View metadata, citation and similar papers at core.ac.uk

brought to you by CORE

provided by ScholarlyCommons@Penn

University of Pennsylvania
ScholarlyCommons

GSE Publications

Graduate School of Education

10-1998

Experiences of Minority Primary Care Physicians With Managed Care: A National Survey

Elizabeth Mackenzie
University of Pennsylvania, emackenz@gse.upenn.edu

Lynne S. Taylor

Risa Lavizzo-Mourey

Follow this and additional works at: http://repository.upenn.edu/gse_pubs

Part of the Education Commons, Medicine and Health Sciences Commons, and the Social Work Commons

Recommended Citation

Mackenzie, E., Taylor, L. S., & Lavizzo-Mourey, R. (1998). Experiences of Minority Primary Care Physicians With Managed Care: A National Survey. *The American Journal of Managed Care, 5* (10), 1251-1264. Retrieved from http://repository.upenn.edu/gse_pubs/399

This paper is posted at ScholarlyCommons. http://repository.upenn.edu/gse_pubs/399
For more information, please contact repository@pobox.upenn.edu.

Experiences of Minority Primary Care Physicians With Managed Care: A National Survey

Abstract

OBJECTIVES:

To determine if ethnic minority physicians experience more barriers in acquiring and maintaining managed care contracts than white physicians, and to determine if the physician's perceptions of his or her ability to provide appropriate care to patients varies with physician ethnicity.

STUDY DESIGN:

Using a national sample, we identified 4 research areas germane to this topic and analyzed them by physician ethnic group.

METHODS:

Analysis involved a pre-existing data set from a national survey that employed a random sampling approach to achieve reasonably accurate national population estimates with acceptable margins of error (95% CI = +/- 2).

RESULTS:

A total of 1032 primary care physicians completed the survey (response rate of 48%). After controlling for confounding variables, we found that Asian physicians have the most difficulty keeping managed care contracts. Type of practice varies with physician ethnicity, and solo practitioners have more problems securing contracts than physicians in other types of practices. Board-certified physicians are more likely to have managed care contracts than those who are not. Latino physicians have significantly fewer managed care patients than primary care physicians who are white, African American, or Asian. The perceptions of the physicians of their ability to deliver appropriate care overall did not vary by ethnicity, but 2 major subcategories of this item did vary by physician ethnicity: quality of care, and limitations to providing care.

CONCLUSIONS:

Although we did not find overwhelming evidence of discrimination against ethnic minority physicians, differences in rates of termination, type of practice, board certification rates, and managed care affiliation were related to physician ethnicity.

Disciplines

Education | Medicine and Health Sciences | Social Work

This journal article is available at ScholarlyCommons: http://repository.upenn.edu/gse_pubs/399

Experiences of Ethnic Minority Primary Care Physicians With Managed Care: A National Survey

Elizabeth R. Mackenzie, PhD; Lynne S. Taylor, PhD; Risa Lavizzo-Mourey, MD, MBA

Abstract

Objectives: **To determine if ethnic minority physicians experience more barriers in acquiring and maintaining managed care contracts than white physicians, and to determine if the physician's perceptions of his or her ability to provide appropriate care to patients varies with physician ethnicity.**

Study Design: **Using a national sample, we identified 4 research areas germane to this topic and analyzed them by physician ethnic group.**

Methods: **Analysis involved a pre-existing data set from a national survey that employed a random sampling approach to achieve reasonably accurate national population estimates with acceptable margins of error (95% CI= ±2).**

Results: **A total of 1032 primary care physicians completed the survey (response rate of 48%). After controlling for confounding variables, we found that Asian physicians have the most difficulty keeping managed care contracts. Type of practice varies with physician ethnicity, and solo practitioners have more problems securing contracts than physicians in other types of practices. Board-certified physicians are more likely to have managed care contracts than those who are not. Latino physicians have significantly fewer managed care patients than primary care physicians who are white, African American, or Asian. The perceptions of the physicians of their ability to deliver appropriate care overall did not vary by ethnicity, but 2 major subcategories of this item did vary by physician ethnicity: *quality of care,* and *limitations to providing care.***

Conclusions: **Although we did not find overwhelming evidence of discrimination against ethnic minority physicians, differences in rates of termination, type of practice, board certification rates, and managed care affiliation were related to physician ethnicity.**

(Am J Manag Care 1999;5:1251-1264)

For editorial comment, please see page 1323.

Anecdotal evidence suggests that ethnic minority physicians may have different experiences in seeking and obtaining managed care contracts than white physicians. In a 1994 survey, 99% of the African American physician responders reported experiencing some form of bias when practicing medicine.[1] In a 1994 survey conducted at the National Medical Association's annual meeting, 28% of the physicians who responded reported having no managed care contracts, and 92% of the responders believed that African American physicians have their contracts terminated more fre-

From the Institute on Aging, University of Pennsylvania Health System, Philadelphia, PA.

Research for this article was conducted with support from The Commonwealth Foundation, New York, NY. The views presented here are those of the authors and not those of The Commonwealth Fund, its directors, officers, or staff.

Address correspondence to: Dr. Elizabeth Mackenzie, Division of Geriatric Medicine, Department of Medicine, University of Pennsylvania Health System, 5 Maloney / 3400 Spruce Street, Philadelphia, PA 19104-4283. E-mail: emackenz@mail.med.upenn.edu.

© Medical Word Communications, Inc.

quently than white physicians.[2] These conditions, if accurate and widespread, could exacerbate the nonfinancial barriers to healthcare for minority and low-income populations because ethnic minority physicians are more likely to care for minority and uninsured patients,[3-7] and are often better able to understand the cultural perspectives of minority groups.[8] Most of the research on the benefits of ethnic matching has been conducted in the mental health field.[9,10] It has not gone unnoticed, however, that underserved ethnic minority groups are not well represented within the physician workforce, a situation that can only heighten other barriers to care for these populations.[11]

In a recent study of physician selection by managed care organizations (MCOs) in California, the authors report that although they found no evidence of discrimination based on age, race, ethnicity, or gender of the doctor, physicians who care for a disproportionate number of nonwhite and uninsured patients are less likely to have managed care patients, an indication that these physicians may be excluded from full participation in the managed care setting.[12] Two previous studies, one national and one in California, found that ethnic minority physicians were more likely than white physicians to care for for minority and uninsured patients.[3,13] Taken together, these studies suggest that although physicians who provide care for lower income, uninsured, and/or minority populations may experience some exclusion from the managed care arena, minority physicians in California, if not other states, are not reporting statistically significant discrimination in acquiring and keeping managed care contracts.

We approached the issues of ethnic minority presence in managed care staffing patterns and minority access to care by examining the experiences of primary care physicians from different ethnic groups with regard to the growth of managed care across the nation. Specifically, we identified 4 research areas germane to this topic and analyzed them by physician ethnic group: 1) experiences with managed care contract acquisition; 2) experiences with managed care contract termination; 3) patient attrition; and 4) the physician's perception of his or her ability to provide appropriate patient care.

···METHODS···

Definitions of Terms

Definitions for important concepts and terms used throughout this study are given below. *Primary care physician,* or *generalist,* includes physicians whose primary speciality is general or family practice, general internal medicine, general pediatrics, or obstetrics/gynecology. *Race and ethnicity* (hereafter referred to as *ethnicity*) refers to the racial, national, or cultural background of an individual.[14] Because of the small sample size (n=4), the American Indian/Alaskan Native category was omitted from our analysis. The 4 categories of *type of practice* are: 1) solo; 2) single/multispecialty partnership or group practice; 3) staff- or group-model health maintenance organization (HMO); and 4) freestanding or hospital-based clinic. *Level of managed care affiliation* is defined as the percentage of patients in any given practice who are enrolled in a managed care plan (HMO, preferred provider network, independent practice association [IPA] models, or staff models).

Sample

The primary care and obstetrics/gynecology physicians subsamples (n=1032) from the Harris and Associates' *Physicians Survey Sample* were used in this study. The *Physicians Survey Sample* is a list based on a national crosssection of the 1994 American Medical Association (AMA) officebased physicians who provide at least 20 hours of direct patient care per week.

Based on statistical tables, physician distribution records, expected refusal rates, and expected eligibility, 3000 generalists and 3000 specialists were needed to ensure a sample large enough to provide reasonably accurate national estimates with small margins of error (95% CI, 2 to 5). Each subpopulation was divided into a geographic section, and the sampling within each geographic section was proportionate to the national distribution of physicians. Each section was randomly sampled (disregarding physicians with addresses in Hawaii or Alaska, physicians who worked for the federal government, physicians and residents who were hospital based, physicians who spent less than 20 hours per week engaged in direct patient care, and those who were inaccessible or refused to participate). Physicians who were African American or Latino as well as managed care physicians (physicians with 75% or more of their patients belonging to a group- or staff-model HMO) from all ethnic groups were oversampled to permit reliable analysis of the subgroups. To preserve the national crosssection representation, weights were applied. A response rate of 48% was obtained for the total sample, 47% for the cross section, 46% for the

HMO oversample, and 61% for the minority oversample.

A total of 1032 obstetric/gynecology, internal medicine, pediatric, and family practice physicians completed the 25-minute telephone survey, which contained 134 questions covering demographics, practice descriptions, practice problems and satisfaction, patient care, referral networks, and financial issues.

Analysis

To address our 4 areas of concern, we selected survey queries that identified the respondent's ethnicity, level of managed care affiliation, geographic region, type of practice, and board certification status. We also looked at questions that focused on their experiences with seeking managed care contracts, being terminated from managed care contracts, patient attrition, their perceptions of their ability to provide appropriate care. For each of these categories, a summary score was constructed using Pearson correlations, factor analysis (principal component), and unidimensional scaling techniques.

Creating Composite Scores

Seeking Contracts. The Pearson correlations among the 5 items included in this component (Appendix 1) ranged from moderate to high. There was a strong relationship between difficulty getting contracts in general, being denied contracts within the last 3 years, and problems with not being able to get enough managed care contracts (r=.80, r=.79, r=.59; $P<.001$). There was a moderate relationship between each of these items and physicians' being asked by their patients to become a member of their managed care plan (r=.22; $P<.05$). Furthermore, the items had moderate to high (r=.35 to r=.94) loadings on factor 1, which accounted for 53% of the variance. Both the interitem correlations and the factor analysis supported the summing together of these questions into one composite score reflecting the dimension *seeking contracts.* The scale's standardized Cronbach α was 72 and the scale (|x|=0; SD=1) ranged from –3.93 to .99, with the smaller scores indicating greater difficulty obtaining contracts.

Termination of Contracts. A termination score was computed based on the 2 survey questions referring to termination of contracts. Pearson correlation was r=.22, the standardized Cronbach α was .37, and loading on factor 1 was high (r=.78), which accounted for 61% of the covariance. The standardized composite score ranged from –5.13 to .88, with smaller scores indicating greater severity of problems.

Patient Attrition. Referring to the previous 3 years, the percent of patients lost because the patients changed insurance plans (thereby leaving the physicians unreimbursed), ranged from 0 to 90% (median = 4%). In general, the relationship among the 6 questions in this category were not related (r=.04; $P<.05$). The item most sensitive to patient attrition was not related to reported changes in income (increases or decreases) (r=.02; $P<.0001$), whether the physician was accepting new patients (r=.04), nor whether the physician had joined a managed care plan in the last 3 years to help retain patients (r=.04). However, patient attrition was related to both decreased size of practice (r=.27) and being asked by several patients to join their plan (r=18; $P<.05$). Thus, physician-patient load increased as the percent of patients lost to managed care decreased and physicians who were asked by several patients to join their plan tended to have experienced a higher percentage of patient loss because of patients changing health plans. Because of low interitem correlations and a reasonably objective single item measure of *patient loss,* a subsequent least-squares regression analysis was conducted on the single item rather than a composite factor score.

Ability to Provide Appropriate Care. This category is comprised of 3 subcategories, described below.

Satisfaction. The Pearson correlations among the 6 questions in this category range from r=.03 to r=.48. Overall satisfaction was linearly related to time spent with patients (r=.26), an increase in time spent with patients (r=.28), ability to make decisions (r=.38), and an increase in freedom to make decisions (r=.22). Loading on factor 1 for these items, which accounted for 37% of the variance, ranged from r=.49 to r=.71. Using standardized scoring coefficients of the factor analysis, a composite score reflecting *satisfaction* was obtained. The scale's standardized Cronbach α was .64 with |x|=0, SD=1.0 and a range from –2.81 to 1.90, with lower scores indicating a higher level of satisfaction.

Quality of Care. The 4 questions included in this component are highly correlated (r=.52 to r=.71; $P<.0001$), and had high loading on factor 1 (r=.79 to r=.88), which accounted for 70% of their covariance. Using standardized scoring coefficients from the factor analysis, the scores of the items were summed together and standardized to form one composite *quality of care* measure, with lower scores indicating higher quality of care. Standardized scores ranged from –2.18 to 3.0, and the Cronbach α was .86.

Limitations on Care Delivered. The 8 questions in this component had moderate to high Pearson correlations (r=.24 to r=.58; *P*<.05). The factor 1 loadings of the questions, which accounted for 44% of the variance, ranged from r=.57 to r=.75. A standardized score was obtained; Cronbach α was .81 with |x|=0, SD=1.0, and a range from –3.89 to 1.72, with lower scores indicating more *serious* problems.

Analyzing Composite Scores with Ordered LeastSquares Regression

After constructing each of the composite scores, analysis was performed using ordered leastsquares regression. In the model, the level of managed care affiliation was entered as a continuous variable, and type of practice (solo, group, HMO, or clinic), geographic region (East, South, Midwest, and West), certification (yes / no), and ethnicity (white, African American, Latino, or Asian) were entered as categorical variables. To adjust for oversampling, weighted analyses (using the Louis Harris and Associates' sample weights) were always conducted.

Table 1. Characteristics of the Primary Care Physicians Sampled (n=1032)

	n	%
Gender		
Male	787	76
Female	244	24
Age (mean = 49 ± 9.5y)		
Ethnicity		
White	680	67
Latino	68	7
African American	86	8
Asian	126	12
Native American	4	.4
Other	54	5
Region in Which Practice is Located		
East	317	31
South	273	27
Midwest	222	21
West	219	21
Percentage of Patients Enrolled in Managed Care		
0%	126	12
1% to 10%	116	12
1% to 49%	348	34
50%+	425	42
Type of Practice		
Solo	345	35
Group	377	38
Staff HMO	165	16
Hospital./Clinic-Based	109	11
Certification		
Yes	763	74
No	264	26

···RESULTS···

Description of the Sample

In the sample used, 76% were male and 24% were female (Table 1). The respondents were distributed across the 4 regions as follows: East 31%; South 27%; Midwest 21%; and West 21%. Approximately 67% of the sample was white, 12% was Asian, 8% was African American and 7% was Latino. Most of the respondents were either in solo practices (35%), or single/multi-specialty partnership or group practices (38%), with the remainder in staff-model HMO (16%) and hospital-based or freestanding clinics (11%). Regarding managed care affiliation, 42% of the practices have 50% or more of their patients enrolled in some form of managed care plan.

MCO Affiliation

African American physicians rely most highly on managed care patients (Table 2), with 80% reporting medium or high levels of managed care patients, followed by white physicians (76%), Asian physicians (66%), and Latino physicians (57%). Twenty-six percent of the Latino physicians surveyed reported having no managed care patients.

Type of Practice

Distribution by type of practice for each ethnic group is variable (Table 2). Approximately one-third of the white, African American, and Latino physicians surveyed are in solo practice, while more than half (56%) of the Asian physicians are in solo practice. Compared with the other groups, African

American physicians reported the highest percentage of participation in staff-model HMOs (19%). The percentage of Latino physicians in freestanding or hospital-based clinics was higher (25%) than for the other ethnic groups. For all groups, solo or group practices were most prevalent, with significant differences across ethnic groups (X2 = 27.10; *df* =9; *P*=.001).

Board Certification

The percent distribution of managed care affiliation by ethnicity and board certification is shown in Table 3. For each ethnic group, practices that rely to a higher degree on managed care patients have the highest rates of certification (73% to 83%). However, Latino physicians have significantly lower odds of having more than 10% of their patients enrolled in managed care plans than white physicians, even after controlling for board certification (OR = .35; X^2_{Wald} = 15.19; *P*=.0001). Only 33% of the noncertified Latino physicians are in practices with more than 10% of their patients enrolled in a managed care plan, compared to 57%, 74%, and 50% of the noncertified white, African American, and Asian physicians, respectively. The distribution of type of practice by ethnicity and board certification (see Table 3) shows that noncertified physicians in all ethnic groups are more likely to be in solo practice. Of the certified physicians in each ethnic group, most are in solo or group practices.

Type of Practice and MCO Affiliation

The distribution between type of practice and managed care reliance for each ethnic group is shown in Table 4. There is a significant association between MCO reliance and type of practice, even when controlling for ethnicity (X^2 =22.95; *df*=9; *P*=.006), but the distribution changes. Although all groups have solo practices and clinic- or hospital-based practices at all levels of managed care reliance, African American physicians in solo practices rely most heavily on patients enrolled in managed care plans. While 23% of Latino physicians in group practice have no managed care affiliation, the percentage of white, African American, and Asian physicians in group practices with no managed care affiliation is much lower (7%, 5%, and 8%, respectively).

Results of the Multivariate Analysis

The results of the ordered leastsquares regressions are shown in Tables 5 and 6.

Seeking Contracts. Region, level of managed care affiliation, and ethnicity were not statistically significantly related to the *seeking contracts* score. Physicians in solo practices, compared to other types of practices, had significantly more problems securing contracts and reported more severe problems with not being able to secure enough contracts.

Table 2. Percent Distribution of Patients Enrolled in a Managed Care Organization (MCO), Type of Practice, and Board Certification for Each Ethnic Group

	ETHNICITY (%)			
	White	African American	Latino	Asian
Percent of Patients* Enrolled in an MCO				
0%	13	10	26	14
1% to 10%	11	10	17	20
11% to 49%	39	33	34	33
50+ %	37	47	23	33
Type of Practice†				
Solo	36	33	35	56
Group	45	31	34	24
Staff HMO	9	19	6	12
Hospital- /Clinic-based	10	17	25	8

All analysis are based on the weighted sample.
* X^2 = 10.24; *df* = 9; *P* = .33
† X^2 = 27.10; *df* = 9; *P* =.001

Termination of Contracts. The multivariate analysis of the composite score shows that ethnicity, type of practice, and region are related to problems with termination. Asian physicians have significantly more problems keeping contracts than white physicians. Physicians in solo practices have significantly more problems with termination than physicians in staff-model HMO practices, and physicians in the west have more problems with termination than those in the South and East.

Patient Attrition. Based on the leastsquares regression β coefficients, the percentage of patients lost was related to region and was not related to the physician's certification, type of practice, or ethnicity. Compared to those in the West, physicians in the South had a significantly lower percentage of patients lost, followed by those in the Midwest, then those in the East.

Ability to Provide Appropriate Care. Physician satisfaction is not significantly related to certification, region, and ethnicity, but it is related to type of practice and the level of managed care affiliation. The greater the managed care affiliation, the lower the level of satisfaction. Regarding *quality of care,* certified physicians have higher quality of care scores; HMO practices have a significantly higher quality of care score compared with solo, group, and clinical practices; Asian physicians have significantly lower quality of care scores than white physicians; and as the number of managed care affilitions for the physician increases, the quality of care scores decrease. Regarding *limitations on providing*

Table 3. Percent Distribution of Managed Care Affiliation and Type of Practice by Ethnicity and Board Certification

	White		African American		Latino		Asian	
	C	NC	C	NC	C	NC	C	NC
MCO Affiliation*								
0%	10%	26%	9%	13%	17%	40%	9%	26%
1% to 10%	9%	17%	8%	13%	11%	27%	18%	24%
1% to 49%	41%	32%	34%	32%	41%	22%	30%	38%
50+%	40%	25%	49%	42%	31%	11%	43%	12%
Type of Practice†								
Solo	31%	54%	27%	46%	26%	48%	55%	62%
Group	51%	25%	39%	13%	49%	11%	21%	31%
Staff HMO	8%	8%	15%	30%	6%	6%	16%	4%
Hosp- /Clinic-based	10%	13%	19%	11%	19%	35%	8%	3%
Overall Board Certification Rates‡								
	White		African American		Latino		Asian	
	78%		69%		61%		70%	

All analysis are based on the weighted sample.
C = Certified.
NC = Not Certified.
*Q_{cmh} = 37.97; P = .001; df = 3.
†Q_{cmh} = 23.89; P = .001; df = 3.
‡X^2 = 6.20; df = 3; P = .10.

care, perceived limitations on providing care was not related to certification but was related to type of practice, level of managed care affiliation, and ethnicity. Physicians in solo, clinic-based, and group practices felt that limitations on providing care was a more serious problem than did physicians in staff-model HMO practices. For all ethnic groups and types of practices nationwide, the level of managed care affiliation and the perceived seriousness of problems with limitations were directly related. As managed care affiliation increased, the reported severity of problems with limitations on care also increased. A specific question, "For your main type of health plan, is the limitation on your ability to refer to a specialist who meets a patient's cultural needs a problem?" yielded particularly valuable information. For all ethnic groups nationwide, a statistically significant percentage of physicians with higher numbers of managed care patients perceived this as problematic (56%) than those with no managed care patients (28%) [$P<.001$]. In addition, Asian physicians were more likely to report problems with limitations on providing care than white physicians, particularly in their ability to refer to a culturally sensitive/appropriate physician (74%). For the same issue, 54% of white and African American physicians and 49% of Latino physicians reported problems.

Table 4. Association Between Ethnicity, Type of Practice, and MCO Affiliation

	MCO AFFILIATION* Percentage of Patients Enrolled in a Managed Care Plan						
	0	1% to 10%	11% to 49%	50%+	X^2	*df*	*P*
Overall							
Solo	18%	18%	41%	23%	140.98	9	.001
Group	7%	9%	42%	42%			
Staff HMO	1%	1%	4%	94%			
Hospital-/Clinic Based	20%	18%	48%	14%			
White							
Solo	20%	16%	39%	25%	95.46	9	.001
Group	7%	9%	42%	42%			
Staff HMO	2%	0%	4%	94%			
Hospital-/Clinic Based	17%	15%	54%	14%			
African American							
Solo	11%	4%	59%	27%	12.04	9	.21
Group	5%	15%	21%	59%			
Staff HMO	0%	7%	0%	93%			
Hospital-/Clinic Based	30%	17%	37%	16%			
Latino							
Solo	13%	36%	40%	11%	7.78	9	.56
Group	23%	4%	36%	37%			
Staff HMO	0%	0%	24%	76%			
Hospital-/Clinic Based	57%	13%	23%	7%			
Asian							
Solo	15%	25%	38%	22%	29.52	9	.001
Group	8%	8%	48%	36%			
Staff HMO	0%	0%	0%	100%			
Hospital Based/Clinic	13%	46%	21%	20%			

All analysis are based on the weighted sample.
*$AQ_{CMH} = 22.95$; $df = 9$; $P = .006$ [controlling for ethnicity]

···DISCUSSION···

Several major findings emerged. First, after controlling for confounding variables, Asian physician ethnicity was a predictor for reporting difficulties in keeping managed care contracts. Physician ethnicity was not a predictor for reporting difficulties with acquiring managed care contracts. Second, solo practitioners had more problems securing contracts

Table 5. Contracts, Termination, and Loss of Patients (Ordered Least-Squares Regression)

	Seeking Contracts		Termination		Loss of Patients	
	ß	*t* (*P*)	ß	*t* (*P*)	ß	*t* (*P*)
Certification	10	0.96 (.34)	.03	0.27 (.79)	0.76	0.86 (.39)
Type of Practice						
Solo	-1.14	-6.26 (.00)	-.70	-4.00 (.00)	1.72	1.13 (.26)
Group	-0.67	-3.89 (.00)	-.35	-2.09 (.04)	-0.28	-0.19 (.85)
Clinic	-0.30	-1.38 (.17)	-.13	-0.61 (.54)	-2.15	-1.16 (.24)
Staff HMO.	.00		.00		.00	
Region						
East	.11	0.48 (.63)	.64	3.22 (.00)	-3.82	-2.22 (.03)
South	.19	0.95 (.34)	.65	3.43 (.00)	-5.91	-3.54 (.00)
Midwest	.18	0.83 (.40)	.39	1.87 (.06)	-5.67	-3.17 (.00)
West.	.00		.00		.00	
HMO %	.00	-0.46 (.64)	.00	.97 (.33)	-0.00	-0.09 (.93)
Race						
Latino	-.01	-0.04 (.97)	-.34	-1.01 (.31)	3.66	1.21 (.23)
African American	-.64	-1.64 (.10)	-.63	-1.79 (.07)	4.06	1.32 (.19)
Asian	-.15	-0.74 (.46)	-.39	-2.05 (.04)	0.00	1.20 (.23)
White	.00		.00		.00	
HMO—Race						
Latino	.02	0.92 (.36)	.01	.60 (.55) .	.14	-1.24 (.22)
African American	.02	1.80 (.07)	.02	1.59 (.11) .	.02	-.21 (.83)
Asian	.00	0.50 (.61)	.01	1.12 (.26)	.02	-.28 (.78)
White	.00		.00		.00	
HMO—Region—Race						
East/Latino	-.01	-0.78 (.44)	-.01	-0.25 (.80)	.03	0.18 (.86)
African American	-.01	-0.83 (.41)	-.01	-0.85 (.40)	.01	0.11 (.92)
Asian	.00	-0.72 (.47)	-.01	-1.26 (.21)	.00	0.08 (.94)
White	.00	-0.05 (.96)	-.01	-2.33 (.02)	.03	0.70 (.48)
South/Latino	-.03	-1.65 (.10)	-.03	-1.52 (.13)	.26	1.78 (.08)
African American	-.02	-1.13 (.26)	-.02	-1.46 (.14)	.07	0.65 (.52)
Asian	.00	-0.42 (.67)	-.02	-2.06 (.04)	.09	1.26 (.21)
White	.00	-0.89 (.37)	-.01	-2.68 (.01)	.17	4.70 (.00)
Midwest/Latino	-.01	-0.39 (.70)	.00	-0.20 (.84)	.10	0.64 (.53)
African American	-.02	-1.09 (.28)	-.01	-0.96 (.34)	.00	-0.01 (.99)
Asian	.00	-0.19 (.85)	.00	-0.42 (.68)	.06	0.81 (.42)
White	.00	-0.44 (.66)	.00	-0.47 (.63)	.08	2.03 (.04)
West/Latino	.00		.00		.00	
African American	.00		.00		.00	
Asian	.00		.00		.00	
White	.00		.00		.00	
Intercept	.66	2.57 (.01)	.10	0.40 (.69)	11.21	5.32 (.00)
Overall Model	**.10***	**3.12† (.00)**	**.07***	**2.62† (.00)**	**.08***	**2.86† (.00)**

*R^2; †*F value*.

than physicians in other types of practices. Third, board-certified physicians reported caring for greater percentages of managed care patients than those who were not board certified; rates of certification varied across ethnic groups: Latino, 61%; African American, 69%; Asian, 70%; and white, 78%. Fourth, patient attrition (or loss of patients) is related to region but not to rates of certification, type of practice, ethnicity, or managed care affiliation. Fifth, type of practice varied by physician ethnicity;

Table 6. Ability to Provide Appropriate Care (Ordered Least-Squares Regression))

	Satisfaction		Quality of Care		Limitations on Providing Care	
	ß	*t* (*P*)	ß	*t* (*P*)	ß	*t* (*P*)
Certification	.07	0.68 (.50)	-0.21	-2.09 (.04)	0.15	1.40 (.16)
Type of Practice						
Solo	-.58	3.37 (.00)	1.30	7.76 (.00)	-0.99	-5.62 (.00)
Group	-.55	3.42 (.00)	.83	5.21 (.00)	-0.61	-3.70 (.00)
Clinic	-.43	-2.11 (.04)	1.24	5.95 (.00)	-0.69	-3.18 (.00)
HMO	.00		.00		.00	
Region						
East	-.18	-0.94 (.35)	-0.30	-1.45 (.15)	0.10	-0.45 (.65)
South	-.31	-1.65 (.10)	-0.17	-0.84 (.40)	0.14	-0.70 (.48)
Midwest	-.09	-0.43 (.67)	-0.24	-1.17 (.24)	0.00	-0.00 (.99)
West	.00		.00		.00	
HMO	.01	2.48 (.01)	0.01	2.41 (.02)	-0.01	-2.77 (.01)
Race						
Latino	-0.23	-0.69 (.49)	0.01	0.01 (.99)	-0.27	-0.62 (.54)
African American	0.26	-.73 (.46)	0.19	0.47 (.64)	-0.14	-0.34 (.73)
Asian	-.33	-1.77 (.08)	0.41	2.02 (.04)	-1.00	-4.77 (.00)
White	.00		.00		.00	
HMO—Race						
Latino	-.01	-0.99 (.32)	-0.01	-0.51 (.61) .	.01	0.62 (.54)
African American	-.01	-1.26 (.21)	-0.01	-0.89 (.37) .	.02	1.33 (.18)
Asian	.01	0.96 (.34)	0.00	-0.54 (.59)	.01	1.43 (.15)
White	.00		.00		.00	
HMO—Region—Race						
East/Latino	.02	0.95 (.34)	0.01	0.31 (.75)	-0.01	-0.67 (.50)
African American	.01	1.20 (.23)	0.01	1.08 (.28)	-0.02	-1.49 (.14)
Asian	.00	0.28 (.78)	0.01	1.17 (.24)	0.00	-0.17 (.87)
White	.00	-0.34 (.73)	0.00	0.58 (.56)	0.00	-0.04 (.97)
South/Latino	.03	1.61 (.11)	0.02	1.23 (.22)	-0.02	-1.11 (.27)
African American	.01	1.24 (.22)	0.01	0.66 (.51)	-0.01	-1.20 (.23)
Asian	.00	-0.22 (.83)	-0.01	-0.76 (.45)	0.00	0.09 (.93)
White	.00	-0.78 (.43)	0.00	0.52 (.60)	0.00	-0.70 (.48)
Midwest/Latino	.01	-0.31 (.75)	-0.01	-0.66 (.51)	0.01	0.69 (.49)
African American	.00	-0.40 (.69)	0.00	0.23 (.82)	-0.01	-0.77 (.44)
Asian	-.01	-1.05 (.30)	0.01	0.95 (.34)	0.00	0.14 (.89)
White	.00	-0.54 (.59)	0.00	0.24 (.81)	0.00	0.49 (.63)
West/Latino	.00		.00		.00	
African American	.00		.00		.00	
Asian	.00		.00		.00	
White	.00		.00		.00	
Intercept	-.65	2.70 (.01)	-1.03	-4.20 (.00)	0.99	3.91 (.00)
Overall Model	**.06***	**1.98† (.00)**	**.11***	**3.78† (.00)**	**.10***	**3.22† (.00)**

*R^2; †*F value*.

Asian physicians are more likely to be in solo practice (56%), African American physicians are more likely to be in a staff-model HMOs (19%), white physicians are more likely to be in group practice (45%), and Latino physicians are more likely to be in a hospital- or clinicbased practice (25%). Sixth, Latino physicians were the least likely to have managed care patients; more than one quarter (26%) of Latino physicians have no managed care patients, compared with 10% to 14% for the 3 other ethnic groups included in this study. This association is significant even after controlling for the lower rate of board certification among Latino physicians. Lastly, physicians with higher percentages of managed care patients had lower levels of satisfaction in general and were more likely to report problems with limitations on care and the quality of care they delivered than physicians with lower percentages of managed care patients. This finding is very likely associated with the utilization review requirements of managed care. These data also indicate that within managed care settings, ethnicity plays a role in determining a physician's perceptions of his or her *ability to deliver appropriate care* (especially *quality of care* and *limitations on providing care*); these perceptions vary among ethnic groups and across regions. The reasons for this finding might relate to the diversity of the provider networks available to primary care physicians, the restrictions imposed by various MCOs, or other factors we could not test within the parameters of this study.

As already discussed, the differences related to *acquisition of contracts* were largely explained by the type of practice, with physicians in solo practice experiencing the greatest difficulties. This finding supports a previous study conducted in California that found no evidence of discrimination on the basis of the age, race, or ethnicity of the physician, but reported that solo practice is the strongest predictor of experiencing difficulties with acquiring managed care contracts.[12] In fact, solo practice has long been associated with lower rates of participation in managed care.[15] Our results also show that Asian physicians reported more difficulties with *termination of contracts* than other physicians.

The literature raises multiple questions regarding how physicians of different ethnicities are treated under managed care, only some of which are answered by this study. While one study hypothesized that minority physicians may be dropped from health plans because they are profiled as high utilizers,[16] our study does not clearly show a higher termination rate among all minority physicians. When involuntary termination did occur, the physicians in this sample did not report utilization rates to be an overwhelming factor. Other authors suggest that MCOs, motivated by demands to maximize profits, shun minority physicians in order to avoid attracting larger numbers of minority members, who are often poorer and sicker than the general population.[17] Again, although our analysis was not designed to answer the nuances embedded in this question, it provides some evidence against outright discrimination. The multivariate analyses suggest that there are no statistically significant differences among ethnic groups in the ability to procure managed care contracts. However, Asian physicians' reporting of greater numbers of contract terminations is worrisome and deserves further exploration.

It is important to note that MCOs may have inadvertently created a systematic bias in the way physicians are selected that has, in effect, led them to be less inclusive of minority physicians. Solo practices are associated with lower levels of participation in managed care. The greater tendency for minority physicians to be in solo practice could explain perceived differences by ethnicity regarding contracting with MCOs. Moreover, these inherent biases may be exacerbated if methods used by the managed care industry to identify new recruits do not routinely include ethnic minority physicians. MCOs recruit in the following ways: advertising in national journals, attending local and national conferences, implementing targeted and mass mailings, and using personal contacts. They also may work with hospitals to identify potential recruits or may even use provider lists of competitors, telephone directories, Medicaid agency directories, and rosters of physicians by state.[18] None of these methods are designed to ensure the identification of a sufficient number of minority physicians. One study found that, after potential recruits are identified, managed care plans have complex and often subjective systems for selecting physicians with whom to contract, including such standards as board certification and previous patterns of utilization.[19] A survey of MCOs found that characteristics of primary care providers sought by managed care plans include: board certification, hospital admitting privileges, recently graduated (1 to 6 years of experience), managed care experience, good interpersonal skills, philosophy congruent with that of the plan, clinical experience, and lastly, practice patterns congruent with those of the plan.[18] Before credentialing, some plans check examining rooms, appointment books, patient charts, and patient waiting times.[18] Requirements for board certification, experience with managed care, and philo-

sophical congruence may systematically work against minority physicians, especially middle-aged and older physicians who were often not inclined to seek board certification when they completed their residency training. The lower rates for board certification reported among minority physicians in this survey add credence to this argument.

There is some evidence to suggest that some MCOs are increasingly aware of the benefits of ethnic matching and may attempt to recruit minority physicians in an effort to attract and retain ethnic minority members.[20] This relatively recent trend may explain findings that point toward overall parity among physicians of different ethnic identification with regard to the acquisition and retention of contracts. As cultural competency for managed care initiatives gain momentum, this effect is likely to increase. And yet, anecdotal reports of bias in managed care staffing procedures persist. In focus groups conducted ancillary to this survey, both white and ethnic minority physicians expressed the belief that informal networks of communication played an important role in both acquiring—and negotiating favorable—contracts.[21] This process could work against minority physicians who are often not in the loop with regard to local power structures and information pathways.

Our study examined geographic variation only at the level of multistate regions (smaller regions produced sample sizes with inadequate statistical power; see "Limitations of Study," below). There is great variability within these regions with regard to managed care penetration and population demographics. Ethnic minority physicians in urban areas may have very different experiences than those in rural areas, and even 2 cities in the same state may have very different cultural dimensions that could affect physician experiences with MCOs.

In short, although we did not discover evidence pointing to unequivocal discrimination against ethnic minority physicians, we found some differences among physician ethnic groups with regard to their perceptions about MCOs, with considerable variation by region. Moreover, the differences may be the result of subtle, systematic and, most importantly, remediable biases in the identification and credentialing of physicians (eg, recruitment methods and board certification requirements).

Limitations of Study

All studies have limitations that must be considered in interpreting the results and drawing conclusions. Perhaps the greatest limitation of this study is the single digit sample sizes that emerged after running crosstabulations by region, ethnicity, and managed care affiliation. Thus, although many of the most interesting queries were at the regional level, the sample simply did not have adequate power to examine them. Despite the efforts made to oversample minority physicians, we found low numbers of minority physicians in most regions; 67 Latino and 85 African American primary care physicians in the nation. In addition, the survey had a 48% response rate overall. The sample population, although randomly selected until an adequate number of respondents was obtained, was nevertheless self-selected in an indeterminable manner. As many as 51% of physicians contacted refused to participate before eligibility status, reason for refusal, and personal demographic information could be obtained. Although there are several models for estimating and addressing sample selection bias, they are rapidly evolving, are not infallible, and yield different results.[22] Moreover, they contain many assumptions and often require that either the distribution of the dependent variable be known or that the relationship between the dependent variable and the independent variable be known (or estimated). Further, it is not obvious which model is most appropriate for this study. For these reasons, rather than use a model to estimate and fix the sample selection bias, we use a conceptual approach to identify selection bias and estimate its effects on the analysis and conclusions.

We have assumed that the overall underlying construct, experiences with MCOs, is a continuous variable that ranges from strong negative feelings to strong positive feelings. Because the literature and anecdotal data suggest conflicting distributions, the true distribution of "experiences with MCOs" is unknown. However, according to survey research literature, self-selected respondents are typically those who are most positive or most negative, have extreme reactions, and/or have more time to respond,[23] which results in having persons at the extremes respond at higher rates than those in the middle. Therefore, our sample probably consists more heavily of physicians who have strong feelings about MCOs and who had more time to respond than other physicians. If self-selection criteria interact with our dependent variable, our results could be biased. For example, if African American physicians with positive MCO experiences were more likely to respond than African American physicians with neg-

ative MCO experiences, then important differences among ethnic groups could be distorted or washed away.

Another issue concerns international medical graduates (IMGs). In the United States, 1 in 5 practicing physicians are foreign trained,[24] a significant percentage of whom are likely to self-identify as ethnic minorities. Our study did not take into account the possibility that physicians trained abroad may have very different MCO experiences than those trained in the United States, and that differences we have attributed to ethnicity may in fact be associated with where the physician received his or her training.

These results must be interpreted in light of the fact that the study was conducted in a social context in which most physicians experience anxiety with regard to the shift to managed care,[25] which may diminish as managed care becomes the dominant payer in their practices. The findings on physician perceptions of the quality of care they are able to deliver within managed care has been mixed. In a study of California primary care physicians, satisfaction with quality of care for capitated patients is significantly lower than for patients overall.[26] Another study found that physicians in general were not less satisfied with the practice of medicine under managed care than in fee-for-service settings.[27] Our analysis of these data suggest that overall satisfaction among all primary care physicians with no managed care contracts is higher than for those whose practices are dominated by managed care. Other studies have found that those physicians with 50% or more of their practice covered by managed care report high levels of dissatisfaction.[28]

Directions for Future Research

Several avenues of future research emerge from this study. First, it would be interesting to examine in greater depth reasons for differences among ethnic groups regarding termination of contracts, quality of care, and limitations on providing care. Second, type of practice varied by physician ethnicity; what accounts for greater numbers of Asian physicians being in solo practice? Third, Latino physicians reported lower rates of managed care affiliation; why would they have fewer managed care patients than other physicians? Fourth, what is the relationship between rates of board certification and participation in managed care? Have board certification rates changed by physician ethnicity? And fifth, what is occurring regionally with regard to physician ethnicity and managed care participation? For example, do differences exist among urban, suburban, and rural areas? Are certain regions of the country more or less biased with regard to physician ethnicity? Finally, the results of this study point out the need for more research into the development of cultural competency indicators for MCOs. Do MCOs utilize data on physician ethnicity when making staffing decisions? Are they concerned with issues of ethnic matching? How can we formulate tools for greater accountability vis à vis cultural competency for MCOs?

···CONCLUSION···

While some of the findings of this survey and subsequent studies portend a less gloomy future under managed care than previous reports, they clearly herald the need for further monitoring, particularly at regional and local levels where the real impact of changes in healthcare policy is felt. As specific regions of the country become more ethnically diverse, with demographic characteristics that do not always mirror the nation as a whole, future research must take into account regional variation in order to elucidate and rectify biases that can perpetuate inequalities in access to basic healthcare. Although the results of this study do not suggest rampant discrimination against ethnic minority physicians on the part of MCOs, there are some troubling signs of differences in physician experiences with managed care based on ethnicity. Until MCOs can demonstrate a sensitivity to the importance of ethnic matching in their network planning process, questions about discrimination and barriers to care will remain.

···REFERENCES···

1. Byrd WM, Clayton LA, Kinchen K, et al. African-American physicians' views on health reform: Results of a survey. *J Natl Med Assoc* 1994;86:191-199.

2. Lavizzo-Mourey R, Clayton LA, Byrd WM, Johnson G, Richardson D. The perceptions of AfricanAmerican physicians concerning their treatment by managed care organizations. *J Natl Med Assoc* 1996;88:210-214.

3. Moy E, Bartman BA. Physician race and care of minority and medically indigent patients. *JAMA* 1995;273:1515-1520.

4. Komaromy M, Lurie N, Bindman AB. California's physicians' willingness to care for the poor. *West J Med* 1995;162:127-132.

5. American Public Health Association. APHA policy paper:

Public health services and managed care. *The Nation's Health* October 1996:12.
6. Leigh WA. Implications of healthcare reform proposals for black Americans. *J Health Care Poor Underserved* 1994;5:17-32.
7. Gray B, Stoddard JJ. Patientphysician pairing: Does racial and ethnic congruity influence selection of regular physician? *J Community Health* 1997;22:247-259.
8. Braithwaite RL, Taylor SE, eds, *Health Issues in the Black Community,* San Francisco, CA: JosseyBass Publishers;1992.
9. Snowden LR, Hu TW, Jerrell JM. Emergency care avoidance: Ethnic matching and participation in minority serving programs. *Community Ment Health J* 1995;31:463-473.
10. Bernal ME, Castro FG. Are clinical psychologists prepared for service and research with ethnic minorities? *Amer Psychol* 1994;49:797-805.
11. Steinbrook R. Diversity in medicine. *N Engl J Med* 1996;334:1327-1328.
12. Bindman AB, Grumbach K, Vranizan K, Jaffe D, Osmond D. Selection and exclusion of primary care physicians by managed care organizations. *JAMA* 1998;279:675-679.
13. Komaromy M, Grumbach K, Drake M, et al. The role of black and Hispanic physicians in providing health care for underserved populations. *N Engl J Med* 1996;334:1305-1310.
14. Witzig R. The medicalization of race: Scientific legitimization of a flawed social construct. Ann Intern Med 1996;125:675679.
15. Inglehart JK. Physicians and the growth of managed care. *New Engl J Med* 1994;331:1167-1171.
16. Horn R. Managed care: Implications for underrepresented physicians. *J Health Care Poor Underserved* 1994;5:154-157.
17. Himmelstein DU, Woolhandler S. Care denied: US residents who are unable to obtain needed medical services. *Amer J Public Health* 1995;85:341-344.
18. Felt S, Frazer H, Gold M. *HMO primary care staffing patterns and processes: A crosssite analysis of 23 HMOs.* Washington DC: Mathematica Policy Research, Inc., 1994.
19. Gold MR, Hurley R, Lake T, Ensor T, Berenson R. A national survey of the arrangements managed care plans make with physicians. *N Engl J Med* 1995;333:1678-1683.
20. Pugh T. Managed care is healing rift with black doctors. *The Philadelphia Inquirer.* February 25, 1998:C1.
21. Mackenzie ER, LavizzoMourey R. The impact of managed care on minority physicians. Paper presented at: American Public Health Association Annual Meeting; November 9-13, 1997; Indianapolis, IN.
22. Winship C, Mare RD. Models for sample selection bias. *Annu Rev Sociol* 1992;18:327-350.
23. Alreck P, Settle R. *The Survey Research Handbook,* 2nd ed. Chicago, IL: Richard D. Irwin, Inc.; 1995.
24. Miller EA, Laugesen M, Lee SY, Mick SS. Emigration of New Zealand and Australian physicians to the United States and the international flow of medical personnel" *Health Policy* 1998;43:253-270.
25. Price TE. Fear, anxiety, and resistance: Those old familiar hallmarks of change. *J Med Assoc* Georgia 1993;82:420-423.
26. Kerr EA, Hays RD, Mittman BS, Siu AL, Leake B, Brook RH. Primary care physicians' satisfaction with quality of care in California capitated medical groups. *JAMA* 1997;278:308-312.
27. Baker LC, Cantor JC. Physician satisfaction under managed care. *Health Aff* 1993;12(suppl):258-270.
28. Collins KS, Schoen C, Khoransanizadeh F. Practice satisfaction and experiences of women physicians in an era of managed care. *J Am Med Women's Assoc* 1997;52:52-56.

Appendix follows on next page.

Appendix. The Survey Questions Used to Construct Scales

Seeking Contracts

1) In the past 3 years, have several of your patients asked you to become a member of their managed care plan so that visits to you would be covered by their insurance?
2) In the last 3 years, have you tried to join an HMO and been denied?
3) In the last 3 years, have you been excluded from an HMO because of billing or computer requirements?
4) In the last 3 years, have you had difficulties getting managed care contracts?
5) In recent years, has not being able to get enough managed care contracts been a serious problem?

Termination

1) Did you leave voluntarily or were you terminated [subsample: physicians who have left a plan in the last 3 years]?
2) Is being dropped by managed care plans a serious problem?

Loss of Patients

1) In the past 3 years, what percent of your patients have you lost due to change in insurance plan?

Ability to Provide Appropriate Care

Satisfaction

1) Overall, how satisfied are you with the practice of medicinevery satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied?
2) Overall, how satisfied are you with the amount of time you can spend with patients?
3) Overall, how satisfied are you with your ability to remain knowledgeable and current?
4) Overall, how satisfied are you with your ability to make decisions you think are right for your patients?
5) Compared with 3 years ago, has the amount of time you can spend with patients increased, decreased, or remained about the same?
6) Compared with 3 years ago, has your ability to make decisions you think are right for your patients increased, decreased, or remained about the same?

Quality of Care

The following series of questions all ask the MD to rate the type of plan (excluding Medicaid and Medicare) that provides the greatest share of patients.

1) How would you rate this type of plan as far as its ability to get the treatment both you and the patients think is necessary?
2) How would you rate this type of plan as far as your ability to get approval for care without delay?
3) How would you rate this type of plan as far as your patients' ability to easily follow the plan's rules?
4) How would you rate this type of plan as far as its insurance coverage for care you provide?

Limitations on Providing Appropriate Care

1) For your main type of health plan, is the limitation on length of hospital stay a problem for your patients?
2) For your main type of health plan, is the limitation on when and if patients can be admitted to the hospital a problem for your patients?
3) For your main type of health plan, is the limitation on your ability to refer a patient to a particular specialist of your choice a problem?
4) For your main type of health plan, is the external review of your clinical decisions prior to your patients receiving needed care a problem?
5) For your main type of health plan, is the external review of your clinical decisions (after your patients have received services, resulting in a denial of payment) a problem?
6) For your main type of health plan, is the continuity of your patient's relationship with you a problem?
7) For your main type of health plan, excluding Medicare and Medicaid, is the limitation on prescriptions or the use of a formulary a problem for your patients?
8) For your main type of health plan, is the limitation on your ability to refer to a specialist who meets a patients cultural needs a problem?