Health Plan Decision Making with New Medicare Information Materials

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Objective. To examine the effect of providing new Medicare information materials on consumers' attitudes and behavior about health plan choice.

Data Source. New and experienced Medicare beneficiaries who resided in the Kansas City metropolitan statistical area during winter 1998–99 were surveyed. More than 2,000 computer-assisted telephone interviews were completed across the two beneficiary populations with a mean response rate of 60 percent.

Study Design. Medicare beneficiaries were randomly assigned to a control group or one of three treatment groups that received varying amounts and types of new Medicare information materials. One treatment group received the Health Care Financing Administrations's pilot *Medicare & You 1999* handbook, a second group received the same version of the handbook and a Medicare version of the Consumer Assessment of Health Plans (CAHPS®) report, and a third treatment group received the *Medicare & You* bulletin, an abbreviated version of the handbook.

Principal Findings. Results of the study suggest that the federal government's new consumer information materials are having some influence on Medicare beneficiaries' attitudes and behaviors about health plan decision making. Experienced beneficiary treatment group members were significantly more confident with their current health plan choice than control group members, but new beneficiaries were significantly less likely to use the new materials to choose or change health plans than control group members. In general the effects on confidence and health plan switching did not vary across the different treatment materials.

Conclusions. The 1999 version of the *Medicare & You* materials contained a message that it is not necessary to change health plans. This message appears to have decreased the likelihood of using the new materials to choose or change plans, whereas other materials to which beneficiaries are exposed may encourage plan switching. Because providing more information to beneficiaries did not result in commensurate increases in confidence levels or rate of health plan switching, factors other than the amount of information, such as how the information is presented, may be more critical than volume.

Key Words. Health plan decision making, Medicare beneficiary, cognitive aging

The Medicare insurance market is undergoing significant change as a result of the Medicare+Choice program created by the Balanced Budget Act (BBA) of 1997. The BBA permitted organizations to sell several new types of health insurance options to Medicare beneficiaries, increasing the number of choices and presumably the complexity of the health insurance decision process. To date the availability of these new options has been quite limited but is expected to grow. It is not known what type of enrollment will occur and how attractive these options will eventually become.

Another notable feature of the BBA is that beginning in 2002 Medicare beneficiaries will no longer be able to change health insurance plans on a monthly basis. An annual lock-in period analogous to that generally required in the employer-sponsored health insurance industry will begin to be phased in. This lock-in removes the safety-valve (Riley, Ingber, and Tudor 1997) feature embedded in the current system that enables beneficiaries to change plans quickly if they make an inappropriate choice, and in doing so elevates the importance of the decision process. Accurate and user-friendly information would be helpful to Medicare beneficiaries to inform them about the new health insurance options and the important systematic changes that were recently legislated.

Significant effort is under way to provide consumers with information to assist them in choosing a health plan. The Health Care Financing Administration (HCFA) is leading the information dissemination activities for the Medicare program with the creation of the National Medicare Education Program (see Goldstein 1999). The program includes the development and annual nationwide dissemination of the new *Medicare & You* handbook (formerly *The Medicare Handbook*), which contains basic information about the Medicare program, supplemental insurance, managed care, and other plan options. The first (1999) version of the *Medicare & You* handbook was pilot tested in

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This research was supported through intra-agency agreement no. IA98-48 between the Health Care Financing Administration and the Agency for Healthcare Research and Quality as part of cooperative agreement no. U18HS09218. Funding for this research was also received through a professional development award from Research Triangle Institute. The opinions expressed in this article are those of the authors.

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five states and the Kansas City metropolitan statistical area (MSA) in fall 1998, while the rest of the country received an abbreviated eight-page *Medicare & You* bulletin. The 2000 version of the handbook, which has a center section that is tailored to 26 distinct geographic regions and contains information on individual health plan performance, was mailed to 33 million Medicare households in fall 1999. The health plan performance information includes two types of quality-of-care indicators: (1) Health Plan Employer Information Data Set (HEDIS) 3.0 measures developed by the National Committee for Quality Assurance, and (2) consumer ratings of plans based on the Consumer Assessment of Health Plans (CAHPS®) survey that HCFA is now fielding on an annual basis. This information is also available on the Medicare program's web site (www.medicare.gov).

No empirical evidence exists to indicate the effect that these new Medicare health plan choices and information materials will have on the health insurance decision-making process for the Medicare population. This article presents findings from an evaluation of the pilot (1999) version of the *Medicare & You* handbook, the *Medicare & You* bulletin, and a separate Medicare CAHPS report on beneficiary decision making in the Kansas City MSA.

THEORETICAL LITERATURE AND PREVIOUS STUDIES

Studies of consumer choice often rely on economic theory, which presumes that consumers will act rationally when making purchasing decisions and make decisions that maximize their expected utility. Informed consumers are expected to spur a competitive health care environment and to encourage health plans to compete on factors other than cost and benefits, namely quality of care.

Decision Making and Cognitive-Aging Theories

Some observers (Hibbard, Slovic, and Jewett 1997; Knutson et al. 1998) have proposed that other theoretical frameworks may be a more appropriate foundation when studying health care decision making. Krantz (1991) also challenges the normative assumption of consumers as "maximizers," suggesting that they are simply "problem solvers," and Slovic's (1995) finding that consumers construct their preferences in the process of elicitation is further evidence against employing the theory of economic rational choice. Hibbard and colleagues (1997) built upon research from the decision sciences to learn how individuals process and use information in making health plan choices. For example, consumers have limits on how much information they can readily process, and as a result they will simplify the decision procedure, often eliminating certain choices or details and taking heuristic shortcuts that may lead to erroneous decisions (Tversky and Kahneman 1974). To understand how older adults process and use information in decisions we draw upon the psychological literature on cognitive aging.

The cognitive-aging literature provides some insight into how aging may affect Medicare beneficiaries' health plan decision-making processes. Studies of cognitive aging reveal that there are age-related differences in information processing with respect to speed, working memory capacity, reasoning ability, problem solving and text processing, and acquisition and retrieval of new information (Salthouse 1996; Gilinsky and Judd 1994; Willis 1996; Meyer, Marsiske, and Willis 1993). These differences result in poorer performance with many cognitive tasks among older adults (Schwarz et al. 1998) and a reduction in the amount of information available with which to make decisions (Park 1999). Some posit that these "age-related information-processing deficits affect the components of the decision process" (Park 1999, p. 11). Many of the information-processing studies to date have focused on the effects of cognition on medication adherence, demonstrating that older adults have more difficulty interpreting prescription labels (Kendrick and Bayne 1982). Another relevant study found that older adults have difficulty comprehending medical information (in advanced directives) regardless of whether it is presented in a simple pamphlet or a more complex, lengthy document (Zwahr et al. 1997). There is general evidence that older adults seek less information about medical decisions, make important treatment decisions more quickly, and exhibit less sophisticated reasoning about decisions made in comparison to younger adults (Meyer, Russo, and Talbot 1995; Park 1999). The literature linking aging and health decision making is in need of further exploration (Schwarz et al. 1998).

Role of Consumer Information in Health Plan Decision Making

It is also important to consider what we have learned from studies of how consumers in general make health plan decisions and the role of quality-of-care information in the decision process. In a review of the literature, Scanlon, Chernew, and Lave (1997) identified the factors most likely to affect health plan choice.

Most studies have shown that consumers are price sensitive (Scanlon, Chernew, and Lave 1997). An earlier literature review documented the importance of benefits and provider choice (Mechanic 1989). Health plan enrollment has also been found to vary by age, gender, and health status (Scanlon, Chernew, and Lave 1997). A handful of recent studies have shown that consumers are not strongly influenced by comparative information about health plan quality (Scanlon and Chernew 1999; Knutson et al. 1998; Chernew and Scanlon 1998; Robinson and Brodie 1997); however, all of these studies were conducted using data from young and middle-aged employed populations. Reliance on other, less formal information sources, such as friends, family, and practitioners, has been proposed as a reason for the limited use of quality information (Scanlon and Chernew 1999; Robinson and Brodie 1997). Others have cited the need to provide more assistance with the new health plan information (Sainfort and Booske 1996). The current approaches used to design and disseminate information materials may indicate another reason for lack of use and effect to date. Few studies have examined the effect of general and comparative information on health insurance decision making among older adults. This study seeks to fill that gap.

STUDY DESIGN

Data for this study are from two parallel surveys of Medicare beneficiaries in the Kansas City MSA conducted by Research Triangle Institute (RTI) in fall and winter 1998–99. One survey was conducted with beneficiaries just aging into the Medicare program at the time of the interview (referred to as new beneficiaries),[1] whereas the other survey was of beneficiaries who were already enrolled in the program (referred to as experienced beneficiaries). Although the content of the surveys was largely the same and computer-assisted telephone interviewing was used for both, the timing of the data collection procedures varied. We also oversampled experienced beneficiaries who reported being more interested in consumer information materials during an initial screening interview. Because of concern about potential contamination we completed the control group interviews prior to HCFA's national mailing of the *Medicare & You* bulletin in the fall of 1999 and interviewed the treatment groups after the national mailing. We asked beneficiaries in the treatment groups to look at the materials to participate in the study.

We obtained two sampling frames from HCFA that excluded those dually eligible for Medicare and Medicaid, those who had end-stage renal disease, those who were institutionalized or receiving hospice care, those who were Medicare-qualified government employees, and those whose original reason for entitlement was a disability. All 1,855 new beneficiary Kansas City residents were used for the study, but we systematically sampled 3,573 of the 170,062 experienced beneficiaries after sorting the file on age, sex, race, and zip code. Beneficiaries from both samples were randomly assigned to one of four study groups, one control group and three separate treatment groups.

The control group received no information as part of the study, but beneficiaries could have been exposed to Medicare-related information outside the study. For example, control and treatment group members could have received Medicare-related information in the media, from their employer, or from insurance companies. We found that one-third of experienced beneficiaries and one-half of new beneficiaries had received at least some Medicare-related information from an insurance company, agent, or health plan in the last six months (McCormack, Garfinkel, Hibbard, et al. under review).

The intervention materials provide varying degrees of information about the Medicare program and other plan options in terms of covered benefits, premium and out-of-pocket costs, and beneficiary rights. One treatment group received the 52-page 1999 *Medicare & You* handbook with a center section about Medicare HMOs tailored to the Kansas City area (the handbook group). Another treatment group received the same copy of the handbook and a Medicare version of the CAHPS report tailored to the Kansas City area (the handbook and CAHPS group). The 22-page CAHPS survey report provides quality-of-care information at the plan level for the five Medicare HMOs that offered services in the Kansas City MSA at the time. No other Medicare+Choice plans were available in the area. The final treatment group received a generic (i.e., not region specific) eight-page trifold *Medicare & You* bulletin, which is the abbreviated version of the handbook. The bulletin was used by HCFA in its 1998 45-state mailing. We mailed the Medicare materials directly to the homes of treatment group participants in advance of the interviews. Therefore, participants in treatment groups received a *Medicare & You* publication from RTI as well as part of the national mailing. On average beneficiaries received the materials from RTI about one month before they were surveyed.

We completed a total of 1,156 interviews with the experienced beneficiaries, which constituted a 62 percent response rate, whereas 951 interviews were completed with the new beneficiaries, which equaled a 58 percent response rate.[2]

RESEARCH QUESTIONS AND METHODS

We were interested in learning whether beneficiaries who received the federal government's pilot Medicare information materials were more likely to use them in making health insurance decisions as compared to other information materials available from alternative sources. We examined the different ways beneficiaries use consumer health plan information in the choice process. Given the high levels of satisfaction among Medicare beneficiaries (Rosenbach, Adamache, and Khandker 1995) and generally low rates of health plan switching documented in the literature (Buchmueller and Feldstein 1997), we expected that beneficiaries may use the materials in ways other than to choose or switch plans. Therefore, we report descriptive statistics on the proportion of beneficiaries who used the information to confirm a health plan choice they had already made as well as the proportion who used the information when choosing or changing plans. We also analyzed the effect of the information on beneficiaries' attitudes about health plan choice, namely their level of confidence in their current health plan selection.[3]

Dependent Variables

Using ordered logistic regression analysis we model the factors that affect: (1) the probability of using the information to choose or change health plans, and (2) beneficiaries' level of confidence in their current health plan choice.

The dependent variable in the first model comprises three mutually exclusive categories reflecting use information: (1) a beneficiary used information to choose or change plans, (2) a beneficiary used information when considering changing plans, or (3) a beneficiary did not use information to choose or change plans or consider changing plans (the omitted category). In this model the underlying latent variable is the propensity to use information to choose or change plans or to consider changing plans. Use of information and choice behavior appear in one dependent variable because we intended to measure whether beneficiaries used the intervention materials when making a health plan choice. A limitation of this approach is that one action (changing plans) had to take priority (over the degree to which the information was used) for coding purposes. We were not able to examine switching versus not switching directly (using a dichotomous dependent variable) because such a small proportion of the Medicare population switches health plans. This approach may be possible in the under-65 population in which switching plans is more commonplace. (See the appendix for the exact wording of the survey questions and coding used to develop the dependent variables.)

Prior to the set of survey questions on choosing or changing health plans, beneficiaries were asked to consider the Medicare-related information they had received in the last six months when responding. If a beneficiary did not receive any Medicare-related information in the last six months (which included 1 percent of new beneficiaries and 3 percent of experienced beneficiaries), they were coded into category three (did not use the information to choose or change plans or consider changing plans). Coding the dependent variable in this way did not change the substantive results relative to excluding these observations altogether. If a beneficiary did not respond to the survey question on health plan switching or considering switching (which included 9 percent of new beneficiaries and less than 1 percent of experienced beneficiaries), they were excluded from the models and the bivariate statistics. The ordered categories of the dependent variable in the confidence model are (1) extremely confident, (2) very confident, (3) somewhat confident, (4) not at all confident (omitted category) that one's current health plan is the best choice for them.

Ordered logit coefficients can be used to identify the direction, but not the magnitude, of the relationship between the outcome and the independent variables. Therefore, we estimated predicted probabilities to quantify the effect of the independent variables on the dependent variable when making comparisons between the study groups. Standard errors were corrected for the stratification used in sampling and the design effect created by the complex survey design. Survey weights, calculated as the inverse of the probability of selection and corrected for nonresponse and sampling stratification, were used in all analyses. Unless otherwise noted a .05 significance criterion was used.

Independent Variables

Study group assignment resulted in the key independent variables in the analysis: (1) bulletin group, (2) handbook group, and (3) handbook and CAHPS report group. We show descriptive statistics for the three treatment groups combined because there were few differences across the groups. However, multivariate results showed slightly more variation and are therefore broken down for each treatment group.

Information about beneficiaries' cost of insurance beyond Medicare was not included in the models because it is only available from insurers, is difficult for a beneficiary to self-report, and is generally not reliable. It was also not possible to capture information about the extent of health insurance coverage or availability of providers. These variables have been found to be important when modeling plan choice but may not be critical when modeling the propensity to use the materials for health plan choice. We also did not have any information reflecting the beneficiaries' cognitive status and thus could not explore its effect. Because the study design involved a randomized experiment we were not concerned about these potentially important but omitted variables.

Socioeconomic and demographic variables used in the regression models include beneficiary age, gender, race, ethnicity, education, income, marital status, and whether they live alone or with others (see Table 1 for descriptive information and differences across subgroups). Insurance variables include indicators of whether the beneficiary has any supplemental insurance and how much a spouse's choice of insurance affected the respondent's choice. The models contain variables reflecting beneficiaries' health status as measured by the Short Form 12 (SF-12©) (physical and mental health scores), whether the beneficiary has a usual source of health care for sick or routine visits, and the amount of health care services used recently.

We also used a 15-item knowledge index as a predictor variable. The index, which reflects beneficiaries' knowledge of the Medicare program and different health insurance options, was developed for another component of this study to measure the effect of the consumer materials on beneficiary knowledge (see McCormack, Garfinkel, Keller, et al. forthcoming). The mean knowledge index score was 60 percent, or about 9 of the 15 questions correctly answered. The models include a continuous variable reflecting the number of (nontreatment) information sources to which a beneficiary was exposed in the last six months. The number of sources ranged from 0 to 11 (different categories) with a mean of 1. For experienced beneficiaries we also included variables indicating how much exposure they had had to quality-of-care information. Finally, we include a dummy variable indicating beneficiaries' perspective about HMOs as this may reduce their likelihood of using consumer materials, many of which discuss managed care options. Although we explored several interactions that were theoretically important, only the combination of the CAHPS treatment group dummy variable and the hospitalization in the last year dummy variable was significant and therefore included in the models.

DESCRIPTIVE STATISTICS

Use of the Materials to Confirm a Choice

We compared how the different study groups used Medicare information they received (for treatment group members this included the intervention

Table 1: Sociodemographic Characteristics of the Study Sample (%)

	Experienced Beneficiaries		*New Beneficiaries*	
Variable	*Control Group*	*Treatment Groups*	*Control Group*	*Treatment Groups*
Age (y)				
64	0	0	33.1	2.8***
65–69	30.4	33.4	66.9	97.2
70–74	29.6	29.3	0	0
75–79	20.9	21.4	0	0
80+	19.1	16.3	0	0
Gender				
Male	39.9	40.5	42.3	45.0
Female	60.1	59.5	57.7	55.0
Race				
White	88.7	91.8**	90.3	90.8
Nonwhite	11.1	8.2	9.7	9.2
Marital status				
Married	62.7	60.9	75.5	75.6
Not married	37.3	39.1	24.5	24.4
Education				
Less than 12 years	15.6	14.4	9.1	8.7
High school graduate	43.6	37.0	45.0	39.1
Trade school/some college	21.0	26.0	23.7	26.6
College graduate	19.9	22.6	22.2	25.7
Income (/y)				
< $15,000	22.5	17.6	10.9	11.2
$15,000–30,000	26.1	28.9	21.2	22.7
> $30,000	23.4	27.7	44.6	46.3
Unknown	28.0	25.8	23.4	19.8
Self-reported health status				
Excellent	13.6	13.3	21.8	21.7
Very good	29.9	32.9	31.9	37.2
Good	31.1	32.1	31.7	30.5
Fair/poor	25.4	21.7	14.6	10.5
Insurance				
Individually purchased	35.4	41.1**	48.9	51.7
Employer sponsored	42.8	45.3	43.6	43.6
Supplement insurance (unsure what kind)	6.4	3.7	.4	1.0
No supplement	15.4	9.8	7.0	3.7
Hospitalization in the last year				
Yes	19.2	19.7	13.6	12.1

Continued

Table 1: *Continued*

	Experienced Beneficiaries		*New Beneficiaries*	
Variable	*Control Group*	*Treatment Groups*	*Control Group*	*Treatment Groups*
No. of physician visits in the last three months				
None	25.5	23.1	34.0	35.0
One	33.3	34.3	39.5	31.8
Two	16.4	17.8	14.0	16.4
Three or more	24.8	24.8	12.6	16.9
Have a usual source of care				
Yes	92.5	93.8	92.0	90.6

Source: Survey of new and experienced Medicare beneficiaries in Kansas City MSA conducted by Research Triangle Institute in fall and winter 1998.

$^{***}p < .01$; $^{**}p < .05$.

materials as well as other materials) and found that a sizeable proportion used the materials to confirm a health plan choice that they had already made. Treatment group members who received the new materials were significantly more likely to use them to confirm a choice relative to control group members who only received information from other sources. Forty-six percent of experienced beneficiary treatment group members used the materials in this way compared to 38 percent of control group members. For new beneficiaries 51 percent of treatment group members used the information to confirm a choice relative to 42 percent of control group members ($p = .08$).

Use of the Materials to Choose or Change Plans

About one-third of experienced beneficiaries had changed health plans since enrolling in Medicare. Of those who had changed plans about one-fourth had switched plans in the last year, two-thirds had switched between one and five years ago, and about 12 percent had switched more than five years ago. This distribution suggests that beneficiaries may now be changing plans more frequently, further emphasizing the need for information enabling people to compare plans side by side.

We asked beneficiaries if they used information they had received in the last six months to choose or change health plans. Overall, experienced beneficiaries were much less likely to have used information to choose or change plans relative to new beneficiaries who were enrolling in Medicare at the time of the interview (see Table 2). We were somewhat surprised to find that control group members were more likely than treatment group members to use information they received outside the study to change plans or choose a new plan, but the difference was only significant for new beneficiaries. Seven percent of experienced beneficiary control group members and 6 percent of treatment group members used information in this way. This compares to 50 percent of new beneficiaries in the control group and 27 percent in the treatment group. It may be possible that control and treatment group members were focusing on different sets of information when answering the survey questions, with the control group members thinking about Medicare-related information in general and the treatment group members thinking exclusively about the intervention materials. Nevertheless, these bivariate results suggest that the new consumer materials did not encourage health plan switching.

The majority (80 percent of experienced and 90 percent of new beneficiaries) who used the new information said it made their choice of a health plan easier. About one-third of respondents who received the CAHPS report indicated that it affected their decision to stay with or leave their current health plan either "a little" or "a lot."

Table 2: Percent of Medicare Beneficiaries Who Used Consumer Materials to Choose or Change Health Plans and Level of Confidence in Health Plan Choice

	Experienced Beneficiaries		*New Beneficiaries*	
Variable	*Control Group*	*Treatment Groups*	*Control Group*	*Treatment Groups*
Beneficiaries Who Used Materials to Choose or Change Plans				
Used the information to choose or change plans	7.0	5.6	49.6	27.3***
Used the information when considering changing plans	19.8	18.4	10.4	15.4
Did not use the information to choose or change plans	73.2	76.0	40.0	57.3
Level of Confidence in Current Plan Choice				
Not at all confident	7.0	3.3***	9.5	7.1
Somewhat confident	24.9	23.7	40.8	35.5
Very confident	51.9	47.6	32.3	38.1
Extremely confident	16.2	25.5	17.4	19.4

Source: Survey of new and experienced Medicare beneficiaries in the Kansas City MSA conducted by Research Triangle Institute in fall and winter 1998.

Note: Data exclude respondents who did not answer the survey question about confidence in health plan choice.

***$p < .01$.

Effect of the Materials on Confidence Levels

Up to 10 percent of Medicare beneficiaries are not at all confident with their current health plan choice, with new beneficiaries being less confident than experienced beneficiaries that they have chosen the best plan (see Table 2). The treatment materials had a positive effect on confidence levels for both populations, but the difference was statistically significant for experienced beneficiaries only. Seventy-three percent of experienced beneficiaries in the treatment groups were very or extremely confident with their decision relative to 68 percent of controls ($p < .001$). For new beneficiaries, 58 percent of the treatment group and 50 percent of the control group were very or extremely confident. Multivariate analysis is needed to determine if these patterns hold when controlling for other factors.

MULTIVARIATE RESULTS

The multivariate results support the descriptive findings for both dependent variables, health plan switching and confidence levels.

Health Plan Switching

New beneficiaries who received any of the treatment group materials were less likely to use them to choose or change plans compared to control group members, ceteris paribus (see Table 3). The inverse relationship was also present for experienced beneficiaries but was only significant for those who received the *Medicare & You* bulletin; results for those who received the handbook or the handbook and the CAHPS report fell below standard significance levels. This unexpected finding is counter to our hypothesis that exposure to information about new types of health plan options would increase the probability of changing health plans. In retrospect the explanation for this finding is simple because one of the key messages being promoted by HCFA in the 1999 version of the *Medicare & You* bulletin and handbook is, "You don't have to change health plans this year if you are happy with the plan you have." This message is printed in bold on the first page of the handbook and bulletin and is repeated later in the handbook.

Predicted probabilities show that 52 percent of new beneficiary control group members versus between 26 percent and 28 percent of treatment group members used the materials to choose or change plans, controlling for the explanatory variables (see Table 4). In other words, those who received the treatment materials were at least 24 percentage points less likely to use them relative to those who received information from outside the study. The

Table 3: Ordered Logistic Regression Results

	Probability of Using the Information to Choose or Change Plans		*Level of Confidence in Plan Choice*	
Variable	*Experienced Beneficiaries, Beta (SE)*	*New Beneficiaries, Beta (SE)*	*Experienced Beneficiaries, Beta (SE)*	*New Beneficiaries, Beta (SE)*
Treatment materials				
Bulletin	−.5238** (.2261)	−1.1911*** (.2298)	.4020** (.1569)	.1563 (NS) (.1945)
Handbook	−.1044 (NS) (.2158)	−1.2134*** (.2324)	.3916** (.1647)	.3156* (.1908)
Handbook and CAHPS	−.3669 (NS) (.2287)	−1.3509*** (.2372)	.5259*** (.1775)	.0522 (NS) (.1994)
Handbook and CAHPS x hospitalization interaction term	.9182** (.4459)	Not included	Not included	.9921** (.4519)
Sociodemographic variable				
Age 65–74 y			.0672*** (.0234)	
Gender (male)		.6654*** (.1692)		
Race (nonwhite)	.6237** (.2645)			
Ethnicity (Hispanic/ Latino)			−.8725* (.5117)	
Education (some college/ technical school)	.4948* (.2757)			
Marital status (married)			.4525** (.2123)	
Lives alone	.6926** (.3264)			
Insurance				
Individually purchased	.4054** (.1713)	.7205*** (.1559)	−.6165*** (.1341)	−.3400** (.1360)
Supplemental (unsure what kind)		2.7095** (1.0785)	−.5805* (.3310)	
No supplement			−.6277*** (.2189)	−1.0752*** (.3672)
Spouse's choice affects respondent		.6782*** (.1733)		−.3207** (.1543)

Continued

Table 3: *Continued*

	Probability of Using the Information to Choose or Change Plans		*Level of Confidence in Plan Choice*	
Variable	*Experienced Beneficiaries, Beta (SE)*	*New Beneficiaries, Beta (SE)*	*Experienced Beneficiaries, Beta (SE)*	*New Beneficiaries, Beta (SE)*
Health and utilization				
Hospitalization in the last year	−.5120** (.2585)		.2962* (.1642)	−.0839 (NS) (.2338)
One physician visit			.4222** (.1657)	
Three or more physician visits			.3571* (.1967)	
Have a usual source of care	−.5422* (.3102)	−.6407** (.2674)		.5633** (.2665)
SF-12 (mental health score)				.0274** (.0111)
Information sources/knowledge				
Number of other information sources	.6499*** (.0796)	.4457*** (.0689)		
15-item knowledge index	1.4305*** (.5506)	1.7363*** (.4990)		
Negative attitude about HMOs	−.3256** (.1611)			
Any quality-of-care information	.6408* (.3301)		−.3296* (.1938)	
Sample size	1,063	831	1,072	861

Intercept values for the dependent variables

	Experienced	*New*		*Experienced*	*New*
Used	−4.0391	−.7593	Extremely confident	−3.3820	−4.1689
Considered	−2.1600	.0017	Very confident	−1.1112	−2.4243
			Somewhat confident	1.2619	.0555

Source: Survey of new and experienced Medicare beneficiaries in the Kansas City MSA conducted by Research Triangle Institute in fall and winter 1998.

Note: SE = standard error of the means; NS = not significant. The regression models also included an age spline variable for 75+ (experienced beneficiaries only) and income. Omitted categories for the categoric variables include female; white race; non-Hispanic; less than 12 years of education; not married; does not live alone; employer-sponsored supplemental insurance; spouse's insurance does not affect choice; no hospitalization, physician visits, or usual source of care; feels negatively about HMOs; received no quality-of-care information.

***$p < .01$; **$p < .05$; *$p < .10$.

difference between treatments and controls for experienced beneficiaries, however, was small, with the greatest difference being between the control and bulletin groups. Thus, the predicted probabilities and their confidence intervals are consistent with the beta coefficient results (not shown). These data suggest that the treatment materials may encourage people to not change plans or even consider changing plans, or conversely, that other marketing materials beneficiaries may be exposed to persuade them to change plans. The regression results in Table 3 indicate that both of these effects (from the treatment and nontreatment materials) are occurring as evidenced by the significant values on the treatment and nontreatment information materials variables.

The interaction between the handbook and CAHPS treatment group and hospitalization dummy variable was statistically significant for experienced beneficiaries only. The cumulative effect of being in the study group that received the most information—the *Medicare & You* handbook and the Medicare CAHPS report—and having been hospitalized in the last year was a

Table 4: Predicted Probabilities from Ordered Logistic Models

	Control Group	*Bulletin*	*Handbook*	*CAHPS*
Probability of using the information to choose or change plans—Experienced beneficiaries				
Used the information to choose or change plans	.076	.049	.070	.056
Used the information to consider changing plans	.218	.163	.207	.179
Did not use the information to choose or change plans or consider changing plans	.706	.788	.724	.765
Probability of using the information to choose or change plans—New beneficiaries				
Used the information to choose or change plans	.515	.283	.280	.257
Used the information to consider changing plans	.151	.144	.143	.139
Did not use the information to choose or change plans or consider changing plans	.333	.573	.577	.605
Predicted confidence levels—Experienced beneficiaries				
Extremely confident	.179	.243	.241	.265
Very confident	.470	.487	.487	.487
Somewhat confident	.299	.234	.236	.216
Not at all confident	.052	.036	.036	.032
Predicted confidence levels—New beneficiaries				
Extremely confident	.172	.195	.220	.180
Very confident	.350	.364	.375	.355
Somewhat confident	.390	.364	.338	.381
Not at all confident	.088	.076	.066	.084

Source: Survey of new and experienced Medicare beneficiaries in the Kansas City MSA conducted by Research Triangle Institute in fall and winter 1998.

2 percentage point increase in the likelihood of switching plans or considering switching plans (calculation not shown but was developed considering use of nonlinear model). The interaction between a hospital stay and receipt of the CAHPS report was dropped from the final new beneficiary model because it was not significant. For new beneficiaries experience with the health care system through a hospitalization was associated with a negative propensity to choose or change plans ($p = .06$).

There were some consistent patterns across the two populations for the other independent variables including insurance, usual source of care, knowledge, and information sources. Beneficiaries with individually purchased supplemental insurance were more likely to use the information to choose or change plans compared to those with employer-sponsored insurance. There was a negative association between having a usual source of care and switching behavior, which is logical given the potential influence of a relationship with an existing provider ($p = .08$ for experienced beneficiaries and $p = .02$ for new beneficiaries).

Exposure to a greater number of other information sources (i.e., non-treatment materials) was positively associated with plan switching for both populations. This finding supports our hypothesis that the message in the *Medicare & You* pilot materials is what affected the likelihood of switching. Greater beneficiary knowledge was also associated with increased probability of switching or considering switching for both groups. Because of concern about potential endogeneity related to the knowledge index variable we reran the final models without this variable; the results were essentially unchanged except that the experienced beneficiary handbook and CAHPS treatment group became significantly less likely to use the materials to switch plans.

Only a few of the sociodemographic variables were significant. Experienced beneficiaries who are nonwhite, more highly educated, or live alone were more likely to use the information to choose or change plans relative to those who are white, less educated, and live with others, respectively. Male new beneficiaries were more likely to use the treatment materials to switch plans as compared to females. Finally, experienced beneficiaries who think that the care delivered by HMOs is worse than care in other plans were less likely to switch. This is also intuitive, as many of the options that beneficiaries can switch into are managed care arrangements.

Confidence in Current Health Plan Choice

The ordered logistic regression results show a statistical connection between receipt of the treatment group materials and higher levels of confidence for experienced beneficiaries (see Table 3). According to the predicted probabilities, higher confidence levels for treatment group members were evident for both populations when controlling for other factors (see Table 4). As might be expected there was a consistent relationship between the overlap of the confidence intervals around the predicted probabilities and the level of significance in the models (not shown). For both new and experienced beneficiaries greater proportions of treatment group members were extremely confident relative to controls. This suggests that the new consumer materials have the potential to positively affect beneficiaries' attitudes about health plan choice.

The interaction between the handbook and CAHPS treatment group and the hospitalization dummy variable was significant for new beneficiaries only. The interactive effect of receiving the *Medicare & You* handbook and having been hospitalized in the last year was a 13 percentage point increase (calculation not shown but was developed considering use of nonlinear model).

The only sociodemographic characteristics significantly associated with higher confidence were age and ethnicity, with experienced beneficiaries under age 75 or those who are not Hispanic being more confident. The effects of insurance were consistent across the two beneficiary populations. As expected, those who purchased insurance on their own or who had no supplement were less confident relative to those with employer-sponsored insurance, who may be more likely to receive personal counseling at the time the choices are presented. New beneficiaries who were influenced by their spouse's insurance decision were less confident. Having a usual source of care had a positive effect on confidence levels for new beneficiaries. Experience with the health care system through either inpatient ($p = .08$) or outpatient utilization increased older beneficiaries' level of confidence with their health plan. New beneficiaries with a higher mental health SF-12 score (meaning they have better mental health) were more confident. Unexpectedly, higher knowledge or greater exposure to other information did not have a significant effect on confidence levels for either population.

DISCUSSION

Results of this study suggest that the federal government's pilot consumer information print materials had some influence on Medicare beneficiaries' attitudes and behaviors about health plan decision making, but the effects do not vary greatly across the different intervention materials. Experienced beneficiaries who were exposed to the materials are more confident that the health plan they currently have is the best choice for them. Greater experience with health insurance decisions, as indicated by having supplemental insurance or experience using the health care system, also appears to be important in increasing confidence in one's current health plan choice. Many beneficiaries used the intervention materials to confirm a health plan choice they have already made. Confirming a choice is in fact making an explicit decision to remain with one's current plan and is an appropriate use of the information.

The pilot Medicare materials were designed to educate beneficiaries about the health plan choices introduced by the BBA of 1997. Supporters of the Medicare+Choice program hoped that the new health plans would attract beneficiaries while achieving the goals of cost containment and higher quality of care resulting from increased competition. We thought that exposure to the new Medicare materials might increase the probability of beneficiaries switching plans as a result of being more informed about other options, but this was not the case. We attribute this result at least in part to the strong message in the 1999 version of the *Medicare & You* materials that changing plans was not required. It is somewhat surprising, however, that the "no need to change" message appeared to be less salient to experienced beneficiaries, who were more likely to be changing plans, than new beneficiaries, who were more likely to be choosing a Medicare health plan for the first time. Because Medicare has undergone reforms in the past and is frequently cited in the popular media, beneficiaries of all ages may be concerned about being forced to change plans.

This may be the first time that this kind of "no need to change" message has been explicitly conveyed to beneficiaries, of whom between one-third and one-half report receiving information—much of which typically markets a particular plan—from health insurance companies, agents, or health plans in the last six months. It is also important to have reasonable expectations about the effect of the materials and to recognize that their availability may have a limited effect on behavior, if any, given the high levels of satisfaction in the Medicare population. Trends in the data suggest that rates of switching may increase in the future, but changing health plans could be viewed as either a good or bad decision depending on the beneficiaries' individual situation.

Implications of this research for the development of information materials for the Medicare population are threefold. As with this study's findings on beneficiary knowledge, which showed that a more intensive information intervention was not consistently associated with greater knowledge (McCormack, Garfinkel, Keller, et al. forthcoming), providing more information to beneficiaries may not result in a greater effect on health plan switching and confidence levels. Although the treatment group materials had a significant effect in some cases, the effect was not linear with the amount of information. This finding coincides with earlier research on cognitive aging, which indicates that older adults have difficulty with medical information regardless of its length and suggests that factors other than the amount of information, such as how the information is presented, may be critical to its effect. More research is needed to determine the most effective way to transmit complicated financial information to older adults. This research should take into consideration how older adults process and use information and what we know about cognitive differences between younger and older adults. Policy analysts may also want to consider the cost-effectiveness of different types of interventions.

Some special subpopulations, such as new beneficiaries, those who purchase their own supplemental or managed care insurance, and those with a usual source of care, may benefit more from the new materials. It may be wise to target these subpopulations when designing, marketing, and distributing the information. Finally, the findings highlight the importance of HCFA's materials in balancing the significant effects of marketing materials.

The following limitations of the study are worth noting. The data for the study were from surveys of beneficiaries. As with all survey data, particularly telephone-based information, participants may respond in a way that they think will please the interviewer, and their responses may be biased in a nonrandom fashion. Respondents' perceptions of the terms and concepts used in the survey may vary. For example, the concept of "using" the new materials to choose or change health plans may mean different things to different people (Booske and Sainfort 1998).

APPENDIX: SURVEY QUESTIONS AND VARIABLE CODING FOR THE DEPENDENT VARIABLES

Survey Questions

Health Plan Switching. Two survey questions were used to create the dependent variable on health plan switching. The preface to the first question was, "For the next set of questions, please think about the materials [we sent you as well as other information] you may have seen, heard, or received in the last six months about health insurance for people on Medicare." (The phrase “we sent you as well as other information” was included for treatment group members only.) If the respondent was not yet aged 65 the question was worded, “Will you use any of the information to choose a Medicare health insurance plan?” Question one was worded, “Did you use any of this information to choose or change a Medicare health insurance plan?” The possible responses were:

1 = yes [skip next question on thinking about changing plans]
2 = no
−1 = don’t know
−2 = refused

Question two was worded, “Based on the information, how much did you think about changing to another Medicare health insurance plan? Would you say . . .”

1 = not at all
2 = a little
3 = a fair amount
4 = a lot

Confidence. Question three was worded, “How confident are you that the health insurance plan you have is the best choice for you? Are you. . . .” (If the respondent was not yet aged 65 the question was worded, “How confident are you that the health insurance plan you plan to get is the best choice for you?”)

1 = not at all confident
2 = somewhat confident
3 = very confident
4 = extremely confident

Confirm a Health Plan Choice. Question four was worded, “Did you use information to confirm a health plan choice that you had already made?”

1 = yes
2 = no

Mutually Exclusive Variable Coding

Health Plan Switching. 1 = used the information to choose or change plans (if they answered question one affirmatively regardless of how question two was answered); 2 = used the information when considering changing plans (if they answered “a little,” “a fair amount,” or “a lot” to question two and answered “no” to question one); 3 = did not use the information to choose or change plans or consider changing plans (if they answered “no” to question one and “not at all” to question two [omitted]).

Confidence. 1 = not at all confident (omitted); 2 = somewhat confident; 3 = very confident; 4 = extremely confident.

Confirming a Health Plan Choice. 1 = used the materials to confirm a health plan choice; 2 = did not use the materials to confirm a health plan choice (omitted).

ACKNOWLEDGMENTS

The authors would like to thank our project officers, Sherry Terrell, Ph.D., Chuck Darby, M.S., Christine Crofton, Ph.D., and Beth Kosiak, Ph.D. for their ongoing support and assistance with this study. We appreciate the statistical and programming expertise provided by May Kuo, Ph.D. and Vincent Iannicchione, M.S. We would also like to acknowledge the contributions of Shoshanna Sofaer, Dr.P.H., Jim Lubalin, Ph.D., Kerry Kilpatrick, Ph.D., and William Kalsbeek, Ph.D. for guidance on the project.

NOTES

1. New beneficiaries were between ages 64 years, 11 months and 65 years, 3 months at the time of the interview.
2. This response rate is comparable to those obtained in several other studies of the Medicare population conducted around the same time (Carmen, Keller, and Hays 1999). Experienced beneficiary respondents were more likely to be younger, male, white, and interested in the information relative to nonrespondents. New beneficiary respondents were more likely to be white than nonrespondents, and the new beneficiary respondents were more likely to be female and white relative to all 65 year olds in Kansas City.
3. We did not define the term "health plan" during the survey, but based on cognitive testing interviews we found that the term generally means whatever type of Medicare insurance arrangement a beneficiary has, a Medicare HMO, original Medicare only or with a Medigap plan.

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