

## DIFFERENCES IN PHYSICIAN PREVENTION PRACTICE PATTERNS FOR WHITE AND MINORITY PATIENTS

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**ABSTRACT:** A telephone survey of 120 randomly selected primary care physicians in New York City was completed in October, 1984 (response rate = 90%) concerning physicians' recommendations for health promotion and disease prevention. Responses from physicians with 50% or more Black and Hispanic patients were compared with responses from physicians with 50% or more White patients. The former were found to be less likely to follow guidelines from nationally recognized organizations for health promotion and disease prevention, although they were just as likely to value the importance of prevention in primary care. For example, physicians with predominantly Black and Hispanic patient populations were significantly less likely to recommend screening mammography (7% versus 23%) or recommend influenza vaccination for patients 65 or older (48% versus 74%) when compared with physicians with predominantly White patient populations. Factors that appeared to contribute to the difference in prevention practice patterns include physician training and education, the socioeconomic status of the patients, and the time physicians spend with patients. Differences in quality of preventive care provided to minority patients may be an additional factor in the disparity between the health status of White and non-White Americans.

### INTRODUCTION

The Secretary's Task Force on Black and Minority Health recently reviewed the persistent differences in health status between White and non-White populations in the United States.<sup>1</sup> Frequently cited explanations advanced for the disparity in health status between these

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populations include socioeconomic factors, access to health care, community supports, family structure, and cultural values.<sup>2</sup>

The Secretary's Task Force noted that the average annual number of physician visits in the United States (4.7) was similar for Black, White and Hispanic populations from 1978 to 1980,<sup>3</sup> but frequency of health professional visits may not reflect quality of care received. "One of the key elements of quality health care is the availability of well-trained health care providers. The degree to which the availability of these professionals differs between minority and nonminority groups may play a crucial role in reducing disparities in overall health status."<sup>3</sup> (p.191) Unfortunately, the Task Force observed, available data do not allow reliable estimates of health care professionals' practice patterns, accessibility, or availability to minority communities in comparison to non-minority communities.<sup>3</sup> (p.191)

In an effort to determine how preventive health care recommendations provided by primary care physicians may differ for White and non-White populations, we analyzed data from a survey of 120 randomly selected primary care physicians in New York City with respect to their recommendations for health promotion and disease prevention.

## METHODS

The details of the sampling and interview process have been described elsewhere.<sup>4</sup> In brief, 307 physicians with office listings in New York City were chosen in a systematic probability sample from the 1982-1983 Directory of the Medical Society of the State of New York. Eligibility required that physicians spend at least 50% of their clinical practice time in either internal medicine, family practice, or general practice. Of the 307 physicians initially selected, 134 were found to be eligible and 120 completed telephone interviews averaging 25 minutes in length (response rate = 90%). All participants were informed that the New York City Division of the American Cancer Society was the primary sponsor of the survey.

## RESULTS

The survey was completed in October, 1984. Responses from physicians who described their patient population as consisting of 50% or more Black and Hispanic were compared with those whose patient population was 50% or more White.

### A. Physician Background and Continuing Medical Education Characteristics

As shown in Table 1, physicians with predominantly minority patient populations differed significantly from physicians with predominantly White patient populations on several background and continuing education variables. The former were less likely to be board-certified

**TABLE 1**

#### Selected Physician Background and Continuing Education Characteristics

	<i>Physicians with <math>\geq 50\%</math> Black and Hispanic (n = 30)</i>	<i>Physicians with <math>\geq 50\%</math> White (n = 90)</i>
Specialty		
Internal Medicine	77%	80%
Family Practice	3%	10%
General Practice	20%	10%
Board Certified**	33%	57%
United States Med Grad	33%	48%
Mean Year of Med School Grad	1955	1955
Medical School Affiliation	27%	40%
NEJM subscription**	40%	64%
Read Medical Literature (hrs/wk)	5.3	5.8
Continuing Med Education (hrs/yr)	75	75
Mean Number of Patients Per Week	104	86
Clinical Practice Time (hrs/wk)*	39.8	46.0
Mean Number Patients Per Hour*	2.6	1.9
Patient Type		
Medicare*	31%	51%
Medicaid*	34%	6%
Hispanic*	42%	8%
Black*	35%	10%
White*	23%	80%

\*p<.01

\*\*p<.05

(33% versus 57%), and were less likely to subscribe to the *New England Journal of Medicine* (40% versus 64%). There were also trends toward fewer hours per week reading medical literature (5.3 versus 5.8), and fewer United States Medical Graduates (33% versus 48%) among the physicians with predominantly minority patient populations.

Physicians with predominantly minority patient populations saw more Medicaid patients (34% versus 6%) and fewer Medicare patients (31% versus 51%). The volume of patients seen per unit time was greater for physicians with predominantly non-White patient populations than for physicians with predominantly White patient populations. The former reported seeing a mean of 2.6 patients per hour (based on estimated weekly means of 104 patients in 39.8 hours), while the latter reported seeing a mean of 1.9 patients per hour (based on estimated weekly means of 86 patients in 46.0 hours).

## **B. Physician Recommendations for Health Promotion and Disease Prevention**

Physicians were questioned regarding recommendations for cancer screening, immunizations, and health promotion for their asymptomatic patients. As shown in Table 2, physicians with predominantly Black and Hispanic patient populations differed from physicians with predominantly White patient populations on several clinical variables. In particular, the former were less likely to recommend screening mammography (7% versus 23%), influenza immunization for patients 65 and over (47% versus 74%), pneumococcal vaccine for elderly patients (27% versus 48%), and smoking cessation programs for patients who smoke (27% versus 54%). Physicians with predominantly minority patient populations were more likely to ask about drug abuse (83% versus 62%).

A series of recommendations derived from guidelines from the American Cancer Society,<sup>5</sup> the American College of Physicians,<sup>6</sup> and *Healthy People*<sup>7</sup> were used to create summary indices of prevention activities in cancer screening, immunization, and health promotion, respectively. The content of the indices may be found in Table 3. As shown in Table 4, when physicians with predominantly Black and Hispanic patient populations were compared to physicians with predominantly White patient populations, the former were found to practice fewer of these activities for each of the three indices.

A summary "prevention index" of 20 prevention activities was created, consisting of the sum of the individual indices for cancer

TABLE 2

## Selected Disease Prevention and Health Promotion Recommendations

	<i>Physicians with <math>\geq 50\%</math> Black and Hispanic (n = 30)</i>	<i>Physicians with <math>\geq 50\%</math> White (n = 90)</i>
Mammography***	6.7%	23.3%
Sigmoidoscopy	30.0%	43.3%
Stool Guaiaac	40.0%	46.7%
Do NOT rec-d screening CXR	46.7%	52.2%
Recd monthly BSE	50.0%	47.8%
Do NOT rec-d Acid Phosphatase***	43.3%	63.3%
Pap Test	90.0%	92.2%
Influenza Imm. for elderly*	46.7%	74.4%
Tetanus Immunization	13.3%	27.8%
Pneumoc. Imm. for elderly***	26.7%	47.8%
Pneumoc. Imm. for asplenic	13.3%	18.9%
Pneumoc. Imm. for chronically ill	63.3%	75.6%
Ask about Alcohol	96.7%	93.3%
Ask about Drug Abuse***	83.3%	62.2%
Recd Smoking Cessation Prog.**	26.7%	54.4%
Recd Nicotine Gum for smokers	13.3%	26.7%

\*p&lt;.01

\*\*p&lt;.05

\*\*\*p&lt;.10

screening, immunization, and health promotion. As shown in Table 4, physicians with predominantly Black and Hispanic patient populations practiced significantly fewer of these activities than did physicians with predominantly White patient populations (10.6 versus 12.4).

The data were examined with respect to factors that might account for the differences in preventive practices between physicians with predominantly minority patients and physicians with predominantly White patients. A previous study divided barriers to physicians' prevention practices as being of three main types: provider-related (e.g. lack of knowledge), patient-related (e.g., low compliance), and organizational (e.g. time constraints).<sup>8</sup> Following this schema, it was hypothesized that physicians providing primary care to predominantly minority

TABLE 3

Contents of Indices for Cancer Screening,  
Immunization and Health Promotion

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## A. Cancer Screening Index:

1. Recommended Pap test every 1-3 years for all females
2. Do not recommend screening sputum cytology
3. Recommend annual physician breast exam for females over 40
4. Recommend annual rectal exam for patients over 40
5. Do not recommend screening acid phosphatase
6. Do not recommend screening Chest X-ray
7. Recommend monthly breast self-exam for females
8. Check stool for occult blood for patients over 50
9. Recommend screening sigmoidoscopy for patients over 50
10. Recommend screening mammography for females over 40

## B. Immunization Index

1. Recommend periodic tetanus immunization for all patients
2. Recommend annual influenza vaccination to patients 65 and over\*
3. Recommend the pneumococcal vaccination to elderly patients
4. Recommend the pneumococcal vaccination to asplenic patients
5. Recommend the pneumococcal vaccination to patients with chronic illness

## C. Health Promotion Index

1. Ask asymptomatic patients about alcohol intake\*
  2. Recommend exercise to patients who do not exercise regularly\*
  3. Recommend a "quit smoking" program for patients who smoke\*\*
  4. Recommend decreasing saturated fat in the diet\*\*
  5. Recommend increasing dietary intake of fiber\*\*
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\*\*"always or usually"

\*\*\*"always, usually, or occasionally"

patient populations may engage in fewer preventive practices than those with predominantly White patient populations because of the following potential barriers:

1. *Provider-related*: the former are less knowledgeable or hold less favorable attitudes than the latter regarding recommended preventive practices.
2. *Patient-related*: the former, more than the latter, perceive their patients as less likely to comply with preventive counseling and

**TABLE 4**

Recommendations for Indices of Disease Prevention and  
Health Promotion

	<i>Physicians with <math>\geq 50\%</math> Black and Hispanic (n = 30)</i>	<i>Physicians with <math>\geq 50\%</math> White (n = 90)</i>
Cancer Screening**	5.4	6.0
Immunization*	1.6	2.4
Health Promotion**	3.6	3.9
Prevention Index*	10.6	12.4

\*p&lt;.01

\*\*p&lt;.10

regimens as a result of their patients' lower socioeconomic status. The lower socioeconomic status of the former's patients may be associated with practitioners' beliefs that their patients will be less able to pay for preventive services, or be less likely to perceive prevention as important and/or desirable.

3. *Organizational*: constraints of the practice setting limit the time that former group devotes to the practice of preventive medicine with their patients.

Attitudinal differences concerning the physician's role in health promotion and disease prevention were not found to be a factor explaining differences in prevention practices. Over 90% of both groups of physicians agreed with the statements that "physicians should probably practice more preventive medicine than they presently do" and that "medical colleges should put more emphasis on preventive medicine in their curricula." When asked whether they would attend a continuing medical education course in preventive medicine, 83% of physicians were predominantly Black and Hispanic patient populations and 66% of physicians with predominantly White patient populations said they would. This would suggest that physicians with predominantly Black and Hispanic patient populations were just as likely, if not more so, to be interested in the value of health promotion and disease prevention.

A multiple regression analysis was performed to examine the

relative import of the other hypothesized barriers. In each case, an indicator variable (or variables) was selected to represent the potential barrier. Board certification, subscription to the *New England Journal of Medicine* (*NEJM*), and graduation from a United States Medical School were chosen as indicators of possible differences in physician knowledge of preventive practices. Percentage of patients covered by Medicaid was used as an indicator for the proportion of low income patients seen by the physician, a patient-related characteristic. Average number of patients per hour was used as an indicator of organizational or practice setting constraints.

These indicators were then entered into the regression equation in a hypothesized causal order starting with provider characteristics, followed by the patient characteristic, and finally the organizational characteristic. Results, as shown in Table 5, reveal that the observed difference in prevention practices (2.0) between the two groups of physicians was reduced by 70% when controlling for the indicator variables cited above. Controlling for differences in provider characteristics alone reduced the deficit in preventive practices from 2.0 to 1.1 or about 45% of the observed difference. Addition of controls for patient and organizational characteristics reduced the size of the deficit by about 0.5 practices, or about 25% of the original difference. Much of the difference in prevention practices between physicians with predominantly Black and Hispanic patient populations and physicians with predominantly White patient populations was therefore explained by differences in the physicians' educational background (as reflected by board certification, *NEJM* subscription, and graduation from a United States Medical School), the proportion of Medicaid patients seen, and the time physicians reported spending with each patient.

## DISCUSSION

A number of theories have been advanced to explain the persistent disparity in health status between White and non-White Americans, including socioeconomic factors, access to health care, cultural factors, community supports, and family structure.<sup>2</sup> While the advent of Medicaid and Medicare served, to some degree, to redress the disparity with respect to access to medical care, little is known about possible differences in quality of medical care received by White and non-White Americans. This paper demonstrates that qualitative differences in one particular aspect of medical care—preventive health—may exist be-



**TABLE 5**  
Multiple Regression of Physicians' Preventive Practices (n = 114)

	Equation 1		Equation 2		Equation 3		Equation 4		
	<i>b</i>	SE	<i>b</i>	SE	<i>b</i>	SE	<i>b</i>	SE	
≥50% White Pts	1.980	0.597	1.090	0.570	0.657	0.672	0.586	0.676	
Board Certified			1.819	0.537	1.758	0.539	1.740	0.539	
NEJM Subscript.			0.888	0.517	0.946	0.518	0.904	0.519	
U.S. Med. Grad.			0.559	0.504	0.571	0.503	0.554	0.503	
Medicaid (%)					-0.015	0.013	-0.012	0.013	
Patients/Hour							-0.264	0.253	
R-square				8.9%		26.9%		27.9%	28.6%

tween physicians with predominantly White patient populations and physicians with predominantly minority patient populations.

Results of a multiple regression analysis revealed that differences in prevention practices between physicians with predominantly White patients and physicians with predominantly minority patients were largely ascribable to differences in physician background and training (as reflected by board certification, *NEJM* subscription, and graduation from a United States Medical School), the patient's socioeconomic status (as measured by the proportion of Medicaid patients in the physicians' practices), and to the time allotted to the physician-patient visit. These findings suggest that the disparity in physician prevention practice patterns between White and minority patients may be a consequence of differences in physician knowledge as well as differences in the character of the physician-patient relationship, as reflected by socio-economic status of the patients and the amount of time the practice allots to the physician-patient interaction.

That efforts directed at overcoming barriers to the optimal practice of preventive medicine can be effective in eliminating health deficits among minority populations is illustrated by field experiments aimed at improving early detection of breast cancer. Several authors have noted a difference in survivorship in this cancer between the White and Black populations, presumably as a result of Black women presenting with the disease at a later stage.<sup>9-13</sup> The Health Insurance Plan of Greater New York breast cancer detection study, a randomized study designed to determine the efficacy of periodic screening with mammography and palpation of the breast, has demonstrated the benefits of a screening program applied equally to Black and White patients. The difference in survivorship between Black and White women, present in the control group in this study, disappeared in the treatment group.<sup>13</sup> Concluded the authors: "Secondary prevention measures may offer the possibility of reducing or closing the gap in breast cancer survival rates between White and non-White women."<sup>13</sup>

The discrepancy in survivorship between Black and White women with respect to breast cancer, then, may represent an underutilization of the available screening procedures by Black women. Data presented in this paper, in which only 7% of physicians with predominantly Black and Hispanic patients recommended screening mammography as opposed to 23% of physicians with predominantly White patients, suggest that the disparity may, at least in part, be explained by the failure of Black women's physicians to recommend the appropriate screening procedure.

Findings from this paper suggest that differences in prevention practice patterns between physicians with predominantly minority and predominantly White patient populations are in part attributable to differences in physician medical knowledge and training. Indicators selected to represent physician knowledge and training (board certification, *NEJM* subscription, and graduation from a United States Medical School) were hypothesized to be associated with a greater awareness of prevention guidelines. It is cautioned, however, that no direct measures of current knowledge of prevention guidelines were obtained to confirm this interpretation.

The data also suggest that the deficit in preventive practices recommended by physicians with predominantly minority patient populations is linked to their patients' lower socioeconomic status, as measured by Medicaid patient load. One possible explanation for this finding may be that physicians perceive lower income patients as less inclined to comply with preventive practices, or less able to pay for preventive procedures. Finally, the low income status of minority populations may exacerbate their access to optimal preventive care as a consequence of the type of settings in which they seek care. Physicians with minority practices see more patients and spend less time with each than do physicians with predominantly White patient populations.

Taken together, these findings suggest that strategies to improve preventive health care for minority patients require a multifaceted approach. Attempts to better educate primary care physicians in preventive medicine would appear to be important but should be augmented with programs that address other potential barriers to effective provision of preventive health. Financial constraints, the physician's perception of patient interest and compliance, accessibility to preventive care and procedures, and time constraints of the practice setting may contribute in varying degrees to a failure to practice optimal prevention. Strategies which address these potential barriers, when coupled with physician education in prevention, may offer the most viable means of enhancing the delivery of preventive medicine to minority patient populations.

In summation, evidence presented in this paper indicates that systematic differences may exist with respect to the provision of preventive health care to White and minority patient populations. Several factors appear to contribute to this finding, including possible differences in physician knowledge and training, the socioeconomic status of the patients, and the time physicians spend with each patient. Explanations for the disparity between the health status of White and non-

White Americans invariably and, in our view, appropriately center around disparities in socioeconomic status. Evidence from this paper suggests that differences in the quality of preventive health care provided minority patients may represent an additional factor in the disparity between the health status of White and non-White Americans.

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