
Impact of Performance Information on Health Care Choices

Do Employees Use Report Cards to Assess Health Care Provider Systems?

Jennifer Schultz, Kathleen Thiede Call, Roger Feldman, and Jon Christianson

Objective. To investigate consumers' use of report cards that provide information on service quality and satisfaction at the provider group level.

Data Sources. In 1998 we conducted a telephone survey of randomly selected employees in firms aligned with the Buyers Health Care Action Group (BHCAG) in the Minneapolis–St. Paul market.

Study Design. Univariate probit models were used to determine report card utilization, perceived helpfulness of the report card, and ease of selecting a provider group. The characteristics used in the models included health status, age, gender, education, residency, job tenure, marital status, presence of dependent children, household income, and whether consumers changed provider groups.

Data Collection. Our sample consists of survey responses from 996 single individuals (a response rate of 91 percent) and 913 families (a response rate of 96 percent). The survey was supplemented with data obtained directly from employers aligned with BHCAG.

Principle Findings. Consumers who changed to a new provider group are more likely to use report card information and find it helpful, consumers employed in large firms are less likely to use the report card, and families who use information from their own health care experiences are less likely to find the report card helpful. In addition, individuals who changed to a new provider group are more likely to find the selection decision difficult.

Conclusion. The findings show that health care consumers are using satisfaction and service-quality information provided by their employers.

Key Words. Consumer information, report cards, satisfaction

The role of consumers in health care and their choice of health care provider are becoming more important as managed competition increases. The importance is magnified as managed care organizations enroll a larger percentage of

the population while offering incentives to limit care. Empowering consumers with the ability to choose a plan and provider theoretically motivates managed care to limit perverse incentives, control costs, and improve quality. This assumes, however, that consumers have a choice of health plans and are informed and able to compare health plans and providers on quality and price. Therefore, a crucial element for a quality-competitive health care market is consumer access to and comprehension of performance data on plans and providers.

Comparative information on benefits, cost, quality, and satisfaction with health plans and health care systems is viewed as essential for the operation of a competitive health care market. McClure (1978) and Enthoven (1993), among others, have speculated that informed consumer choice will contribute to a more efficient health care marketplace. However, the hypothesis that information will create a more efficient and improved health care market is conditional on many factors; it presumes that information will (1) be publicly available; (2) be read and understood by consumers; (3) be perceived as valid, reliable, and relevant to the decision-making process; and (4) increase competition in health care markets (Sangl and Wolf 1996; Sainfort and Booske 1996; Cleary 1999). Currently information on health care benefit levels and premiums is widely available to consumers, and its provision has created more efficient health care markets (Mechanic 1989; Klinkman 1991; Chakraborty, Ettenson, and Gaeth 1994; Edgman-Levitan and Cleary 1996; McCormack, Garfinkel, Schnaier, et al. 1996; Tumlinson, Bottigheimer, Mahoney, et al. 1997). Unfortunately information on quality and satisfaction is not as common or accessible. Nevertheless, once performance information is available and used by consumers it will provide an important incentive for health care systems to compete on quality.

Providing consumers with information on costs, benefits, service quality,

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and satisfaction should be a valued end itself, regardless of the effect on prices and competition. We believe active consumer involvement in the decision process will benefit individual consumers, purchasers of health insurance, and society. Individuals may benefit from information by making better choices that potentially could reduce their costs, improve their health status, and increase their satisfaction with medical care. Employers will benefit through increased productivity of healthier and more satisfied employees, which in turn benefits society (Sofaer 1997). In addition health care providers can benefit from information on satisfaction and service quality by using it to modify their guidelines and practices. Therefore, despite its effect on the market, the dissemination of information potentially improves the well-being of purchasers and providers of health care.

Much uncertainty remains among researchers about what information consumers actually use and find helpful. Edgman-Levitan and Cleary (1996) note that we know relatively little about what information consumers would like to see in report cards and how they interpret and make decisions based on this information. Using focus groups, they found that consumers would use information on how a plan works, what it costs, the covered benefits, the quality of care, and overall satisfaction with care if it were available. Consumers were most interested in information about costs of coverage, technical competence, the information and communication provided by physicians, coordination of care, and access. Although informational needs will vary across individuals, for example by health status and age, studies suggest that consumers would like more information, particularly on detailed aspects of satisfaction and service at the provider level (Isaacs 1996; Hibbard, Slovic, and Jewett 1997).

Additional findings from focus groups show that consumers are unfamiliar with performance measures, have trouble understanding them, and report difficulty in selecting a health plan (McCormack, Garfinkel, Schnaier, et al. 1996; Gibbs, Sangl, and Burrus 1996). For example, McCormack, Garfinkel, Schnaier, et al. (1996) held two informal focus groups with employees in two organizations to discuss the information materials distributed by their employers. They found that employees were unfamiliar with the information and had difficulty comprehending it. Nevertheless, employees, particularly new employees or those contemplating changing plans, viewed the materials favorably.

Studies using surveys rather than focus groups found that report cards play only a minor role in consumers' decisions. A recent survey by Tumlinson, Bottigheimer, Mahoney, et al. (1997) concluded that consumers are more

interested in cost and benefit information than plan performance measures. This finding may be an artifact of the structure of health plans. For example, many health plans have overlapping networks, and this makes performance information at the health plan level less useful.

Knutson et al. (1998) analyzed the effect of report card information on two groups of individuals in a natural experiment and concluded that the report card had few discernible effects on employees' knowledge, attitudes, or choice of health plans. Knutson, Fowles, Finch, et al. (1996), however, showed that individuals who read report cards more thoroughly found them more helpful.

The majority of the literature assessing health plan report cards has been limited to focus group studies that determine consumers' preferences for information and the level of comprehension. Few studies analyze consumers' use of information when selecting a specific health care system or provider group as opposed to a health plan (Edgman-Levitan and Cleary 1996). Furthermore, the existing survey research tends to use hypothetical plan choices and mock report cards.

Our research is unique because we analyze consumers' use of report cards that provide information on service quality and satisfaction at the provider-group level. In addition this research is unique because it extends focus group studies by using survey information to explore the use and helpfulness of actual report cards containing satisfaction and quality measures.

Eighty-five percent of employed persons are now covered by some form of managed care (Employee Benefit Research Institute 1998), and 43 percent of employees enrolled in employer plans were offered a choice of health plans in 1997 (Marquis and Long 1999). Thus, as we move toward managed competition and consumer-driven health care, consumer choice and consumers' access to and ability to understand and use information on price and quality are essential. When choices increase and information becomes a prominent feature in consumer decision making, managed care systems will feel increased pressure to compete on quality. Therefore, it is important to show that consumers who have access to report cards will use this type of information when selecting a health care provider system.

In 1998 we conducted a telephone survey of individuals enrolled in the Buyers Health Care Action Group's (BHCAG) Choice Plus program. BHCAG distributes a report card, known as the *Performance Results Book* (PRB), that gives enrollees information on satisfaction and service quality. Our study analyzes the use and perceived helpfulness of the report card as conveyed by survey respondents.

SURVEY TO EVALUATE USE OF THE REPORT CARD

We surveyed employees of firms aligned with BHCAG in the Minneapolis–St. Paul market. BHCAG represents 28 large, self-funded employers, and approximately 250,000 employees are eligible for their employer-sponsored health plan, Choice Plus. BHCAG contracts directly with care systems, which are groups of physicians, clinics, and hospitals. Each care system has its own nonoverlapping network of primary care providers and clinics and offers a standard set of health insurance benefits. The care systems are grouped into three cost tiers with a separate premium for each tier. Beginning in January 1997 employees and family members chose from among 25 distinct care systems.¹ Care systems offer broad geographic coverage throughout the greater Twin Cities metro area; thus, employees have many choices regardless of where they live or work.

We conducted a telephone survey of randomly selected BHCAG employees with Choice Plus coverage. The survey was conducted in February to April of 1998 after the second open enrollment period to question employees shortly after they had made their choice. The employees were screened to remove any with dual coverage through other private or public insurance programs. We sampled single- and family-coverage members of Choice Plus in 19 firms. These firms were selected based on the number of employees expected to enroll in the Choice Plus program and the type of alternative insurance plans available. Firms that offered point-of-service products that were similar to the Choice Plus plan were excluded. Firms with late open enrollment periods (occurring after March) were excluded as well.

To obtain the required number of completed surveys it was necessary to select a larger number of employee names from BHCAG's enrollment file. About 15 percent of the employees were ineligible because they had participated in a 1997 consumer satisfaction survey. These names were deleted to minimize employee objections to being over-surveyed. In addition it was determined that it would not be possible to locate about 20 percent of the sample because of bad telephone numbers or other reasons. It was estimated that 10 percent of eligible employees would refuse to participate in the survey. Thus, a sample approximately twice as large as the desired number of completed surveys was drawn. Two hundred names (equally divided between single and family coverage) were used to pretest the survey.

Our final sample consists of survey responses from 996 single individuals (a response rate of 91 percent) and 913 families (a response rate of 96

percent). The survey was supplemented with data on premium information obtained directly from BHCAG employers.

The Report Card

The information contained in the PRB or report card differs from information typically provided to health care consumers concerning the performance of health plans. The difference is a result of the fact that the satisfaction and service-quality information is reported at the care-system level. Information about physician performance (i.e., time doctor spends with patient, attention paid by doctors and staff to what patient says, explanations of medical procedures and tests, and outcomes of care) will have more meaning to consumers because it relates directly to particular care systems that have unique physician networks as opposed to health plans with overlapping networks.²

The PRB contains summary charts, bar graphs, and detailed rankings of each care system. It also provides instructions on interpreting the charts and graphs. BHCAG contracted with an independent organization (the Survey Research Center, Division of Health Services Research, University of Minnesota) to survey employees enrolled in Choice Plus. The survey was used to collect information on consumers' level of satisfaction and perceived quality attributes of their care system. The satisfaction survey was conducted by phone between April and August of 1997. For each care system the survey results are based on approximately 350 interviews with adults about their own care and 350 interviews with parents regarding their children's care. The report card was made available to employers, who then distributed them to their employees.³ Each care system also received a detailed report of its survey results to use in guiding improvements.

Summary charts showed the results of statistical tests that compared the rating of each care system to the mean rating for all care systems. The summary charts and detailed bar graphs included the following 12 categories: overall satisfaction with the clinic, satisfaction with overall quality of care and service from the clinic, ease of seeing doctor of choice, amount of time doctor spends with patient, attention paid by doctors and staff to what patient says, explanations of medical procedures and tests, outcomes of care, overall rating of access to care, ease of getting advice by phone when clinic is closed, availability of appointments at convenient times, waiting time to be seen for a minor health problem, and time spent in the waiting room. For instance, the survey asked respondents, "How would you rate your satisfaction with your clinic on the overall quality of care and service?" and "How would

you rate your satisfaction with the outcomes of your care or how much you were helped?" The responses were limited to four categories: dissatisfied, neither satisfied nor dissatisfied, satisfied, or very satisfied. The summary charts ranked the care systems' performance in each category on a one-to-three scale based on the satisfaction ratings. Three stars represents a better-than-average rating for all care systems, two stars means a rating similar to the average, and one star represents a below-average rating. Detailed color-coded bar graphs showed the percentage of survey respondents choosing each satisfaction level in the 12 categories. For questions related to access the bar graphs were scaled using ratings of poor to excellent instead of satisfaction levels. The report card had separate ratings on each of the 12 categories for adult and children's care.

Descriptive Statistics of Sample from the Survey

Throughout the article respondents who were single (i.e., not married with no dependents) with single coverage are referred to as single respondents and those with family coverage are referred to as family respondents. Sixty-five percent of the single survey respondents were female. Employees had worked a mean of eight years for their current employer, but a majority of employees had less than five years' tenure. A variety of occupations are represented in the sample, but office workers and professionals are the most common. Approximately 18 percent of single respondents had only a high school diploma, 33 percent had some college or technical training, 37 percent had a four-year college degree, and 12 percent had some postgraduate experience.

Eighty-six percent of the family respondents were married, 12 percent were single parents, and 1 percent lived with a domestic partner. Roughly 70 percent of the family respondents had dependent children. Employees had worked a mean of 12 years for their current employer, but half had worked for their current employer for less than ten years. Descriptive statistics for both single respondents and family respondents are summarized in Table 1.

EMPIRICAL ANALYSIS

Descriptive Analysis

Based on prior research we expected highly educated individuals, those new to the area, or those changing care systems to be most interested in the report card (McCormack, Garfinkel, Schnaier, et al. 1996; Fowles 1998; Beaulieu 1998; Feldman, Christianson, and Schultz 2000). Also, we believed that the

Table 1: Description of Variables and Descriptive Statistics of Sample by Type of Coverage

<i>Personal Characteristic</i>	<i>Description</i>	<i>Single</i>	<i>Family</i>
Enrollment		996	913
Sex	0 = male, 1 = female	65%	67%
Marital status	0 = married, 1 = single	0	86%
Children	Dependent children: 0 = no, 1 = yes	0	70%
Income		37,688	71,681
Income 1	Household gross income \$2,000-\$20,000	[18,350]	[51,3280]
Income 2	Household gross income \$20,001-\$40,000	16.6%	3.0%
Income 3	Household gross income \$41,000-\$60,000	49.2%	16.6%
Income 4	Household gross income \$61,000-\$150,000	14.5%	23.2%
Income missing	Dummy variable if income is not reported: 0 = no, 1 = yes	6.6%	35.1%
		13.2%	22.2%
Chronic conditions	Chronic condition present, any family member: 0 = no, 1 = yes	154 (15.5%)	316 (35%)
Primary care physician (PCP)	PCP in current care system, any family member: 0 = no, 1 = yes	610 (61.7%)	627 (69%)
Physician visits	Medical visit in 12 months prior to survey; used employee's response	79%	79%
Technical school	Some college or technical training: 0 = no, 1 = yes; used employee's education	328 (33.0%)	288 (31.6%)
College graduate	Four-year college degree: 0 = no, 1 = yes	362 (36.5%)	317 (34.8%)
Graduate school	Postgraduate or professional degree: 0 = no, 1 = yes	121 (12.2%)	150 (16.4%)
Age	Age of single individual; age of employee for families	37.8 [12.1]	42 [10.6]
Years in Twin Cities	Years lived in the Twin Cities, used employee's residency for families	23.9 [15.9]	26.4 [16.4]
Job tenure	Years worked for current employer, used employee's tenure for families	8 [8.3]	12 [9.3]

<i>Information Variable</i>			
Information from experience	Used information from experience with physicians and hospitals: 0 = no, 1 = yes	50%	72%
Information from ads	Used information from advertisements	14%	10%
Information from friends	Used information from friends, relatives, or coworkers	33%	29%
Information from doctors	Used information from physicians or other health professionals	8%	14%
Information from employer	Used information from employer	60%	58%
Internal communications	Employer distributed information using internal communication	59%	59%
Web	Employer distributed information using the web	12%	11%
Kiosk	Employer distributed information using kiosks	58%	61%
Change care system	Enrollee or any family member changed care system: 0 = no, 1 = yes	14%	18%
Premium change	Change in care system premium	8.78 [8.1]	23.57 [22.3]
<i>Reported Attribute Importance</i>	Scaled as 0 = not very important, 1 = very important in probit analysis		
Quality important	Very important to have high-quality physicians and hospitals in care system	35.9%	73.9%
Specialist referral important	Very important to see specialists in the care system network without a referral	58.5%	46.7%
Wait time important	Very important to have short waiting times for an appointment	56.4%	47.0%
Premium important	Very important to have low monthly premiums	66.5%	33.7%

Note: Standard deviations are given in brackets.

report card could be used to supplement or substitute for other sources of information such as friends and relatives. We were not certain how health status influences whether consumers view the report card or find it helpful. However, we believed that enrollees with a chronic condition are probably attached to a physician; thus, they would be more likely to base their decision on experience rather than on performance measures. We hypothesized that individuals with longer residencies in the Twin Cities would be more familiar with care systems and thus would not use the report card. Finally, we expected that individuals would use the report card if they rate certain care system attributes, such as quality, as very important.

We tried to determine which factors predict use of the report card and strongly believe that consumers who are considering changing provider groups are more likely to use the report card. Unfortunately we did not ask survey respondents whether they were contemplating changing providers; thus, we used the variable "changing care systems" as a proxy for considering the change. Of course the relationship between changing care systems and seeing the report card may be reversed; changing care systems could be a function of seeing the report card and thus could be endogenous. However, based on prior research we discovered that seeing the report card is not a significant predictor of changing care systems. We concluded that seeing the report card was not sufficient to induce switching, making potential endogeneity less of an issue.

The first question we investigated is whether individuals recalled seeing the report card. Forty-seven percent of single respondents and 52 percent of family respondents reported seeing the report card during the last open enrollment period. We found no direct relationship between the health status of single and family respondents and viewing the report card. Single respondents with and without a chronic illness were equally likely to view or not view the report card. Fifty-six percent of family respondents where at least one family member has a chronic illness recalled seeing the report card. These rates can be compared to findings by Knutson, Fowles, Finch, et al. (1996). Those authors found that only 25 percent of state and university employees reported seeing a community-wide report card; however, 76 percent of state employees reported seeing an employer-specific report card.

Not every survey respondent who saw the report card found it helpful in selecting his or her 1998 care system. However, 59 percent of single respondents who saw the report card thought it was helpful. In most cases respondents who thought the report card was not helpful did not pick reasons listed in the survey question (i.e., that the ratings were too complicated,

everyone seemed satisfied with all the clinics, special medical problems not covered by the ratings, or not trusting of the information). Instead they tended to check off the category "other reasons." These consisted mostly of being satisfied with their current clinic and having no plans to change care systems. Notably, of those who did not find the report card helpful, only eight single respondents and five families stated they did not trust the information.

Compared with respondents who found the report card helpful, single respondents who thought the report card was not helpful were more likely to state that choosing a care system was very easy. This relationship does not hold for families; specifically, there is no apparent relationship between ease of selecting a care system and helpfulness of the report card.

Single respondents in fair health were much more likely to find the report card helpful compared to respondents in other states of health. For example, there is a 4-to-1 ratio of finding the report card helpful versus not helpful for respondents in fair health as opposed to only a 2-to-1 ratio for healthier individuals. In addition 61 percent of single respondents with a chronic illness found the report card helpful.⁴

Among family respondents who recalled seeing the report card, 55 percent found it helpful. Most respondents who said the report card was not helpful were satisfied with their current care system and thus did not need to use the report card. Employees in fair health were slightly more likely to find the report card not helpful compared to other self-reported health states; this differs from the results we found for singles. Fifty-four percent of family respondents where at least one family member has a chronic illness found the report card helpful, slightly lower than the percentage of single respondents with a chronic illness who found it helpful.

We asked respondents who found the report card helpful what specific aspects were most and least helpful. The ratings on overall quality of care and service were cited as most helpful, whereas detailed aspects of quality and service were viewed as least helpful for both single and family respondents. Ratings on overall patient satisfaction were viewed as helpful by 26 percent of single respondents and 31 percent of families. Results for most-helpful and least-helpful ratings are mutually exclusive categories (see Table 2). The respondents appeared to be sending a message, although a rather weak one, that they want an overall rating of care-system quality rather than detailed ratings. This contradicts prior studies based on focus groups that found consumers prefer detailed rather than overall measures of performance information (Gibbs, Sangl, and Burrus 1996). There is no relationship between self-reported health status and most-helpful or least-helpful ratings.

Table 2: Most-Helpful and Least-Helpful Report Card Ratings (%)

<i>Single and Family Respondents</i>	<i>Most Helpful</i>		<i>Least Helpful</i>	
	<i>Single</i>	<i>Family</i>	<i>Single</i>	<i>Family</i>
Ratings on overall patient satisfaction	26.1	31.0	22.2	28.3
Ratings on overall quality of care and service	40.2	38.0	2.2	2.2
Ratings on overall access to care	15.4	13.0	25.9	24.6
Ratings on detailed aspects of quality, service, and access	18.4	18.0	49.7	44.9
<i>N</i>	234	200	185	138
<i>Single and Family Respondents with a Chronic Illness</i>				
Ratings on overall patient satisfaction	35.7	30.0	13.6	21.7
Ratings on overall quality of care and service	28.6	42.9	0	2.2
Ratings on overall access to care	7.1	11.4	40.9	26.1
Ratings on detailed aspects of quality, service, and access	28.6	15.7	45.5	50.0
<i>N</i>	28	70	22	46

As shown by Table 2, when single enrollees with a chronic health condition used the report card and found it helpful they tended to list overall patient satisfaction and general quality-of-care measures as the most helpful. Single enrollees with a chronic condition who found the report card not helpful thought detailed measures of quality and service access were the least helpful features of the report card. Based on focus groups of privately insured individuals and Medicaid and Medicare beneficiaries, Gibbs, Sangl, and Burrus (1996) found that participants with a chronic disease use quality-of-care measures such as survival rates and procedures performed but are less concerned with customer service ratings. These authors also found that participants with a chronic illness are less concerned with waiting times, which is consistent with the finding in this study that enrollees with a chronic condition find access measures less helpful.

Univariate Analysis

Three univariate probit models are used to predict whether (1) consumers see the report card, (2) consumers find the report card helpful, and (3) it is easy for consumers to select a care system. The dependent variables are coded as either 0 or 1. In addition to the explanatory variables listed in Table 1 we include dummy variables to capture firm size; small firms are defined as having fewer than 2,000 employees, medium firms have between 2,000 and

6,000 employees, and large firms have more than 6,000 employees. These dummy variables are meant to capture unobserved differences related to the size of companies in the sample.

The results from the first probit model of whether enrollees recalled seeing the report card are reported in Table 3. Single respondents who use information from their own experience or from friends were more likely to view the report card; however, those who valued low premiums were less likely to view the report card. Single respondents who believe specialist referrals are important were more likely to see the report card; however, those who value short waiting times for an appointment were less likely to view the report card. The first result supports the assertion that individuals who value certain care-system attributes will be more inclined to search for care systems with those attributes and thus will have a higher probability of using the report card. However, the finding that those who value short waiting times are less likely to use the report card contradicts this assertion.

Among family respondents, those who believe quality is important were less likely to see the report card. This may indicate that the report card lacks measures on quality that families value. It also may suggest that family respondents who rank quality as important access other sources of information and thus are less likely to see the report card. These assertions are consistent with findings in other studies. For instance, Knutson et al. (1998) found that employees with family coverage are less likely to report a gain in perceived knowledge of health plan options after using a report card.

A significant finding is that family respondents who changed care systems during the open enrollment period were more likely to view the report card versus families who did not change care systems. Additionally, single and family respondents were less likely to see the report card if they are employed in a large firm with more than 6,000 employees. This may suggest variations across large, medium, and small firms. For instance, large firms may have organizational differences that affect the dissemination of report cards. Finally, family respondents were more likely to see the report card if the person most knowledgeable about health care decisions is female.

Table 3 also reports the marginal effects for each independent variable. A marginal effect is the change in the probability of seeing the report card with respect to a one-unit change in each independent variable evaluated at the mean of each variable. Our results show that singles' use of information from experience increases the probability of seeing the report card by 7.6 percentage points. Also, if any family member changes care systems, the probability of viewing the report card increases by 14 percentage points.

Table 3: Probit Analysis—Factors Influencing Whether Single and Family Respondents Recalled Seeing the Report Card

Variable	Single Respondents			Family Respondents		
	Coefficient	Marginal	t-ratio	Coefficient	Marginal	t-ratio
Constant	-.4856*	-.1935*	-1.9474	-.1181	-.0469	-.3535
Married	—	—	—	.1629	.0642	.9883
Children	—	—	—	.0642	.0255	.5547
Female	.1205	.0479	1.1927	.2351**	.0935**	2.3132
Age	.0064	.0025	1.1728	-.0001	-.0001	-.0248
Technical school	.2673**	.1063**	2.0598	-.0160	-.0064	-.1130
College graduate	.1921	.0765	1.4094	.1332	.0528	.9043
Graduate school	.1143	.0456	.6404	.1149	.0454	.6516
Income	-.0032	-.0013	-1.1093	.0011	.0004	1.0156
Income missing	-.3290*	-.1287*	-1.8997	.0556	.0220	.3893
Years in Twin Cities	-.0031	-.0012	-.9061	.0006	.0002	.1915
Job tenure	.0067	.0027	.9451	-.0048	-.0019	-.7890
Visit physician	.0659	.0262	.5610	.0716	.0285	.5947
Primary care physician	.1763*	.0700*	1.7732	.0662	.0263	.6268
Chronic condition	-.1141	-.0453	-.9055	.0667	.0265	.6813
Information from experience	.1901**	.0756**	2.0770	.0493	.0196	.4720
Information from ads	.0670	.0267	.5096	.1972	.0774	1.2523
Information from friends	.2159**	.0860**	2.2441	.1139	.0451	1.0767
Information from doctors	.2801	.1111	1.6320	-.0683	-.0272	-.5035
Specialist referral important	.2110*	.0839*	1.9316	-.0423	-.0168	-.3866
Quality important	-.1722	-.0686	-1.5858	-.2525**	-.0993**	-2.0601
Premium important	-.2097*	-.0832*	-1.9535	-.0426	-.0169	-.3840
Wait time important	-.1691*	-.0673*	-1.6450	.0120	.0048	.1096
Premium change	.0041	.0016	.6616	-.0017	-.0007	-.6860
Change care system	.2073	.0825	1.5773	.3630**	.1404**	2.4996
Internal communications	.1706	.0678	1.4271	.0527	.0210	.4328
Web	-.1846	-.0730	-1.2061	-.2604	-.1036	-1.5708
Kiosk	-.0872	-.0347	-.7479	-.0677	-.0269	-.5492
Medium company	-.0088	-.0035	-.0780	.0353	.0140	.2809
Large company	-.6633***	-.2528***	-5.3188	-.2933**	-.1166**	-2.2155
N	894			780		
Log likelihood function	-569.67			-520.5868		
Restricted log likelihood	-619.03			-538.7841		
Chi-squared	98.71			36.39453		
Degrees of freedom	27			29		
Significance level	.000			.1623523		

***Significant at .01; **significant at .05; *significant at .10.

Next, we analyzed what factors predict whether the report card was helpful. The sample consists of individuals who saw the report card. Single respondents who use information from friends, changed care systems during the open enrollment period, or are employed in a large company were more likely to find the report card helpful. Family respondents where at least one family member changed care systems also were more likely to find the report card helpful. More specifically, the probability of finding the report card helpful increased by 14 percentage points for single respondents who changed care systems and 19 percentage points for family respondents.

The report card is more likely to be helpful for family respondents with children. For example, the probability of finding the report card helpful increased by 17 percentage points for family respondents with children. The report card is less helpful for families headed by two adults compared to single parents and less helpful for families who use information from experience. The latter result is plausible because family respondents with experience in the Twin Cities health care market may gain more information from direct interaction with hospitals and physicians than from ratings in the report card. Nevertheless, families where any family member had at least one visit to a physician in the previous year were more likely to find the report card helpful compared to families that did not use health care services in the prior year. In addition families who use information from advertisements were more likely to find the report card helpful. Finally, contrary to the finding for single respondents, family respondents were less likely to find the report card helpful if the employee works for a large firm. Results are reported in Table 4.

Overall relatively few factors are predictive of using report cards or finding them helpful. Moreover, many factors that were hypothesized to be significant are not. For instance, years of residency in the Twin Cities, a measure of experience with the health care market, is not significant in either model, nor are the methods used by firms to disseminate information. Unfortunately many factors that are likely to predict use and helpfulness of report cards are not available in this study. Factors that should be considered in future research include enrollees' satisfaction with current providers, whether enrollees are contemplating changing provider groups or health plans, and employer characteristics.

Finally, we specified a probit model for the ease of selecting a care system. We asked enrollees if it was easy or difficult for them to select a care system in 1998. Roughly 44 percent of singles and 46 percent of families found the choice difficult. This is consistent with consumers' responses in focus group studies where they report the process of choosing a health plan

Table 4: Probit Analysis—Factors Influencing Whether Single and Family Respondents Found the Report Card Helpful

Variable	Single Respondents			Family Respondents		
	Coefficient	Marginal	t-ratio	Coefficient	Marginal	t-ratio
Constant	.4796	.1859	1.2819	.2020	.0796	.3841
Married	—	—	—	-.5183**	-.2043**	-2.1459
Children	—	—	—	.4231**	.1672**	2.3566
Female	.1746	.0680	1.1428	-.1234	-.0484	-.7673
Age	-.0044	-.0017	-.5726	.0086	.0034	.9070
Technical school	-.0377	-.0146	-.1879	-.1888	-.0747	-.8298
College graduate	-.3031	-.1180	-1.4192	-.0882	-.0348	-.3763
Graduate school	-.4452	-.1757	-1.6412	-.2933	-.1164	-1.1028
Income	.0041	.0016	.9403	-.0021	-.0008	-1.4262
Income missing	.3471	.1283	1.2361	-.2143	-.0850	-.9757
Years in Twin Cities	-.0047	-.0018	-.9524	-.0070	-.0027	-1.4893
Job tenure	-.0026	-.0010	-.2718	-.0118	-.0047	-1.2673
Visit physician	-.0063	-.0024	-.0354	.4677***	.1849**	2.5295
Primary care physician	.0435	.0169	.2845	-.1090	-.0428	-.6771
Chronic condition	-.2237	-.0879	-1.2204	.1280	.0503	.8639
Information from experience	-.1233	-.0477	-.9146	-.6286***	-.2366***	-3.8499
Information from ads	.1320	.0505	.7118	.7485***	.2651***	3.1489
Information from friends	.3051**	.1167**	2.2238	.1977	.0773	1.2805
Information from doctors	.2235	.0843	.9754	.1423	.0555	.6998
Specialist referral important	-.0866	-.0336	-.5557	-.0792	-.0312	-.4610
Quality important	.0002	.0001	.0010	.1991	.0788	1.0976
Premium important	-.0260	-.0101	-.1662	.0622	.0244	.3673
Wait time important	-.1883	-.0732	-1.2475	-.4160**	-.1633**	-2.4737
Premium change	-.0035	-.0014	-.4266	.0030	.0012	.8383
Change care system	.3840**	.1419**	1.9614	.5172**	.1929**	2.4257
Internal communications	-.0155	-.0060	-.0811	.1350	.0532	.7021
Web	-.0353	-.0137	-.1601	.1735	.0674	.6996
Kiosk	-.1503	-.0581	-.8071	-.1323	-.0520	-.6795
Medium company	.0345	.0134	.2172	-.1912	-.0755	-1.0663
Large company	.3995*	.1469*	1.8185	-.3664*	-.1452*	-1.7091
N	430			389		
Log likelihood function	-275.53			-231.16		
Restricted log likelihood	-291.30			-267.68		
Chi-squared	31.55			73.04		
Degrees of freedom	27			29		
Significance level	.249			.00001		

***Significant at .01; **significant at .05; *significant at .10.

as difficult and frustrating (Gibbs, Sangl, and Burrus 1996). Single respondents who report difficulty in choosing a care system were less likely to have seen the report card. Sainfort and Booske (1996) provide further evidence of this relationship. The authors discovered that individuals who report the selection of a health plan as very difficult or very easy were less likely to spend time accessing and reviewing information. However, for family members, difficulty in choosing a care system is not related to having viewed the report card. In addition respondents with a chronic condition reported no more difficulty in choosing a care system compared to individuals without a chronic condition.

Single respondents with higher levels of education were likely to find the choice of care system difficult. Also, if respondents used information from friends or changed care systems, they are more likely to find the choice difficult. For those who changed care systems, as compared to those who did not, the probability of finding the choice easy decreased by 17 percentage points for single respondents and 13 percentage points for family respondents. Single enrollees using information from their own experience were more likely to categorize the decision as easy. Therefore, single respondents lacking health care experience may find the selection of a care system difficult. This finding highlights the importance of the report card, especially for individuals who have not acquired experience with the health care system. Finally, single respondents who value high quality find the choice easier. The results are reported in Table 5.

Among family respondents, the choice of care systems was easier for families who have selected primary care physicians in their current care system. Family respondents with a primary care physician may be more attached to a care system and thus will remain in the same system, simplifying the choice. On the other hand, family respondents where at least one family member changed care systems were more likely to find the decision difficult. In addition family respondents who use information from advertisements, friends, or physicians were more likely to find it difficult to choose a care system. This may indicate that families who use these types of information find them inadequate. Surprisingly, seeing the report card or finding it helpful were not significant predictors of ease of selecting a care system for single or family respondents. This finding is consistent with prior research. For example, Knutson et al. (1998) analyzed the influence of report cards on changes in employees' knowledge of health plan benefits, changes in preferences for health plan attributes, changes in ratings of health plans' overall quality, and choice of plans. The authors concluded that the report card has few discernible effects on employees' knowledge, attitudes, or choice of health plans. The sole

Table 5: Probit Analysis—Factors Influencing Single and Family Respondents' Ease of Selecting a Care System

Variable	Single Respondents			Family Respondents		
	Coefficient	Marginal	t-ratio	Coefficient	Marginal	t-ratio
Constant	.5495**	.1974**	2.0955	.4666	.1748	1.3525
Married	—	—	—	.2009	.0729	1.1646
Children	—	—	—	.0238	.0089	.2007
Female	.0999	.0361	.9668	.0064	.0024	.0612
Age	-.0059	-.0021	-1.0248	-.0018	-.0007	-.3002
Technical school	-.3139**	-.1150**	-2.2446	-.1742	-.0659	-1.1656
College graduate	-.3797***	-.1386***	-2.6174	-.2895*	-.1096	-1.8752
Graduate school	-.3374*	-.1269*	-1.8004	-.2968	-.1142	-1.6204
Income	.0010	.0004	.3490	.0005	.0002	.4460
Income missing	.0032	.0012	.0180	-.0310	-.0117	-.2116
Years in Twin Cities	.0052	.0019	1.4822	.0032	.0012	1.0415
Job tenure	.0015	.0005	.1981	-.0076	-.0029	-1.2209
Visit physician	-.1694	-.0593	-1.3951	-.1583	-.0582	-1.2669
Primary care physician	.1459	.0528	1.4360	.4013***	.1530	3.7129
Chronic condition	.0168	.0060	.1292	.1276	.0475	1.2586
Information from experience	.1828*	.0656*	1.9266	.1019	.0384	.9467
Information from ads	.1678	.0584	1.2174	-.3448**	-.1338	-2.1256
Information from friends	-.2733***	-.0999***	-2.7678	-.2366**	-.0899	-2.1948
Information from doctors	.0729	.0258	.4136	-.2420*	-.0929	-1.7561
Specialist referral important	.0283	.0102	.2519	-.0173	-.0065	-.1532
Quality important	.3424***	.1254***	3.1002	.0923	.0348	.7344
Premium important	.0506	.0181	.4554	-.0173	-.0065	-.1502
Wait time important	.0820	.0294	.7667	.0675	.0253	.5971
Premium change	-.0048	-.0017	-.7554	-.0036	-.0014	-1.3941
Change care system	-.4600***	-.1744***	-3.5016	-.3281**	-.1269	-2.2631
See PRB	.0350	.0126	.2809	-.0235	-.0088	-.2022
PRB helpful	-.1610	-.0587	-1.1974	.2082	.0765	1.5421
Internal communications	.1780	.0643	1.4603	-.0563	-.0211	-.4483
Web	.0793	.0281	.4960	.0984	.0363	.5733
Kiosk	-.1857	-.0662	-1.5468	.0253	.0095	.1994
Medium company	.0715	.0255	.6160	-.0628	-.0236	-.4868
Large company	.0051	.0018	.0397	.0503	.0187	.3676
N	894			780		
Log likelihood function	-529.76			-484.24		
Restricted log likelihood	-569.73			-513.13		
Chi-squared	79.95			57.78		
Degrees of freedom	29			31		
Significance level	.000001			.002		

***Significant at .01; **significant at .05; *significant at .10.

effect is that employees with single coverage are more likely to know more about health plan options after viewing the report card.

IMPLICATIONS

The findings show that health care consumers are using satisfaction and quality information provided by their employer. The survey results demonstrate that consumers are actively involved in the selection of provider groups based on factors other than price and covered benefits, an encouraging finding for advocates of managed competition.

The survey results indicate that consumers find measures on overall quality of care and service most helpful. This indicates that the typical consumer may not want detailed performance indicators for making health care decisions. In fact, the least-helpful ratings are detailed aspects of quality, service, and access. This contradicts findings from focus group research where consumers state that they prefer detailed quality ratings (Gibbs, Sangl, and Burrus 1996). Nevertheless, the detailed ratings are useful to establish the validity of the overall ranking measure, and they may be useful to a few individuals, if not the average consumer.

Our results imply that (1) consumers who change care systems are more likely to use performance information and find it helpful, (2) those who are pleased with their care system tend not to view the report card, and (3) consumers who change care systems report difficulty in selecting a care system. Our findings suggest that information on service quality is important and is being used by consumers, especially those new to the health care market and those who change care systems.

The finding that satisfaction and service-quality information is helpful to consumers provides an important incentive for providers to improve quality, service, and access. Consumers' use of report cards may induce health care systems to increase quality to acquire high ratings on satisfaction measures and to attract patients. For example, if employees use information to select efficient, high-quality health care systems, employers and employees will benefit from lower health care costs. Thus, employers have every incentive to disseminate information on plans and providers to their employees. Our findings should encourage providers and developers of report cards to increase their efforts in deriving relevant quality measures, continually evaluating and updating these measures, and releasing and publicizing information.

To arrive at a quality-competitive health care system, consumers must become effective agents, evolving from passive recipients to informed customers who help steer the system to improve outcomes. The development, dissemination, and use of report cards will stimulate the evolution of health care consumers and empower them with information.

This study is limited by its inability to analyze objective information because the report card contains only subjective satisfaction and service-quality information. Also, it is limited in scope because it analyzes a relatively homogeneous population in one geographic area. Future research on report card use should focus on special populations, for instance, the less educated, non-English-speaking populations and those with chronic conditions.

NOTES

1. Details of Choice Plus and payment arrangements can be found in Robinow (1997), Knutson (1998), O'Reilly (1998), and Christianson et al. (1999).
2. There is likely to be little variation in report card measures for health plans with overlapping networks, making it more difficult to distinguish "good" performers from "bad" performers.
3. To learn about the methods employers used to disseminate information to employees see Feldman, Christianson, and Schultz (2000).
4. Individuals were coded as having a chronic condition if they reported having any of these conditions: diabetes, asthma, hypertension, cancer, heart disease, or depression.

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