

# Primary Care and Patient Perceptions of Access to Care

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**BACKGROUND.** Although much is known about how insurance affects access to care, it is unclear whether good primary care contributes to access. The purpose of this study was to determine how optimal primary care given by providers at a regular place of care, defined in terms of continuity, comprehensiveness, communication, and availability, contributed to perceptions of access to care in a large population-based probability sample of adults.

**METHODS.** Data were from a cross-sectional survey of 6674 English- and Spanish-speaking adults 18 to 64 years of age, randomly sampled from 41 urban California communities with a range of levels of access to care.

**RESULTS.** Following adjustment for sociodemographics and need for care, we found that having "optimal" primary care contributed independently to improved self-rated access, as did having health insurance, a regular place, and a regular provider. The largest difference in access was between having any health insurance and not having insurance. Once insurance was available, each additional element contributed in a cumulative manner to self-rated access. For those with insurance and a regular place, adding optimal primary care improved self-rated access to an extent similar to adding a regular provider.

**CONCLUSIONS.** We conclude that although providing insurance to the uninsured is the most effective means of improving self-rated access, the other elements each improve access as well. Once insurance and a regular place are provided, good primary care at that place may be equivalent to having a regular provider in terms of perceived access. Results support promotion of primary care as a model of health care that encourages good access.

**KEY WORDS.** Health services accessibility; primary health care; insurance, health; primary care physicians.  
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Provision of high-quality health care includes providing good access to care. Access to care is a complex concept that is traditionally measured indirectly in a number of different ways.<sup>1-4</sup> Access has been measured in terms of the availability of facilities, services, and providers in an area; individual financial factors affecting the likelihood of obtaining care such as income and health insurance; presence of a regular place or provider for care; convenience of getting care at

one's regular place; and rates of utilization among those who need health care.

Concepts of primary care and access overlap and are not always differentiated.<sup>5</sup> For example, both access and primary care have been defined in terms of characteristics of one's regular source of care such as continuity, availability, and convenience.<sup>2,4</sup> Some investigators have suggested that access is improved if the regular place for care fits a primary care model, that is, the care is comprehensive, continuous, coordinated, and readily available.<sup>6,7</sup>

Much of the research in this area has studied access and primary care variables in isolation rather than in multivariate models.<sup>4,6,8</sup> For example, a loss of health insurance has been found to be associated with a decline in health status.<sup>9</sup> Lack of a regular source of care has been found to be associated with more reliance on emergency department services.<sup>10</sup> Increased continuity of care has been found to be associated with greater use of preventive services<sup>11</sup> and higher compliance with appointment keeping and use of medications.<sup>12</sup> Increased provision of

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comprehensive care has improved use of preventive services and health outcomes.<sup>13</sup> Thus, it is not known whether these various indicators are redundant, or whether each one contributes unique information about access to care. For example, we know little about the interplay between having a regular place and having a regular provider, although one study suggests that having an identified regular individual provider at the regular place of care improves some access indicators.<sup>14</sup> Without studies examining the interrelationships among these variables, we do not know the extent to which having optimal primary care improves overall access over and above the contribution of other elements of access. It is reasonable to surmise that those whose regular place provides optimal primary care (including features such as continuity, availability, and comprehensiveness of care) should report greater ease in being able to obtain care when needed as opposed to those who have a regular place without these features.

We propose a conceptual framework that considers indicators of access and of primary care as unique elements that contribute cumulatively to improved overall ability to obtain needed care. That is, we consider having health insurance, having a regular place to go for care, having a regular provider at that place, and having care at the regular place that fits a primary care model as building blocks where: (1) having any one (as opposed to none) should facilitate improved access, (2) the addition of others should improve overall access, and (3) having all of them would result in optimal access.

The purpose of this study was twofold: (1) to examine the extent to which several key indicators of primary care and access are uniquely and cumulatively associated with a summary measure of access (perceived or self-rated access) in a population-based sample of Californians, and (2) to describe the magnitude of the differences in perceived access associated with each added element.

## METHODS

### SAMPLING AND DATA COLLECTION

The sampling frame consisted of individuals residing in 41 randomly selected urban communities in California. These areas were made up of contiguous zip codes (zip code clusters) that correspond to urban neighborhoods and to medical service study areas developed by the California Office of

Statewide Health Planning and Development to monitor primary care resource availability.<sup>15, 16</sup> The communities were selected as part of a larger study using a stratified design to select areas with a range of health care access as represented by variations in their community-wide preventable hospitalization rates for conditions such as asthma and congestive heart failure. The sampling procedures have been described elsewhere.<sup>17</sup>

Households were chosen by random-digit dialing, and the respondent within a household was chosen by random selection among eligible adults in the household. Individuals were eligible for the study if they were between 18 and 64 years of age, spoke English or Spanish, and had resided in one of the designated zip codes for at least the prior 3 months. Only one adult per household was sampled.

The survey was administered by Field Research Corporation (San Francisco, Calif), using computer-assisted telephone interviewing methods. Interviews were conducted in English and Spanish between April and July 1993. The overall response rate for the survey was 65.4%, and we completed interviews with 6674 adults. Test-retest reliability of the access measures was examined on a subsample of 99 individuals who completed the English version of the questionnaire and agreed to respond to a subset of questions on a second occasion, which was 30 to 60 days after the first questionnaire was administered.

### MEASURES

**Self-rated access.** The following question was developed specifically for this survey: "Overall, how difficult is it for you to get medical care when you need it? Would you say it is (1) extremely difficult, (2) very difficult, (3) somewhat difficult, (4) not too difficult, or (5) not at all difficult?" The item, hereafter referred to as *self-rated access*, was scored using this scale of 1 to 5, with higher scores indicating better access. The validity of the self-rated access item is supported by the finding in a previous study<sup>17</sup> that it was a strong predictor of preventable hospitalizations; when scores were aggregated to the community level, this item explained 50% of the variation in hospitalizations that are considered preventable with timely outpatient care. Subjective ratings of health status have long been known to be powerful predictors of future outcomes over and above numerous more objective health status indicators<sup>18, 19</sup> and are thus



often used as summary measures of health. A subjective rating of access provides similarly useful information regarding overall access and serves as a comparable summary indicator of access.

The test-retest reliability coefficient for the access item was .60 using both Spearman rank-order and Pearson correlation methods.

**Primary care.** To measure the extent to which individuals' care at their regular place fit a primary care model that is consistent with established primary care constructs, we defined primary care in terms of: (1) availability of their regular place for care (in terms of distance, waiting time for appointments and waiting time in the office, after-hours telephone availability of a provider, and telephone availability of a provider during weekdays); (2) continuity (length of time the person has been coming to the place); (3) comprehensiveness (degree to which the place addresses the full spectrum of health care problems including preventive, acute, and chronic care); and (4) communication (the extent to which doctors listen and explain things to the patient's satisfaction, and whether there are language barriers). A summary dichotomous classification measure was derived to identify those who received optimal primary care. Individuals were considered to have optimal primary care if they received the highest possible score on the availability, comprehensiveness, and communication measures and had been coming to their regular place of care for 12 months or more (continuity). These measures are described in more detail in the Appendix.

**Access.** Insurance status was classified into three categories: none, Medicaid (known in California as MediCal), and private (including about 4% other insurance such as CHAMPUS and Medicare). We measured whether individuals had a regular place for care. The type of place was also identified, and those who identified an emergency department as their regular place of care were defined as having no regular place (because in theory everyone has access to an emergency department). For those who had a regular place, we asked whether they had a regular provider in charge of their care at that place.

**Covariates.** We assessed demographics (age, sex, education, household income, race/ethnicity) and the need for care. The need for medical care was defined as having one or more of the following: any activity limitations due to health problems,<sup>20</sup> fair or

poor self-rated health, endorsing a question asking if they "need medical treatment or hospitalization on a regular basis," or endorsing a question about having a "health condition that requires ongoing medical attention." The need measures and their relationship to utilization of outpatient services are described elsewhere.<sup>21</sup>

## METHODS OF ANALYSIS

We began by testing a priori hypotheses of relationships between self-rated access and demographic factors as well as the established indicators of access, based on the literature or on theory. We hypothesized that self-rated access would be poorer for those with less education and less income, and that lower access scores would be observed for African Americans and Hispanics relative to their counterparts<sup>22, 23</sup> and for those with no insurance or Medicaid relative to those with private insurance.<sup>24, 25</sup> With respect to having a source of care, we hypothesized that persons with both a place and a provider would have the best access scores and those with neither would have the worst scores. We also hypothesized that access scores would be the best for those whose regular source of care was a doctor's office or HMO, next best for those receiving care in a clinic or urgent care center, and worst for those with no source of care. Similarly, we expected that self-rated access would be greater for those with the highest scores on availability, comprehensiveness, continuity, and communication, as well as for those with optimal primary care. Analysis of variance was used to test for mean differences in self-rated access across these groups.

To explore whether the four components contributed to self-rated access in a cumulative manner, we stratified individuals into five categories that reflected various cumulative patterns and calculated mean unadjusted self-rated access scores for each. The five categories were as follows: (1) no regular place or provider; (2) regular place, no regular provider, no optimal primary care; (3) regular place and provider, no optimal primary care; (4) regular place, optimal primary care at that place, no regular provider; and (5) regular place and provider, optimal primary care. We computed mean scores on self-rated access separately within each group for those with and without insurance. Pairwise differences between all 10 groups were evaluated by two sample *t* tests using pooled variance estimates.



As an additional approach to estimating the unique contribution to self-rated access of the various components of access and primary care, we used multiple regression (GLM program in SAS). We included optimal primary care, regular place, regular provider, and insurance status as categorical variables, as well as covariates for demographics (age, sex, race/ethnicity, income, and education) and need for care. Interaction terms between the various components of access and primary care were also explored.

## RESULTS

The sample consisted of 6674 persons ranging in age from 18 to 64 years (mean=38.4, SD=11.9). Fifty-eight percent were female and 60% were non-Hispanic white. The majority of respondents reported little difficulty obtaining access (Table 1); the mean self-rated access score for the total sample was 4.28 (SD=1.11). Self-rated access scores were similarly skewed in most subgroups with individuals tending to report not having a lot of difficulty receiving care (Table 2). The mean scores across the various subgroups ranged from 3.12 to 4.74 on a scale of 1 to 5. Patterns of access scores within categories in unadjusted analyses confirmed our hypotheses, with lower access scores being reported by individuals who were less educated, nonwhite, not privately insured, and lacking a regular place for care. The

lowest score was observed in the group with no insurance (3.12), with 62% reporting having difficulty, and the second lowest score was found in those with no regular place or provider (3.50). The highest score was observed in the group with optimal primary care (4.82), with only 4% reporting having any difficulty, and the next highest score was observed in those with \$60,000 or more annual household income (4.74).

The cumulative nature of the various elements is presented graphically in the Figure. (The self-rated access score is not presented for one of the patterns in the Figure because the small cell size precluded estimating the score with reasonable precision for that group.) For all patterns of the three elements (place, provider, optimal primary care) for which estimates could be made, having insurance was associated with significantly greater self-rated access than not having insurance ( $P$  values  $< .001$ ). For those with insurance and a regular place, self-rated access was improved by either adding a regular provider ( $P < .001$ ) or by adding optimal primary care ( $P < .001$ ). Moreover, for those with insurance and a regular place, adding optimal primary care was associated with higher self-rated access (mean=4.85) than adding a regular provider (mean=4.61) ( $P < .001$ ).

For insured individuals who have a regular place that provides optimal primary care, the addition of a regular provider does not add significantly to self-rated access (columns G versus I in the Figure). However, for insured individuals with a regular place that does not provide optimal primary care, the addition of a regular provider does add significantly to self-rated access ( $P < .001$ ) (columns D versus F in the Figure). In other words, individuals with a regular place and optimal primary care at that place tended to have near maximal self-rated access irrespective of whether they also had a regular provider.

The multiple regression analysis indicated that, after controlling for sociodemographics and the need for care, having insurance, a regular place, a regular provider, and having optimal primary care each contributed positively and independently to self-rated access. The variance explained by these measures, including the covariates, was 0.34 (Table 3). We explored the association of the four components of optimal primary care to self-rated access by including the individual primary care components instead of the optimal primary care measure in a sec-

TABLE 1

### Frequency Distribution of Patient Self-rated Access to Care, by Response to Study Question

Responses to Question,* Rated on Scale of 1 to 5	N	%
(1) Extremely difficult	253	4.0
(2) Very difficult	336	5.1
(3) Somewhat difficult	839	12.8
(4) Not too difficult	1012	15.5
(5) Not at all difficult	4092	62.6
Total	6532	100.0

\*Question: "Overall, how difficult is it for you to get medical care when you need it? Would you say it is extremely difficult, very difficult, somewhat difficult, not too difficult, or not at all difficult."



TABLE 2

**Mean Self-rated Access Scores by Patient Demographic Factors, Insurance Status, and Regular Place and Provider**

Group	N (%)	Mean Access	SD	% Difficult Access*
Total sample	6674	4.28	1.11	21.9
Age group				
18-38	3501 (54)	4.13	1.16	27.0
39-64	3031 (46)	4.45	1.02	15.9
Sex				
Male	2732 (42)	4.30	1.09	21.1
Female	3800 (58)	4.26	1.12	22.4
Education†				
>12 years	3455 (63)	4.49	0.94	15.2
12 years	1188 (22)	4.22	1.20	24.5
<12 years	829 (15)	3.73	1.31	42.7
Race/ethnicity				
White	3946 (63)	4.43	0.99	14.5
African American	591 (9)	4.22	1.22	23.9
Hispanic	1298 (21)	3.88	1.27	36.2
Asian	227 (4)	4.37	0.92	16.3
Other	173 (3)	4.15	1.16	24.3
Household income				
\$60,000 or more	1411 (25)	4.74	0.65	6.4
\$20,000 to \$59,999	2758 (49)	4.40	1.00	17.0
Less than \$20,000	1480 (26)	3.64	1.33	44.5
Insurance status				
Private insurance	4833 (77)	4.59	0.79	11.0
Medicaid	310 (5)	3.89	1.19	37.7
None	1158 (18)	3.12	1.36	61.8
Source of care				
Regular place and provider	3486 (54)	4.58	0.83	11.3
Regular place, no provider	1745 (27)	4.20	1.11	23.8
No place or provider	1183 (19)	3.50	1.40	49.9
Type of place				
Doctor's office, HMO	3469 (53)	4.60	0.80	10.3
Clinic, urgent care center	1859 (29)	4.17	1.14	25.3
None	1192 (18)	3.51	1.39	49.9
Primary care				
Optimal care	953 (18)	4.82	0.54	3.6
Less than optimal	4217 (72)	4.37	1.00	18.0

\*Score of 1, 2, or 3 (extremely, very, or somewhat difficult).

† Excluding individuals <25 years to allow adults to achieve their highest possible level.

NOTE: Access scores range from 1 (extremely difficult) to 5 (not at all difficult); *t* tests used for two groups, analysis of variance used for more than two groups. Differences in access scores within each category significant at *P* < .001 except for sex.

ond model. In this second model, we retained the dichotomous scores of each separate measure used to create the summary primary care measure (Appendix). In this analysis, each component contributed independently to self-rated access. The coefficient for communication was .348 (*P* < .001), comprehensiveness .077 (*P* < .05), continuity .107 (*P* < .05), and availability .194 (*P* < .001). The effect of communication on self-rated access was not changed (nor were any other coefficients) by including a variable for language of interview (Spanish or English) in the model.

When we included interaction terms in the multiple regression, the interaction of regular provider and optimal primary care was significant (*P* = .02). These results are consistent with the results of the unadjusted means shown in the Figure.

## DISCUSSION

We have demonstrated that patients who receive optimal primary care at their regular place of care report better overall self-rated access to care than those who do not. Having insurance, a regular place, a regular provider, and optimal primary care contribute cumulatively to perceptions of access, with each added element contributing uniquely to explaining variation in perceived access. Thus, our findings suggest that all these indicators are important to individual perceptions of access. As would be expected, perceived



access is determined primarily by having health insurance. For those with no insurance, although additional elements other than insurance add significantly to self-rated access, the magnitude of the improvement is small relative to that gained by having health insurance. On our 5-point scale of self-rated access, the difference between those who have none of the components of access and those who have all of the components was 2 (nearly 2 standard deviations). Approximately two thirds of this difference could be attributed to insurance and one third to the other three indicators. This implies that the provision of health insurance to those who do not have it could contribute the most toward improving general access to care, at least as measured in this study.

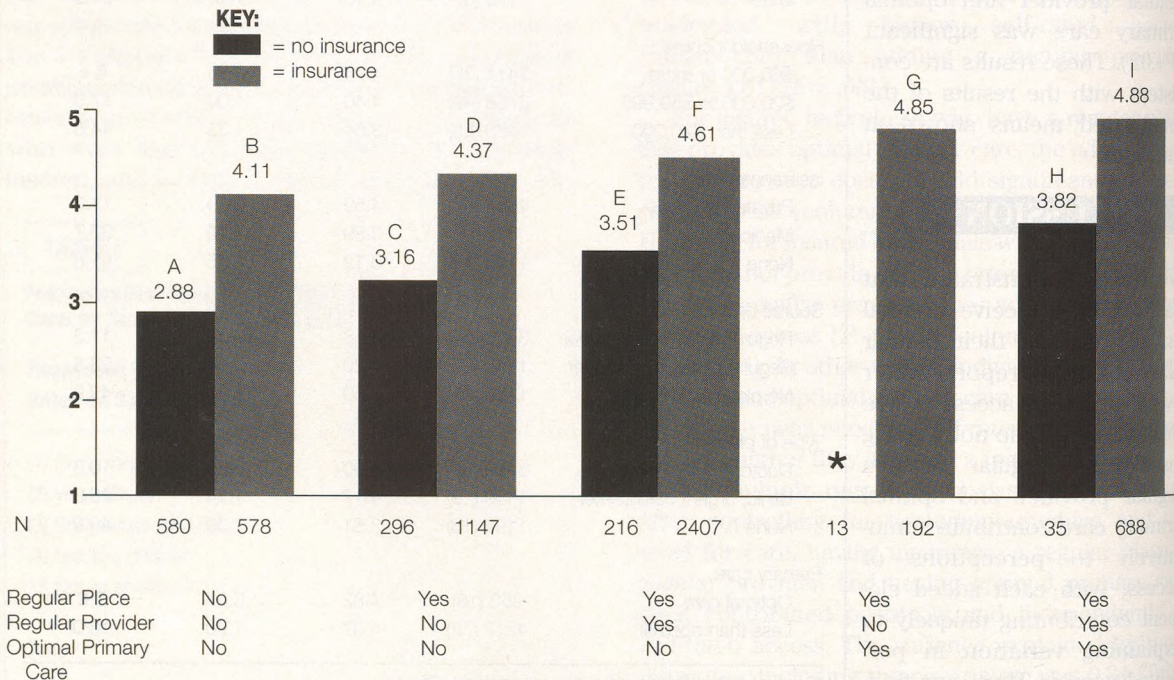
Although both uninsured and insured individuals who have a regular place for care report better access than their counterparts without a regular place, insurance status continues to exert a powerful

influence on self-rated access even among individuals with a regular source of care. Those who have a regular place and provider but have no health insurance may report worse access to care than their counterparts with insurance because the regular physician may be limited in ordering tests, making referrals, and obtaining consultations.<sup>26</sup> Other types of outpatient services (eg, home nursing) may also be unavailable to those with no insurance. In addition, greater out-of-pocket payments among the uninsured may result in lower rates of actual utilization even if they have a regular source of care.

Once insurance is available, the addition of a regular place, a regular provider, and optimal primary care each contribute to significant improvements in self-rated access. For those who have two of the features we studied, insurance and a regular place, having optimal primary care at that place but no regular provider may improve access more than having a regular provider at that place but not receiving opti-

FIGURE

Mean self-rated access scores by four determinants.



Note: Unadjusted means. All pairwise comparisons significant ( $P < .001$ ) except G versus I, B versus H, and E versus H. Asterisk indicates that sample size too small to reliably estimate. Optimal primary care=optimal care at regular place (see text).



TABLE 3

## Multiple Linear Regression Analysis Performed on Variables of Patient Self-rated Access to Care

Variable	Coefficient	P
Optimal primary care at regular place	.251	<.001
Regular place	.336	<.001
Regular provider	.176	<.001
No insurance†	-1.123	<.001
Medicaid‡,§	-.299	<.001
Age (years)	.004	<.001
Male	.077	<.01
Hispanic§	.056	.102
African American§	-.071	.098
Asian§	-.086	.193
Other race/ethnicity§	-.156	<.05
Income >\$20,000	.314	<.001
Education (years)	.001	.827
Need for care	-.242	<.001
Intercept	3.721	

† Versus private insurance.

‡ Known as MediCal in California.

§ Versus white.

NOTE: Variance explained,  $R^2=.34$ .

mal primary care. These results suggest that a regular provider may add little to an individual's perception of access to care when the providers at a place, as a group, are providing optimal primary care. Our finding that communication (which included assessment of language barriers) was significant supports recent suggestions that language difficulties are an important barrier to access.<sup>27, 28</sup>

One remarkable finding was the relatively good scores on this overall access indicator in the total population. This may be partially related to our focus on individuals who spoke English or Spanish, had telephones, and had resided in the sampled urban areas for at least 3 months. Despite this, over 20% reported at least some difficulty and represent the group about whom to be concerned. Indeed, we found that access problems are not evenly distributed across the population but are concentrated among those with low socioeconomic status and those with no insurance.

There are numerous other access and primary care indicators that could have been included in our conceptual model. The Institute of Medicine (IOM) has recently refined its definition of primary care to include some elements that we did not measure, as our study instruments were developed prior to publication of the IOM report.<sup>29</sup> Some investigators have suggested that continuity includes such additional facets as advance planning for future care<sup>2</sup>; however, these additional elements are difficult to measure from patient self-report. Our analysis includes many of the components most essential in today's health care climate. Further, these elements are the focus of debate as new forms of care are being developed for the underserved.<sup>30</sup> Although we found that nearly one third of the variance in self-rated access was explained by the four major determinants included in our model, a substantial amount of variance remains unexplained. Thus, there are clearly many other important factors that contribute to individual perceptions of difficulty obtaining care. Subsequent research could include additional variables in the model, such as patients' lack of familiarity with the health care system,<sup>31</sup> the amount of copayment or deductible involved with the health insurance, the availability of physicians accepting Medicaid and

poor patients,<sup>26, 32</sup> coverage of other services such as psychiatric care and physical rehabilitation, and elements such as patient-provider trust that have been highlighted by the IOM.

Our findings are cross-sectional in nature and thus could not address the issue of whether changes in health insurance status, having a regular place for care, a regular provider, or optimal primary care would necessarily lead to corresponding changes in self-rated access. Thus, studies of how changes in these elements might lead to changes in self-rated access are important next steps.

Our study relies on self-reported information because it focuses on access from the individual's perspective. The perceptions of the individual regarding these types of indicators have generally been found to be reliable.<sup>33, 34</sup> Although we are encouraged by our findings regarding the self-rated access measure, the reliability of the single-item measure was at the lower end of the acceptable levels.<sup>35</sup> Reliability may have suffered in part because the question does not have a time frame. Nevertheless, this type of self-rated item was a strong predictor of preventable hospitalizations in area-level analyses in a previous study,<sup>17</sup> suggesting that our small-sample test represents a lower-bound estimate of reliability, and that its reliability is not a limiting factor in its use.

It would be of interest to replicate these findings



in samples that include individuals living in rural areas, persons speaking other languages, and those who are more transient, all of whom may have greater access problems. In addition, we support efforts to explore the relative contributions of insurance, a regular place and provider for care, and optimal primary care in explaining other outcomes such as health status, need-adjusted utilization, or delayed care. We have studied how three of these elements (insurance, regular place, and optimal primary care) contribute to the receipt of preventive services and found similar cumulative patterns.<sup>36</sup>

The construct of self-rated access may be a useful addition to the language of access to care, similar to the construct of self-rated health. Continuing to focus attention on patient perceptions regarding health care should facilitate understanding of the experiences of those who are the recipients of health care. Finally, when considering how to improve access to care to achieve such outcomes as reductions in rates of preventable hospitalizations and improved health status, policymakers should consider strategies to address each of the "building blocks" that appear to uniquely contribute to overall access to care. Future studies can contribute to understanding the determinants of overall access to care by using different indicators of access and incorporating other determinants of access in the analytic models.

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## APPENDIX

### Measures of Primary Care: Definitions and Scoring Information

Measure/Definition	Scoring Information
<b>Availability:</b> Convenience and timeliness of care	Count of five "optimal" features of availability: (1) 1 day or less average waiting time for appointment when sick; (2) 20 minutes or less average waiting time in office; (3) after-hours telephone access; (4) telephone access during weekdays; (5) less than 20 minutes travel time to regular place. If no regular place, assigned a zero. Dichotomous score: 1=score of 5, 0=all other scores.
<b>Continuity:</b> Length of time coming to regular place; if more than one place, length of time coming to place they rely on the most when they are sick or want advice about health	Years coming to regular place. If no place, assigned a zero. Dichotomous score: 1=1 or more year, 0=less than 1 year.
<b>Comprehensiveness:</b> Extent to which regular place provides care for acute and chronic problems and preventive services	Count of three aspects of comprehensiveness. Would go to this place: (1) if had new problem such as sprained ankle or flu; (2) for care of a flareup of ongoing health problem such as asthma or diabetes; (3) for a checkup, vaccination, or (women only) Pap test. Score ranges from 0-3. If no place, assigned a zero. Dichotomous score: 1=score of 3, 0=score of 0-2.
<b>Communication of providers:</b> Extent to which providers at regular place listen and explain things to their satisfaction, and extent of language barriers	Average of responses to three items: (1) doctors at place take time to listen (2=most of the time, 1=some of the time, 0=not usually); (2) doctors at place take time to explain things (2=most of the time, 1=some of the time, 0=not usually); (3) any trouble talking to doctor or receiving care because of a language problem (2=no, 0=yes). Score range 0-2. If no place, assigned a zero. Dichotomous score: 1=score of 2, 0=score of 0 or 1.
<b>Optimal primary care</b>	1=Received highest possible score on availability, comprehensiveness, and communication, and received a score of 12 months or more on continuity; 0=all else.