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ACCESS TO CARE AMONG VULNERABLE POPULATIONS ENROLLED IN COMMERCIAL HMOs

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Abstract: This cross-sectional study compares self-reported access to care among a representative sample of 13,952 HMO enrollees in New Jersey. Using multivariate logistic regression, this study found that compared with college graduates, those with less than a high school education reported more difficulty obtaining tests or treatment. Compared with whites, Hispanics were more likely to report difficulty seeing their primary care provider, and African Americans reported greater difficulty seeing a specialist and obtaining tests and treatment. Enrollees in poor health were more likely to report problems seeing a specialist and obtaining tests and treatment than enrollees in excellent health. Income was not a consistent predictor of access. Nonfinancial barriers appear to be more influential than financial barriers for predicting access problems in commercial HMOs. More work is needed to identify the source of nonfinancial barriers to care among vulnerable populations.

Key words: Health services accessibility, socioeconomic factors, Consumer Assessment of Health Plans Study (CAHPS) survey, health maintenance organizations.

Research on access to care has repeatedly shown that certain groups of Americans, including those with low incomes or less education; members of racial/ethnic minorities; and those with chronic illnesses are more vulnerable to difficulties with access to medical care.¹⁻⁹ To some extent, this reflects the greater likelihood of inadequate health insurance in these groups. However, having medical insurance does not guarantee access to care.^{4,10}

Within HMOs, for example, there is some evidence that these populations may experience relatively greater difficulty obtaining care.^{2,5-7,9,11} In explaining

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the underlying reasons for these difficulties, some have noted that enrollees with less education or lower incomes may be less able to enroll in high-cost plans with better coverage⁵ and may also be less able to negotiate administrative barriers.⁶ They may also be burdened by inflexible jobs or difficulties finding transportation to providers.¹² For racial and ethnic minorities, economic disparities may account for some of the access difficulties. However, a lack of cultural competence on the part of providers has also been implicated in diminished access.¹³⁻¹⁵ For persons with chronic illnesses or poor health, the cost-saving measures used by plans (such as restrictions on referrals to specialists and limitations on use of laboratory tests) may account for some of the reported access barriers.¹⁶⁻¹⁸

Most studies of access to care in HMOs are confined to special populations (the elders or individuals with particular chronic illnesses) or compare HMO performance with that of traditional insurance plans. With few exceptions, researchers have not compared access to care by various subgroups of HMO enrollees. The current study fills that void by examining difficulties in self-reported access within the population of HMO enrollees in New Jersey. It investigates the extent to which subgroups that have been shown to be vulnerable to access difficulties in other contexts experience similar problems in commercial HMOs.

Method

The Consumer Assessment of Health Plans Study (CAHPS™) survey was created through a consortium headed by the Research Triangle Institute, RAND, and Harvard Medical School and was funded by the Agency for Healthcare Research and Quality (AHRQ). The survey has been extensively tested and is a reliable and valid indicator of consumers' experiences with their health plans.^{19,20} The psychometric properties of the CAHPS instrument have been described in detail elsewhere.²¹ The New Jersey CAHPS surveys were conducted in 1997 and 1998 on a probability sample of enrollees from all large (> 2,000 enrollees) commercial HMOs in the state. During the two-year period, there were 13 such plans, with 10 operating nationally. Eleven of the 13 eligible HMOs were for-profit, network model health plans. Of the two not-for-profit plans, one was a network model and the other was a group model. The CAHPS survey was administered by telephone (in English and Spanish) for the New Jersey Department of Health and Senior Services (NJDHSS) by the Eagleton Center for Public Interest Polling, an independent research institute affiliated with Rutgers University. Medicaid and Medicare beneficiaries were not included in the sample. A total of 13,952 adults completed surveys; this represents an overall response rate of 55 percent for the 1997 survey and 49 percent for the 1998 survey. However, among qualified respondents (i.e., English or Spanish speaking and still in their health plan) with good contact information, the response rates were 60 percent and 57 percent, respectively, a rate similar to other surveys of health plan members.^{5,21,22} Most of the remaining

nonresponse was due to inability to contact respondents by telephone (e.g., busy, no answer). The participation rate of those contacted was 86 percent and 83 percent, respectively.

Preliminary analyses revealed that patterns of responses to the access items in the two years were comparable, so data from the two years were pooled to get sufficiently large numbers to permit subgroup comparisons. The characteristics of the New Jersey commercial HMO population is described in detail elsewhere.²³

Within New Jersey, there was considerable variation in market share among commercial HMOs. For example, one of the very large plans accounted for more than 30 percent of the commercial managed care market, while two of the smaller plans accounted for less than 1 percent. Because a random sample of similar size was taken from each of the health plans, responses were weighted to reflect plan size in order to ensure that the sample reflected the population of New Jersey HMO enrollees.

Dependent variables—access to care. The CAHPS 1.0™ has four items that measure access to care in the six months prior to the survey administration. Figure 1 lists those four items and shows the relationship between each access item and a corresponding screener item. For each of the four access items, the at-risk population is defined by responses to the corresponding screener. For instance, the first access item (“How often did you have to see someone else when you wanted to see your personal doctor or nurse?”) only applies to the 8,598 individuals who reported that they had someone they thought of as their personal doctor or nurse and responded affirmatively to the prior screener “In the last 6 months, did you try to see your personal doctor or nurse?” Because a different screener precedes each item, the number of at-risk persons is different for each access problem. All four access items were coded on a 4-point scale (*never/sometimes/usually/always*). Individuals were defined as having access problems if they answered “usually” or “always” to the first question or if they answered “sometimes” or “never” to the latter questions as recommended by the AHRQ.²⁴

Vulnerable subgroups. As noted at the outset, vulnerability was defined in terms of lower income, less education, minority race/ethnicity, and poorer health. Both income and education were measured as categorical variables. It should be noted that family income is not routinely collected in the course of the CAHPS survey but was added by the NJDHSS. Due to the relatively high rate of nonresponse on the income item (11.6 percent), missing answers were grouped together and included as a separate variable in the multivariate analyses. Those with missing income data were significantly more likely to be white, to have no more than a high school education, and to come from the youngest (18-24) and the oldest (55+) age-groups. For race/ethnicity, four mutually exclusive categories were created: white (non-Hispanic), black (non-

FIGURE 1
SUMMARY OF ITEMS MEASURING ACCESS TO MEDICAL CARE
IN CAHPS 1.0: SCREENERS, FOLLOW-UP ITEMS, AND RESPONSE
PATTERNS IN THE SAMPLE AT LARGE (N = 13,958)

<u>Screener items</u>		<u>Access items</u>	
In the last 6 months, did you try to see your personal doctor or nurse? Percent (n) responding "Yes"	→ 72.4 ^a (8,598)	→ How often did you have to see someone else when you wanted to see your personal doctor or nurse? Percent (n) responding "usually/always"	→ 7.4 (636)
In the last 6 months, have you thought you needed to see a specialist? Percent (n) responding "Yes"	→ 42.5 (5,932)	→ How often did you see a specialist when you thought you needed one? Percent (n) responding "sometimes/never"	→ 41.1 (2,438)
In the last 6 months, how many times did you phone a doctor's office or clinic during the day Monday through Friday to get medical help or advice for yourself? Percent (n) responding "1 or more"	→ 56.9 (7,942)	→ How often did you get the medical help or advice you needed when you phoned the doctor's office or clinic during the day Monday through Friday? Percent (n) responding "sometimes/never"	→ 14.5 (1,152)
In the last 6 months, did you think you needed any tests or treatment? Percent (n) responding "Yes"	→ 31.5 (4,396)	→ How often did you get the tests or treatment you thought you needed? Percent (n) responding "sometimes/never"	→ 18.8 (826)

Note: CAHPS = Consumer Assessment of Health Plans Study

^aExcludes respondents with no personal doctor or nurse

Hispanic), Hispanic, other (includes Asians, Native Americans, Alaskan Natives, and "Other race"). Health status was measured using an adjectival scale where respondents characterized their overall health as *excellent/very good/good/fair/poor*.

Covariates. Other factors that have been linked to access to care were also included in the analyses. Primary language was assessed by asking whether English was the language usually spoken in the home.²⁵ Because having a regular provider has been shown to be an important mediator of access to care,^{1,26} whether the subject had someone they thought of as their primary care provider (PCP) was ascertained. Consistent with HMO practice, most of the members (86 percent) had a PCP. In addition, for the access-to-specialist model, a dummy variable was included to indicate whether the respondent reported that the plan's benefit structure required enrollees to obtain a referral prior to seeing a specialist. Finally, age and sex were included in all analyses.

Analysis. We began our analyses by examining the bivariate association between the four measures of access and sociodemographic characteristics and health status. We then used multivariate logistic regression to estimate the relationship between individual characteristics and access to medical care. For all of the models, the sociodemographic and health status variables were

entered simultaneously, along with the covariates. To minimize the influence of unmeasured variation between health plans, plan dummies were added to all regression models. A dummy variable indicating year of survey was also included in all analyses.

Results

Difficulty obtaining medical care among vulnerable enrollees. As shown in Figure 1, the proportion of respondents answering the screener items affirmatively ranged from 31.5 percent of the sample (for "needing tests or treatment") to 72.4 percent of those with a PCP ("trying to see personal doctor or nurse"). Similarly, the fraction reporting access difficulties among those who responded affirmatively to screeners was highly variable, ranging from 7.4 percent ("had to see someone other than personal doctor or nurse") to 41.1 percent ("difficulty seeing specialist").

Analyses reported in Table 1 reveal a substantial association between responses to screeners and sociodemographic vulnerability. As in the left-hand column of Figure 1, percentages in Table 1 refer to the proportion of respondents who indicated that they tried to obtain needed care. Lower income, less education, and minority race/ethnicity were all associated with a decreased likelihood of "needing to see a specialist," "phoning a doctor's office or clinic," and "needing tests or treatment." However, responses to the item "Did you try to see your personal doctor or nurse?" did not follow the same pattern. Respondents with lower income and less education as well as whites and African Americans were more likely to report trying to see their PCP. Poor health was associated with more affirmative responses to screeners for all four items. In sum, the demand for three of the four services in question was generally lower among sociodemographically vulnerable enrollees and higher for enrollees in poor health.

Table 2 shows the bivariate relationships between enrollee characteristics and the likelihood of reporting each of the four access problems. As in the right-hand column of Figure 1, percentages refer to the proportion of enrollees reporting the access problem among those who responded affirmatively to the corresponding screener. As shown in Table 2, vulnerable enrollees generally reported greater access difficulties for all four of the items. The pattern of association with sociodemographic vulnerability was consistent across income, education, and race/ethnicity for "difficulty seeing a specialist," "difficulty obtaining help by phone," and "difficulty obtaining tests or treatment." For "difficulty seeing personal doctor or nurse," only Hispanic and other race/ethnicity were significantly associated with access difficulties. Consistent with the findings on sociodemographic variables, poor health was also associated with access difficulties. For all of the items, except for "difficulty seeing a specialist," those in poorer health were substantially more likely to report access problems.

TABLE 1
PROPORTION OF INDIVIDUALS IN VARIOUS GROUPS
RESPONDING AFFIRMATIVELY TO SCREENERS
(IN PERCENTAGES)

	<i>DID YOU TRY TO SEE YOUR PCP?^a</i> (n = 11,847)	<i>HAVE YOU THOUGHT YOU NEEDED TO SEE A SPECIALIST?</i> (n = 13,958)	<i>DID YOU PHONE FOR MEDICAL ASSISTANCE?</i> (n = 13,958)	<i>DID YOU THINK YOU NEEDED TESTS OR TREATMENT?</i> (n = 13,958)
Total	72.4	42.5	56.9	31.5
Income				
< \$18,000	76.1**	41.5*** ^b	55.2*** ^b	28.5*** ^b
\$18,000-\$25,000	75.8	38.2	54.4	28.0
\$25,000-\$50,000	73.6	41.5	58.6	31.3
\$50,000-\$100,000	71.3	42.3	58.5	31.0
> \$100,000	71.2	47.7	61.9	39.4
Education				
Less than high school	75.5*** ^b	35.9*** ^b	51.9*** ^b	26.3*
High school	73.4	39.9	55.9	27.3
Some college	72.7	42.5	58.9	33.4
College	71.3	46.4	59.3	35.2
Race				
White	72.7*** ^b	43.7*** ^b	58.1*** ^b	32.5*** ^b
Black	73.3	40.5	61.9	34.6
Hispanic	69.9	40.0	52.7	26.7
Other	68.8	37.0	53.3	23.9
Primary language				
English	62.0*** ^b	42.7*** ^b	58.0*	32.0*** ^b
Spanish/other	51.7	36.7	54.9	24.8
Age				
18-24	68.6*** ^b	34.0*** ^b	53.2*** ^b	22.6*** ^b
25-34	67.1	37.2	59.0	26.1
35-44	70.5	42.8	58.8	33.4
45-54	73.4	44.6	59.2	34.6
55+	82.7	50.1	53.3	35.3
Gender				
Male	69.2*** ^b	35.5*** ^b	50.0*** ^b	26.9*** ^b
Female	74.8	47.9	63.2	35.1
Health status				
Fair/poor health	84.8*** ^b	61.7*** ^b	69.9*** ^b	52.6*** ^b
Good health	79.2	46.6	58.9	35.4
Very good health	71.1	41.3	58.8	29.7
Excellent health	64.0	34.2	50.4	23.6
Regular provider				
Does not have PCP	—	30.4*** ^b	48.0*** ^b	23.2*** ^b
Has PCP	—	44.8	59.3	33.0

Note: PCP = primary care provider

^a Excludes respondents with no personal doctor or nurse

^b For income, education, age, and health status, Mantel-Haenszel chi-square test for linear association is reported.

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$ for χ^2

TABLE 2
ACCESS PROBLEMS REPORTED BY NEW JERSEY HMO ENROLLEES^a (IN PERCENTAGES)

	HAD TO SEE SOMEONE OTHER THAN PERSONAL PHYSICIAN (n = 8,598)	DIFFICULTY SEEING SPECIALIST (n = 5,932)	DIFFICULTY OBTAINING HELP BY PHONE (n = 7,942)	DIFFICULTY GETTING TESTS OR TREATMENT (n = 4,396)
Total	7.4	41.1	14.5	18.8
Income				
< \$18,000	9.2	45.3***b	21.5***b	27.7***b
\$18,000-\$25,000	6.9	40.9	15.5	19.9
\$25,000-\$50,000	6.8	44.4	15.4	18.7
\$50,000-\$100,000	7.1	41.4	12.4	19.6
> \$100,000	10.2	31.3	14.2	15.8
Education				
Less than high school	8.9	44.6**	13.4	24.5**
High school	6.7	44.2	14.1	20.4
Some college	6.9	40.0	13.9	17.8
College	8.4	39.5	15.3	17.7
Race				
White	7.1**	37.6*	12.6***b	16.6*
Black	6.4	53.9	14.4	22.6
Hispanic	9.6	44.0	21.2	24.0
Other	9.9	53.8	26.7	31.8
Primary language				
English	7.3	40.0***b	13.3***b	17.9***b
Spanish/other	9.1	57.7	29.0	32.8

(continued)

Table 2 (continued)

Age					
18-24	3.9***b	49.5*	12.7***b	18.4*	
25-34	6.9	49.1	16.4	27.3	
35-44	6.6	42.3	14.8	19.3	
45-54	9.2	37.6	14.9	17.7	
55+	8.0	33.6	11.0	12.4	
Gender					
Male	7.7	41.6	14.2	17.6	
Female	7.3	40.9	14.6	19.5	
Health status					
Fair/poor health	13.4***b	42.4	24.5***b	29.8*	
Good health	7.4	41.6	15.7	19.5	
Very good health	6.3	40.3	12.4	16.1	
Excellent health	7.0	41.3	12.1	14.9	
Regular provider					
Does not have PCP	—	53.5*	22.3***b	32.6*	
Has PCP	—	39.6	13.3	17.2	

Note: PCP = primary care provider

^a Percentages represent the proportion in each category reporting an access problem.

^b For income, education, age, and health status, the Mantel-Haenszel chi-square test for linear association is reported.

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$ for χ^2

Regression results. Results of the multivariate logistic regressions, reported in Table 3, generally confirm the bivariate findings, showing that more vulnerable enrollees were more likely to report access problems. However, there were some notable exceptions that merit elaboration.

The first of these pertains to the impact of income, where the direction of the relationship was reversed for having to see someone other than one's personal doctor or nurse. For example, in this case, those with annual family incomes of \$25,000 to \$50,000 were significantly less likely to report access difficulties compared with those reporting incomes of greater than \$100,000 (odds ratio [OR] = 0.66, $p < 0.01$). There was no consistent relationship between income and difficulty getting tests or treatment.

The second pertains to the impact of education. Enrollees with less education were more likely to report difficulty seeing a specialist and, although the confidence interval included 1, the relationship between education and getting tests or treatment was in the expected direction (i.e., less education coincided with greater likelihood of access difficulties). However, the relationship between vulnerability and access was reversed for obtaining help by telephone. Those with less than a high school education were less likely to report difficulty obtaining help by telephone, compared with those with a college education (OR = 0.61, $p < 0.01$). There was no consistent relationship between education and having to see someone other than one's personal doctor or nurse.

Finally, the bivariate analyses showed that Hispanics were substantially more likely than whites to report problems for all four measures of access. Nevertheless, in the multivariate analyses, compared with whites, Hispanics were only more likely to report having to see someone other than a personal doctor or nurse. In addition, enrollees who spoke English as their primary language reported much better access to care for three of the four measures.

The multivariate analyses also showed that enrollees who did not have someone they thought of as their personal doctor or nurse were much more likely to report difficulty obtaining care. In fact, enrollees with no regular provider were significantly more likely to report difficulty getting tests or treatment (OR = 1.98, $p < 0.001$). In auxiliary analyses (not shown), models restricted to only those enrollees with a PCP were run in order to ascertain whether the observed access variations were found among persons who had primary care providers. Those relationships were essentially unchanged in the restricted models.

Discussion

These analyses suggest that New Jersey's HMO enrollees face barriers in obtaining medical care and that more vulnerable enrollees may be at increased risk of experiencing difficulty obtaining care. However, while all of the vulnerable populations examined in these analyses reported difficulty on one or

TABLE 3

ADJUSTED ODDS RATIOS AND 95 PERCENT CONFIDENCE INTERVALS FOR THE ASSOCIATION BETWEEN INDIVIDUAL CHARACTERISTICS AND DIFFICULTY OBTAINING CARE^a

	HAD TO SEE SOMEONE OTHER THAN PCP (n = 8,598)	DIFFICULTY SEEING A SPECIALIST (n = 5,932)	DIFFICULTY OBTAINING HELP BY PHONE (n = 7,942)	DIFFICULTY GETTING TESTS OR TREATMENT (n = 4,396)
Income				
< \$18,000	0.73 (0.46-1.16)	1.46* (1.06-2.15)	1.50* (1.05-2.15)	1.04 (0.67-1.65)
\$18,000-\$25,000	0.70 (0.45-1.08)	1.23 (0.91-1.66)	1.11 (0.78-1.57)	0.86 (0.55-1.34)
\$25,000-\$50,000	0.66** (0.50-0.88)	1.45*** (1.20-1.77)	1.02 (0.81-1.29)	0.86 (0.65-1.14)
\$50,000-\$100,000	0.68** (0.53-0.88)	1.38*** (1.15-1.65)	0.82 (0.66-1.03)	1.03 (0.78-1.34)
> \$100,000	1.00	1.00	1.00	1.00
Education				
Less than high school	1.09 (0.74-1.62)	1.13 (0.84-1.51)	0.61** (0.43-0.87)	1.47* (0.99-2.19)
High school	0.89 (0.72-1.12)	1.25*** (1.08-1.44)	0.86 (0.72-1.02)	1.17 (0.95-1.46)
Some college	0.90 (0.72-1.13)	0.99 (0.86-1.14)	0.94 (0.80-1.12)	1.02 (0.83-1.26)
College	1.00	1.00	1.00	1.00
Race				
White	1.00	1.00	1.00	1.00
Black	0.83 (0.64-1.08)	1.89*** (1.60-2.23)	1.02 (0.85-1.24)	1.35** (1.08-1.67)
Hispanic	1.43* (1.02-2.00)	0.87 (0.69-1.10)	1.13 (0.88-1.47)	0.85 (0.59-1.20)
Other	1.39 (0.98-1.96)	1.49*** (1.16-1.92)	1.66*** (1.28-2.15)	1.81*** (1.27-2.56)
Primary language				
English	1.00	1.00	1.00	1.00
Spanish/other	0.86 (0.59-1.25)	1.93*** (1.49-2.50)	1.91*** (1.49-2.45)	1.73*** (1.21-2.47)
Age				
18-24	.53** (0.33-0.85)	1.96*** (1.52-2.53)	1.08 (0.78-1.45)	1.86** (1.24-2.74)
25-34	.94 (0.71-1.26)	1.98*** (1.63-2.40)	1.60*** (1.26-2.03)	2.95*** (2.20-3.96)

Note: PCP = primary care provider
^aOdds ratios derived from multivariate logistic regression adjusted for year of survey and health plan.
 *p < 0.05 **p < 0.01 ***p < 0.001

more of the access measures, none of the vulnerable subgroups examined reported difficulty for all measures of access.

That minorities report more difficulty accessing services in HMOs is consistent with a growing body of literature suggesting that minorities face barriers in a variety of health care contexts. The dynamics underlying these difficulties are beyond the range of our data. While cultural differences in health beliefs may explain lower demand or suboptimal use of health services,^{14,27} in this study, the differences persist only among those who felt they needed services, a restriction that effectively controls for cultural differences in demand for care.

Poor health was the most consistent predictor of access problems. The finding that enrollees in poor health report greater difficulty getting tests or treatment is consistent with managed care's limitation of expensive tests and treatment.⁷ These may be disproportionately indicated for those with more extensive disease. While HMOs also control access to specialists, the finding that those in poor health do not experience greater barriers to specialty care may reflect the "clinical integration" that underlies the managed care approach to patients with complex illness.²

Of the four measures, vulnerable enrollees were least likely to report difficulty with access to a personal doctor or nurse. In fact, our analyses suggest that groups often found to have poor access to primary care, including those with low incomes and African Americans, do not face barriers to this critical aspect of primary care in HMOs. This is consistent with managed care's emphasis on the role of the PCP and with findings from previous studies that suggest HMOs may improve access to primary care relative to traditional insurance.^{6,28}

Some limitations of this study bear mentioning. The measures of need and access were both based on self-report. Subjective assessments of need may not match objective clinical assessments, and self-reported difficulties with access may reflect expectations as much as the realities of the process of care. Absent clinical information, the access differences reported here do not support conclusions about quality or outcomes of care. However, perceived difficulties with access to care may lead to adverse outcomes. Even if the lower reported access to care among certain groups of enrollees simply reflects higher levels of dissatisfaction, rather than reduced access, dissatisfaction itself can have health consequences. Dissatisfied patients may be less likely to use services, to follow treatment regimens, and to maintain a relationship with their physician, all of which may negatively affect health.²⁹⁻³¹ Thus, if medical care is appropriately allocated from a clinical perspective, and differences in reported access result from differences in expectations, those differences may still have important consequences.

Another important limitation pertains to the representativeness of responders versus those who could not be reached by telephone. Although our response rate is similar to other published surveys of health plan

members, results should be generalized to all New Jersey HMO members only with caution.

Data for this study were collected from a probability sample representing the universe of HMO enrollees in New Jersey and thus provide compelling evidence of sociodemographic and health status differences in access to care within the state. While generalizations about access to medical care in markets outside of New Jersey should be made only with caution, we are unaware of any systematic differences between New Jersey HMOs and those in other states. Since 10 of the 13 HMOs examined in this study operate at a national level, it seems reasonable to believe that the results are generalizable to some degree.

Conclusion

The findings from this statewide survey of HMO enrollees in New Jersey provide evidence that suggests vulnerable subgroups, especially minorities and those in poor health, may be at increased risk of experiencing difficulty accessing medical care, although only limited conclusions can be drawn from a single study. Future avenues for investigation should include the role of non-financial barriers to care, for example, negotiating the bureaucratic processes involved in obtaining care. In addition, the results of this and previous research are consistent with suggestions that more effort is needed to improve the cultural competence of health care providers. Finally, evidence from this survey suggests that enrollees who had a relationship with a PCP enjoyed much better access to all aspects of care examined in this report. Considering the importance of the PCP-enrollee relationship, our findings reinforce the position that policies and practices that make it easier for HMO members to select and develop a relationship with a PCP are beneficial and should therefore be encouraged. In the future, efforts to better understand the dynamics underlying the associations reported here may lead to policies and activities that improve the health care of some of our most vulnerable citizens.

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