

# How Do Patients Choose Physicians? Evidence from a National Survey of Enrollees in Employment-Related Health Plans

*Katherine M. Harris*

---

**Objective.** This study examines the process by which patients search for and choose physicians.

**Data Source.** A survey to a random sample of individuals between the ages of 21 and 64 with employer-related health benefits, drawn from a nationally representative panel of households.

**Study Design.** Logit models are used to measure the effect of patient characteristics on the probability of (1) using alternative sources of information to support the choice of a current physician, (2) seriously considering another physician before choosing a current physician, and (3) stating a willingness to switch physicians when information suggests that other health plan doctors receive higher quality ratings.

**Principal Findings.** Although a minority of respondents actively searches for a physician, there appears to be substantial variation in the degree of consumer activism across patient subgroups. Poor health status, higher levels of service use in the past year, and stronger ties to individual physicians are associated with less consumer activism. At the same time, greater levels of consumer activism were found among racial and ethnic minorities, among those who report using information to choose their physicians, and among those who switched physicians as a result of dissatisfaction some time in the past five years. Source of quality information (medical experts versus patient advocates) did not influence stated willingness to switch physicians.

**Conclusions.** Despite predictions of the increasing importance of consumer choice in shaping the health care delivery system, the results largely confirm the image depicted in the previous literature of patients as passive health care consumers of physician services, and highlight the importance of investments in the development of decision support tools in consumer-driven health care systems.

**Key Words.** Consumer choice of physician, patient choice of physician, quality information, doctor-switching, physician-switching, and racial differences

---

There is growing awareness of consumer and patient choices and their large impact on the ultimate cost and outcomes of health service use. This can occur directly through decisions to seek care, to comply with prescribed treatment

regimens, or indirectly through choice of physicians who make treatment decisions jointly with or on behalf of patients. In theory, patients can play an important role in achieving optimal health by taking an active and informed role in treatment decisions and switching physicians if care is unsatisfactory. There is a wide consensus that the role of consumers in shaping the health care delivery system will expand over time with the recent decline of restrictive forms of managed care and rapid increases in the availability of health care information via the internet (Robinson 2001; Herzlinger 1997).

In assessing the potential impact of this enhanced role, it is important to understand the process by which consumers evaluate and choose health care providers and treatments. Of particular importance is a better understanding of the role of health status in the consumer choice process. Individuals in poor health use the health care delivery system more frequently and intensively compared with their healthier counterparts. To the extent that providers compete to maintain and attract new patients, provider and treatment choices made by individuals in poor health will have a disproportionate effect on care processes. Likewise, those in poor health will experience disproportionate health and financial consequences of a consumer-driven health care system.

This paper contributes to a greater understanding of the consumer choice process by examining patient choice of physician. Patients choose a practitioner each time they seek physician care. Sometimes the choice of a practitioner is explicit, for example, when a patient moves to a new area or chooses to leave an established relationship to join a health plan unaffiliated with his or her physician. Other times the choice is implicit, as in the case of a patient who continues to see the same physician or accepts a referral to a single physician without actively considering alternative practitioners. Literature suggests that patients do not engage in rational or "consumerist" behavior when searching for or choosing physicians. They instead rely heavily on recommendations from family and friends and engage in limited searches for alternative physicians (Hoerger and Howard 1995; Kaiser Family Foundation/Agency for Health Care Policy and Research 1996; Kaiser Family Foundation Agency for Health Care Research and Quality 2000; Lupton,

---

This study was supported by a grant from the Robert Wood Johnson Foundation's Changes in Health Care Financing and Organization Initiative (HCFO). The author gratefully acknowledges helpful comments and suggestions from Michael Dennis of Knowledge Networks.

At the time of this study Katherine Harris was an Economist at RAND, Arlington, VA. Address correspondence to Katherine Harris, NIH/NIAAA, 6000 Executive Blvd., Suite 505, Bethesda, MD 20892-7003.

Donaldson, and Lloyd 1997). The increasing availability of information with which to evaluate physician quality has the potential to make the process of choosing physicians more active by reducing the cost and time needed to assess the costs and benefits of seeking care from alternative practitioners. Little is known about the process by which patients search for and choose physicians. Studies to date have focused narrowly on the impact of physician attributes (e.g., gender, race, cost, specialty) (Saha et al. 2000; Weiss and Blustein 1996; Phillips and Brooks 1998; Kerssens, Bensing, and Andela 1997; Marquis 1984). The small number of studies focusing more generally on the choice process use highly selected samples of patients or data from a single geographic region or population subgroup (Hoerger and Howard, 1995; Lupton, Donaldson, and Lloyd 1997; Hibbard and Weeks 1987; Olsen, Kane, and Kasteler 1976; Booth and Babchuk 1972).

This paper addresses this gap in the literature by examining several aspects of the process by which patients search for and choose physicians, using data from a survey administered to a random sample drawn from a nationally representative panel of households. Specifically, this study uses a wide range of patient characteristics to predict (1) the use of information to support the choice of current physician, (2) the serious consideration of another doctor prior to choosing a physician, and (3) the stated willingness to switch physicians when presented with information that suggests other health plan physicians received higher quality ratings.

## BACKGROUND

A number of traits characterize active health care consumers, including seeking and using information on cost and quality variations, the consideration of a range of alternatives before choosing providers and treatments, the formulation of independent judgments about quality once services are rendered, and the willingness to choose practitioners based on these judgments (Hibbard and Weeks 1987; Lupton, Donaldson, and Lloyd 1997). Active health care consumers may be viewed as more skeptical about the competency of physicians, and less confident in the ability of individuals to find good doctors through traditional trial-and-error methods using information from family and friends and the judgments of individual doctors (Hibbard and Weeks 1987). Lack of consumer activism is often blamed for the high cost of obtaining information with which to compare the quality of alternative physicians (Hoerger and Howard 1995).

Economic theory suggests that consumers will actively seek information when its value outweighs the cost of obtaining it, which is determined by two factors: (1) the confidence the consumer has in his or her initial beliefs, where greater confidence is associated with a lower perceived usefulness of new information, and (2) the importance of the particular features (e.g., price, quality), where lower importance is associated with lower value—even when the information source is deemed highly reliable (Feldman, Christianson, and Schultz 2000; Hirshleifer and Riley 1979). Some have suggested that the high cost of obtaining physician quality information results in reductions in the number of alternatives that patients consider in choosing a physician and causes patients to remain with their current provider longer than they would have otherwise (Hoerger and Howard 1995; Satterthwaite 1979).

The effect of health status and service use on consumer activism is indeterminate in this theoretical framework. The value of additional information to patients in poorer health may be reduced because they interact with physicians more frequently and intensely in a way that leads to greater certainty about the quality of individual doctors. However, the value of information to these patients may be greater because quality of care (and other relevant features) may be more salient to these individuals than to their healthier counterparts.

Taken together, existing empirical studies paint a highly fragmented picture of the process by which individuals choose physicians. A number of studies describe the factors that lead to satisfaction with and longevity of patient–physician relationships (Weiss and Blustein 1996; Kao et al. 1998; Hargraves 2000; Gross et al. 1998; Thom and Campbell 1997) and the factors associated with physician-switching and -shopping (Weiss and Blustein 1996; Olsen, Kane, and Kasteler 1976). These studies help to explain *why* individuals leave existing relationships with physicians. However, they tell us little about *how* patients search among and select from alternative physicians. The literature on patient choice of physician has focused narrowly on the relationship between patient characteristics and the choice of physicians with specific attributes, such as gender, race, or specialty (Phillips and Brooks 1998; Saha et al. 2000; Kerssens, Bensing, and Andela 1997; Marquis 1984).

Only a small number of studies specifically address the choice process; these studies are somewhat limited by their reliance on highly selected samples of patients or samples that generalize to a limited geographic region. Booth and Babchuk (1972) studied the process used by 190 residents of Lincoln and Omaha, Nebraska, to seek health care services from unfamiliar

physicians. A majority of respondents reported personal contacts as sources of information, with only one-third reporting that they had contacted more than one individual. Only 25 percent consulted another physician—most frequently in emergency situations.

Hibbard and Weeks (1987) conducted a series of face-to-face interviews with 1,833 Oregon state employees and Medicare beneficiaries, using measures of cost sensitivity, information-seeking, and independent judgment to examine the extent to which insured individuals demonstrate consumerist attitudes and behaviors in making health care consumption decisions. The authors found that only a minority of respondents engaged in the examined behaviors, although the majority of respondents were considered “knowledgeable” about health care. Although elderly respondents were at the greatest risk for using health care services, the authors found that they were substantially less likely than state employees (43 versus 24 percent) to use independent judgment.

Lupton and colleagues (1997) analyzed 333 responses to an open-ended questionnaire of patients from six physician practices located in and around Sydney, Australia. The questionnaire included questions about respondents’ reasons for choosing and continuing to visit their current doctor; it also solicited opinions about patients’ ability to judge physicians’ quality. The authors concluded that respondents highly trusted their regular doctor and did not seek additional information about their doctor or evaluate the quality of rendered services.

Hoerger and Howard (1995) studied the process of searching for and selecting a prenatal care provider by interviewing 963 pregnant women in six Florida locations. The authors speculated that the predictability, importance, and high incidence of pregnancy reduce the cost of searching alternative providers compared with that for other conditions. However, the authors found that more than 75 percent of the respondents reported friends, colleagues, and relatives as information sources and less than 25 percent actively considered more than one physician; among those who considered alternative physicians, less than 60 percent actually visited or spoke with another physician.

To date, evidence about the effect of quality information on patient choice of physician has been very limited. This is due in large part to a general lack of physician-level quality measures. Two studies provide indirect evidence about the effect of public reporting of physician- and hospital-level data on mortality associated with cardiac surgery on consumer behavior. Mukamel and Mushlin (1998) found that hospitals with lower mortality rates

experienced greater growth in market share and physicians with lower mortality rates experienced greater growth in charges over the study period. Dranove and colleagues (2002) found that reporting increased the proportion of the sickest patients treated at those hospitals with the best outcomes. Unfortunately, the design of neither study makes it possible to know whether measured effects result from changes in patient choices, physician referral patterns, or both.

Studies conducted during the mid-1990s form the conceptual and empirical foundation for health plan quality measures (i.e., Consumer Assessment of Health Plans or “CAHPS” and Health Plan Employer Data and Information Set “HEDIS”) in wide use today. These studies measured consumers’ understanding of and preferences for various dimensions of health care quality and measurement approaches and are useful for predicting consumers reactions to physician-level quality measures, though to date such measures are not publicly reported on a widespread basis. Hibbard and Jewett (1997) conducted focus groups to determine why *some* consumers fail to use available quality information in making plan and provider choices. They found that consumers lack understanding of the organization and delivery of care in managed care settings and that consumers tend to rely on more fully understandable measures, such as interpersonal skills of providers. Focus groups conducted by Lubalin and others (1995) found that consumers do not appear to trust other consumers’ judgments about technical aspects of care, but do appear to trust others’ judgments on more subjective aspects of care.

Preference for nontechnical, informal sources of quality information is reflected in a number of focus group studies and surveys on the topic of consumers’ use of health care quality information. This preference appears to be driven by a perceived lack of understanding of process-based measures. A 1996 series of case studies of organizations developing and disseminating quality information reported that employees generally preferred consumer-assessed measures to HEDIS type measures (McCormack et al. 1996). In one extreme case, the report said that employees of firms with membership in a large purchasing coalition expressed “no interest in HEDIS type performance measures.” Focus groups conducted as part of a 1990 Institute of Medicine study found that although participants expressed interest in performance-based quality measures (similar to HEDIS), they based their health care decisions on interpersonal, or “art-of-care,” considerations because they felt they lacked the relevant clinical information or the ability to use it (Walker 1990). Jewett and Hibbard (1996) conducted a series of 15 focus groups exploring consumers’ comprehension of several types of quality indicators.

The authors found that participants better understood patient satisfaction measures compared with measures of the rate at which desirable events (e.g., mammography screening) and undesirable events (e.g., inpatient use by asthma patients) occurred.

Although quality measures based on expert judgment have been largely, if not totally, missing from consumer information efforts to date, a longitudinal study of health care consumers by the Kaiser Family Foundation and Agency for Health Care Research and Quality suggests that a general disinclination to use expert judgment for health care decisions may be declining. Surveys conducted in 1996 and 2000 of roughly two thousand respondents found that the respondents consistently reported that informal sources of information were more influential than information provided by experts, employers, government agencies, consumer groups, patient surveys, and doctors' associations. However, when asked to choose between a hospital with which they were familiar and one highly rated by experts, 72 percent preferred the familiar hospital in 1996; by 2000, the proportion preferring the familiar hospital fell to 62 percent. Seventy-six percent preferred a surgeon whom they had seen before to one highly rated by experts in 1996; only 50 percent preferred the familiar surgeon in 2000. Finally, 52 percent of the respondents in 1996, compared with 47 percent in 2000, preferred the health plan recommended by family and friends to one highly rated by experts.

## DATA SOURCE

### *Sample*

Survey respondents were randomly drawn from a nationally representative online research panel of more than 33,000 households containing roughly 1.7 to 1.8 panelists per household. The research panel was developed and maintained by the for-profit, California-based Knowledge Networks. This company uses Random Digit Dialing techniques to recruit panelists from a sampling frame consisting of the U.S. population who have access to a telephone. Roughly 56 percent of contacted households agreed to participate in the panel. Panelists agreed to respond to weekly surveys in exchange for hardware and other software and equipment that allows internet access via televisions (WebTV) at no charge. Because the Knowledge Network panel includes many who would otherwise not have access to the internet, the study design overcomes concerns about generalizability that limits the value of web-based surveys of existing internet users. Panelists are sent e-mail notification of awaiting surveys and additional reminders to reduce the nonresponse rate.

Panelists age 21 and older were eligible for the sample. The study included no more than one panelist per household. A stratified sample of 2,795 panelists was drawn from the subgroup of 45,370 eligible panel members who previously supplied information on their medical conditions. To assure there was an adequate sample of individuals in poor health status, sample members were drawn proportionately from three strata based on a weighted count of the number of reported doctor-diagnosed illnesses from a list of 35 possible conditions where weights took on values between one and three based on the morbidity and mortality burden associated with each. Conditions included, for example, allergies (burden = 1), cancer (= 3), depression (= 2), heartburn or indigestion (= 1), migraine headaches (= 2), and stroke (= 3). The weighted condition counts took on values between 0 and 70. One-third of the sample was drawn from the group with 0–2 weighted conditions, another third from the group with 3–6 conditions, and the final third from those with 7 or more conditions. Within each strata, sampling weights were used to assure the distribution of sample members closely tracked the April 2001 Current Population Survey (<http://www.bls.census.gov/cps/cpsmain.htm>) on the basis of age, race/ethnicity, geographic region, and education. Sampled panelists providing consent were eligible to participate if currently enrolled in a health plan sponsored by their or their spouse's employer or union.

Fifty-five percent (1,541) of those sampled agreed to participate. Seventy percent ( $n = 1,071$ ) of participants reported having employer-related coverage, closely matching published data on the prevalence of such coverage (National Center for Health Statistics 2000). The lack of recent published data on the characteristics of individuals with employer-based health coverage complicates more-detailed assessments of the representativeness of the study participants. Nonetheless, informal comparisons between study participants, weighted to reflect the sociodemographic characteristics of the 2001 Current Population Survey and the population with employer-based health insurance in the 1996 Medical Expenditure Panel Survey, suggest that the sample reasonably represents the population with employer-based coverage on the basis of geographic region and education, while at the same time it overrepresents females and underrepresents racial and ethnic minorities (Cooper and Schone 1997).

### *Measures*

Three sets of dependent variables measure the process by which patients choose physicians. (Descriptive statistics corresponding to these measures are



Table 1: Descriptive Statistics for Eligible Respondents ( $n = 1,071$ )

<i>Patient Characteristics</i>	<i>Mean</i>	<i>Standard Deviation</i>
<b>Dependent Variables</b>		
<i>Information Use</i>		
Formal sources (0, 1)	0.244	0.429
Family and friends (0, 1)	0.514	0.500
Individual doctors or nurses (0, 1)	0.116	0.320
<i>Other Consumer Behaviors and Attitudes</i>		
Considered another doctor (0, 1)	0.305	0.461
Likely to switch doctors for quality		
Medical experts (0, 1)	0.307	0.461
Patient advocates (0, 1)	0.322	0.467
<b>Explanatory Variables</b>		
<i>Health Status</i>		
Fair or poor health for age (0, 1)	0.186	0.389
Doctor-diagnosed health conditions	6.725	5.890
<i>Service Use</i>		
Number of doctor visits in last year	3.476	3.071
Hospital stay last year (0, 1)	0.114	0.318
Likelihood of hospital stay next year	1.860	1.373
Two+ years in managed care (0, 1)	0.300	0.460
<i>Ties to Physician</i>		
Personal doctor	0.773	0.419
Rate doctor	5.512	1.177
Switched due to dissatisfaction (0, 1)	0.250	0.433
<i>Geographic Region</i>		
Northeast (0, 1)	0.199	0.399
Midwest (0, 1)	0.232	0.422
South (0, 1)	0.356	0.486
West (0, 1)	0.223	0.417
<i>Race/Ethnicity</i>		
Hispanic (0, 1)	0.106	0.306
White (0, 1)	0.768	0.424
Black (0, 1)	0.087	0.282
Other (0, 1)	0.049	0.221
<i>Other Controls</i>		
Age	46.537	14.950
Female (0, 1)	0.536	0.500
Years of school	13.700	2.311
Household income/\$10,000	5.131	2.888

Note: Weighted to reflect the 2001 Current Population Survey.

presented in the first six rows of Table 1.) The first set includes indicators of the sources of information that survey respondents used to choose a current physician. A *current physician* is defined as either the respondent’s personal physician or the physician seen on the last visit (for those without a personal

physician). Sources are grouped into three categories: (1) formal sources, such as patient surveys, employers, government agencies, newspapers, and web sites; (2) family and friends; and (3) consultations with individual doctors and nurses. Roughly half of the sample members (51 percent) reported consulting with family and friends. Less prevalent was the use of formal information sources (24 percent) and individual doctors or nurses (12 percent). The second measure is an indicator of whether the respondent seriously considered another doctor before choosing his or her current physician. Thirty-one percent reported seriously considering another doctor, a proportion similar to that found in the Booth and Babchuk (1972) and Hoerger and Howard (1995) studies.

The final set includes two indicators of stated willingness to switch doctors, if information suggests that other plan doctors receive higher quality ratings from a “panel of medical experts” or a “patient advocacy organization.” Such hypothetical measures are useful because a realistic threat of switching, as opposed to actual switching, is an important component of patient consumerism that cannot be measured directly. This is because physicians have a greater incentive to keep patients satisfied when they believe patients will switch. Respondents are considered willing to switch if they rate their likelihood of switching as five or more on a seven-point scale, where the extreme category is labeled “highly likely” to switch. Based on these criteria, roughly one-third of respondents expressed a willingness to switch from a current physician on the basis of either measure.

Covariates are measured in four domains. (Descriptive statistics are shown in the bottom half of Table 1.) First, self-reported health status measures include a self-reported count of doctor-diagnosed health conditions weighted to reflect morbidity and mortality burden (discussed in the sampling section) and respondents’ ratings (excellent, good, fair, poor) of their health status compared with others their age. Roughly one-fifth of respondents report being in fair or poor health compared with others their age. Respondents report an average of 6.73 weighted health conditions and 3.48 doctor visits in the past year. Second, measures of service use and experience with managed care include the number of doctor visits in the past year; a binary variable indicating a hospital visit in the past year for a condition other than childbirth; a seven-point rating of the subject’s subjective assessment of the likelihood of a hospital visit for a condition other than childbirth in the upcoming year (“not very likely” to “highly likely”); and an indicator measuring whether the respondent had been enrolled in a current managed care plan for two years or more. Slightly more than 10 percent of the sample reports a hospital stay in the

past year for a condition other than childbirth. On average, respondents rate the likelihood of a hospital stay in the upcoming year at 1.86 on a 1–7 scale. Less than one-third of the sample has more than two years' experience in a managed care plan. Third, the existence and strength of patient–physician relationships are measured by an indicator of whether the survey respondent had at least one person he or she considered a “personal physician or nurse”; of respondents' rating of their doctor or nurse compared with others in the area on a 7-point scale from “the worst” to “the best”; and indicators of whether the respondent switched physicians in the past five years because of dissatisfaction. Three-quarters of respondents report having a personal doctor or nurse and rate their current doctor (personal or seen on last visit) at an average of 5.51 on a 7-point scale. At the same time, 25 percent report switching physicians as a result of dissatisfaction.

Finally, included is a set of control variables as proxies for otherwise unobserved aspects of individuals and markets that influence the physician search process. The analyses include indicator variables for whites, blacks, Hispanics, and “others” (including Asians and Native Americans); however, the size of these groups is too small to analyze separately. Other socio-demographic variables include age, gender, education, and income. Four indicators of geographic region are used to control for broad differences in consumer attitudes and behaviors and in the organization and delivery of medical care services across geographic regions.

## RESULTS

This section presents results from three sets of binary logit models of self-reported behaviors and attitudes related to consumer choice of physician. Coefficient estimates are reported in Tables 2 and 3. To the right of each set of coefficients are marginal effect estimates, which measure the impact of changes in individual patient characteristics on the probability that the dependent variable of interest takes on a value of one, holding other patient characteristics constant.

### *Use of Information to Choose Physicians*

Table 2 shows coefficient and marginal effect estimates for three binary logit models of the effect of patient characteristics on the use of alternative sources of information to choose a current physician. Controlling for the use of services, the two health status measures have an insignificant effect on the use

Table 2: Logit Coefficients and Marginal Effects for the Use of Alternative Sources of Information to Help Choose Current Doctor

<i>Patient Characteristic</i>	<i>Formal Sources</i>		<i>Family and Friends</i>		<i>Individual Doctors</i>	
	<i>Coefficient</i>	<i>Marginal</i>	<i>Coefficient</i>	<i>Marginal</i>	<i>Coefficient</i>	<i>Marginal</i>
Fair or poor health for age (0, 1)	0.012 (0.09)	0.4%	-0.210 (1.80) <sup>+</sup>	-8.4%	0.015 (0.10)	0.3%
Doctor-diagnosed conditions	0.014 (1.58)	0.4	-0.016 (2.01)*	-0.7	0.010 (0.97)	0.2
Number of doctor visits	0.005 (0.27)	0.1	-0.016 (1.01)	-0.6	0.030 (1.48)	0.6
Hospital stay last year (0, 1)	-0.415 (2.52)*	-11.7	0.061 (0.43)	2.4	0.340 (2.06)*	7.3
Likelihood of hospital stay	0.061 (1.69) <sup>+</sup>	2.0	-0.004 (0.11)	-0.1	0.058 (1.37)	1.1
Two + years in managed care (0, 1)	0.182 (1.90) <sup>+</sup>	6.0	-0.082 (0.91)	-3.3	-0.118 (0.96)	-2.1
Switched due to dissatisfaction (0, 1)	0.423 (4.23)**	14.4	0.039 (0.40)	1.5	0.247 (2.00)*	4.9
Northeast (0, 1)	-0.295 (2.09)*	-8.9	0.244 (1.91) <sup>+</sup>	9.5	0.313 (1.86) <sup>+</sup>	6.4
Midwest (0, 1)	-0.082 (0.62)	-2.6	0.157 (1.28)	6.2	0.176 (1.05)	3.4
South (0, 1)	-0.069 (0.57)	-2.2	0.198 (1.73) <sup>+</sup>	7.8	0.143 (0.91)	2.7
Hispanic (0, 1)	0.307 (2.11)*	10.6	-0.204 (1.47)	-8.1	0.143 (0.76)	2.8
Black (0, 1)	0.498 (3.15)**	17.8	-0.427 (2.76)**	-16.8	-0.156 (0.67)	-2.6

Other	0.188 (0.90)	6.3	-0.635 (3.12)**	-24.5	0.678 (2.97)**	17.3
Age	-0.005 (1.58)	-0.2	0.002 (0.74)	0.1	0.012 (2.91)**	0.2
Female (0, 1)	-0.092 (1.03)	-3.0	0.108 (1.31)	4.3	0.237 (2.11)*	4.3
Years of school	0.027 (1.33)	0.9	0.004 (0.19)	0.1	0.022 (0.93)	0.4
Household income/\$10,000	0.002 (0.09)	0.0	0.003 (0.20)	0.1	0.041 (2.09)*	0.7
Constant	-1.060 (3.01)**	—	0.019 (0.06)	—	-2.962 (6.88)**	—
Observations	992		992		992	

T-statistics in parentheses.

+Significant at 10%; \*Significant at 5%; \*\*Significant at 1%.

Table 3: Logit Coefficients and Marginal Effects for Seriously Considering Another Doctor before Choosing Current Doctor and Likelihood of Switching Doctors if Other Plan Doctors Receive Higher Quality Ratings by Quality Information Source ( $n = 1,063$ )

<i>Patient Characteristics</i>	<i>Other Doctor</i>		<i>Medical Experts</i>		<i>Patient Advocates</i>	
	<i>Coefficient</i>	<i>Marginal Effect</i>	<i>Coefficient</i>	<i>Marginal Effect</i>	<i>Coefficient</i>	<i>Marginal Effect</i>
Fair or poor health for age (0, 1)	-0.058 (0.48)	-1.9	0.059 (0.47)	2.0%	0.066 (0.53)	2.3%
Doctor-diagnosed health conditions	-0.002 (0.28)	-0.1	-0.015 (1.71) <sup>+</sup>	-0.5	-0.019 (2.12)*	-0.6
Number of doctor visits in last year	0.036 (2.22)*	1.2	0.028 (1.64)	0.9	0.029 (1.75) <sup>+</sup>	1.0
Hospital stay last year (0, 1)	0.031 (0.21)	1.0	-0.348 (2.20)*	-10.7	-0.324 (2.09)*	-10.3
Likelihood of hospital stay next year	0.021 (0.58)	0.7	0.052 (1.40)	1.8	0.078 (2.10)*	2.7
Two+ years in managed care (0, 1)	0.057 (0.62)	2.0	-0.029 (0.30)	-1.0	0.080 (0.83)	2.8
Used formal information (0, 1)	0.238 (2.41)*	8.3	0.214 (2.10)*	7.4	0.338 (3.39)**	12.1
Information from family and friends (0,1)	0.130 (1.48)	4.4	0.227 (2.41)*	7.6	0.159 (1.72) <sup>+</sup>	5.5
Information from individual doctors (0, 1)	0.361 (2.77)**	13.0	0.271 (1.87) <sup>+</sup>	9.8	0.255 (1.82) <sup>+</sup>	9.2
Personal doctor (0, 1)	—	—	-0.216 (1.85) <sup>+</sup>	-7.5	-0.192 (1.64)	-6.8
Rate doctor	—	—	-0.428 (9.53)**	-14.4	-0.377 (8.57)**	-13.0
Switched due to dissatisfaction (0,1)	0.750 (7.77)**	27.2	0.305 (2.98)**	10.6	0.411 (4.08)**	14.8

Northeast (0, 1)	0.205 (1.53)	7.2	-0.282 (2.00)*	-8.9	-0.228 (1.66) <sup>†</sup>	-7.6
Midwest (0, 1)	-0.022 (0.17)	-0.7	-0.183 (1.37)	-6.0	-0.185 (1.41)	-6.2
South (0, 1)	0.164 (1.38)	5.6	0.013 (0.10)	0.4	-0.044 (0.37)	-1.5
Hispanic (0, 1)	-0.295 (1.91) <sup>†</sup>	-9.2	0.245 (1.73) <sup>†</sup>	8.5	0.250 (1.78) <sup>†</sup>	9.0
Black (0, 1)	-0.108 (0.67)	-3.5	-0.067 (0.40)	-2.2	0.083 (0.52)	2.9
Other (0, 1)	0.363 (1.86) <sup>†</sup>	13.2	0.146 (0.73)	5.1	0.531 (2.67)**	20.0
Age	0.003 (1.06)	0.1	-0.004 (1.31)	-1.5	-0.000 (0.00)	0.0
Female (0, 1)	0.013 (0.15)	0.4	-0.294 (3.27)**	-10.0	-0.190 (2.14)*	-6.6
Years of school	0.048 (2.49)*	1.6	0.009 (0.46)	3.2	0.013 (0.64)	0.4
Household income/\$10,000	-0.001 (0.09)	-0.1	0.011 (0.66)	3.6	0.017 (1.07)	0.6
Constant	-1.979 (5.76)**		1.855 (4.67)**		1.150 (2.93)**	

T-Statistics in parentheses.

<sup>†</sup>Significant at 10% level; \*Significant at 5%; \*\*Significant at 1%.

of formal sources and information from doctors and nurses. At the same time, the two health status measures are significant ( $\alpha \leq 0.10$ ), negative predictors of the use of family and friends. Having a hospital stay in the past year is a significant, negative predictor ( $\alpha = 0.01$ ) of the use of formal information and a significant, positive predictor ( $\alpha = 0.05$ ) of using individual doctors as a source of information in choosing a current physician. By contrast, the number of doctor visits in the last year does not predict use of any of the three forms of information.

Coefficient estimates imply that being in fair or poor health reduces the probability of using family and friends by 8.4 percentage points. A hospital stay in the last year reduces the chances of using formal information by 11.7 percentage points, increases the likelihood of consulting an individual physician by 7.3 percentage points, and has no effect on the likelihood of consulting with family and friends. Likewise, a high likelihood of a hospital stay in the next year has a statistically significant ( $\alpha = 0.10$ ) but small, positive effect on the use of information from formal sources.

Respondents with two or more years of managed care experience are significantly more likely ( $\alpha = 0.05$ ) to use formal sources of information and less likely to use the other two forms of information, although the latter effects are not statistically significant. There are several potential explanations for this finding. First, managed care enrollees may be more likely to be exposed to formal sources of information compared with their counterparts in fee-for-service plans—for example, through employers who offer choice among multiple plans. Second, the preference for managed care and the preference for formal information sources may be positively related. Third, enrollment in managed care may affect the relative value of alternative sources of information. For example, the recommendations of family, friends, and individual doctors may be more difficult to act upon once enrolled in managed care, and potentially less worth seeking. Likewise, managed care enrollees may be more skeptical about the objectivity of plan doctors who are faced with incentives to control costs and, thus, enrollees perceive formal sources of information as an attractive substitute.

Having switched doctors is a significant, positive predictor of using formal information sources and consulting individual doctors. The effect of dissatisfaction-driven doctor-switching is almost three times larger for formal sources of information than for information from individual doctors (14.9 versus 5.3 percentage points), suggesting that those who have had bad experiences with a physician may be more likely to seek objective forms of information.



Although race and ethnicity were not related to the overall use of information, they are strong determinates of information source, controlling for health status and access to employer-sponsored health insurance. Racial and ethnic minorities are substantially less likely than their white counterparts to seek information about doctors from family and friends—with Hispanics 14.3 percentage points less likely and blacks 23.4 percentage points less likely. Hispanics and blacks are more likely than whites to use formal sources of information while “others” are more likely than whites to consult individual doctors.

Other demographic characteristics have statistically significant, but substantively small, effects. Older, female, and upper-income respondents are more likely to report using individual doctors as an information source and are less likely to use formal sources. This pattern may reflect stronger ties to individual physicians among these groups. Finally, respondents residing in the northeastern United States were less likely to use formal sources of information and more likely to consult with individual doctors and family and friends compared with their western counterparts. Unfortunately, it is not possible in this study to distinguish whether these differences result from regional differences in the ways that patients interact with the delivery system, in preferences for information, or in the availability of different types of information.

### *Consideration of Alternative Physicians*

Table 3 also shows coefficient and marginal effect estimates for a logit model of the probability of seriously considering another doctor before one chooses a current physician. The results suggest that considering alternative physicians is positively associated ( $\alpha \leq 0.05$ ) with the use of formal information and advice from individual doctors and unassociated with use of information from family and friends. This relationship is consistent with the picture of active choosers as seeking and using information from sources other than acquaintances. Past doctor-switching due to dissatisfaction has the largest effect on serious consideration of alternative physicians: It results in a 27–percentage point increase in the probably of seriously considering other physicians. This result suggests that bad experiences may motivate patients to consider a broader number of alternatives.

The racial and ethnic differences apparent in the information-use models are also apparent here. Hispanics are significantly less likely, and “others” are more likely, than whites to have seriously considered other

doctors. Interestingly, although blacks were more likely than whites to use formal sources of information, there is no evidence that they are more likely to consider multiple physicians. Finally, the number of doctor visits in the past year and years of schooling are significant positive predictors ( $\alpha = 0.05$ ) of considering alternative doctors, although their predicted effects are not large.

### *Stated Willingness to Switch Physicians*

Table 3 shows coefficient and marginal effect estimates for two logit models of the stated willingness to switch physicians if other physicians in the health plan received higher quality ratings. The hypothetical quality ratings are based on the judgments of medical experts in the first model and on those of patient advocates in the second. Despite the literature suggesting that patients prefer information from lay sources, the estimated effects of the covariates on stated willingness are very similar in magnitude and statistical significance across the two models, providing little evidence that respondents discriminate between the two sources of quality information. Consistent with the idea that information users are more active choosers, reported use of each of the three sources of information is a significant positive ( $\alpha \leq 0.10$ ) predictor and associated with a 4–13 percentage point increase in the willingness to switch physicians.

Stated willingness to switch physicians based on quality appears inversely related to the strength of ties to individual physicians and experience with the health care delivery system. Controlling for perceived quality, having a personal physician makes an individual roughly 7–8 percentage points less likely to be willing to switch physicians based on quality. At the same time, a one-point increase in the rating of one's own physician (personal or current) results in a 13–14 percentage point decrease in reported willingness to switch. In contrast, reporting a dissatisfaction-related doctor switch in the last five years is associated with a 10–14 percentage point increase in the stated willingness to switch physicians, depending on the information source.

Reporting a hospital stay in the last year significantly ( $\alpha = 0.05$ ) reduces the stated willingness to switch physicians by slightly more than 10 percentage points for both sources of information. The number of doctor visits in the last year and a high likelihood of a hospital stay in the upcoming year modestly increase (both less than 3 percentage points) the likelihood of willingness to switch on the basis of information from patient advocates, but not from medical experts.

Consistent with the results from the preceding two analyses, health status has only a small independent effect on the stated willingness to switch.

The number of weighted medical conditions is negatively related to the willingness. The model predicts that one additional medical condition is associated with a 0.5–0.6 percentage point reduction in willingness. Thus, an additional six weighted conditions (roughly equivalent to a standard deviation) would result in a 6 percentage point increase in willingness to switch. Being in fair or poor health increases the willingness to switch by roughly 2 percentage points, but this effect is not statistically significant.

The pattern of racial and ethnic differences evident in the first two sets of results also appears here. Hispanics and “others” express greater willingness to switch relative to whites. The willingness of Hispanics to switch appears unrelated to the source of quality information while “others” are more influenced by information from patient advocates. At the same time, the willingness of blacks to switch is not significantly different from that of whites.

Finally, females state less willingness to switch than males. Respondents residing in the northeastern United States expressed less willingness than their western counterparts to switch physicians for quality considerations.

## DISCUSSION

The desirability of a consumer choice–driven health care system depends on the ability of consumers to actively use information to evaluate and select among alternative service providers. Overall, the results of this study confirm the image depicted in the previous literature of patients as passive consumers of physician services. The multivariate results suggest that ties to individual physicians and experiences with the delivery system are most important in determining the process by which patients search for and choose physicians. Controlling for health status, prior and expected hospital use, and greater use of physician services was generally associated with less consumer activism. Likewise, having a personal doctor and rating highly one’s current physician reduced the stated willingness of respondents to switch physicians in light of poor quality. Taken together, these results suggest that, in the current market, physicians do not have to compete to maintain the loyalty of established patients. The results also highlight the importance of investments in the development of decision-support tools to help consumers choose physicians in consumer-driven health care systems. Otherwise, such systems will be less effective in achieving cost containment and quality improvement goals.

The results are useful in identifying subgroups of active consumers and point to the mechanisms through which the prevalence of consumer activism may increase over time. The use of information was strongly associated with

considering another doctor before choosing a current doctor and a greater willingness to switch physicians. This result implies that the prevalence of consumer activism is likely to grow as access to information with which to compare physicians also grows. Reported dissatisfaction-related physician-switching was a significant predictor of using formal sources of information, considering alternative physicians, and determining the willingness to switch physicians in light of poor quality. These relationships imply that consumers may become more active as it becomes more socially acceptable to switch physicians in response to negative experiences.

Consumer activism was also positively associated with a number of sociodemographic control variables, including gender, education, and geographic region. Of particular interest was the strength of racial and ethnic differences in consumer behavior. Overall, the results suggest that compared with whites, minorities are less likely to rely on information from informal sources, make greater use of formal sources, and state greater willingness to switch physicians on the basis of quality information. These results are consistent with recent focus on differences in the way patients of different racial and ethnic groups experience the health care delivery system (Institute of Medicine 2002). Unfortunately, the study design is not adequate to explain why minorities appear to be more active consumers. Potential explanations include differences in patient trust of providers, the perceived ability of family and friends to be reliable informants, and the perceived utility of formal information sources.

## REFERENCES

- Booth, A., and N. Babchuk. 1972. "Seeking Health Care from New Resources." *Journal of Health and Social Behavior* 13 (1): 90–9.
- Cooper, P. F., and B. S. Schone. 1997. "More Offers, Fewer Takers for Employment-Based Health Insurance: 1987 and 1996." *Health Affairs* 16 (6): 142–9.
- Dranove, D., D. Kessler, M. McClellan, and M. Satterthwaite. 2002. "Is More Information Better? The Effects of 'Report Cards' on Health Care Providers." Working paper no. 8697. Cambridge, MA: National Bureau of Economic Research.
- Feldman, R., J. Christianson, and J. Schultz. 2000. "Do Consumers Use Information to Choose a Health-Care Provider System?" *Milbank Quarterly* 78 (1): 47–77.
- Gross, D. A., S. J. Zyzanski, E. A. Borawski, R. D. Cebul, and K. C. Stange. 1998. "Patient Satisfaction with Time Spent with Their Physician." *Journal of Family Practice* 47 (2): 133–7.
- Hargraves, L. J. 2000. *Patients Concerned about Insurer Influences—Data Bulletin: Results from HSC Research*. Washington, DC: Center for Studying Health System Change.

- Herzlinger, R. E. 1997. *Market-Driven Health Care: Who Wins, Who Loses in the Transformation of America's Largest Service Industry*. New York: Addison-Wesley.
- Hibbard, J. H., and J. J. Jewett. 1997. "Will Quality Report Cards Help Consumers?" *Health Affairs* 16 (3): 218–28.
- Hibbard, J. H., and E. C. Weeks. 1987. "Consumerism in Health Care: Prevalence and Predictors." *Medical Care* 25 (11): 1019–32.
- Hirshleifer, J., and J. G. Riley. 1979. "The Analytics of Uncertainty and Information: An Expository Essay." *Journal of Economic Literature* 17: 1375–1421.
- Hoerger, T. J., and L. Z. Howard. 1995. "Search Behavior and Choice of Physician in the Market for Prenatal Care." *Medical Care* 33 (4): 332–49.
- Institute of Medicine. 2002. *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. Washington, DC: National Academy Press.
- Jewett, J. J., and J. H. Hibbard. 1996. "Comprehension of Quality Care Indicators: Differences among Privately Insured, Publicly Insured, and Uninsured." *Health Care Financing Review* 18 (1): 75–94.
- Kaiser Family Foundation/Agency for Health Care Policy and Research. 1996. *Americans as Health Care Consumers: The Role of Quality Information*. Rockville, MD and Menlo Park, CA: Kaiser Family Foundation/Agency for Health Care Policy and Research.
- Kaiser Family Foundation/Agency for Health Care Research and Quality [AHRQ]. 2000. *National Survey on Americans as Health Care Consumers: An Update on the Role of Quality Information*. Rockville, MD and Menlo Park, CA: Kaiser Family Foundation/Agency for Health Care Policy and Research.
- Kao, A. C., D. C. Green, A. M. Zaslavsky, J. P. Koplan, and P. D. Cleary. 1998. "The Relationship between Method of Physician Payment and Patient Trust." *Journal of the American Medical Association* 280 (19): 1708–14.
- Kerssens, J. J., J. M. Bensing, and M. G. Andela. 1997. "Patient Preference for Genders of Health Professionals." *Social Science and Medicine* 44 (10): 1531–40.
- Lubalin, J., J. Schnaier, B. Forsyth, and D. A. Gibbs. 1995. *Design of a Survey to Monitor Consumers' Access to Care, Use of Health Services, Health Outcomes, Patient Satisfaction*. Final report, no. 282-92-0045. Rockville, MD: Agency for Health Care Policy and Research.
- Lupton, D., C. Donaldson, and P. Lloyd. 1991. "Caveat Emptor or Blissful Ignorance? Patients and the Consumerist Ethos." *Social Science and Medicine* 33 (5): 559–68.
- Marquis, S. M. 1984. *Cost-Sharing and the Patient's Choice of Provider*. Report no. R-3126-HHS. Santa Monica, CA: RAND.
- McCormack, L. A., S. A. Garfinkel, J. A. Schnaier, A. J. Lee, and J. A. Sangl. 1996. "Consumer Information Development and Use." *Health Care Financing Review* 18 (1): 15–30.
- Mukamel, D. B., and A. I. Mushlin. 1998. "Quality of Care Information Makes a Difference: An Analysis of Market Share and Price Changes after Publication of the New York State Cardiac Surgery Mortality Reports." *Medical Care* 36 (7): 945–54.
- National Center for Health Statistics. 2000. "Health, United States, 2000." with Adolescent Health Chartbook. Hyattsville, MD, pp. 123, 339.

- Olsen, D. M., R. L. Kane, and J. Kasteler. 1976. "Medical Care as a Commodity: An Exploration of the Shipping Behavior of Patients." *Journal of Community Health* 2 (2): 85-91.
- Phillips, D., and F. Brooks. 1998. "Women Patients' Preferences for Female or Male GPs." *Family Practice* 15 (6): 543-7.
- Robinson, J. C. 2001. "The End of Managed Care." *Journal of the American Medical Association* 285 (20): 2622-8.
- Saha, S., S. H. Taggart, M. Komaromy, and A. B. Bindman. 2000. "Do Patients Choose Physicians of Their Own Race?" *Health Affairs* 19 (4): 76-83.
- Satterthwaite, M. A. 1979. "Consumer Information, Equilibrium Industry Price, and the Number of Sellers." *Bell Journal of Economics* 10 (2): 483-502.
- Thom, D. H., and B. Campbell. 1997. "Patient-Physician Trust: An Exploratory Study." *Journal of Family Practice* 44 (2): 169-76.
- Walker, A. J. 1990. "Results of the Medicare Beneficiary and Physician Focus Groups." In *Medicare: A Strategy for Quality Assurance*, edited by K. Lohr. Washington, DC: National Academy Press.
- Weiss, L. J., and J. Blustein. 1996. "Faithful Patients: The Effect of Long-term Physician-Patient Relationships on the Costs and Use of Health Care by Older Americans." *American Journal of Public Health* 86 (12): 1742-7.