Do Consumer Reports of Health Plan Quality Affect Health Plan Selection?

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Objective. To learn whether consumer reports of health plan quality can affect health plan selection.

Data Sources. A sample of 311 privately insured adults from Los Angeles County.

Study Design. The design was a fractional factorial experiment. Consumers reviewed materials on four hypothetical health plans and selected one. The health plans varied as to cost, coverage, type of plan, ability to keep one's doctor, and quality, as measured by the Consumer Assessment of Health Plans Study (CAHPS™) survey.

Data Analysis. We used multinomial logistic regression to model each consumer's choice among health plans.

Principal Findings. In the absence of CAHPS™ information, 86 percent of consumers preferred plans that covered more services, even though they cost more. When CAHPS™ information was provided, consumers shifted to less expensive plans covering fewer services if CAHPS™ ratings identified those plans as higher quality (59 percent of consumers preferred plans covering more services). Consumer choices were unaffected when CAHPS™ ratings identified the more expensive plans covering more services as higher quality (89 percent of consumers preferred plans covering more services).

Conclusions. This study establishes that, under certain realistic conditions, CAHPS™ ratings could affect consumer selection of health plans and ultimately contain costs. Other studies are needed to learn how to enhance exposure and use of CAHPS™ information in the real world as well as to identify other conditions in which CAHPS™ ratings could make a difference.

Key Words. Quality of care, reporting, health plan selection, CAHPS™

This article reports on a study designed to test whether providing consumers with comparative information from a survey of health plan members affects their health plan choices. The topic is timely, because public and private organizations are increasingly investing in indicators of plan performance for dissemination to consumers. Employees are now given comparative information on plan performance by nearly one-quarter of the large employers

that offer coverage choices (Long and Marquis 1998). Several states, includ-
ing Maryland, Minnesota, and New Jersey, have recently published report
cards that compare plans on the results of member surveys or the HEDIS
performance measures developed by the National Committee for Quality
Assurance. Florida, Iowa, Kansas, New Jersey, Washington, and other states
have experimented with giving this type of information to Medicaid recipi-
ents who are enrolling in managed care plans. The Health Care Financing
Administration (HCFA) is collecting and will publish survey information for
every managed care plan that has a risk contract with Medicare. Moreover,
the Consumer Assessment of Health Plans Study (CAHPS™), funded by
the Agency for Health Care Policy and Research (AHCPR), is developing a
survey to measure quality of health plans from the consumer perspective and
reporting tools for communicating survey results (McGee, Kanouse, Sofaer,
et al. 1999). The study reported here was undertaken as part of CAHPS™.

All signs indicate that efforts to develop and distribute consumer infor-
mation will increase in the future. In the "Medicare+Choice" provisions of the
Balanced Budget Act of 1997, Congress expanded the types of plans that will
be available to Medicare beneficiaries and mandated the disclosure of quality
and performance indicators to potential enrollees. In its "Consumer Bill of
Rights and Responsibilities," President Clinton's Advisory Commission on
Consumer Protection and Quality in the Health Care Industry asserted that
consumers have a right to comparative measures of quality and consumer
satisfaction for health plans, health professionals, and health facilities. The
President subsequently instructed all federal agencies to bring their programs
(including Medicare, Medicaid, and military and veterans health services)
into compliance with this and other standards articulated in the Bill of Rights.
As evidenced by the President's action and Republican proposals for in-
creased patient protections, such as the Patient Access to Responsible Care

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Act (PARCA, H.R. 1415) introduced by Congressman Charles Norwood (R-GA), the demand for more information about quality for consumers is a bipartisan movement.

There are several arguments for presenting consumers with comparative information about quality and consumer satisfaction. First, if consumers choose plans with higher ratings, enrollment will be concentrated in better plans and more consumers will receive quality services. Second, if consumers do "vote with their feet," plans have an incentive to improve their services and attract more members. Furthermore, the comparative information provided to consumers will help plans identify their strengths and weaknesses and, in that way, will facilitate quality improvement efforts. Finally, if consumers know that plans offer services of equal quality, then they will be disposed to choose the plan that offers those services at a lower price. Consequently, better information about quality may encourage plans to operate more efficiently and compete on price.

Determinants of Health Plan Selection

Any test of the effects of consumer rating information on people's health plan choices needs to be guided by what we already know about the factors that are important in plan choices. The health plan characteristics important to consumers have been studied extensively over the years. Studies typically have collected data on self-reported preferences using surveys or focus groups, or have estimated analytic models of the effects of various factors on actual plan enrollment choices. Key factors consistently found to be important to consumers are the health benefits offered, costs, maintenance of established providers, and freedom of provider choice (Moustafa, Hopkins, and Klein 1971; Mechanic, Ettel, and Davis 1990; Marquis and Rogowski 1991; Davis et al. 1995; Gibbs, Sangl, and Burris 1996; Sanfort and Booske 1996; Scanlon, Chernew, and Lave 1997; Tumlinson, Bottigheimer, Mahoney, et al. 1997).

Although much is known about the impact of cost, coverage, and provider availability on health plan selection, relatively little is known about the impact of plan quality. Scanlon and colleagues note that little research had been done before 1997 regarding the effects of providing consumers with information on plan quality, no doubt because measures of plan quality appeared only recently (Scanlon, Chernew, and Lave 1997). Consumers say they value certain measures of quality, such as HEDIS indicators, physician board certification, waiting time for appointments, ease of getting specialty care, and disenrollment due to dissatisfaction. But when consumers are actually

choosing health plans, they place less importance on these measures of quality than they do on benefits, provider choice, or costs (Sainfort and Booske 1996). Moreover, the quality indicators consumers say they want are not necessarily the indicators they pay most attention to when choosing a health plan (Hibbard and Jewett 1996). Consumers' use of quality information may often be constrained by their limited understanding of how health plans can influence the quality of care delivered and how quality indicators measure plan performance (Gibbs, Sangl, and Burris 1996; Jewett and Hibbard 1996; Hibbard and Jewett 1997). In addition, many consumers in focus groups report that they do not understand consumer survey methods or how to interpret survey results, and some regard survey results as irrelevant. But as consumers are exposed to this type of information over time, comprehension problems may diminish. (Sainfort and Booske 1996).

Here we report on a laboratory experiment investigating the effect of a new set of measures of plan quality—namely CAHPS™ survey results—on the selection of a health plan. The primary goal of the CAHPS™ project is to give consumers information about the quality of available health plans so they can choose the best plan for themselves. Toward that end, CAHPS™ researchers have developed a state-of-the-art survey for measuring consumers' experiences with their health plans. The CAHPS™ survey asks people to rate their health plan and the quality of care they have received. The survey also asks people to report on their experiences, such as whether they got care without long waits, how well their doctors communicated, and whether the office staff was courteous, respectful, and helpful. To communicate survey results to consumers choosing a health plan, CAHPS™ researchers have developed two reporting guides, namely, a booklet called *Compare Your Health Plan Choices* and a computer tool called *Decision Helper*.

The CAHPS™ survey and reporting guides are being tested on publicly and privately insured consumer populations in demonstration sites around the United States. Results from demonstration studies will provide evidence on consumers' exposure to CAHPS™ information, their attitudes toward it, and whether it affects their plan choices. But the demonstrations are conducted under real-world, uncontrolled conditions that are not optimal for drawing clear inferences about the effects of CAHPS™ information.

For that reason, we undertook a parallel study in the laboratory, which presents several advantages for conducting research on how consumers respond to informational interventions such as CAHPS™. First, laboratory research sheds light on consumer responses under conditions where they are guaranteed to see and spend time considering the survey findings, which

allows us to examine the intervention's efficacy. Second, in controlled conditions of the laboratory, we can guarantee that the plans consumers evaluate are actually different in quality ratings and other dimensions of interest, which may not be the case in a field setting. Third, we are able to control other variables, such as the number and types of plans, their benefits and costs, and the relationship between these variables and plan ratings. In field situations, uncontrolled variables and their confounding with variables of interest make it difficult to draw causal inferences.

However, it is also important to recognize that the laboratory environment has limitations. First, consumers recruited to review materials in a laboratory setting are not in a real decision-making mode, but are role-playing what they might do if they were actually choosing a health plan. They may not respond to information as they would if their decision were to have real consequences. Second, their job as research subjects is to review the information they are given, and that role may exaggerate how long and how closely they examine the information. Third, the option sets that consumers are asked to evaluate may be somewhat unrealistic, varying only on the characteristics in which researchers are interested. The most informative laboratory studies take advantage of the strengths of the laboratory while minimizing its limitations, for example, by using materials that are as realistic as possible.

METHODS

In a controlled laboratory experiment, hypothetical CAHPS^{TM} survey results were presented to privately insured consumers using the reporting categories and formats developed for CAHPS^{TM} version 1.0 (AHCPR 1997). Consumers participating in the experiment were asked to imagine that they were choosing a health plan for themselves. They received information on four fictitious health plans that varied by plan type (HMO versus PPO), benefits and cost to the employee, and whether the health care provider they liked was available through the plan. Consumers were randomly assigned to receive a choice set that included plans with differing combinations of these features. In addition, they were randomly assigned to receive either information on plan features alone (control group) or information on plan features with experimental CAHPS^{TM} survey ratings of the plans[1]. The CAHPS^{TM} survey ratings were provided either in the CAHPS^{TM} booklet, *Compare Your Health Plan Choices*, or in an interactive computerized format in the CAHPS^{TM} *Decision Helper*. After

reviewing the materials for about 45 minutes, consumers selected a health plan and completed a questionnaire.

Sample

Participants were 311 men and women in Los Angeles County who were recruited by a focus group recruiting firm. Eligibility was restricted to adults, ages 18 to 64 years, who had a private health insurance plan and resided or worked within 12 miles of Santa Monica. Persons with vision or reading problems and those whose current job involved selling or buying health insurance were excluded. All of the discussion and written materials were in English. Subjects were paid $50 for their participation.

Fifty-eight percent of participants were female. Fifty-six percent of participants were between the ages of 25 and 44 years. Eighty-two percent had incomes over $30,000, and 38 percent had incomes over $60,000. Participants were racially and ethnically diverse: 59 percent were white, 19 percent black, 14 percent Hispanic, and 5 percent Asian or Pacific Islander. Ninety-nine percent were high school graduates, and 35 percent were college graduates. Sixty-eight percent described their overall health as excellent or very good. Sixty percent described their current health insurance plan as an HMO, 32 percent as a PPO.

Experimental Design

Each consumer had a choice of four basic health plans (Table 1). Two plans offered more coverage for a higher premium and two offered less coverage for a lower premium. The cheaper plans cost employees nothing; the more expensive plans cost $100 per month, exclusive of employer contributions. Low-benefit plans offered basic benefits but no supplemental benefits. High-benefit plans offered basic benefits plus six supplemental benefits (i.e., prescription drugs, extended vision care, dental care, durable medical equipment, inpatient mental health care, and corrective appliances). Costs and benefits were correlated in the choices offered, so that high-cost plans offered supplemental benefits, and low-cost plans did not.

The four basic plans also varied in whether consumers could keep their provider. To manipulate the provider variable, we asked participants to assume that they had a provider whom they liked and that they called their provider to find out which health plans he or she was in. The provider was in the network of two of the four plans they had to choose from, according to the materials they received. For the other two plans, consumers would have to switch to a new provider.

Table 1: Four Choices Presented to All Study Participants (Control and Experimental)

	More Benefits, *More Expensive*	*Fewer Benefits,* *Less Expensive*
Keep provider	(A) HMO	(C) PPO
Switch provider	(B) PPO	(D) HMO
	Or	

	More Benefits, *More Expensive*	*Fewer Benefits,* *Less Expensive*
Keep provider	(A) PPO	(C) HMO

Note: Every subject saw plans A through D. Plan A refers to a plan offering more benefits at higher cost and a provider network that includes one's doctor. Plan B refers to a plan offering more benefits at higher cost and a provider network that does not include one's doctor. Plan C refers to a plan offering fewer benefits at lower cost and a provider network that includes one's doctor. Plan D refers to a plan offering fewer benefits at lower cost and a provider network that does not include one's doctor.

In addition to varying on cost, coverage, and provider, plans varied with respect to type (HMO versus PPO, Table 1). Consumers in the control group, who received no CAHPS™ information, were randomly assigned to see the four choices displayed in the upper panel of Table 1 or those displayed in the lower panel. These two sets differ in the specific combinations of cost and coverage, provider, and HMO versus PPO available as choices, and thus in the kind of trade-offs required.

Consumers assigned to receive CAHPS™ information were divided into two experimental groups (Table 2). For one group, the plans that did well on the CAHPS™ survey were also the more expensive plans with more coverage (upper panel); for the other group, the plans that did well on the CAHPS™ survey were the less expensive plans with less coverage (lower panel). Each group that received CAHPS™ information was further randomly divided into subgroups that received one of the two choice sets shown in Table 1.

Consumer ratings of plans were summarized in a chart displaying stars to indicate whether each plan received ratings on each of 13 survey dimensions that were above average (three stars), average (two stars), or below average (one star) compared with other plans. Plans with high CAHPS™ consumer ratings had 32 stars distributed across the 13 survey dimensions (mean = 2.46 stars), whereas plans with low CAHPS™ ratings had 20 stars distributed across the 13 survey dimensions (mean = 1.54 stars).[2]

Table 2:   Two Experimental Groups

(1) Higher CAHPS™ Ratings for More Benefits, More Expensive Plans

	More Benefits, More Expensive	Fewer Benefits, Less Expensive
Keep provider	(A) higher CAHPS™ ratings	(C) lower CAHPS™ ratings
Switch provider	(B) higher CAHPS™ ratings	(D) lower CAHPS™ ratings

(1) Higher CAHPS™ Ratings for Fewer Benefits, Less Expensive Plans

	More Benefits, More Expensive	Fewer Benefits, Less Expensive
Keep provider	(A) lower CAHPS™ ratings	(C) higher CAHPS™ ratings
Switch provider	(B) lower CAHPS™ ratings	(D) higher CAHPS™ ratings

Experimental Materials

The CAHPS™ consumer survey results for the fictitious plans in this experiment were presented in the formats developed as part of the CAHPS™ 1.0 Survey and Reporting Kit. Half of the experimental subjects saw the CAHPS™ information in a 30-page booklet and the other half saw the CAHPS™ information in a Web-based computer tool with about 50 screens. The medium in which information was presented had no effect on preferences for Plans A through D in Table 1 ($\chi^2_{(3)} = 0.70$, $p = .87$) or on the strength of CAHPS™ effects ($\chi^2_{(3)} = 4.12$, $p = .25$), based on a multinomial logistic regression. Therefore, the experimental design effectively simplifies to the one shown in Tables 1 and 2.

Other materials, such as the descriptions of plan features, costs, and basic and supplemental benefits, were based on examples of similar materials distributed by employers in the area. These were presented to all subjects in a short booklet.

Multivariate Models

We used multinomial logistic regression to model each consumer's choice among plan types A, B, C, and D. This allowed us to estimate first, the probability of a consumer choosing a given plan type and second, the effect of varying plan characteristics (CAHPS™ ratings, HMO versus PPO) on preferences for plan types A through D.

The independent variables used to predict plan choice were three dummy variables describing the pairings of plan characteristics with plan

types. The pairing of CAHPS™ ratings with plan type is described by two dummy variables: (1) higher CAHPS™ ratings for more expensive plans (plans A and B have high CAHPS™ ratings) and (2) lower CAHPS™ ratings for more expensive plans (plans A and B have low CAHPS™ ratings). The group, no CAHPS™ ratings, is omitted. A third dummy variable, HMO-PPO structure, contrasts choice sets in which plans A and D are HMOs (and B and C are PPOs) with choice sets in which Plans A and D are PPOs (and B and C are HMOs). Jointly, these three dummy variables describe the two choice sets for the control group (Table 1) and the four choice sets for the experimental groups (Tables 1 and 2 combined).

RESULTS

We examined overall enrollment choices in the control group, where preferences were unaffected by the presence of CAHPS™ ratings. Overall, 86 percent of consumers preferred plans with higher premiums and more benefits to plans with lower premiums and fewer benefits (Table 3). This difference is significant ($p < .0001$). Overall, 74 percent of consumers preferred plans that allow them to keep their provider to plans that require them to switch providers ($p < .0001$). HMOs were preferred over PPOs by 53.8 percent of consumers. This difference is not significant ($p = .38$).

Consumers' enrollment choices among plans A through D were not affected by whether the plan was an HMO or a PPO ($\chi^2_{(3)} = 1.93$, $p = .59$, $N = 309$). That is, preferences for plans A and D were the same whether they were HMOs or PPOs, and preferences for plans B and C were the same whether they were HMOs or PPOs.

The effects of CAHPS™ ratings on plan choice is revealed by examining the choices made by consumers with the CAHPS™ information, compared

Table 3:   Percent Distribution of Plan Choices in the Control Group ($N = 132$)

	More Benefits, More Expensive	Fewer Benefits, Less Expensive	Total
Keep provider	62% (A)	12% (C)	74%
Switch provider	24% (B)	2% (D)	26%
Total	86%	14%	100%

Source: Authors' analyses.

to the choices made by the control group when it is absent. If CAHPS™ information has an effect, this will show up as a shift, relative to the control group, to plans that receive higher ratings, and a corresponding shift away from plans that receive lower ratings.

As can be seen in Table 4, consumer preferences for plans A through D were essentially the same in the control group and in the experimental group where higher CAHPS™ ratings were assigned to the more expensive plans ($\chi^2_{(3)} = 2.14$, $p = .54$, $N = 309$). This means that CAHPS™ information had no effect on plan choices in this experimental group. However, plan preferences were significantly different between the control group and the experimental group in which higher CAHPS™ ratings were assigned to less expensive plans ($\chi^2_{(3)} = 20.07$, $p = .0002$, $N = 309$). A follow-up test showed that consumers shifted toward plans with higher CAHPS™ ratings (C and D) and away from plans with lower CAHPS™ ratings (A and B) compared to the control condition ($\chi^2_{(1)} = 55.61$, $p < .0001$, $N = 309$).

We tested for differences in the effect of CAHPS™ ratings on plan choices involving HMOs and PPOs.[3] We found significant differences ($\chi^2_{(3)} = 8.41$, $p = .038$, $N = 309$). As can be seen in Table 5, people's preferences for HMOs are more sensitive to CAHPS™ ratings than are their preferences for PPOs.

We also tested whether demographic characteristics altered the CAHPS™ effect. The demographic characteristics we examined were gender, age, race and ethnicity, education, self-rated overall health, and family

Table 4:   Percent Distribution of Plan Choices, According to CAHPS™ Ratings for More Expensive Plans

	Control Group (No CAHPS™ Ratings) (N = 132)	Higher CAHPS™ Ratings for More Expensive Plans (N = 91)	Lower CAHPS™ Ratings for More Expensive Plans (N = 88)
More Benefits, More Expensive	86%	89%	59%
Keep provider	62% (A)	61% (A)	38% (A)
Switch provider	24% (B)	28% (B)	21% (B)
Fewer Benefits, Less Expensive	14%	11%	41%
Keep provider	12% (C)	8% (C)	28% (C)
Switch provider	2% (D)	3% (D)	13% (D)
Total	100%	100%	100%

Source: Authors' analyses. For the multivariate analyses, the sample size was 309 because of missing data on one of the variables in the equation.

Table 5:   Gain in Market Share as a Result of Higher versus Lower CAHPS™ Ratings by Plan Type

	HMO	PPO
More Benefits, More Expensive		
Keep provider	+31% (A)	+14% (A)
Switch provider	+21% (B)	−8% (B)
Fewer Benefits, Less Expensive		
Keep provider	+29% (C)	+12% (C)
Switch provider	+12% (D)	+6% (D)

Source: Authors' analyses. For the multivariate analyses, the sample size was 309 because of missing data on one of the variables in the equation.

Note: The "gain" represents the difference between the percentage of consumers who chose a particular plan with high versus low CAHPS™ ratings.

income. Tested as a group, we found no evidence that these demographic variables altered the CAHPS™ effect. This could reflect limitations in the diversity of our sample, which included only one percent without a high school education and only 6 percent who rated their health as less than good.

DISCUSSION

The results reported here provide the first experimental evidence that CAHPS™ ratings can influence plan choices. CAHPS™ ratings have an effect in situations where high CAHPS™ plans cost less and cover fewer services and not in situations where high CAHPS™ plans cost more and cover more services. This interesting pattern suggests that CAHPS™ ratings may help to contain costs. CAHPS™ ratings may also affect plan choices in situations not studied here, such as when costs are the same across plans.

Our results suggest that CAHPS™ ratings affect choices when CAHPS™ ratings reveal high-quality plans that cost less. The consumers who participated in our laboratory study, all of them privately insured, tended to prefer more expensive plans with better coverage. When the more expensive plans also received higher ratings, plan choices were unaffected by the ratings. This may signify that the survey results merely confirmed consumers' beliefs that more expensive plans offer higher quality. However, when the more expensive plans received lower CAHPS™ ratings, consumers shifted their choices to the higher-rated, less expensive plans.

This finding suggests that quality information can facilitate cost containment. Apparently, lacking CAHPS™ results or other quality information,

consumers assume that price indicates quality, or that "more is better" (Mc-Connell 1968; Peterson 1970; Olson 1977). CAHPS™ ratings provide one measure of quality that allows consumers to assess value. Accordingly, it is possible that quality ratings may alter consumers' choices even when they do not reveal quality differences by demonstrating that low-cost plans offer better value than consumers might expect.

Our results also suggest that CAHPS™ ratings are likely to have a somewhat stronger influence when consumers are selecting among HMOs than among PPOs. We speculate that consumers may regard the quality of care they are likely to receive in an HMO as more highly dependent on the plan than is the case in PPOs, where the quality may be seen as more dependent on which provider they choose. Consumers who are leaning toward an HMO may be more interested in CAHPS™ ratings because the limited choice of providers and the constraints on utilization outside the plan lead them to expect that the care they receive will be similar to that of others enrolled in the plan. In contrast, the wider choice of providers available in a PPO and the greater freedom to go outside the plan may make the plan averages seem less relevant to those considering a PPO.

Because the impact of quality information can vary dramatically as a function of other plan attributes, it is important to study the effects of quality information in conjunction with other information known to affect choice. For example, the consumers in our experiment were exposed to CAHPS™ ratings only under conditions where plans varied in cost. For some, CAHPS™ ratings were positively correlated with cost; for others, CAHPS™ ratings were negatively correlated with cost. We did not address the important case in which the cost for all plans was the same, as is the case under Medicaid. Presumably, in that case consumers will balance quality against other things they care about, such as choice of providers or location of facilities.

For the CAHPS™ ratings to have an impact in the real world, consumers must receive CAHPS™ rating information and pay attention to it. In the laboratory, we placed the information in front of the subjects and paid for their time while they studied it. In the real world, distribution of the survey information will often be imperfect, and many consumers who receive CAHPS™ information will not look at it before choosing a plan. We have no way of estimating from this experiment the actual rates of exposure and use under real-world conditions, but ongoing CAHPS™ demonstration studies will measure exposure and use in various settings (Carman, Short, Farley, et al. 1999).

The mode of delivering CAHPS™ information, whether in a printed booklet or on a computer screen, seems to have no effect on plan choices.

This suggests that sponsors considering how to disseminate comparative plan information can focus on the best strategy for making the information accessible to consumers. They need not worry about media effects on consumers' comprehension or use of the information once they see it. However, the medium may affect which consumers are reached and how they process the information. Our research did not address this question.

This study identifies some conditions under which CAHPS™ survey results may affect consumers' choice of health plans. The prevalence of these conditions in the real world is unknown. Other studies are needed to learn whether CAHPS™ ratings may have an impact under other conditions, such as when the ratings reveal no differences among the plans, or the plans all cost the same.

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NOTES

1. Subjects were randomly assigned at the level of the group into one of three conditions. Approximately ten subjects signed up for each session of the study. These groups of approximately ten subjects were randomly assigned to receive either control, paper, or computer materials.
2. CAHPS™ assigns stars by conducting tests of statistical difference. A plan is assigned two stars in a rating category if its mean rating is not statistically different from the mean of all plans being compared. A plan is assigned one or three stars if its mean rating is statistically lower or higher than the mean of all plans being compared.

   We compared the strength of the CAHPS™ manipulation in the laboratory experiment to the variability of stars obtained in real CAHPS™ data sets collected in New Jersey and Washington. One measure of variability is the range. In New Jersey, the average number of stars per plan ranged from 2.50 to 1.60 (range = 0.90). In Washington, the average ranged from 3.00 to 1.31 (range = 1.69). In the laboratory experiment, the best plan averaged 2.46 and the worst 1.54 for a range of 0.92. By this measure of variability, the CAHPS™ manipulation in

the laboratory experiment is as strong as the variation found in New Jersey and less strong than that found in Washington. Another measure of variability is the standard error of the average number of stars per plan across plans. The standard error was 0.90 in New Jersey, 1.44 in Washington, and 1.92 in the laboratory experiment. By this measure of variability, the CAHPS^{TM} manipulation in the laboratory experiment was stronger than the variation found in New Jersey and Washington. Because the laboratory experiment has no plans that are "average" on CAHPS^{TM}, it appears more variable by this measure.

3. We ran a multinomial logistic regression that predicted choice of plans A, B, C, and D as a function of HMO-PPO structure, the pairing of CAHPS^{TM} ratings with more or less expensive plans, and the interaction between these two variables. We eliminated the control group from this comparison.

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