents with a USC. The question concerning provider specialty of USC was limited to those whose USC was not a facility but a person or a person in a facility. The differences among questions in missing values and the number of people answering “other,” “refused,” and “don’t know” also caused variations in sample sizes for different models and therefore caused the population to be generalized.

Results

In 1996, about 19% of the younger-than-65 noninstitutionalized civilian population was uninsured. Among those insured, 69% had private coverage (38% private HMO and 31% FFS) and 12% had public insurance, primarily Medicaid.

Bivariate Results

Table 1 presents the bivariate results associating type of insurance with primary care attributes. The result of each comparison was significant at $P < .05$ after Bonferroni adjustments for multiple comparisons within each primary care domain. In terms of the USC part of the first-contact indicators, the insured were more likely to have a USC than were the uninsured (95% vs 82%). For individuals covered through private FFS, the USC was more likely to be a person or a person in a facility than a facility (62%), whereas for others the USC was typically the facility (51%). Primary care physicians—those in general or family practice, internal medicine, and pediatrics—were more likely to be the USC.

In terms of the accessibility part of the first-contact indicators, the privately insured were more likely to make appointments (78%) prior to visiting their USC rather than just walk in. Compared with the privately insured, the publicly insured and the uninsured found it harder to get an appointment (10% of the publicly insured and uninsured vs 8% of the privately insured considered getting an appointment to be very difficult) and waited longer during an appointment (25% of the publicly insured and uninsured vs 14% of the privately insured waited for more than 30 minutes). They also were more likely to find it difficult to contact the USC by phone. Most of their USC providers did not have office hours in the evening or on weekends.

Regarding longitudinality indicators, among those currently without a USC, 14% of the privately insured had a USC in the previous year, compared with 9% of the publicly insured and the uninsured. Regardless of insurance status, an overwhelming majority of respondents said that their USC providers listened to them and that they had confidence in their providers’ ability. Most remained satisfied with USC staff and the quality of care received. Those insured under private FFS were the most satisfied.

As for comprehensiveness, an overwhelming majority of respondents, regardless of insurance status, went to their USC for preventive health care. Finally, with regard to coordination, HMO patients were less likely than others to indicate that their providers asked about other treatments (75% vs 81%). An overwhelming majority of respondents went to their USC for referrals.

Multivariate Results

Table 2 displays the logistic regression results associating insurance status with primary care attributes after control for individual predisposing, enabling, and need covariates (coefficients of covariates not shown; available on request). These results relate the type of insurance coverage (insured vs uninsured, privately insured vs publicly insured, and private HMO vs private FFS) to the odds of experiencing a variety of primary care attributes classified under the 4 domains of first contact, longitudinality, comprehensiveness, and coordination. (The association of vulnerable characteristics and primary care experience is not discussed here.) Both the odds ratios and their 95% confidence intervals are presented.

Insured vs uninsured. The insured were more likely than the uninsured to receive better first-contact care. They were 3.40 times more likely than the uninsured to have a USC and more likely to identify persons rather than facilities as their USC. When seeing their USC, they were more likely to have an appointment than to walk in. They found it less difficult to contact their USC by phone and waited less time during a visit. Overall, the insured were 2.63 times more likely to be very satisfied that their family could get care.

Insurance or the lack of insurance does not significantly affect longitudinality of care after individual predisposing, enabling, and need characteristics are controlled for. Only 1 measure—whether USC provider listens—yielded a significant difference between the insured and uninsured ($P < .05$). For comprehensiveness, the insured were 1.39 times more likely to go to a USC for preventive health care. For coordination measures, the insured were 1.42 times more likely than the uninsured to go to a USC for referrals. However, providers of the uninsured were more likely to ask about other treatments, presumably because they were less knowledgeable about them.

Privately insured vs publicly insured. Similar to the findings for the insured and the uninsured, even after control for individual characteristics the privately insured were found to be more likely than the publicly insured to receive better first-contact care. Compared with the publicly insured, the privately insured were more likely to identify persons than to identify facilities as their USC. When seeing their USC, the privately insured were more likely to have an appointment than to walk in. They found it less difficult to get an appointment with the USC or to contact the USC by phone, and they waited less time during a visit. Their USCs were 1.68 times more likely to have office hours during nights and weekends. Overall, the privately insured were 1.63 times more likely to be very satisfied that their family could get care.

TABLE 1—Health Insurance Coverage and Primary Care Attributes of US Noninstitutionalized Civilian Population Younger Than 65 Years, 1996

Primary Care Attribute	Population (1000)	Insurance Coverage			
		Private HMO, %	FFS, %	Public Only, %	Uninsured, %
First Contact					
Has USC	197 090	40	31	12	17
Yes	183 071	96	94	95	82
No	14 019	4	6	5	18
Provider type of USC	183 044	42	31	12	15
Facility	84 295	48	38	51	54
Person/person in facility	98 749	52	62	49	46
Provider specialty of USC	98 749	40	36	11	13
Primary care	91 516	94	91	94	92
Other	7 233	6	9	6	8
USC location	182 726	41	31	12	15
Office	162 173	89	93	82	84
Hospital	20 553	11	7	18	16
When sees USC, has appointment or walks in	181 421	42	32	12	15
Has appointment	135 416	79	78	63	65
Walks in	46 005	21	22	37	35
Difficulty in getting appointment with USC	164 477	43	31	12	14
Very difficult	14 002	9	7	10	10
Not very difficult	150 475	91	93	90	90
With appointment, how long till seen by USC	164 956	43	31	12	14
≤30 min	137 431	86	86	73	78
>30 min	27 525	14	14	27	22
Difficulty in contacting USC by phone	169 359	42	31	12	14
Very difficult	14 950	9	6	12	11
Not very difficult	154 409	91	94	88	89
USC has office hours nights/weekends	169 234	42	31	12	15
Yes	87 224	56	51	44	47
No	82 010	44	49	56	53
Satisfied family can get care	225 945	38	31	11	19
Very satisfied	165 719	79	82	66	53
Not very satisfied	60 226	21	18	34	47
Longitudinality					
Had a USC last year	20 860	23	29	7	41
Yes	2 355	17	12	11	8
No	18 505	83	88	89	92
Changed USC last year	204 989	40	31	12	17
Yes	24 050	13	11	12	10
No	180 939	87	89	88	90
USC provider listens	179 035	42	31	12	15
Yes	172 969	97	98	96	95
No	6 066	3	2	4	5
Confident in USC provider's ability	179 822	42	32	12	15
Yes	172 064	95	97	96	95
No	7 758	5	3	4	5
Satisfied with USC staff	180 487	42	31	12	15
Very satisfied	131 309	71	77	71	71
Not very satisfied	49 178	29	23	29	29
Satisfied with quality of care	180 561	42	31	12	15
Very satisfied	141 546	76	84	78	76
Somewhat satisfied	39 015	24	16	22	24
Comprehensiveness					
Goes to USC for preventive health care	182 656	42	31	12	15
Yes	175 107	97	95	96	94
No	7 549	3	5	4	6
Coordination					
Provider asks about other treatments	173 394	42	31	12	15
Yes	135 098	75	79	80	83
No	38 296	25	21	20	17
Goes to USC for referrals	182 381	42	31	12	15
Yes	175 326	97	96	96	94
No	7 055	3	4	4	6

Note. USC = usual source of care; FFS = fee-for-service. All results significant at $P < .05$ after Bonferroni adjustments for multiple comparisons within each primary care domain.

TABLE 2—Logistic Regression Odds Ratios for Primary Care Attributes According to Health Insurance Status: 1996 US Noninstitutionalized Civilian Population Younger Than 65 Years

Primary Care Attribute	Insurance Coverage Status		
	Insured vs Uninsured, Odds Ratio (95% CI)	Privately Insured vs Publicly Insured, Odds Ratio (95% CI)	Private HMO vs Fee-for-Service, Odds Ratio (95% CI)
First contact			
Has USC			
Yes	3.40*** (2.91, 3.97)	1.09 (0.84, 1.43)	1.69*** (1.38, 2.07)
No	1.00	1.00	1.00
Provider type of USC			
Facility	0.74*** (0.67, 0.83)	0.88* (0.78, 1.00)	1.45*** (1.33, 1.59)
Person/person in facility	1.00	1.00	1.00
Provider specialty of USC			
Primary care	1.21 (0.89, 1.63)	0.88 (0.58, 1.34)	1.80*** (1.43, 2.26)
Other	1.00	1.00	1.00
USC location			
Office	1.47*** (1.26, 1.70)	1.67*** (1.40, 1.99)	0.61*** (0.52, 0.71)
Hospital	1.00	1.00	1.00
When sees USC, has appointment or walks in			
Has appointment	1.38*** (1.23, 1.55)	1.65*** (1.45, 1.88)	1.12* (1.00, 1.25)
Walks in	1.00	1.00	1.00
Difficulty in getting appointment with USC			
Very difficult	0.83 (0.69, 1.01)	0.72** (0.57, 0.91)	1.32** (1.11, 1.57)
Not very difficult	1.00	1.00	1.00
With appointment, how long till seen by USC			
≤30 min	1.28*** (1.12, 1.46)	1.77*** (1.51, 2.06)	0.96 (0.84, 1.10)
>30 min	1.00	1.00	1.00
Difficulty in contacting USC by phone			
Very difficult	0.78*** (0.65, 0.94)	0.68*** (0.55, 0.84)	1.57*** (1.32, 1.87)
Not very difficult	1.00	1.00	1.00
USC has office hours nights/weekends			
Yes	1.03 (0.92, 1.16)	1.68*** (1.48, 1.91)	1.18*** (1.08, 1.30)
No	1.00	1.00	1.00
Satisfied family can get care			
Very satisfied	2.63*** (2.39, 2.88)	1.63*** (1.29, 2.05)	0.91 (0.74, 1.11)
Not very satisfied	1.00	1.00	1.00
Longitudinality			
Had a USC last year			
Yes	1.40 (0.92, 2.13)	1.92 (0.81, 4.51)	1.63* (1.07, 2.49)
No	1.00	1.00	1.00
Changed USC last year			
Yes	1.13 (0.96, 1.33)	1.00 (0.83, 1.20)	1.21*** (1.06, 1.38)
No	1.00	1.00	1.00
USC provider listens			
Yes	1.31* (1.01, 1.70)	1.03 (0.76, 1.40)	0.74** (0.58, 0.95)
No	1.00	1.00	1.00
Confident in USC provider's ability			
Yes	1.13 (0.88, 1.45)	0.81 (0.59, 1.11)	0.56*** (0.44, 0.72)
No	1.00	1.00	1.00
Satisfied with USC staff			
Very satisfied	1.05 (0.93, 1.18)	0.70* (0.53, 0.93)	0.62*** (0.49, 0.77)
Not very satisfied	1.00	1.00	1.00
Satisfied with quality of care			
Very satisfied	1.10 (0.97, 1.25)	0.99 (0.85, 1.15)	0.64*** (0.58, 0.72)
Not very satisfied	1.00	1.00	1.00
Comprehensiveness			
Goes to USC for preventive health care			
Yes	1.39** (1.09, 1.76)	1.08 (0.79, 1.49)	2.04*** (1.60, 2.60)
No	1.00	1.00	1.00
Coordination			
Provider asks about other treatments			
Yes	0.72*** (0.62, 0.83)	0.76*** (0.66, 0.89)	0.73*** (0.65, 0.81)
No	1.00	1.00	1.00
Goes to USC for referrals			
Yes	1.42** (1.11, 1.81)	1.02 (0.73, 1.43)	1.74*** (1.37, 2.22)
No	1.00	1.00	1.00

Note. USC=usual source of care; CI=confidence interval. Odds ratios are expressed as the odds of each primary care attribute among those with health insurance compared with those without health insurance (model 1), among those with private insurance compared with those with public insurance (model 2), and among those with HMO coverage compared with those with private fee-for-service coverage (model 3). Odds ratios have been adjusted for individuals' predisposing (age, sex, race/ethnicity, education, employment status), enabling (income, metropolitan statistical area, census region), and need characteristics (perceived health status, perceived mental health status, help with activities of daily living, help with instrumental activities of daily living).

* $P < .05$; ** $P < .01$; *** $P < .001$.

Whether the type of insurance is private or public does not significantly affect longitudinality or comprehensiveness as measured in this study. For coordination measures, the privately insured had less difficulty obtaining care than the publicly insured. However, providers of the publicly insured were more likely to ask about other treatments.

HMO vs FFS coverage. Those insured under private HMOs were 1.69 times more likely than those insured through FFS to have a USC. However, USC providers of the HMO insured were more likely to be facilities than persons. Although their USC providers were more likely to have office hours during nights and weekends, the HMO insured found it significantly more difficult to get an appointment with their USC or to contact their USC by phone. Overall, the HMO insured were less likely to be very satisfied that their family could get care than those insured through FFS.

The HMO insured experienced less quality in longitudinal care than did the FFS insured. The HMO insured were more likely to have changed their USC, less likely to think that providers listened to them, less confident in providers' ability, and less satisfied overall with the quality of care they received. For comprehensive care, they were 2.04 times more likely to go to a USC for preventive health care. For coordination of care, they were more likely to go to a USC for referrals, although their providers were less likely to ask about other treatments.

Discussion

This study indicates that the experience of primary care varies significantly according to insurance status. In general, the insured are able to receive better primary care than the uninsured, and the privately insured are able to receive better primary care than the publicly insured. Although vulnerable populations are more likely to have public insurance, and their vulnerable characteristics are significantly associated with negative health care experience, this study has controlled for these characteristics and still demonstrates that the experience of primary care varies according to whether insurance is public or private. This finding suggests the possible existence of a 2-tiered system, with one tier for the well-financed privately insured and another tier for the poorly financed publicly insured, who often have no choice but to depend on whatever services they are provided.³⁶ From a public policy perspective, it is important not only to expand insurance coverage to establish access for the uninsured but also to enhance quality for the publicly insured to strengthen the patient-provider relationship. This policy implication has direct relevance to the current State Children's Health

Insurance Program. Although expanding coverage to uninsured children is critical for improving access to care, quality of care must also be addressed, especially in the case of a public insurance program, whether Medicaid or the state plan.

This study also demonstrates that the association between different attributes of primary care and the type of insurance coverage is not uniform. The most significant contribution of insurance in general (relative to no insurance) and private insurance in particular (relative to public insurance) is in improving the first-contact aspect of primary care. Insurance is least likely to affect the interpersonal or longitudinal aspect of the experience of care, presumably because most caregiving remains episodic and problem focused rather than holistic and person oriented.

The differences in the experience of primary care between the insured and the uninsured are mostly consistent with those observed between the privately insured and the publicly insured. However, comparisons of the experience of persons under HMO care and under FFS care yield a different picture, suggesting that primary care is multidimensional and should be evaluated as such. Although the HMO insured experienced better comprehensive care (when measured by preventive health care), they had worse longitudinal care (when measured by change of USC, trust in USC, and satisfaction with USC) and coordination (when measured by providers' asking about other treatments) than the FFS insured. It is possible that HMOs cover more preventive care as a mechanism to reduce more serious illness that could result in hospitalization. On the other hand, the annual turnover of patients from one health plan to another often weakens longitudinal care and severs the USC relationship.^{37,38} Frequent changes in USC result in physicians' having less knowledge about the personal medical histories, family medical histories, and health needs of their patients and in weakened interpersonal communication.⁹ Patient selection may also account for the higher turnover rate by HMO enrollees, because patients who have formed strong relationships with their physicians are less likely to join a managed care plan.³⁹

These findings are largely consistent with other local and regional studies that compare the primary care experience of HMO and FFS users. Using a random sample of consumers in a defined geographic area of Washington, DC, Starfield et al. found that comprehensiveness as measured by services available was reported to be significantly better by consumers associated with facilities that were primarily capitated than by consumers whose facilities were primarily FFS.²⁰ On the basis of a cross-sectional patient exit survey in northeast Ohio,

Flocke found that persons with managed care insurance, compared with those with FFS insurance, were more than 3 times more likely to have changed physicians.²³ In a regional study, Safran et al. noted that FFS patients reported better continuity and interpersonal accountability than did HMO patients.²² The finding on coordination is consistent with the study by Roulidis and Schulman that noted that primary care physicians in HMOs coordinate care less actively than FFS physicians, more often referring patients to specialists unknown to them rather than communicating with these specialists regarding patient conditions and treatment.⁴⁰

The findings regarding first contact are mixed. Although the HMO insured were more likely to have a USC than the FFS insured, their USC providers were more likely to be facilities than persons. The HMO insured found it significantly more difficult to get appointments with their USC or to contact the facility or provider by phone, even though HMO providers were more likely to have office hours during nights and weekends. These mixed findings are consistent with the literature regarding managed care and accessibility.^{20,22} While an HMO improves access to care for those previously without it,⁴¹⁻⁴³ HMO enrollees have greater difficulty gaining access to care than enrollees in traditional FFS health plans.³⁹ Safran et al.²² also found diminished organizational access for HMO patients. The organizational barrier could be the result of over-subscription by the physicians or of negative incentives to see capitated patients. An organizational barrier will likely adversely affect physician-patient continuity, as patients dissatisfied with their ability to see their physician are more likely to switch health plans or providers.⁴⁴ This study does indicate that the HMO insured were less likely to be very satisfied that their family could get care than those insured through FFS. The finding that the HMO insured were generally less satisfied than the FFS insured is consistent with findings from most other studies.³⁹

Owing to several limitations, caution must be exercised in interpreting the results of this study. First, although the generalizability of the study is strengthened by the national representativeness of the MEPS study population, the secondary nature of the data set precluded the consideration of all the major measures of primary care attributes that investigator-initiated studies are able to accomplish, especially with regard to measures of comprehensiveness and coordination.^{1,9,20} Indeed, further refinement, validation, and consensus on primary care measures are necessary and should become a health policy and health services research priority as the public and private sectors and consumers demand valid and meaningful infor-

mation to evaluate health care and allocate scarce resources. Similarly, this study examined HMO vs FFS rather than the distinguishing attributes of managed care, including gate-keeping arrangements, provider and patient financial inducements, restricted provider networks, and limited choice of health care services.²⁷ Future studies can identify which managed care attributes foster or impede primary care performance.

Second, like other national surveys, MEPS is limited in its ability to track vulnerable populations owing to a series of logistic challenges, including language barriers, limited literacy, limited telephone accessibility of the potential respondents, lack of stable addresses, and higher rates of nonresponse and loss to follow-up.⁴⁵ Generalizing from MEPS findings is further hampered by differences among questions in the numbers of nonresponses and of “don’t know,” “refused,” and “other” responses.

Third, this study examined the experience rather than the outcome of primary care. Although numerous studies have linked primary care to better health outcome,¹⁻⁹ further research is needed to examine how each of the primary care attributes is related to positive health outcome and what organizational arrangements are best able to provide these features. Such research can help explain which process and system of care are best related to outcome, so that limited resources can be used to focus on these combinations of attributes. The limitations of outcome measures within MEPS precluded such an analysis.

Another limitation of this analysis is that the MEPS data on primary care are entirely based on respondents’ self-report. In addition to the usual set-related biases of recall and response, self-report also restricts the inclusion of questions on the technical quality of primary care. Finally, the cross-sectional nature of the analysis limits the ability to draw causal inferences from these findings. Longitudinal analysis is the next important step.

In conclusion, this study demonstrates that health insurance does make a difference in achieving the cardinal features of primary care. The insured are more likely to experience good primary care than are the uninsured, particularly in terms of first contact, coordination, and comprehensiveness. Similarly, the privately insured are more likely to experience good primary care than are the publicly insured. These findings indicate that although expanding insurance coverage is important for improving access, efforts are needed to enhance the quality of primary health care, particularly for the publicly insured. Although less significant differences were noted between the HMO and FFS insured, the study did show that those insured by FFS experience better longitudinal care and less difficulty of access than the HMO

insured. Given the proliferation of managed care, policymakers should monitor closely the quality of primary care provision by HMOs in addition to cost savings. □

Acknowledgments

Funding for this research was provided in part by the Bureau of Primary Health Care, Health Resources and Services Administration, Department of Health and Human Services.

I wish to thank Yan Wang for the excellent computer programming assistance in producing the analyses and the anonymous reviewers for the constructive comments on an earlier draft of this paper.

References

- Safran DG, Taira DA, Rogers WH, Kosinski M, Ware JE, Tarlov AR. Linking primary care performance to outcomes of care. *J Fam Pract.* 1998;47:213-219.
- Starfield B. *Primary Care: Concept, Evaluation, and Policy.* New York, NY: Oxford University Press; 1992.
- Shi L. The relation between primary care and life chances. *J Health Care Poor Underserved.* 1992; 3:321-335.
- Starfield B. Primary care: is it essential? *Lancet.* 1994;344:1129-1133.
- Shi L. Primary care, specialty care, and life chances. *Int J Health Serv.* 1994;24:431-458.
- Greenfield S, Rogers W, Mangotich M, et al. Outcomes of patients with hypertension and non-insulin-dependent diabetes mellitus treated by different systems and specialties: results from the Medical Outcomes Study. *JAMA.* 1995;274: 1436-1444.
- Bindman AB, Grumbach K, Osmond D, Vranizan K, Stewart A. Primary care and receipt of preventive services. *J Gen Intern Med.* 1996;11: 269-276.
- Starfield B. *Primary Care, Health Services, and Health.* New York, NY: Oxford University Press; 1998.
- Flocke SA, Stange KC, Zyzanski S. The association of attributes of primary care with the delivery of clinical preventive services. *Med Care.* 1998;36:AS21-AS30.
- Lave JR, Keane CR, Lin CJ, Ricci EM, Amersbach G, LaVallee CP. Impact of a children’s health insurance program on newly enrolled children. *JAMA.* 1998;279:1820-1825.
- Freeman HE, Corey CR. Insurance status and access to health services among poor persons. *Health Serv Res.* 1993;28:531-541.
- Schoen C, Lyons B, Rowland D, Davis K, Puleo E. Insurance matters for low-income adults: results from a five-state survey. *Health Aff.* 1997;16: 163-171.
- Does Health Insurance Make a Difference?* [background paper]. Washington, DC: US Congress, Office of Technology Assessment; 1992. Report OTA-BP-H-99.
- Muller KJ, Patil K, Boilesen E. The role of uninsurance and race in healthcare utilization by rural minorities. *Health Serv Res.* 1998;33:507-610.
- Sox CM, Swartz K, Bursstin HR, Brennan TA. Insurance or a regular physician: which is the most powerful predictor of health care? *Am J Public Health.* 1998;88:364-370.
- Newacheck PW, Stoddard JJ, Hughes DC, Pearl M. Health insurance and access to primary care for children. *N Engl J Med.* 1998;338:513-519.
- Kogan MD, Alexander GR, Teitelbaum MA, Jack BW, Kotelchuck M, Pappas G. The effect of gaps in health insurance on continuity of a regular source of care among preschool-aged children in the United States. *JAMA.* 1995;274:1429-1435.
- Institute of Medicine. *A Manpower Policy for Primary Health Care.* Washington, DC: National Academy of Sciences; 1978. IOM Publication 78-02.
- Institute of Medicine. *Defining Primary Care: An Interim Report.* Washington, DC: National Academy Press; 1994.
- Starfield B, Cassady C, Nanda J, Forrest CB, Berk R. Consumer experiences and provider perceptions of the quality of primary care: implications for managed care. *J Fam Pract.* 1998;46: 216-226.
- Safran DG, Kosinski M, Tarlov AR, et al. The primary care assessment survey: test of data quality and measurement performance. *Med Care.* 1998;36:728-739.
- Safran DG, Tarlov AR, Rogers WH. Primary care performance in fee-for-service and prepaid health care systems: results from the Medical Outcomes Study. *JAMA.* 1994;271:1579-1586.
- Flocke SA. Measuring attributes of primary care: development of a new instrument. *J Fam Pract.* 1997;45:64-74.
- Smith WG, Buesching D. Measures of primary medical care and patient characteristics. *J Ambulatory Care Manage.* 1986;9:49-57.
- Nutting PA. Health promotion in primary medical care: problems and potential. *Prev Med.* 1986; 15:537.
- Blendon RJ, Brodie M, Benson JM, et al. Understanding the managed care backlash. *Health Aff.* 1998;17:80-94.
- Hellinger FJ. The effect of managed care on quality: a review of recent evidence. *Arch Intern Med.* 1998;158:833-841.
- Terris M. Lean and mean: the quality of care in the era of managed care. *J Public Health Policy.* 1998;19:5-14.
- Cohen J. *Design and Methods of the Medical Expenditure Panel Survey Household Component.* Rockville, Md: Agency for Health Care Policy and Research; 1997. MEPS Methodology Report No. 1. AHCPR publication 97-0026.
- Cohen J. *Sample Design of the Medical Expenditure Panel Survey Household Component.* Rockville, Md: Agency for Health Care Policy and Research; 1997. MEPS Methodology Report No. 2. AHCPR publication 97-0027.
- Lambrew JM, DeFries GH, Carey TS, Ricketts TC, Biddle AK. The effects of having a regular doctor on access to primary care. *Med Care.* 1996;34:138-151.
- Hayward RA, Bernard AM, Freeman HE, Corey CR. Regular source of ambulatory care and access to health services. *Am J Public Health.* 1991; 81:434-438.
- Andersen R, Aday LA. Access to medical care in the US: realized and potential. *Med Care.* 1978;16:533-546.
- Aday LA, Andersen R, Fleming GV. *Health Care in the US: Equitable for Whom?* Beverly Hills, Calif: Sage Publications; 1980.

35. Aday LA, Fleming GV, Andersen R. *Access to Medical Care in the US: Who Has It, Who Doesn't*. Chicago, Ill: Pluribus Press; 1984.
36. Torrens PR. Historical evolution and overview of health services in the United States. In: Williams SJ, Torrens PR, eds. *Introduction to Health Services*. 4th ed. Albany, NY: Delmar Publishers Inc; 1993:3–28.
37. Davis K, Collins K, Schoen C, Morris C. Choice matters: enrollees' views of their health plan. *Health Aff*. 1995;14:99–112.
38. National Committee for Quality Assurance. *Technical Report: Report Card Pilot Project*. Washington, DC: National Committee for Quality Assurance; 1995.
39. Hellinger FJ. Selection bias in HMOs and PPOs: a review of the evidence. *Inquiry*. 1995;32:135–143.
40. Roulidis ZC, Schulman K. Role of the gatekeeper in managed care: theory or reality? Paper presented at: 10th Annual Conference of the Association for Health Services Research; June 28, 1993; Washington, DC.
41. Freund DA, Hurley RE. Medicaid managed care: contribution to issues of health reform. *Annu Rev Public Health*. 1995;16:473–495.
42. Wallack S. Managed care: practice, pitfalls, and potential. *Health Care Financ Rev Annu Suppl*. 1991;27–34.
43. Temkin-Greener H, Winchell M. Medicaid beneficiaries under managed care: provider choice and satisfaction. *Health Serv Res*. 1991;26:509–527.
44. Mechanic D. The organization of medical practice and practice orientation among physicians in prepaid and nonprepaid primary care settings. *Med Care*. 1975;13:189–204.
45. Lieu TA, Newman TB. Issues in studying the effectiveness of health services for children. *Health Serv Res*. 1998;33:1041–1058.