Analysis of the 1998 Medicare Current Beneficiary Survey for Use in Monitoring the National Medicare Education Program

Phase Two Report

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Executive Summary

This report is the second of two reports concerning how the Medicare Current Beneficiary Survey (MCBS) can be used to effectively evaluate the goals of the National Medicare Education Program (NMEP). The report analyzes whether the NMEP is achieving its goals using Rounds 23 and 24 of the 1998 MCBS that were fielded immediately following NMEP implementation in the Fall of 1998. We evaluated MCBS survey questions that were explicitly created to measure progress toward NMEP goals and can be used in future longitudinal analyses. In the prior Phase 1 report, RTI identified MCBS survey questions that could be used to establish a pre-NMEP baseline as well as knowledge measures drawn from a variety of projects that could be modified and tested for use in monitoring progress toward NMEP goals.

Two other companion reports accompany the Phase 1 and Phase 2 reports. The *Technical Note 1: Knowledge Index* contains psychometric analyses of four potential measures that we considered for measuring NMEP progress. *Technical Note 2: Preliminary Baseline Analysis* contains the foundation for longitudinal analyses that take advantage of the 5-state pilot project where the *1999 Medicare & You* handbook was initially fielded. All of these reports seek to provide HCFA with information and recommendations for using the MCBS to measure progress toward the NMEP goals.

The goals of the NMEP are:

- increasing beneficiary access to information on Medicare program choices,
- raising beneficiary awareness of the Medicare program and choices available to them,
- helping beneficiaries understand the Medicare program and choices that can be made, and
- helping beneficiaries use the information obtained to make optimal choices.

HCFA is interested in understanding whether beneficiaries have enough information to make informed choices concerning recent changes in the Medicare program. These changes include increases in the number of health insurance options and initiatives to promote the use of preventive health services. Rounds 23 and 24 of the 1998 MCBS Access to Care files contain questions directly concerning the 1999 *Medicare & You Handbook* and the *1999 Medicare & You Bulletin* that can be used to evaluate whether the NMEP is increasing beneficiary knowledge about the Medicare program. Progress can be best monitored using measures of beneficiary knowledge as well as other measures associated with one or more of the goals above.

In order to achieve this purpose, HCFA and RTI developed the following objectives for the Phase 2 report:

- Identify questions in the 1998 MCBS associated with each of the four NMEP goals;
- Analyze these questions using descriptive and multivariate analyses to determine if HCFA-sponsored materials are promoting NMEP goals; and
- Draw conclusions and make technical recommendations based on these findings.

Scope of Work

MCBS Round 23 interviews contained a supplement of questions specifically designed to obtain information concerning the respondent's need for and use of information, and in particular, the *1999 Medicare & You Handbook* (or *Bulletin*). This Round 23 supplement, known as the Beneficiary Knowledge (BK) Supplement, contained a total of 78 questions. MCBS Round 24 interviews contained a supplement of questions known as the Beneficiary Information Needs (BN) Supplement with a total of 34 questions. These two supplements together contained a total of 112 questions on various aspects of beneficiary knowledge and information needs that could potentially be used to monitor the NMEP.

For each of the NMEP goals we identified survey questions in the MCBS that could be used to evaluate the effects of the NMEP. We linked 44 different survey questions in the MCBS to policy questions for determining the effects of the NMEP on access to information, awareness, understanding, and impact/use, and for understanding what beneficiaries thought about the *1999 Medicare & You* materials and what they did with them.

For each NMEP goal or area we list the MCBS survey questions analyzed and present the results of both descriptive and multivariate analyses. We discuss frequency distributions in narrative form and present the results in bar charts. For multivariate analyses, we present the marginal effect of reading the *1999 Medicare & You* handbook in the five states in which it was fielded. This main policy measure is expressed as the percentage point difference in one of the 12 survey questions of interest being analyzed as a consequence of reading the handbook or not.

In each of the areas that we examined using regression analyses, most but not all of these survey questions showed that reading the handbook made a positive difference compared to not reading the handbook. One of the three access questions, both of the awareness questions, all three of the knowledge indices, and two of the four impact/use questions showed a significant effect of having read the handbook on the outcome measured. In all, 8 of the 12 regression analyses showed that reading the handbook significantly influenced the outcome. The results from each area of analysis are presented below.

Access. We found that reading the handbook had a significant effect on only one of our three access questions— whether beneficiaries tried to find out about new benefits or changes in the Medicare program. Beneficiaries who read the handbook in the five states that received it were only 2.8 percentage points more likely to have tried to find out about new benefits or changes. Reading the handbook had no significant effect on whether beneficiaries tried to find out about the availability and benefits of Medicare managed care plans and what Medigap or

supplemental insurance policies cover. In part, these questions are not the best measures of access in that they only ask beneficiaries whether they tried to find information. Better measures of access ask whether beneficiaries actually received information.

Awareness. We found modest effects of reading the handbook on both MCBS questions that we used to measure awareness. Beneficiaries who read the handbook in the five states that received it were approximately 8 percentage points more likely to have been aware of Medicare MSAs and 8.4 percentage points more likely to have been aware of PPOs. Both of these results were statistically significant. We found in descriptive analyses that only 16% of beneficiaries were aware of MSAs and 24% were aware of PPOs, and even fewer beneficiaries were aware of POSs and PSOs. Only 9.5% of beneficiaries had heard of the buy-in programs, and 91.7% of beneficiaries were unaware that this type of help was available.

Understanding. We also found modest effects of reading the handbook for the NMEP goal of understanding. We found approximately 5 to 7 percentage point gains in knowledge scores on three separate knowledge indices developed for measuring beneficiary understanding of different parts of the Medicare program. All three of these findings were statistically significant. The index on which beneficiaries scored the largest gain (7.3 percentage points) was the 8-item quiz, the majority of which contained questions concerning Medicare managed care issues. The other two knowledge indices for which reading the handbook in the five states had an effect were the Perceived Medicare Knowledge index and the 3-item quiz, which showed percentage point increases of 5.9 and 4.8 respectively.

Impact/Use. We also measured the impact and use of the handbook in the five states, finding significant results in two of four regression models we analyzed. Beneficiaries who read the handbook were 16.7 percentage points more likely to have ever used the handbook to find information about health plan options, and 12.2 percentage points more likely to have reviewed information about different Medicare health plan options. We did not find a significant effect for having read the handbook in satisfaction or confidence measures we analyzed. Beneficiaries were no more likely to have been satisfied with the availability of information about the Medicare program when they needed it, nor were they more confident that they could choose a health care plan that best matched their needs.

Direct Evaluation of NMEP Materials. Beneficiaries who get the handbook or bulletin materials read them and find them fairly easy to understand, but only a minority of beneficiaries report receiving these materials. Only 26.4% of all respondents reported reading all or parts of the 1999 handbook. We found that sizeable majorities of beneficiaries reported the materials in general and a comparison chart within them were either very easy or somewhat easy to understand, but almost 15% of beneficiaries said that they were difficult to understand.

Conclusion

Reading the handbook shows potential for increasing knowledge of Medicare beneficiaries, raising awareness of managed care arrangements and buy-in programs, and getting beneficiaries to review health plan choices. Reading the handbook in the five states had modest percentage point gains for the NMEP goal on impact/use as beneficiaries used it to find or review

information on health plan choices. When considering the effects of reading the handbook on satisfaction and confidence issues, beneficiaries who read the handbook may find that their choices and options are more complicated and numerous than previously thought, and are not necessarily more satisfied about information from the Medicare program or confident in making health plan choices.

We found Rounds 23 and 24 of the MCBS to be generally of benefit for evaluating the NMEP, but several improvements are needed for comprehensive monitoring. In general, more MCBS questions are needed to better measure the four NMEP goals (see our Phase 1 report, Chapter 6). We found some survey questions in the MCBS that could be used to evaluate each of the goals of the NMEP, though some were better than others.

Our findings suggest the importance of ongoing development, testing, and refinement of knowledge indices as an important way to measure beneficiary knowledge and limit the impact of social desirability in responses. Additional survey questions, especially questions with objective answers, are needed for knowledge index development. In addition, HCFA should continue to identify better measures of access to information that more effectively measure the influence of the NMEP. A consistent set of questions will need to be administered over time in order to assess the longer range effects of the NMEP. Over time, there may be diminishing returns to knowledge improvement as a consequence of reading the handbook or bulletin.

Though a minority of beneficiaries report receiving the handbook, most beneficiaries who get the handbook read it, and most keep it for future reference. Beneficiaries more likely to be reading the handbook are those who may already be making informed choices as opposed to those who need more help in doing so. This finding may need to be taken into consideration when interpreting the marginal effects of reading the handbook presented in this report. In general, HCFA should continue to fund a diverse array of measures to educate beneficiaries.

1.0 Introduction

1.1 Background on NMEP

Recent changes to the Medicare program increase the number and range of options open to individual beneficiary choice. Understanding these options and choosing optimally places a greater burden on beneficiaries at the same time that they express concern over decreasing cognitive acuity from aging (Gibbs et al., 1996). Thus, the need is greater than ever for easily understood information about Medicare that beneficiaries are motivated to use.

Several studies have documented that adults of all ages have an inadequate understanding of their health insurance coverage (Mechanic, 1989; Isaacs, 1996; Garnick, 1993). Now there is a growing body of research documenting the low level of understanding that Medicare beneficiaries possess about the Medicare program (Gibbs et al., 1996; Hibbard et al., 1998; Murray and Shatto, 1998; National Academy of Social Insurance (NASI), 1998). Many beneficiaries do not understand what is covered, who operates the program, or what plan options are available under the Medicare program. Many have never heard of a Medicare HMO and the vast majority are unable to identify the differences between the original Medicare program and a Medicare managed care plan (Hibbard et al., 1998). This is an especially important finding, as understanding the differences among original Medicare, Medicare HMOs, and the newer Medicare+Choice options is a prerequisite to making an informed choice.

The National Medicare Education Program (NMEP) is the Health Care Financing Administration's (HCFA) coordinated effort to address this problem, in both the short and long term, by creating useful information resources (e.g., print materials, Internet materials, toll-free information hotlines, trained intermediaries), informing beneficiaries that these resources are available, and motivating them to use the resources.

The goals of the NMEP are:

- increasing beneficiary access to information on Medicare program choices,
- raising beneficiary awareness of the Medicare program and choices available to them,
- helping beneficiaries understand the Medicare program and choices that can be made, and
- helping beneficiaries use the information obtained to make optimal choices.

HCFA is interested in identifying and using data collected from beneficiaries to monitor progress toward the NMEP goals. Progress can be best monitored using measures of beneficiary knowledge as well as other measures associated with one or more of the goals above. Changes in these measures over time will be the best indicators of progress toward meeting these goals.

1.2 Purpose

The purpose of this report is to monitor progress toward achievement of each of the four NMEP goals using questions drawn from Rounds 23 and 24 of the 1998 Medicare Current Beneficiary Survey (MCBS) Access to Care files. These files contain questions directly concerning the *1999 Medicare & You Handbook* and the *1999 Medicare & You Bulletin* that can be used to evaluate whether the NMEP is increasing beneficiary knowledge. HCFA is interested in understanding whether beneficiaries have enough information to make informed choices concerning recent changes in the Medicare program. These changes include increases in the number of health insurance options, availability of buy-in programs, and initiatives to promote the use of preventive health services.

In order to achieve this purpose, HCFA and RTI have developed the following objectives:

- Identify questions in the 1998 MCBS associated with each of the four NMEP goals;
- Analyze these questions using descriptive and multivariate analyses to determine if HCFA-sponsored materials are promoting NMEP goals; and
- Draw conclusions and make policy recommendations based on these findings.

This report is the second of two reports concerning how the MCBS can be used to measure progress toward NMEP goals. This Phase 2 report will evaluate progress toward NMEP goals using 1998 MCBS Rounds 23 and 24 which were fielded immediately following NMEP implementation. The Phase 2 report contains analyses using MCBS survey questions that were explicitly created to measure progress toward NMEP goals and can be used in future longitudinal analyses. In the prior Phase 1 report, RTI identified MCBS survey questions that could be used to establish a pre-NMEP baseline as well as knowledge measures drawn from a variety of projects that could be modified and tested for use in monitoring progress toward NMEP goals.

Two other companion reports accompany the Phase 1 and Phase 2 reports. The *Technical Note 1: Knowledge Index* contains psychometric analyses of four potential measures that we considered for measuring NMEP progress. *Technical Note 2: Preliminary Baseline Analysis* contains the foundation for longitudinal analyses that takes advantage of the 5-state pilot project where the *1999 Medicare & You* handbook was initially fielded. All of these reports seek to provide HCFA with information and recommendations for using the MCBS to measure progress toward the NMEP goals.

2.0 Description of 1998 MCBS and Questions Used for Monitoring the NMEP

We describe in this section how the MCBS is related to the NMEP implementation and goals, and how we identified MCBS questions appropriate for the evaluation of the NMEP. Survey questions were drawn from several rounds of the 1998 MCBS and linked to policy questions we sought to answer about how well the NMEP met its goals. We also describe the types of measures we created using these survey questions to measure knowledge.

2.1 Description of 1998 MCBS As Related to the NMEP

The 1998 MCBS was fielded in three rounds of interviews beginning in September 1998. The three time periods over which interviews were conducted were:

Round 22 from September 1998 to December 1998;
Round 23 from January 1999 to April 1999; and
Round 24 from May 1999 to August 1999.

The *1999 Medicare & You Handbook* was initially mailed in the Fall of 1998 in five states (Oregon, Washington, Ohio, Florida, and Arizona) as a pilot study. This pilot study of the handbook occurred during the fielding of the Round 22 (Fall 1998) MCBS interviews, allowing HCFA to develop specific questions related to the use of the handbook in Rounds 23 and 24. These same questions with minor wording changes were also administered to respondents in the remaining 45 states who had received the *Medicare and You 1999 Bulletin* during 1998.

MCBS Round 23 interviews contained a supplement of questions specifically designed to obtain information concerning the respondent's need for and use of information, and in particular, the *1999 Medicare & You Handbook* (or *Bulletin*). This Round 23 supplement, known as the Beneficiary Knowledge (BK) Supplement, contained a total of 78 questions. MCBS Round 24 interviews contained a supplement of questions known as the Beneficiary Information Needs (BN) Supplement with a total of 34 questions. These two supplements together contained a total of 112 questions on various aspects of beneficiary knowledge and information needs which could be used to monitor the NMEP.

2.2 MCBS Measures Used to Evaluate Achievement of NMEP Goals

RTI proposed a series of policy questions designed to monitor progress toward attainment of each of the four NMEP goals in its Final Analysis Plan dated August 19, 1999. Each of the MCBS questions was linked to one of these policy questions. Some MCBS questions could arguably be associated with more than one NMEP goal, but in the report we linked each question with the goal that we believed it most strongly reflected.

After reviewing the descriptive frequencies of each question in the MCBS data, we selected those questions that had sample sizes large enough to potentially answer each policy question and provide a broad picture of the effects of the NMEP on beneficiary knowledge and choices. We were able to identify enough questions to give an assessment of how well the NMEP is attaining each of its four goals. The individual questions that we have chosen to present in the analysis section of this report appear in Section 4 grouped by the four NMEP goals.

One way to measure progress toward NMEP goals is by measuring beneficiaries' knowledge of the Medicare program. In addition to identifying the individual MCBS questions above for analysis, we developed three multi-item knowledge indices using most of the individual MCBS questions from the NMEP goal on Understanding. These knowledge indices are designed to measure achievement of NMEP goals in a more comprehensive way than can be achieved by analyzing any single question alone.

In our report entitled *Technical Note 1: Knowledge Index*, we analyzed data for these three knowledge indices to provide estimates of their internal consistency reliability and construct validity. These two characteristics are important in determining whether scores yielded by a knowledge index are repeatable and whether they provide important information about beneficiary knowledge.

The three knowledge indices used in this report to monitor the NMEP are the 8-item quiz, the Perceived Medicare Knowledge Index, and the 3-item quiz. The 8-item quiz and the Perceived Medicare Knowledge Index were found to be both internally consistent and valid constructs. We determined that the 3-item quiz was a valid measure of knowledge but it did not have enough questions to be deemed internally consistent. The addition of more questions to the 3-item index would improve its internal consistency. Still, for this Phase 2 report, we have decided to include the 3-item quiz as a knowledge index and present results for it so that we could view any differences in its performance compared to the 8-item quiz and the Perceived Medicare Knowledge Index.

3.0 Description of Analytic Methods

3.1 Descriptive Analyses

To investigate the potential for the NMEP to have an effect on beneficiary knowledge and other measures, we performed analyses of the MCBS questions grouped by five areas—the four NMEP goals (Access, Awareness, Understanding, and Impact/Use) and a fifth group of questions concerning a direct evaluation of the handbook and bulletin materials. We performed all analyses using the sampling weights and SUDAAN software which take into account the complex survey design in order to obtain reliable estimates for the entire Medicare population. Weighted sample sizes for all analyses ranged from 648,650 to 30,105,201.

First, we performed frequency distributions for all questions individually. We reported these results in bar charts in the appendices for **Exhibits B1-B7** for Access questions, **Exhibits C1-C4** for Awareness questions, **Exhibits D1-D24** for Understanding questions, **Exhibits E1-E5** for Impact/Use questions, and **Exhibits F1-F4** for questions concerning the direct evaluation of the handbook or bulletin materials. These exhibits are found in the back of the report in Appendices B-F. We briefly report on these results in narrative form in Section 4 grouped by each of these five areas.

Second, we performed bivariate analyses on each of the three knowledge indices (the 8-item quiz, the Perceived Medicare Knowledge Index, and the 3-item quiz) to explore how knowledge varies across certain beneficiary characteristics selected to represent a wide range of

beneficiary experiences. We identified eight beneficiary characteristics for comparisons in the bivariate analyses. We selected four demographic and socio-economic measures (gender, age group, race, and education), one health status indicator (self-reported health status), two health insurance indicators (the type of insurance held and whether a beneficiary had any managed care experience), and one indicator of the extent of health services utilization (total Medicare charges).

We present the distribution of knowledge scores across these beneficiary characteristics without the usual tests of association often used in bivariate analyses because sample sizes in the MCBS are so large that tests of association are usually significant at $p<0.01$ (even for small differences in mean knowledge scores within a beneficiary characteristic). Instead, we have chosen to limit significance testing to our multivariate analyses where we can control for the independent effect that each of these beneficiary characteristics has on the knowledge index being tested. These bivariate distributions are nonetheless informative for understanding the distribution of knowledge within each beneficiary characteristic.

Various studies have demonstrated differences between variables associated with these indicators and knowledge of Medicare beneficiaries about their insurance. Demographic and socio-economic factors commonly associated with higher levels of knowledge include being male (Lambert, 1980), younger age (Lambert, 1980; Caffereta, 1984; McCall, Rice and Sangl, 1986), being white (Marquis, 1983; McCall, Rice and Sangl, 1986), and having higher education (Caffereta, 1984; McCall, Rice, and Sangl, 1986; Hibbard, et al., 1998; Lambert, 1980; Marquis, 1983; McCall, Rice, and Sangl, 1986).

Although self-reported health status has not been previously found in the literature to be a significant predictor of knowledge, we explored this relationship using the MCBS data. We found self-reported health status to be a significant predictor of knowledge in our Phase 1 report on baseline MCBS characteristics that could be used to monitor the NMEP, and therefore included this indicator in our bivariate analyses.

Several studies have explored the effect of types of insurance coverage on knowledge. Marquis (1983) found knowledge to be significantly associated with being offered a choice of health plans and adversely affected by plan complexity. Caffereta (1984) found that having supplemental insurance was positively related to knowledge. She also found that the use of services was positively associated with knowledge in a model subset to the privately insured, while other studies have not found an effect.

3.2 Multivariate Analyses

3.2.1 Dependent Variables

For our multivariate analysis, we created 12 dependent variables using MCBS survey questions. Of the 12 models, three represent the goal of Access, two reflect Awareness, three reflect Understanding, and four measure Impact/Use. Three of these 12 models are Ordinary Least Squares regressions on the three knowledge indices we have constructed to measure the NMEP effects on the goal of Understanding. The remaining nine models use categorical

measures of access to information, awareness, or impact/use as dependent variables in either logistic or ordered logistic regressions. The measures chosen for dependent variables in the 12 multivariate analyses are described in Section 4, and bar charts presenting the frequency distributions of these variables are presented with related bar charts for each NMEP goal.

3.2.2 Independent Variables

We identified a set of 17 independent variables drawn from measures in the MCBS to use in multivariate analyses. One of these independent dichotomous variables —whether a respondent had read the handbook or bulletin materials thoroughly or in part, as opposed to not reading the materials— reflects the principal effect of the NMEP on each of the dependent variables in the analyses. The remaining independent variables are used to control for other factors that may influence the respective outcomes being measured. Bar charts presenting the frequency distributions of these independent variables are presented as **Exhibits G1-G15**.

To separate the effects of reading the *1999 Medicare & You Handbook* from the effects of reading the *1999 Medicare & You Bulletin*, we interacted the variable that reflects reading these materials with a dichotomous variable indicating whether the respondent was in one of the five states that received the *Handbook* during the pilot study. After performing each regression, we predicted the marginal effect of having read the *1999 Medicare & You Handbook* in the five states where the handbook was fielded. We calculated the marginal effect by taking the difference of reading and not reading the handbook in the five states and we report this result in the narrative section of each NMEP goal analyzed. It is expressed as a percentage point increase/decrease in the dependent variable for having read the handbook in the five states compared to those in the five states who did not read it. For each regression, we report whether the marginal effect of reading the handbook was significant as well as whether other variables employed as controls in the analyses were significant.

We created several dichotomous and categorical variables to control for socioeconomic and demographic effects not related to reading the handbook or bulletin materials. We identified whether respondents were serving as proxies for the sample person with sample beneficiaries as the reference group. We also separately identified who made health insurance decisions for each respondent. A categorical variable was constructed with three levels: sample beneficiaries who make their own health care decisions, sample beneficiaries who receive help in making their health care decisions, and sample person for whom someone else makes their health care decisions as the reference group.

We created a dichotomous variable for whether beneficiaries had been enrolled in managed care with beneficiaries who had not been as the reference group. To describe health insurance status, we created a categorical variable grouped as respondents with Medicare only as the reference group, respondents with Medicare and supplemental insurance such as Medigap policies, and respondents with Medicare and Medicaid. To describe levels of health care utilization, we created a categorical variable representing the respondent's total Medicare charges for the year.

We also included independent variables describing the types of media available to respondents. We created one dichotomous variable for whether beneficiaries had cable TV or not, and another dichotomous variable for whether they had a personal computer or not. We also created a categorical variable for whether respondents had access to the Internet, with levels of having access, having never heard of the Internet, and finally not having access to the Internet as the reference group.

For all multivariate analyses except for the three using the knowledge indices as dependent variables, we included the Perceived Medicare Knowledge index as an independent variable because respondents who think they have varying levels of perceived Medicare knowledge may act differently when making choices. We did not include the Perceived Medicare knowledge index in the other knowledge index regressions because it would be highly correlated with the dependent variables.

3.2.3 Limitations in Estimation

Three types of endogeneity may be present in some or all of the multivariate analyses performed. In particular, our estimations measure the effect of reading the handbook on any of 12 dependent variables. If these dependent variables contribute to beneficiaries reading the handbook, implying reverse causality, then endogeneity may result, producing biased estimates of reading the handbook on the dependent variable. Other sources of endogeneity include the case where beneficiaries with certain characteristics are more likely to read the handbook than other beneficiaries (selection bias), and the case where a beneficiary performs the activity being measured prior to reading the handbook rather than after reading it. As traditional corrections for endogeneity always result in larger variance estimates, no corrections for it were made in these analyses.

4.0 Results

For each NMEP goal or area we list the survey questions analyzed and present the results of both descriptive and multivariate analyses. We discuss frequency distributions in narrative form and present the results in either bar charts or frequency tables in exhibits at the end of the entire report. For multivariate analyses, we present the marginal effect of reading the *1999 Medicare & You* handbook as a percentage difference in the outcome being measured and discuss only the remaining results that were found to be significant. We present the regression results in tables in the back of the report.

The main policy measure of interest in the multivariate analyses is the effect that reading the handbook has in the five states that received it on one of the 12 outcomes of interest being analyzed. To understand more fully who reported reading either the handbook or the bulletin and who did not, we performed a logistic regression on this variable with all of the independent variables to be used in our analyses. These results are presented in **Exhibit A1** in Appendix A. Beneficiaries who were more likely to be reading the handbook or the bulletin:

- lived in the five states that received the handbook in 1998 rather than in the 45 states that received only the bulletin;

- were male;
- had either high school or college educations;
- made their own health care decisions or had help in doing so as opposed to having someone else make these decisions for them;
- had supplemental insurance such as a Medigap policy as opposed to having Medicare alone; and
- had higher scores on the Perceived Medicare Knowledge index.

Most of these factors are similar to those reported in the research literature for Medicare beneficiaries with higher knowledge scores. When taking these findings together, the results suggest that beneficiaries more likely to be reading the handbook are those beneficiaries who may already be making informed choices as opposed to those who need more help in doing so. This finding may need to be taken into consideration when interpreting the marginal effect of reading the handbook.

4.1 Access

We analyzed seven questions that reflect the NMEP goal of Access to Information. These questions and the policy research questions they address are listed in **Exhibit 1**. Descriptive frequencies for each of the MCBS survey questions are shown in bar charts in the Appendix in **Exhibits B1-B7**.

Exhibit 1. Access Research Questions and Related MCBS Questions

Research Questions	Relevant MCBS Survey Items
I. Access	**What information about Medicare do beneficiaries access after NMEP implementation?**
What types of information have beneficiaries tried to access?	BK3 – In the past year, have you tried to find out how much you needed to pay for a particular medical service? BK7 – In the past year, have you tried to find information about new benefits or changes in the Medicare program? BK11 – In the past year, have you tried to find information about what medical services Medicare covers and does not cover? BK15 – In the past year, have you tried to find out about the availability and benefits of Medicare managed care plans, such as HMOs? BK19 – In the past year, have you tried to find information about what your Medigap or supplemental insurance policy covers? BK23 – In the past year, have you tried to find information about your Medicaid plan, such as how it works with Medicare?
How trustworthy are beneficiaries of information gleaned from radio and television?	BK52 – You can't really trust what you see on television or read in the newspapers about Medicare. Is that mostly true for you, mostly false for you, or neither true or false?

Six of these seven questions (BK 3, 7, 11, 15, 19, and 23) concern the types of information to which respondents have tried to gain access to information. Overall, the percentage of respondents who attempted to gain information regarding any of the topics in these six questions ranged from only 5-12%. Too few sample members (less than approximately 100 in each case) responded to the follow-up question about which sources were found to be most helpful to enable meaningful analyses of questions beyond the initial screening question listed above.

These descriptive results suggest that few Medicare beneficiaries actively attempt to find information regarding their health insurance issues. It is discouraging that such a small percentage of respondents sought information regarding these six topics that seem central to the function of the Medicare program. Beneficiaries would seemingly need information concerning particular medical services, new benefits or changes in benefits, which services are covered, availability and benefits of managed care plans, Medigap plans and Medicaid issues in order to make informed choices. Either most respondents are making uninformed choices, or are not making choices and accepting by default what comes their way, or perhaps relying on someone else to get the information for them. On the other hand, these questions may not be ideal for identifying whether the NMEP is achieving its goal of access to information.

The last MCBS question (BK52) in the exhibit above concerns whether beneficiaries trust what is described about Medicare on television and in newspapers. Respondents were asked to respond to a statement that "they can't really trust what they see on television and in newspapers about Medicare" with a true/false response. Approximately 42% of respondents indicated that they don't trust what these media say about Medicare, while 23% indicated that they could trust what they see on television and in newspapers. One-third of respondents said the statement was neither true nor false, with only 2% stating that they did not know. These respondents do have an opinion about what they are seeing and hearing, but greatly differ on whether one can trust information about Medicare presented in these media. Both good and bad information about Medicare is presented in both media in the forms of reports from government and the Congress, political advertising, investigative reporting by both newspapers and independent government agencies. Given that less than one-quarter of respondents indicated that they mostly trusted what appears in these media about Medicare, they may be accessing information from other sources that they trust more.

For multivariate analyses, we identified three of the seven questions from the exhibit above that described areas with the most change in the Medicare program in recent years. These three measures were the best available to us for investigation of the effects of the NMEP on Medicare beneficiary access to information. The three questions used were:

- In the past year, have you tried to find information about new benefits or changes in the Medicare program? (BK7)
- In the past year, have you tried to find out about the availability and benefits of Medicare managed care plans, such as HMOs? (BK15)
- In the past year, have you tried to find information about what your Medigap or supplemental insurance policy covers? (BK19)

We performed three logistic regressions using each of these three questions as dependent variables to analyze factors that predict access to information. Results of these three regressions are presented in **Exhibit A2** in Appendix A. These results show that most of the Medicare characteristics modeled had a significant effect on the responses for each question.

We calculated the marginal effect of having read the *Medicare and You* handbook in the five states that received it for each of the three questions modeled above. As can be seen in

Exhibit 2, beneficiaries who had read the handbook in the five states were 2.8 percentage points more likely to have tried to find information about new benefits or changes in Medicare (about 7.5% of beneficiaries who read the handbook had tried to find information about new benefits or changes in Medicare compared to only about 4.7% of beneficiaries who did not read the handbook). The effect of reading the handbook was not significant for beneficiaries trying to find out about the availability and benefits of Medicare managed care plans, nor for beneficiaries trying to find information about what their Medigap or supplemental insurance policy covers.

Exhibit 2. Marginal Effect of Reading the Handbook in the Five Intervention States

MCBS Question	Marginal effect
Tried to find information about new benefits or changes in Medicare	2.81 pct. points**
Tried to find out about the availability and benefits of Medicare managed care plans, such as HMOs	0.86 pct. points
Tried to find information about what your Medigap or supplemental insurance policy covers	1.25 pct.points

** Significant at $p<0.01$

These small effects may be the result of several factors. These questions are not the best measures of access to information. The research literature often uses measures that describe whether someone actually received the service or information in question. These measures only ask if someone tried to find information. Nevertheless, if better questions to describe access to information could be found in the MCBS, they may still show only modest improvements of the effect of the NMEP on access.

Almost all of the socio-demographic characteristics included in the models were significant predictors of trying to find information on new benefits and changes, but far fewer were for the questions on managed care plans and supplemental insurance. Males were less likely to have tried to find information about new benefits or changes in Medicare, as were beneficiaries between ages 65-75. Respondents over age 75 were less likely to have tried to find information in all three questions on access to information. This age group may be difficult to reach with new information about all of these topics and may require special efforts to present appropriate information to them. Non-whites were less likely to have tried to find information for only the question about managed care plans. Progressively higher education was a significant predictor of access to information in the question concerning access to information to information concerning new benefits and changes in Medicare, while college-educated beneficiaries were more likely to have tried to find information about managed care plans than beneficiaries with an 8^{th} grade education or less.

Concerning health status characteristics, beneficiaries in fair or poor health were more likely to have tried to find information on new benefits and changes in Medicare relative to beneficiaries in excellent or very good health. These beneficiaries may be interested in learning about benefits and changes that can help them with current illnesses or needs. Surprisingly, health status was not a significant factor for the questions on managed care plans and supplemental insurance.

Respondents with some managed care enrollment were more likely to have tried to find information concerning the availability and benefits of Medicare managed care plans, while beneficiaries with supplemental insurance were less likely to have tried to find this information. Beneficiaries with supplemental insurance may be content with regular Medicare and not interested in risking entry into managed care. Respondents with Medicaid eligibility were less likely to have tried to find information about new benefits or changes in Medicare, perhaps because most of their insurance needs are met through a combination of both programs. Beneficiaries with higher total Medicare charges were more likely to have tried to find information concerning new benefits and changes in Medicare and concerning managed care plans than beneficiaries without any Medicare charges.

Respondents with increasingly higher Perceived Medicare Knowledge index scores were more likely to have tried to find information concerning all three questions. Respondents who think they know more about Medicare appear to still continue to look for information concerning the program in order to update their understanding of the program. In contrast, respondents who had never heard of the Internet were less likely to look for information on new benefits and changes in Medicare than beneficiaries who did not have access to the Internet.

In summary, reading the *1999 Medicare & You Handbook* either thoroughly or in part had a positive but small effect (ranging from one to three per cent) on MCBS questions used to portray access to information and was significant for only the question on trying to find information on new benefits and changes in Medicare. The NMEP does not seem to have much of an effect on access to information as measured by these questions.

4.2 Awareness

We analyzed four questions that reflect the NMEP goal of Awareness. These questions and the policy research questions they address are listed in **Exhibit 3**. Descriptive frequencies for each of the MCBS survey questions are shown in bar charts in the Appendix in **Exhibits C1-C4**.

Exhibit 3. Awareness Research Questions and Related MCBS Questions

II. Awareness	**How aware are beneficiaries about their rights and options after NMEP implementation?**
What types of Medicare + Choice health plan options have beneficiaries heard of?	BK64 – Before now, had you ever heard of a Medical Savings Account? BK66 – Have you ever heard of a Preferred Provider Organization, or PPO?
Have beneficiaries heard of the buy-in programs?	BN8 – Have you ever heard of any of these (Medicare Buy-In) programs? BN9 – Were you aware that such (Medicare Buy-In) benefits were available?

Two of these questions dealt with respondent's awareness of Medicare + Choice options— specifically, medical saving accounts (MSAs)and preferred provider organizations (PPOs). The remaining two questions concerned awareness of the buy-in programs which are

open to seniors and persons with disabilities who have limited financial resources and who need help paying Medicare-related costs. Only 16.4% of respondents were aware of Medicare MSAs, while 24.0% of respondents reported awareness of preferred provider organizations. Medical savings accounts have been discussed in the popular press, but few beneficiaries have been faced with a decision regarding them. On the other hand, respondents, or perhaps their family or friends, have been forced to learn about preferred provider arrangements which are common outside of Medicare.

Only 9.5% of respondents had heard of the various buy-in programs. The buy-in programs mentioned in the question in the MCBS were the Qualified Medicare Beneficiary program, the Specified Low-income Medicare Beneficiary program, and the Qualifying Individual program. Of the remaining beneficiaries, 91.7% were unaware that this type of help was available to pay for premiums, deductibles and copayments. A large number of respondents are ineligible for these programs given their income status or the lack of a disability. Still, more efforts customized to reach needy beneficiaries with these benefits may be needed in order to fulfill their intent.

For the multivariate analysis, we identified two questions from a series of questions that ask the respondent if he/she has heard of a particular type of health care arrangement or plan.

The two questions used were drawn from Round 23 of the MCBS and are the first two question in the exhibit above:

- Have you ever heard of a MSA? (BK 64)
- Have you ever heard of a PPO? (BK 66)

We performed separate logistic regressions using responses to each of the two questions as dependent variables to analyze predictive factors of awareness. Results of these regressions are presented in **Exhibit A3** in Appendix A. Slightly more than half of the Medicare characteristics modeled had a significant effect on responses to each question, most at the $p < 0.01$ significance level.

As a measure of the effect of the NMEP, we calculated the marginal effect of having read the *Medicare and You* Handbook in the 5 states that received it for each of the two questions modeled above. As can be seen in **Exhibit 4**, there was a positive significant increase in awareness as defined by these questions for beneficiaries who read the handbook. Beneficiaries who read the handbook in the five states were about 8 percentage points more aware of MSAs (about 22.1% of beneficiaries who read the handbook had heard of a MSA compared to only 14.1% of beneficiaries who had not read the handbook). Beneficiaries who read the handbook in the five states were about 8.4 percentage points more aware of PPOs (about 29.8% of beneficiaries who read the handbook had heard of a PPO compared to only 21.4% of beneficiaries who had not read the handbook).

Exhibit 4. Marginal Effect of Reading the Handbook in the Five Intervention States

MCBS Question	Marginal Effect
Have you ever heard of a MSA?	7.96 pct. Points**
Have you ever heard of a PPO?	8.42 pct. Points**

** Significant at p<0.01

Based on the results in **Exhibit A3**, almost all of the socio-demographic characteristics included in the models were significant predictors of awareness for the two questions on MSAs and PPOs. Male beneficiaries were more likely to have heard of both a MSA and a PPO than females. Greater male awareness may be due in part to males traditionally being the household member who primarily attend to financial affairs. Beneficiaries age 65 and over were less likely to have heard of a PPO than beneficiaries under age 65. Younger beneficiaries may be more familiar with managed care, and thus more familiar with PPOs. Beneficiaries who were non-white were less likely to have heard of both MSAs and PPOs. Progressively higher education was also a highly significant predictor in both questions.

Concerning health status characteristics, beneficiaries in fair or poor health were less likely than beneficiaries in excellent or very good health to have heard of both MSAs and PPOs. Elderly beneficiaries who are very ill perhaps have little need for PPOs or are unable to take the initiative to learn about these options. Beneficiaries in good health were also less likely than beneficiaries in excellent or very good health to have heard of a PPO. Beneficiaries who make their own health decisions or receive help making health decisions were more likely to have heard of a MSA than beneficiaries who had someone else make their health decisions for them. These beneficiaries would naturally have more awareness of their health plan choices than beneficiaries who have health decisions made for them.

Beneficiaries who had any managed care enrollment were more likely to have heard of PPOs than beneficiaries never enrolled in a managed care plan. Managed care enrollment may force beneficiaries to be more aware of their options. Beneficiaries enrolled in both Medicare and a private health insurance plan were more likely to have heard of both MSAs and PPOs than beneficiaries enrolled in Medicare only.

Beneficiaries with higher scores on the Perceived Medicare Knowledge index were more likely to know about MSAs and PPOs. Both ownership of a personal computer and access to the Internet had positive effects on awareness of MSAs and PPOs. Perhaps beneficiaries with personal computers and Internet access take more initiative to be aware of health insurance issues. Beneficiaries who had never heard of the Internet were also less likely to have heard of PPOs than beneficiaries with Internet access.

4.3 Understanding

We analyzed 24 questions reflecting the NMEP goal of Understanding. These questions and the policy research questions they address are listed in **Exhibit 5**. Questions BK43-50 comprise the 8-item quiz, questions BN1-5 comprise the Perceived Medicare Knowledge index, and questions BN16, 18, and 19 comprise the 3-item quiz—the three knowledge indices which will be analyzed in the multivariate analysis in this section. Descriptive frequencies for each of the individual MCBS survey questions are shown in bar charts in the Appendix in **Exhibits D1-D24**.

In questions BK1, beneficiaries were asked how much they thought they knew about the Medicare program. Respondents gave one of the five answers below:

- just about everything I need to know (9.5%);
- most of what I need to know (24.9%);
- some of what I need to know (29.0%);
- little of what I need to know (21.1%); and
- almost none of what I need to know (15.5%).

There is a wide distribution of responses to this question. While this question asks respondents to describe their general knowledge of the Medicare program as a whole, it may not be that useful because it measures self-reported knowledge and may not be specific enough to gain much insight into what respondents say they know and don't know.

Four additional questions provide information on beneficiaries' self-reported understanding of selected Medicare + Choice plan options. Respondents were asked how well they understood MSAs (BK65), PPOs (BK67), PSOs (BK70), and POSs (BK73). They could respond with one of four choices—Very well, Fairly well, Not too well, or Not at all.

Exhibit 5. Understanding Research Questions and Related MCBS Questions

III. Understanding	How knowledgeable are beneficiaries about Medicare after NMEP implementation?
What is beneficiaries' self-reported understanding of the Medicare program in general?	BK1- How much do you think you know about the Medicare program?
What is beneficiaries' self-reported understanding of selected Medicare + Choice plan options?	BK65 – How well do you understand MSAs: Would you say very well, fairly well, not too well, or not at all? BK67 – How well do you understand PPOs: Would you say very well, fairly well, not too well, or not at all? BK70 – How well do you understand PSOs: Would you say very well, fairly well, not too well, or not at all? BK73 – How well do you understand POSs: Would you say very well, fairly well, not too well, or not at all?
How informed are beneficiaries about what plan options are available to them?	BK68 – Can people on Medicare join PPOs? BK71 – Can people on Medicare join PSOs? BK74 – Can people on Medicare join POSs?
How informed are beneficiaries about the Medicare program and selected plan options? (8-item quiz)	Series of true/false questions: BK43 – Most people covered by Medicare can select among different kinds of health plan options within Medicare? BK44 – Medicare without a supplemental insurance policy pays for all of your health care expenses? BK45 – If you are happy with the way you currently receive health care, you do not have to make any changes in the way you get your Medicare services. BK46 – The Medicare program has recently begun to offer more information and help in order to answer your Medicare questions. BK47 – People can report complaints to Medicare about their Medicare managed care plans (HMOs) or supplemental plans if they are not satisfied with them. BK48 – If someone joins a Medicare managed care plan (HMO) that covers people on Medicare, they have limited choices about which doctors they can see. BK49 – If someone joins a Medicare managed care plan (HMO) that covers people on Medicare, they can change or drop the plan and still be covered by Medicare. BK50 – Medicare managed care plans (HMOs) that cover people on Medicare often cover more health services, like prescribed medicines, than Medicare without a supplemental policy.
How much do beneficiaries feel they know about various Medicare issues? (Perceived Medicare Knowledge index)	BN1 – How much do you feel you know about what medical services Medicare covers or does not cover? BN2 – How much do you feel you know about how much you have to pay for medical services? BN3 – How much do you feel you know about supplemental or Medigap insurance, such as what it covers or how it works with Medicare to pay medical claims? BN4 – How much do you feel you know about the availability and benefits of Medicare managed care plans? BN5 - How much do you feel you know about choosing or finding a doctor or other health care provider?
How well do beneficiaries understand the Medicare program? (3-item quiz)	Series of true/false questions: BN16 –Medicare covers colorectal cancer screening. BN18 – Medigap or supplemental insurance is the same as a Medicare managed care plan. BN19 – Medicare covers an annual flu shot.

About 39.6% of respondents indicated that they understood MSAs very well or fairly well. In other words, the majority of respondents had a limited understanding of MSAs. Responses to the questions on understanding of PPOs, PSOs, and POSs show a decreasing understanding of each of these arrangements given the order of their listing. While almost 49% of respondents said they understood PPOs very well or fairly well, only about 40% of respondents said the same for PSOs, and only about 36% said the same for POSs. PPOs have been in the marketplace longer than PSOs and POSs and respondents may be more generally familiar with PPOs than the other arrangements. On the other hand, beneficiaries may not realize that a PPO is a specific model and think it refers to any form of network plan. Some insurers call HMOs and POSs preferred provider organizations.

Questions BK68, 71, and 74 ask respondents about plan options available to them in Medicare. About 56% of respondents said that they could join PPOs, while about 59% said they could join PSOs and 62% said they could join POSs. When comparing these responses to those in the prior paragraph about how well respondents understood each of these options, arrangements beneficiaries said they could more frequently join were arrangements they understood less well. POSs were less understood, but more beneficiaries replied that they could join them. This finding may be evidence of social desirability bias.

Correct responses on individual questions of the 8-item quiz ranged from 39% of respondents who answered BK50 correctly as True (that managed care plans cover more services than Medicare without a supplemental policy) to 77% of respondents who answered BK44 correctly as False (that Medicare without a supplemental insurance policy pays for all of your health care expenses). All of these questions but one had True as the correct answer. Respondents may have been more challenged if more answers had been False.

In the Perceived Medicare Knowledge, respondents reported how much they felt they knew about particular aspects of the Medicare program. When these responses are aggregated into the knowledge index, they are a valid and internally consistent measure of how much respondents feel they know about particular aspects of Medicare.

Correct responses on individual questions in the 3-item quiz ranged from 44% of respondents who answered BN18 correctly as False (that Medigap or supplemental insurance is the same as a Medicare managed care plan) to 84% of respondents who answered BN19 correctly as True (that Medicare covers an annual flu shot). The third question on whether Medicare covers colorectal cancer screening was answered correctly by 49% of respondents.

Weighted mean scores for the three knowledge indices are shown in Exhibit 6.

Exhibit 6. Weighted Mean Knowledge Index Scores

MCBS Knowledge Index	Weighted Mean	Standard Error
8-item quiz	59.0%	14.5%
Perceived Medicare Knowledge	56.2	13.3
3-item quiz	51.0	25.0

Each of these three knowledge indices were analyzed bivariately with a set of eight beneficiary characteristics to understand how scores on each of the knowledge indices varied within each characteristic. Beneficiary characteristics chosen for this bivariate analysis were gender, age group, race, education, self-reported health status, whether the respondent had any managed care enrollment, type of insurance, and the amount of Medicare covered charges. Knowledge scores were estimated for the entire beneficiary population and reported with confidence intervals. These results are presented in **Exhibit 7**.

Across the three knowledge indices, results from the bivariate analyses were consistent among beneficiary characteristics. There was very little difference in knowledge scores concerning gender. Beneficiaries between ages 65-75 scored the highest on each index, while beneficiaries under 65 years of age scored lowest, perhaps because they are newest to the Medicare program. There were wide differences in knowledge score concerning race, where white beneficiaries scored higher than non-white beneficiaries. As expected, respondents with progressively higher education had higher knowledge scores.

Respondents with progressively better health had higher knowledge scores. Respondents with some managed care enrollment had higher knowledge scores than beneficiaries without managed care enrollment. This was expected as some of the questions concerned managed care. Respondents with Medicare and supplemental insurance had the highest knowledge scores while person on Medicaid had the lowest knowledge scores. While results for the amount of Medicare covered charges were not monotonic within the category or between knowledge indices, overall there was very little variance in knowledge scores for this characteristic.

We performed OLS regressions on each knowledge index expressed as a scale from 0 to 100. These results are presented in **Exhibit A4** in Appendix A. The knowledge score can thus be interpreted as a percentage score out of 100 points.

As a measure of the effect of the NMEP, we calculated the marginal effect of having read the *Medicare and You* handbook in the 5 states that received it for each of the three knowledge indices modeled above. As can be seen in **Exhibit 8**, there was a positive significant increase in knowledge for all three knowledge indices for beneficiaries who read the handbook. Beneficiaries who had read the handbook in the five states scored 7.3 percentage points higher on the 8-item quiz than beneficiaries who did not read the handbook. Beneficiaries who had read the handbook in the five states scored 5.9 percentage points higher on the Perceived Medicare Knowledge index than beneficiaries who did not read the handbook. Beneficiaries who had read the handbook in the five states scored 4.8 percentage points higher on the 3-item quiz than beneficiaries who did not read the handbook. All of these results are highly significant.

Exhibit 7
Mean Knowledge Index Scores (in Percent) for Selected Sub Groups
(n=30,105,201)

	8-item quiz		Perceived Medicare Knowledge		3-item quiz	
Sub Group	**Mean**	**95% Conf. Int.**	**Mean**	**95% Conf. Int.**	**Mean**	**95% Conf. Int.**
Gender						
Male	57.6	(55.6, 59.6)	52.2	(50.8, 53.6)	58.7	(56.9, 60.5)
Female	55.1	(53.3, 56.9)	51.1	(50.7, 52.5)	59.2	(57.6, 60.8)
Age Group						
Under 65	48.8	(46.6, 51.0)	43.5	(41.7, 45.3)	48.3	(45.9, 50.7)
65-75	59.7	(57.7, 61.7)	54.1	(52.9, 55.3)	62.5	(60.9, 64.1)
Over 75	54.0	(52.2, 55.8)	51.0	(49.4, 52.6)	57.9	(56.3, 59.5)
Race						
White	58.8	(56.8, 60.8)	54.3	(52.9, 55.7)	62.1	(60.3, 63.9)
Non-white	44.5	(41.9, 47.1)	39.7	(37.5, 41.9)	45.1	(43.3, 46.9)
Education						
Less than 8th grade	43.9	(41.3, 46.5)	40.7	(38.7, 42.7)	48.0	(45.6, 60.4)
Some/all high school	56.5	(54.5, 58.5)	52.0	(50.8, 53.2)	58.9	(57.3, 60.5)
Some/all college	64.1	(62.7, 65.5)	58.3	(56.9, 59.7)	66.5	(64.9, 68.1)
Health status						
Excellent/Very Good	61.0	(59.2, 62.8)	55.5	(54.3, 56.7)	61.9	(60.5, 63.3)
Good	55.8	(53.6, 58.0)	51.5	(49.7, 53.3)	59.3	(57.3, 61.3)
Fair/Poor	49.7	(47.5, 51.9)	45.5	(43.9, 47.1)	54.1	(51.9, 56.3)
Managed Care Enrollment						
Some	68.5	(66.7, 70.3)	57.2	(55.4, 59.0)	61.2	(59.4, 63.0)
None	54.3	(52.3, 56.3)	50.7	(49.3, 52.1)	58.6	(57.0, 60.2)
Type of Health Insurance						
Medicare only	56.6	(54.2, 59.0)	48.0	(46.2, 49.8)	52.8	(51.2, 54.4)
Medicare and private	59.4	(57.6, 61.2)	55.7	(54.3, 57.1)	63.9	(62.1, 65.7)
Medicare and Medicaid	43.4	(41.2, 45.6)	40.3	(38.5, 42.1)	48.2	(46.0, 50.4)
Health Service Utilization						
None	58.1	(55.9, 60.3)	50.1	(48.3, 51.9)	53.0	(51.4, 54.6)
$1-$499	55.3	(52.9, 57.7)	50.5	(48.7, 52.3)	57.6	(55.4, 59.8)
$500-$4,999	57.0	(55.0, 59.0)	53.0	(51.4, 54.6)	62.0	(60.2, 63.8)
$5,000 and over	54.1	(52.1, 56.1)	51.6	(50.0, 53.2)	60.9	(59.3, 62.5)

Exhibit 8. Marginal Effect of Reading the Handbook in the Five Intervention States

MCBS Knowledge Index	Marginal effect	Std. Err.
8-item quiz	7.33** percentage points	0.93
Perceived Medicare Knowledge index	5.92** percentage points	0.98
3-item quiz	4.76** percentage points	1.21

** Significant at p<0.01

These modest gains in knowledge (from roughly 5-7 percentage points) are consistent with increases in knowledge from other interventions described in the research literature. There may be additional increases in knowledge over time with additional mailings of the handbook. The highest increases in knowledge for having read the handbook were shown in the 8-item quiz and the Perceived Medicare Knowledge index, both of which have been shown to be internally consistent and valid measures of knowledge of Medicare beneficiaries in RTI's *Technical Report 1: Knowledge Index*.

There was little difference in knowledge scores according to gender (even though the regression results show a significant difference for a 1.4% increase in knowledge for males on the 8-item quiz). There was approximately a 3 percentage point increase for beneficiaries between ages 65-75 as compared to beneficiaries less than age 65 in the 8-item quiz and the Perceived Medicare Knowledge index. In the 3-item quiz, beneficiaries between ages 65-75 scored 7 percentage points higher and person over age 75 scored 3 percentage points higher than beneficiaries who were less than age 65. Beneficiaries who were non-white scored between 5.7 and 8.9 percentage points lower than beneficiaries who were white, independent of educational status.

Respondents with some high school or a high school degree scored roughly 4 to 6 percentage points higher than respondents with an eighth grade education or less, and college-educated respondents scored roughly 9-10 percentage points higher than beneficiaries with an eighth grade education or less. Respondents in both the 8-item quiz and the Perceived Medicare Knowledge index reporting only good health scored about 2 percentage points lower than respondents reporting excellent or very good health, while respondents with fair or poor health in quizzes scored about 4.5 percentage points lower than respondents reporting excellent or very good health.

Although there were no differences in knowledge scores for proxy respondents when compared to those of beneficiaries who responded for themselves, there were marked differences for respondents who made their own health care decisions or had help making them as opposed to those who had someone else make their health care decisions for them. Respondents who made their own decisions scored from 10 to 13 percentage points higher than those who had someone else make their decisions in all three quizzes. Respondents who had help in their decisions scored between 6 to 10 percentage points higher than beneficiaries who had someone else make their decisions for them in all three quizzes. Beneficiaries have higher knowledge scores to the degree that they can take responsibility for their own decisions, partly because they may be required to use some of their knowledge to make health insurance decisions.

Beneficiaries with managed care enrollment experience scored 12 to 18 percentage points higher than beneficiaries without managed care experience. These beneficiaries are required to review materials and make decisions regarding their managed care arrangements on a more frequent basis than beneficiaries without managed care given the many changes in the Medicare program concerning managed care.

Respondents with supplemental insurance scored approximately 4 to 7 percentage points higher than beneficiaries with Medicare only in all three quizzes, while beneficiaries with Medicaid scored 3 percentage points lower than beneficiaries with Medicare only on the 8-item quiz. Respondents who make decisions regarding supplemental insurance issues require more knowledge to make decisions on health insurance, but perhaps not quite as much as beneficiaries who are in managed care arrangements.

Respondents with progressively higher Medicare covered charges scored higher than beneficiaries with no expenditures. Beneficiaries with even only $1 to $499 in charges scored 4 to 7 percentage points higher than beneficiaries without charges, and beneficiaries with expenditures greater than $500 scored between 6 to 12 percentage points higher. Apparently use of health care resources promotes better understanding of the resources at hand.

Beneficiaries with cable TV, personal computers, or Internet access scored roughly 2 to 3 percentage points higher than beneficiaries without these resources, and beneficiaries who had never heard of the Internet scored about 1 percentage point lower than beneficiaries who did not have Internet access.

4.4 Impact/Use

We analyzed five questions that reflect the NMEP goal of Impact/Use. These questions and the policy research questions they address are listed in **Exhibit 9**. Descriptive frequencies for each of the MCBS survey questions are shown in bar charts in the Appendix in **Exhibits E1-E5**.

Exhibit 9. Impact/Use Research Questions and Related MCBS Questions

IV. Impact	What is the effect of the NMEP on selected beneficiary activities and outcomes?
How did beneficiaries use the 1999 Medicare & You bulletin and handbook? What actions did they take as a result of being exposed to them?	BK30 – Would you say you have read this (book/bulletin) thoroughly, that you have read parts of it, or that you haven't read it at all? BK32 – Have you ever used this (book/bulletin) to find information about health plan options available to you, such as Medicare managed care plans, HMOs or supplemental plans?
What was beneficiaries' information seeking behavior after the implementation of the NMEP?	BK58 – Starting in 1999, Medicare will offer new health plan options. You may want to review these options. Have you reviewed information about different Medicare health plan options?
How satisfied are beneficiaries with the information they receive from and can give to the Medicare program?	BK2 – How satisfied are you in general with the availability of information about the Medicare program when you need it?
How confident are beneficiaries in their ability to select an appropriate plan?	BK62 – How confident are you that you could choose a health care plan that best matches your needs? Would you say not confident, slightly confident, moderately confident, or extremely confident?

Respondents were asked in Question BK30 if they had read the handbook or the bulletin thoroughly, read parts of it, or read none at all. Respondents who indicated that they had not received the handbook or bulletin after being shown a copy of it in Question BK28 were coded as if they did not read the handbook or bulletin at all for Question BK30. Using this coding, 26.4% of all respondents indicated that they read the book or bulletin thoroughly or read parts of it. This variable is used as the key policy intervention variable in the multivariate analyses.

Respondents were then asked in Question BK32 if they had used the handbook or bulletin to find information about health plan options available to them, such as Medicare managed care plans, HMOs, or supplemental plans. Only 8.4% of respondents indicated that they used the handbook or bulletin to do so. Given the relatively small percentage of Medicare beneficiaries involved in managed care, a lower percentage was expected for this question.

In Question BK58, respondents were asked if they had reviewed information about different Medicare health plan options. Only 12.3% of respondents indicated that they had done so, which corresponds to the low percentage of beneficiaries who used the handbook or bulletin in Question BK32 just discussed.

One question addressed respondent satisfaction. In Question BK2, 93% of respondents reported that generally they were either very satisfied or satisfied with the availability of information about the Medicare program when they needed it. This finding may mean that beneficiaries are happy with their insurance in general. On the other hand, given the changes in the Medicare program in recent years, this may be a reflection of how much beneficiaries don't know, and really should. Additional follow-up questions asked in the next section about the HCFA-sponsored materials may be informative for qualifying responses to this question.

In Question BK62, respondents were asked how confident they were that they could choose a health care plan that best matches their need. About 11.2% of respondents said they were extremely confident, 18.6% said they were very confident, 34.4% of respondents said they were moderately confident, 29.2% said they were slightly confident, and 6.6% said they were not confident in making this choice. Almost two-thirds of respondents indicated they were at least moderately confident in making this choice.

The impact, use, and usefulness of the NMEP was explored through the multivariate analysis of four survey questions. They are:

- Have you ever used this book/bulletin to find information about health plan options available to you/spouse, such as Medicare managed care plans, HMOs or supplemental plans? (BK32)
- Starting in 1999, Medicare will offer new health plan options. You may want to review these options. Have you reviewed information about different Medicare health plan options? (BK58)
- How satisfied are you in general with the availability of information about the Medicare program when you need it? (BK2)
- How confident are you that you could choose a health care plan that best matches your needs? (BK62)

Questions BK32 and BK58 were analyzed using a logistic regression model with a bivariate outcome (yes, no), and questions BK2 and BK62 were analyzed using an ordered logistic regression model. Results of these four models are presented in **Exhibit A5** in Appendix A.

As can been seen in **Exhibit 10**, the models predict that those who read the handbook were 15.6 percentage points more likely to say that they actually used the handbook to find out about available health plan options in question BK32 (16.7% of those who read the handbook relative to 1.2% of those who did not). Also, in response to question BK58, those who read the handbook were 12.2 percentage points more likely to have reviewed information (using any source) about different health plan options (20.7% of those who read the handbook relative to 8.5% of those who did not). In contrast, no significant difference was found in the level of satisfaction or confidence in making a health plan choice between those in the five states who received the *1999 Medicare & You Handbook* and those who did not. Based on these results, we see that while those who received the handbook were significantly more likely to use available information to make decisions, they were not more satisfied with the availability of information or their confidence in choosing a health plan.

Exhibit 10. Marginal Effect of Reading the Handbook in the Five Intervention States

MCBS Question	Marginal Effect
Have you ever used this book/bulletin to find information about health plan options available to you/spouse, such as Medicare managed care plans, HMOs or supplemental plans?	15.6 percentage points **
Starting in 1999, Medicare will offer new health plan options. You may want to review these options. Have you reviewed information about different Medicare health plan options?	12.2 percentage points **
How satisfied are you in general with the availability of information about the Medicare program when you need it?	Not significant
How confident are you that you could choose a health care plan that best matches your needs?	Not significant

** Significant at $p<0.01$

Reading the handbook in the five states was positively related to having reviewed information in general concerning new health plan options and in having used the handbook to do so. However, in Questions BK2 and 62, respondents were significantly less satisfied with the availability of information about Medicare when they needed it and less confident that they could choose a health plan that best met their needs.

Selected demographic characteristics were significant predictors of whether beneficiaries used the book/bulletin to review information on their health plan options and whether they reviewed information from any source on their new health plan options starting in 1999. Individuals who were 65 years of age and older were less likely to have reviewed information in

general concerning new health plans but no differences by age category were found in relation to use of the book/bulletin. Beneficiaries with at least some high school education relative to those with less than an 8th grade education were more likely to have used the handbook to find out about their options, as were those with some college education relative to those with less than an 8th grade education.

Beneficiaries with Medicare expenditures of any amount were more likely to have reviewed information about their health plan options (BK 58) as were those with some managed care enrollment. Proxy respondents were less likely to have used the book/bulletin to find out information.

Individuals with greater Perceived Medicare Knowledge index scores were more likely to have reviewed information on new health plan choices. Those who had never heard of the Internet were less likely to have used information in general or the handbook specifically.

Males were less likely to be satisfied with the availability of information (BK 2) as were those with at least some high school education. Males and those 65 years of age and older were less likely to be confident that they could choose a health plan to meet their needs (BK 62).

Health status was found to be inversely related to satisfaction and confidence. Individuals who reported being in good health or fair to poor health relative to excellent or very good health were more satisfied with the availability of information and their ability to choose a health plan that met their needs.

Beneficiaries with Medicare and private coverage, relative to those with only Medicare coverage, were significantly less confident that they could choose a health plan that meets their needs. The same relationship was found for those with some managed care enrollment and those who make their own health insurance decisions (either with some assistance or not) relative to those who do not make their own decisions.

Lastly, those who scored higher on the Perceived Medicare Knowledge index were significantly less likely to be satisfied with the availability of information and less confident that they could choose a health plan that met their needs.

In conclusion, respondents using the handbook were more likely to use information (including the handbook) to review health plan options. However, beneficiaries tended to be significantly less satisfied with the information they had about Medicare and less confident with their ability to make health plan decisions that meet their needs. These results may be interpreted as meaning that those who have used the greatest amount of information and have the greatest perceived knowledge of the Medicare program have a greater appreciation of how complicated and difficult their health care choices are. These results may also support continuing efforts to improve the information provided to beneficiaries in terms of its usefulness and usability.

4.5 Direct Evaluation of NMEP Materials

We analyzed four questions that ask beneficiaries to evaluate the NMEP materials. These questions and the policy research questions they address are listed in **Exhibit 11**. Descriptive frequencies for each of the MCBS survey questions are shown in bar charts in the Appendix in **Exhibits F1-F4**.

Exhibit 11. NMEP Materials Policy Questions and MCBS Questions

V. Direct Evaluation of NMEP Materials	
What proportion of beneficiaries nationwide received the 1999 Medicare & You materials, and what proportion kept them? What were beneficiaries' impressions of the materials, including the comparison charts, in terms of comprehension?	BK28 – Did you receive a copy of this (book/bulletin), called Medicare & You, in the mail sometime in the past year? BK33 – How easy to understand did you find (this book/this bulletin/the parts you looked at): Would you say (it was/they were) very easy to understand, somewhat easy to understand, somewhat difficult to understand, or very difficult to understand? BK37 – How easy did you find (the comparison chart) to understand: Would you say (it was/they were) very easy to understand, somewhat easy to understand, somewhat difficult to understand, or very difficult to understand? BK40 – Do you still have the Medicare & You (book/bulletin)?

Only 39.4% of respondents indicated that they had received a copy of the handbook or bulletin in the past year in Question BK28. Since these materials were mailed to all beneficiaries, and interviewers showed beneficiaries a copy of the handbook or bulletin to improve recall, it is troubling that such a low percentage said they received it. Beneficiaries may not remember it because they file the materials away and use them only when they have a need for them. They may also not have been the person who picked up mail to their house that day.

In Question BK33, respondents rated the handbook or bulletin in terms of their ease in understanding the parts they looked at. About 30.5% of respondents said the materials were very easy to understand and 54.6% said they were somewhat easy. Only 2.4% of respondents said the materials were very difficult to understand, and 12.5% said they were somewhat difficult to understand. When asked how easy they found the comparison chart in the materials to understand, respondents said 36.3% of respondents said it was very easy to understand, and 53.5% said it was somewhat easy to understand. Only about 12.3% said the chart was somewhat difficult or very difficult to understand. Using prior analyses from the Phase 1 report RTI prepared for HCFA in July 2000, we know that 63% of beneficiaries who received the handbook in the five states in which it was distributed read it. This high percentage of respondents reading the handbook may be facilitated by the ease with which beneficiaries reported understanding it.

When asked if they still had the handbook or bulletin in their possession, 75% of those respondents who said they got it indicated that they did. Most beneficiaries seem to be filing it in a place where they can retrieve it for future reference when they have a question or decision that requires information. If beneficiaries can find the handbook and bulletin, it seems like it is designed well enough such that beneficiaries can understand it generally.

In summary, a minority of beneficiaries report ever getting the handbook or bulletin. However, the majority of beneficiaries who recall receiving it indicate that they read all or parts of it, and that they found it fairly easy to understand. Most beneficiaries seem to be keeping the handbook for future reference.

5.0 Conclusion

For each of the NMEP areas that we examined, some but not all of the evaluation measures showed that the 1999 handbook made a difference in the outcome being measured. One of the three access measures, both of the awareness measures, all three of the knowledge measures, and two of the four impact/use measures showed a significant effect of having read the 1999 handbook on the outcome measured. In all 8 of the 12 regression analyses showed that reading the 1999 handbook significantly influenced the outcome, and these 8 analyses were in the positive direction.

We found that reading the 1999 handbook had a significant effect on only one of our three **access** questions— whether beneficiaries tried to find out about new benefits or changes in the Medicare program. Beneficiaries who read the 1999 handbook in the five states that received it were only 2.8 percentage points more likely to have tried to find out about new benefits or changes. Reading the 1999 handbook had no significant effect on whether beneficiaries tried to find out about the availability and benefits of Medicare managed care plans and what Medigap or supplemental insurance policies cover. In part, these questions are not the best measures of access in that they only ask beneficiaries whether they tried to find information. Better measures of access ask whether beneficiaries actually received information. In addition, so few beneficiaries tried to find information (5-12%) that follow-up questions had sample sizes to small for meaningful investigation of the NMEP. HCFA should continue to identify better measures of access to information that more effectively measure the influence of the NMEP.

We found modest effects of reading the 1999 handbook on both MCBS questions that we used to measure **awareness**. Beneficiaries who read the 1999 handbook in the five states that received it were approximately 8 percentage points more likely to have been aware of Medicare MSAs and 8.4 percentage points more likely to have been aware of PPOs. Only 16% of beneficiaries were aware of MSAs and 24% were aware of PPOs, so we did not model whether persons were aware of POSs and PSOs as even fewer beneficiaries were aware of these arrangements. We found in descriptive analyses that only 9.5% of beneficiaries had heard of the buy-in programs, and that 91.7% of beneficiaries were unaware that this type of help was available. These results suggest that reading the 1999 handbook has potential for raising awareness of managed care arrangements and buy-in programs.

We also found modest effects of reading the 1999 handbook for the NMEP goal of **understanding**. We found approximately 5-7 percentage point gains in knowledge scores on three separate knowledge indices developed for measuring beneficiary understanding of different parts of the Medicare program. All three of these findings were statistically significant. The index on which beneficiaries scored the largest gain (7.3 percentage points) was the 8-item quiz, the majority of which contained questions concerning Medicare managed care issues. The other two knowledge indices for which reading the 1999 handbook in the five states had an effect were

the Perceived Medicare Knowledge index and the 3-item quiz, which showed percentage point increases of 5.9 and 4.8 respectively. Clearly, reading the 1999 handbook shows potential for increasing knowledge of Medicare beneficiaries. A consistent set of questions will need to be administered over time in order to assess the longer range effects of the NMEP.

Use of well-constructed knowledge indices may have an advantage in that they minimize the contribution of any one specific question. Other MCBS questions designed to assess beneficiary knowledge about plan options in Medicare + Choice that were not included in the knowledge indices show that social desirability may lead to upward bias in knowledge measures. Managed care arrangements (like PSOs and POSs) that beneficiaries said they could more frequently join in Medicare were arrangements they understood less well. These findings suggest the importance of ongoing development, testing, and refinement of knowledge indices as an important way to measure beneficiary knowledge and limit the impact of social desirability in responses.

We also measured the **impact and use** of the 1999 handbook in the five states, finding significant results in two of four regression models we analyzed. Beneficiaries who read the 1999 handbook were 16.7 percentage points more likely to have ever used the 1999 handbook to find information about health plan options, and 12.2 percentage points more likely to have reviewed information about different Medicare health plan options. These results were the largest percentage point gains from having read the 1999 handbook in all of our analyses, and demonstrate that persons who read the 1999 handbook tend to use it more.

We did not find a significant effect for having read the 1999 handbook in satisfaction or confidence measures we analyzed. Beneficiaries were no more likely to have been satisfied with the availability of information about the Medicare program when they needed it, nor were they more confident that they could choose a health care plan that best matched their needs. These results suggest that beneficiaries who read the 1999 handbook may find that their choices and options are more complicated and numerous than previously thought.

Beneficiaries who get the 1999 handbook or bulletin materials read them and find them fairly easy to understand, but only a minority of beneficiaries report receiving these materials. Only 26.4% of all respondents reported reading all or parts of the handbook. We found that sizeable majorities of beneficiaries reported the materials in general and a comparison chart within them were either very easy or somewhat easy to understand, but almost 15% of beneficiaries said the opposite. HCFA should continue to simplify the 1999 handbook to reach more beneficiaries. Most beneficiaries who get the 1999 handbook read it, and most keep the 1999 handbook for future reference. These results in general show that HCFA should continue to fund a diverse array of measures to educate beneficiaries.

In general, more MCBS questions are needed to better measure the four NMEP goals (see our Phase 1 report, Chapter 6). We found some survey questions in the MCBS that could be used to evaluate each of the goals of the NMEP, though some were better than others. Additional survey questions, especially questions with objective answers, are needed for knowledge index development.

Finally, these results are for only one point in time. In the future results from the same questions and analyses may show increases over time, or they may not. In fact, there may not be large increases over time if there are diminishing returns to knowledge improvement as a consequence of reading the 1999 handbook or bulletin.

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Appendix A
Exhibits for Results of Multivariate Analyses

Exhibit A1. Logistic Regression for Respondents Who Reported Reading Either the Handbook or the Bulletin

(n=25,658,713)

Medicare Characteristic	Coefficient	Std. Error
Lived in handbook states	0.491**	0.074
Male	0.165**	0.052
Age 65-75	0.142	0.093
Over Age 75	0.003	0.092
Non-white	0.002	0.068
Some high school	0.327**	0.079
Some college	0.383**	0.089
Good health	-0.044	0.058
Fair/poor health	0.001	0.077
Proxy responder	-0.47	0.25
Person makes own health decisions	0.66**	0.14
Person receives help making own health decisions	0.56**	0.15
Some managed care	-0.102	0.099
Supplemental insurance	0.173*	0.074
Medicaid eligibility	0.127	0.093
$1-$499 in charges	0.082	0.085
$500-$4,999 in charges	0.141	0.078
$5,000 + in charges	-0.020	0.083
Perceived Medicare knowledge	0.89**	0.14
Has cable TV	0.009	0.066
Has personal computer	0.085	0.070
Has Internet access	0.016	0.076
Never heard of Internet	-0.02	0.18
Intercept	-2.78**	0.22

* Significant at $p<0.05$

** Significant at $p<0.01$

Exhibit A2. Logistic Regression Results Concerning the NMEP Goal of Access to Information

	BK7 Info on benefits/changes (n=25,479.151)		BK15 Info on managed care plans (n=25,478,073)		BK19 Info on supplemental plans (n=17,323,382)	
Medicare Characteristic	**Coefficient**	**Std. Error**	**Coefficient**	**Std. Error**	**Coefficient**	**Std. Error**
Read handbook	0.56**	0.11	0.25*	0.12	0.38**	0.11
Lived in handbook states	0.09	0.15	0.38	0.20	0.23	0.18
Interaction term	-0.05	0.21	-0.12	0.20	-0.27	0.27
Male	-0.182*	0.090	-0.114	0.082	-0.02	0.08
Age 65-75	-0.41**	0.15	-0.22	0.17	-0.38	0.20
Over Age 75	-0.74**	0.16	-0.46**	0.16	-0.65**	0.21
Non-white	0.16	0.13	-0.54**	0.14	-0.19	0.16
Some high school	0.47**	0.15	0.21	0.14	-0.02	0.12
Some college	0.81**	0.16	0.54**	0.16	0.07	0.13
Good health	0.06	0.11	0.02	0.11	0.01	0.09
Fair/poor health	0.30*	0.12	0.21	0.14	0.00	0.13
Proxy responder	-0.35	0.47	-0.50	0.48	0.65	0.36
Person makes own health decisions	0.40	0.31	-0.09	0.25	-0.33	0.20
Person receives help making own health decisions	0.48	0.29	-0.03	0.24	-0.19	0.19
Some managed care	0.18	0.19	1.58**	0.16	-0.32	0.21
Supplemental insurance	-0.12	0.15	-0.37**	0.13	-0.16	0.28
Medicaid eligibility	-0.36*	0.18	-0.27	0.17	-0.18	0.38
$1-$499 in charges	0.36	0.18	0.56**	0.17	-0.04	0.18
$500-$4,999 in charges	0.42*	0.19	0.48**	0.17	0.14	0.16
$5,000 + in charges	0.65**	0.19	0.39*	0.19	-0.03	0.19
Perceived Medicare knowledge	0.44*	0.20	0.82**	0.22	0.39*	0.17
Has cable TV	-0.061	0.089	-0.19	0.13	-0.06	0.09
Has personal computer	-0.04	0.13	0.13	0.13	-0.05	0.15
Has Internet access	0.20	0.13	0.08	0.15	0.18	0.13
Never heard of Internet	-0.85*	0.42	-0.58	0.60	-0.69	0.44
Intercept	-4.12**	0.39	-3.65**	0.37	-1.50**	0.37

* Significant at $p<0.05$

** Significant at $p<0.01$

Exhibit A3. Logistic Regression Results Concerning the NMEP Goal of Awareness

	BK64 Ever heard of a MSA (n=25,487,734)		BK66 Ever heard of a PPO (n=25,484,653)	
Medicare Characteristic	**Coefficient**	**Std error**	**Coefficient**	**Std. Error**
Read handbook	.509**	.076**	.493**	.058
Lived in handbook states	.02	.11	.10	.13
Interaction term	.10	.15	.03	.12
Male	.284**	.061	.203**	.052
Age 65-75	.22	.12	-.253**	.096
Over Age 75	.06	.12	-.82**	.11
Non-white	-.50**	.11	-.530**	.094
Some high school	.40**	.12	.56**	.11
Some college	1.00**	.13	1.27**	.11
Good health	-.069	.071	-.190**	.067
Fair/poor health	-.225**	.084	-.238**	.076
Proxy responder	-.33	.38	-.16	.31
Person makes own health decisions	.62**	.15	.13	.17
Person receives help making own health decisions	.37*	.17	.08	.19
Some managed care	.19	.12	.320**	.097
Supplemental insurance	.36**	.10	.560**	.084
Medicaid eligibility	-.08	.15	-.16	.13
$1-$499 in charges	.13	.12	-.013	.099
$500-$4,999 in charges	.22	.12	-.02	.10
$5,000 + in charges	.02	.13	.02	.11
Perceived Medicare knowledge	1.35**	.13	1.17**	.14
Has cable TV	-.104	.065	-.117	.062
Has personal computer	.370**	.078	.417**	.086
Has Internet access	.379**	.082	.383**	.086
Never heard of Internet	-.72	.37	-.30	.28
Intercept	-4.32**	.21	-2.89**	.22

* Significant at $p<0.05$

** Significant at $p<0.01$

Exhibit A4. OLS Regression Results Concerning the NMEP Goal of Understanding

	8-item quiz (n=25,603,774)		Perceived Medicare Knowledge (n=25,489,087)		3-item quiz (n=25,605,588)	
Medicare Characteristic	**Coefficient**	**Std. Error**	**Coefficient**	**Std. Error**	**Coefficient**	**Std. Error**
Read handbook	0.1004**	0.0081	0.0418**	0.0078	0.051	0.010
Lived in handbook states	0.077**	0.012	0.001	0.012	0.010	0.013
Interaction term	-0.027*	0.013	0.017	0.012	-0.004	0.016
Male	0.0144*	0.0057	.0059	.0043	-0.0095	0.0062
Age 65-75	0.034*	0.012	0.0312**	0.0093	0.070**	0.011
Over Age 75	-0.007	0.011	0.0130	0.0097	0.027*	0.012
Non-white	-0.057**	0.012	-0.066**	0.010	-0.089**	0.011
Some high school	0.0619**	0.0086	0.0587**	0.0073	0.0436**	0.0099
Some college	0.102**	0.011	0.0897**	0.0092	0.093**	0.011
Good health	-0.0207**	0.0080	-0.0190**	0.0056	-0.0023	0.0090
Fair/poor health	-0.0449**	0.0088	-0.0447**	0.0073	-0.0095	0.0095
Proxy responder	0.008	0.028	0.004	0.022	-0.000	0.032
Person makes own health decisions	0.134**	0.013	0.100**	0.013	0.140**	0.016
Person receives help making own health decisions	0.100**	0.014	0.058**	0.014	0.103**	0.015
Some managed care	0.182**	0.013	0.127**	0.011	0.126**	0.014
Supplemental insurance	0.038**	0.011	0.0650**	0.0095	0.0707**	0.0099
Medicaid eligibility	-0.031**	0.012	-0.0166	0.0096	-0.001	0.012
$1-$499 in charges	0.0396**	0.0097	0.037**	0.010	0.072**	0.012
$500-$4,999 in charges	0.0635**	0.0093	0.0627**	0.0098	0.116**	0.011
$5,000 + in charges	0.060**	0.010	0.071**	0.011	0.123**	0.011
Has cable TV	0.0222**	0.0071	0.0312**	0.0058	0.0331**	0.0080
Has personal computer	0.0308**	0.0085	0.0218**	0.0075	0.017	0.011
Has Internet access	0.0342**	0.0084	0.0356**	0.0076	0.034**	0.010
Never heard of Internet	-0.125**	0.021	-0.064**	0.023	-0.080**	0.023
Intercept	0.24	0.023	0.233**	0.022	0.202	0.024

* Significant at $p<0.05$

** Significant at $p<0.01$

Exhibit A5. Logistic and Ordered Logit Regression Results Concerning the NMEP Goal of Impact/Use

	Used Information (n=14,551)		Used book/bulletin (n=14,551)		Satisfied with Information Availability (n=14,551)		Confidence in choices (n=14,551)	
Medicare Characteristic	**Coefficient**	**Std error**	**Coefficient**	**Std error**	**Coefficient**	**Std error**	**Coefficient**	**Std error**
Read handbook	1.822**	0.407	1.195**	0.091	0.278**	0.064	0.136	0.060
Lived in handbook states	-0.350	0.633	0.054	0.131	-0.162	0.132	0.059	0.126
Interaction term	1.052	0.602	-0.128	0.156	0.032	0.186	0.048	0.120
Male	0.099	0.154	-0.064	0.063	0.139*	0.057	0.116**	0.039
Age 65-75	-0.409**	0.190	0.231	0.129	0.329**	0.111	0.021	0.068
Over Age 75	-0.638*	0.249	0.062	0.133	0.415**	0.113	-0.106	0.072
Non-white	0.077	0.241	0.021	0.121	-0.010	0.080	-0.049	0.066
Some high school	0.110	0.222	0.125	0.121	-0.022	0.088	0.260**	0.064
Some college	0.150	0.252	0.332**	0.130	0.050	0.095	0.400**	0.085
Good health	-0.180	0.154	-0.006	0.082	-0.140*	0.062	-0.177**	0.048
Fair/poor health	0.109	0.149	-0.015	0.090	-0.342**	0.084	-0.317**	0.051
Proxy responder	-0.593	0.698	-1.736**	0.517	-0.409	0.323	-0.147	0.208
Person makes own health decisions	0.627	0.436	0.276	0.228	0.068	0.141	1.248**	0.134
Person receives help making own health decisions	0.563	0.461	0.005	0.223	0.001	0.136	0.741**	0.122
Some managed care	0.504*	0.246	0.124	0.132	0.068	0.113	0.269**	0.081
Supplemental insurance	-0.301	0.174	0.119	0.098	0.004	0.090	0.279**	0.057
Medicaid eligibility	-0.100	0.202	-0.029	0.116	0.234	0.121	-0.084	0.068
$1-$499 in charges	0.633**	0.229	0.126	0.130	-0.143	0.095	-0.129	0.081
$500-$4,999 in charges	0.762**	0.223	0.093	0.105	-0.047	0.102	-0.128	0.081
$5,000 + in charges	0.741**	0.270	-0.028	0.123	-0.102	0.106	-0.103	0.079
Perceived Medicare knowledge	0.688*	0.316	1.163**	0.146	1.545**	0.150	1.672**	0.134
Has cable TV	0.035	0.153	-0.1157	0.077	0.062	0.063	0.038	0.043
Has personal computer	0.053	0.179	0.095	0.085	0.046	0.077	0.261**	0.058
Has Internet access	0.157	0.169	0.363**	0.097	-0.025	0.093	0.038	0.064
Never heard of Internet	-2.164*	1.025	-0.992**	0.369	-0.133	0.139	-0.280*	0.126

Exhibit A5. Logistic and Ordered Logit Regression Results Concerning the NMEP Goal of Impact/Use

	Used Information (n=14,551)		Used book/bulletin (n=14,551)		Satisfied with Information Availability (n=14,551)		Confidence in choices (n=14,551)	
Medicare Characteristic	**Coefficient**	**Std error**	**Coefficient**	**Std error**	**Coefficient**	**Std error**	**Coefficient**	**Std error**
Intercept 1	-5.331**	0.759	-3.710**	0.333	-3.293**	0.220	-5.211**	0.209
Intercept 2					1.519**	0.208	-2.982**	0.210
Intercept 3					3.064**	0.241	-1.363**	0.188
Intercept 4							0.003	0.171

* Significant at p<0.05
** Significant at p<0.01

Appendix B
Bar Charts for NMEP Goal on Access

Exhibit B1

Question BK 3: In the past year, have you tried to find out how much you needed to pay for a particular medical service?

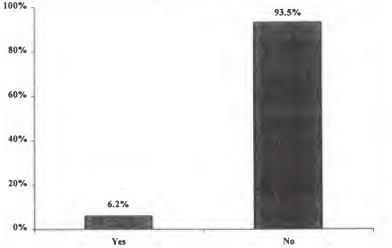


Exhibit B2

Dependent Variables Used in Multivariate Analyses

Question BK 7: In the past year, have you tried to find information about any new benefits or changes in the Medicare program?

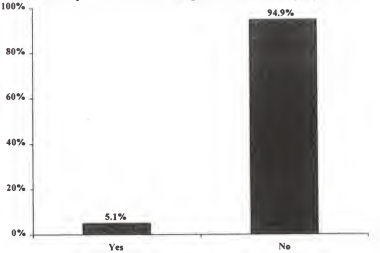


Exhibit B3
Question BK 11: In the past year, have you tried to find information about what medical services Medicare covers and does not cover?

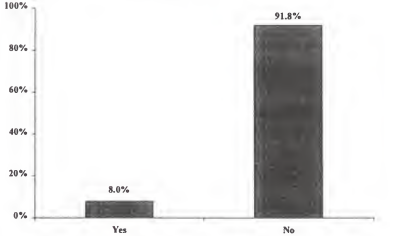


Exhibit B4
Dependent Variables Used in Multivariate Analyses
Question BK 15: In the past year, have you tried to find out about the availability and benefits of Medicare managed care plans, such as HMOs?

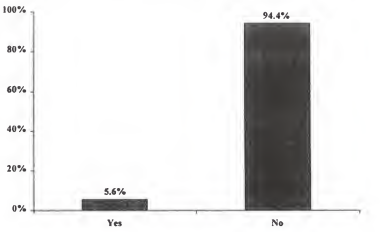


Exhibit B5
Dependent Variables Used in Multivariate Analyses
Question BK 19: In the past year, have you tried to find information about what your Medigap or supplemental insurance policy covers?

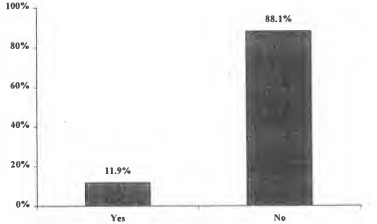


Exhibit B6
Question BK 23: In the past year, have you tried to find information about your Medicaid plan, such as how it works with Medicare?

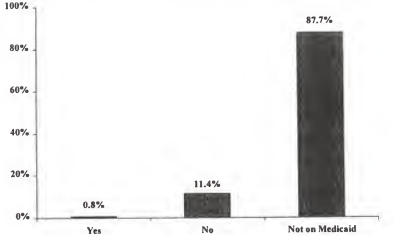
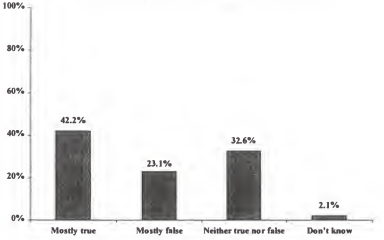


Exhibit B7

Question BK 52: You can't really trust what you see on television or read in the newspapers about Medicare. Is that mostly true for you, mostly false for you, or neither true nor false?



Appendix C
Bar Charts for NMEP Goal on Awareness

Exhibit C1
Dependent Variables Used in Multivariate Analyses
Question BK 64: Before now, had you ever heard of a Medical Savings Account?

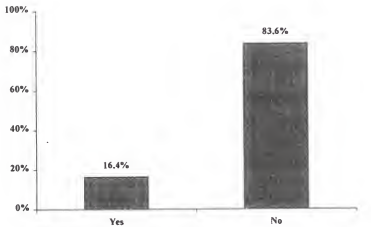


Exhibit C2
Dependent Variables Used in Multivariate Analyses
Question BK 66: Have you ever heard of a Preferred Provider Organization, or PPO?

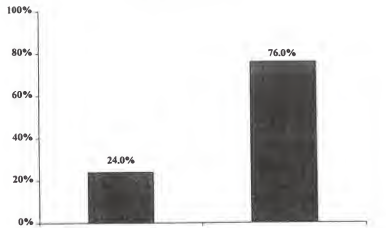


Exhibit C3
Question BN 8: Have you ever heard of any of the Medicare Buy-In Programs?

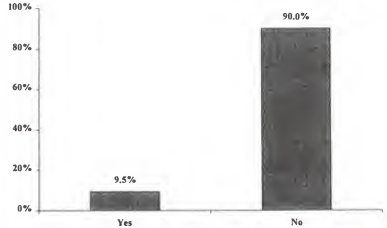
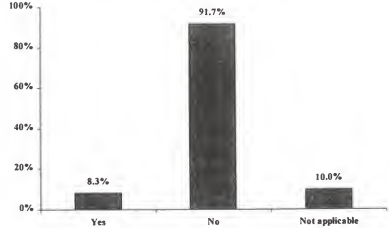


Exhibit C4
Question BN 9: Before now, were you aware that benefits (from Medicare Buy-In Programs) were available?



Appendix D
Bar Charts for NMEP Goal on Understanding

Exhibit D1
Question BK 1: How much do you think you know about the Medicare program?

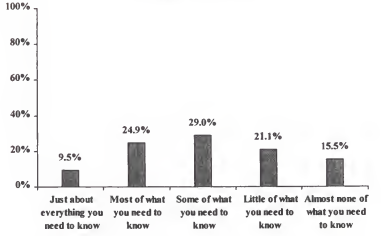


Exhibit D2
Question BK 65: How well do you understand Medical Savings Accounts?

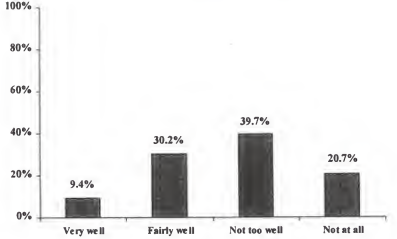


Exhibit D3
Question BK 67: How well do you understand PPOs?

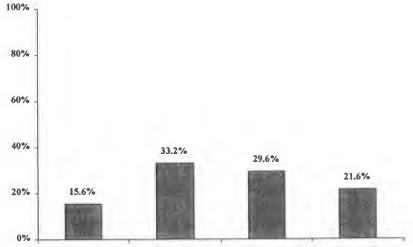


Exhibit D4
Question BK 70: How well do you understand PSOs?

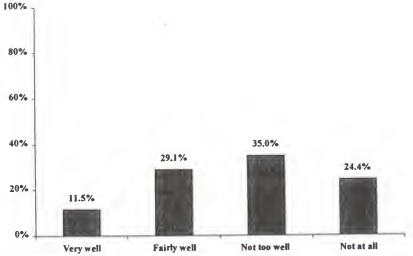


Exhibit D5
Question BK 73: How well do you understand POSs?

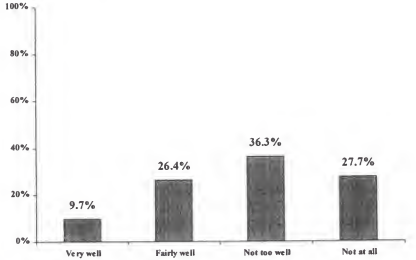


Exhibit D6
Question BK 68: Can people on Medicare join PPO plans?

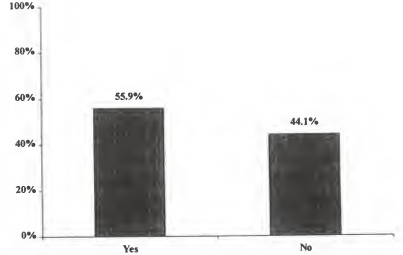


Exhibit D7
Question BK 71: Can people on Medicare join PSO plans?

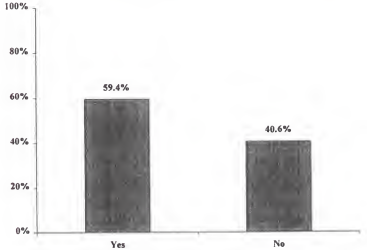


Exhibit D8
Question BK 74: Can people on Medicare join HMO POS plans?

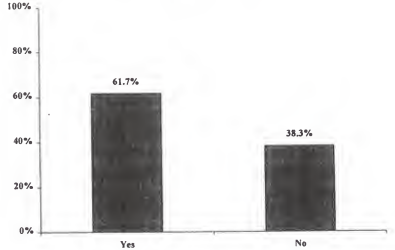


Exhibit D9
Question BK 43: Most people covered by Medicare can select among different health plan options within Medicare -True or False?

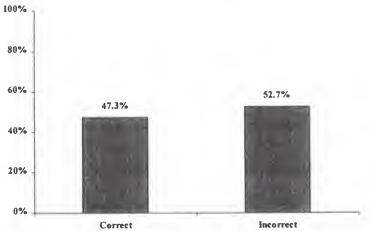


Exhibit D10
Question BK 44: Medicare without a supplemental insurance policy pays for all of your health care expenses - True or False?

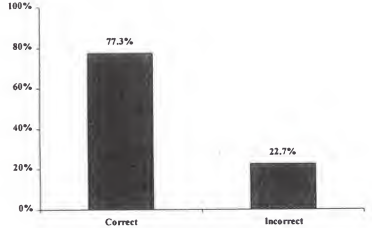


Exhibit D11

Question BK 45: If you are happy with the way you currently receive health care, you do not have to make changes in the way you get your Medicare services - True or False?

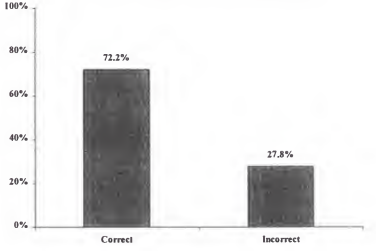


Exhibit D12

Question BK 46: The Medicare program has recently begun to offer more information and help in order to answer your Medicare questions - True or False?

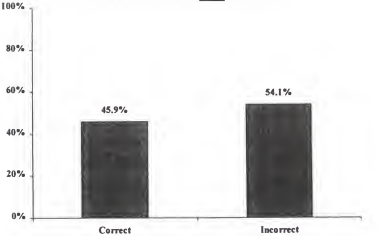


Exhibit D13

Question BK 47: People can report complaints to Medicare about their Medicare managed care plans (HMOs) or supplemental plans if they are not satisfied with them - True or False?

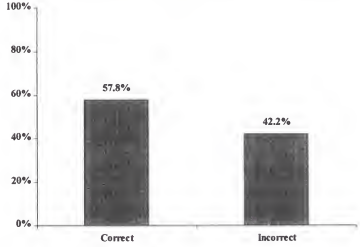


Exhibit D14

Question BK 48: If someone joins a Medicare managed care plan (HMO) that covers people on Medicare, they have limited choices about which doctors they can see - True or False?

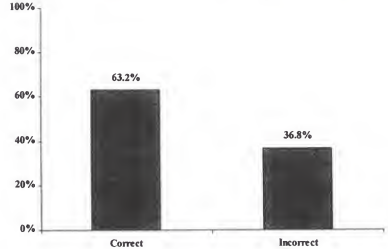


Exhibit D15

Question BK 49: If someone joins a Medicare managed care plan (HMO) that covers people on Medicare, they can change or drop the plan and still be covered by Medicare - True or False?

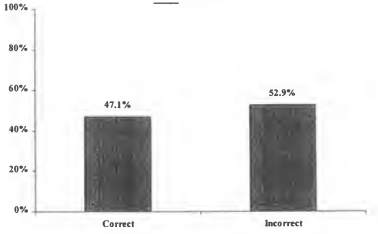


Exhibit D16

Question BK 50: Medicare managed care plans (HMOs) that cover people on Medicare often cover more health services, like prescribed medicines, than Medicare without a supplemental policy - True or False?

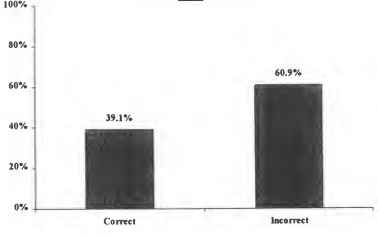


Exhibit D17
Question BN 1: How much do you feel you know about what medical services Medicare covers or does not cover?

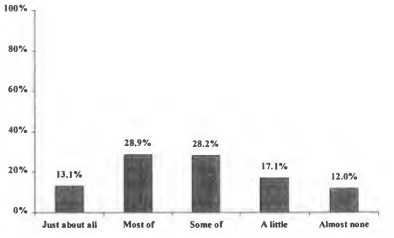


Exhibit D18
Question BN 2: How much do you feel you know about how much you have to pay for medical services?

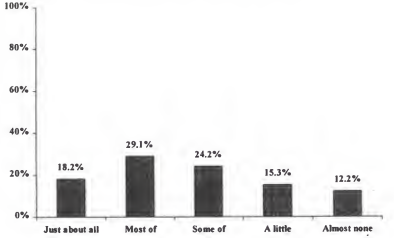


Exhibit D19
Question BN 3: How much do you feel you know about supplemental or Medigap insurance, such as what it covers or how it works with Medicare to pay medical claims?

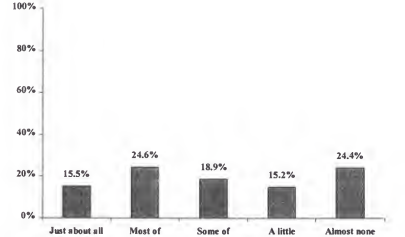


Exhibit D20
Question BN 4: How much do you feel you know about the availability and benefits of Medicare managed care plans?

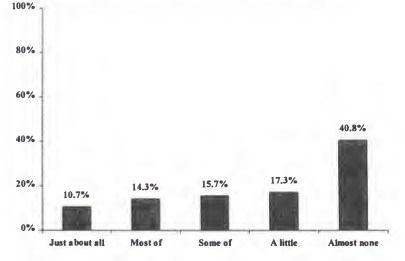


Exhibit D21
Question BN 5: How much do you feel you know about choosing or finding a doctor or health care provider?

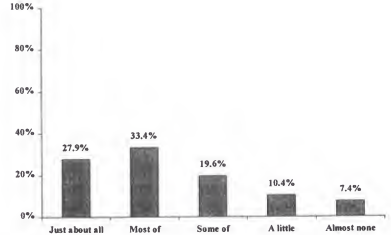


Exhibit D22
Question BN 16: Medicare covers colorectal cancer screening - True or False?

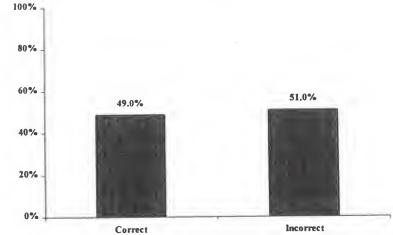


Exhibit D23
Question BN 18: Medigap or supplemental insurance is the same as a Medicare managed care plan - True or False?

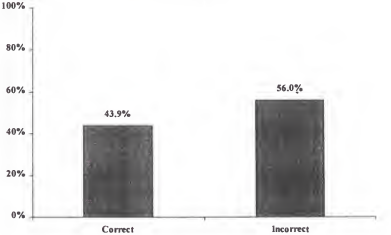
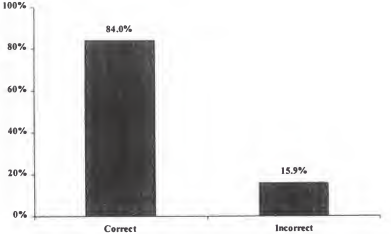


Exhibit D24
Question BN 19: Medicare covers an annual flu shot - True or False?



Appendix E
Bar Charts for NMEP Goal on Impact/Use

Exhibit E1

Question BK 30: Would you say you have read this (book/bulletin) throughly, that you have read parts of it, or that you haven't read it at all?

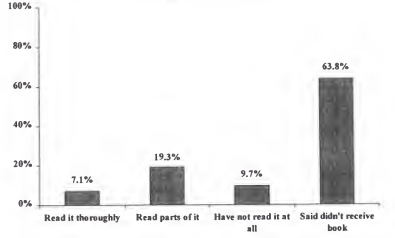


Exhibit E2

Question BK 32: Have you ever used this (book/bulletin) to find information about health plan options available to you, such as Medicare managed care plans, HMO or Supplemental plans?

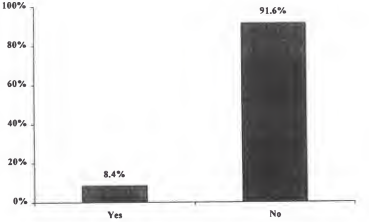


Exhibit E3
"Dependent Variables Used in Multivariate Analyses"
Question BK 58: Have you reviewed information about different Medicare health plan options?

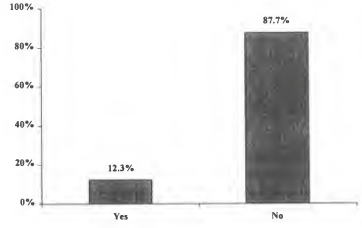


Exhibit E4
"Dependent Variables Used in Multivariate Analyses"
Question BK 2: How satisfied are you in general with the availablitly of information about the Medicare program when you need it?

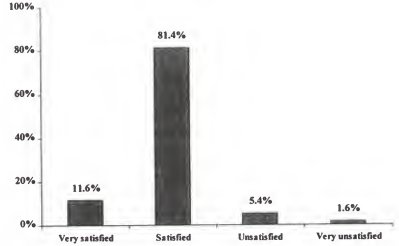
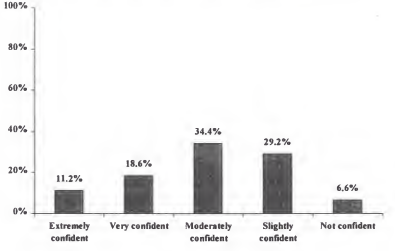


Exhibit E5
"Dependent Variables Used in Multivariate Analyses"
Question BK 62: How confident are you that you could choose a health care plan that best matches your needs?



Appendix F
Bar Charts for Direct Evaluation of NMEP Materials

Exhibit F1

Question BK 28: Did you receive a copy of this (book/bulletin), called Medicare & You, in the mail sometime in the past year?

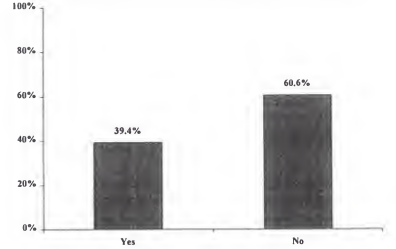


Exhibit F2

Question BK 33: How easy to understand did you find (this book/this bulletin/the parts you looked at)?

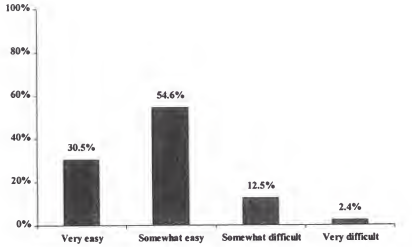


Exhibit F3
Question BK 37: How easy did you find the Comparison Chart to understand?

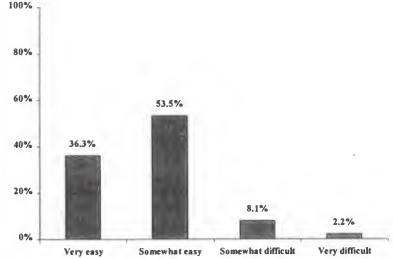
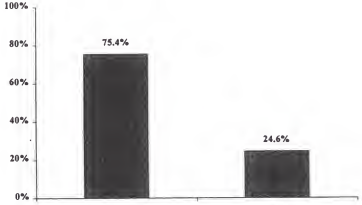


Exhibit F4
Question BK 40: Do you still have the Medicare & You (book/bulletin)?



Appendix G
Bar Charts for Independent Variables Used in Multivariate Analysis

Exhibit G1
Independent Variables Used in Multivariate Analysis
Persons Who Read the Handbook or Bulletin

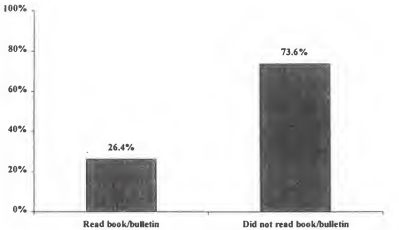


Exhibit G2
Independent Variables Used in Multivariate Analysis
Does Beneficiary Live In One of the Five States that Received the M & Y Handbook?

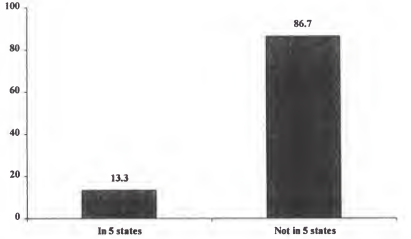


Exhibit G3
Independent Variables Used in Multivariate Analysis
Gender

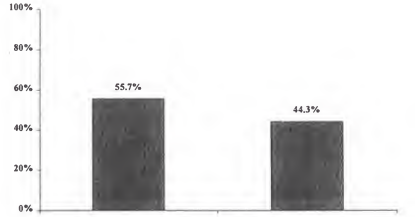


Exhibit G4
Independent Variables Used in Multivariate Analysis
Age Group

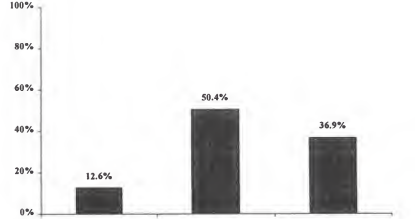


Exhibit G5
Independent Variables Used in Multivariate Analysis
Race

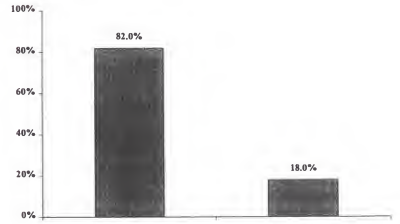


Exhibit G6
Independent Variables Used in Multivariate Analysis
Education

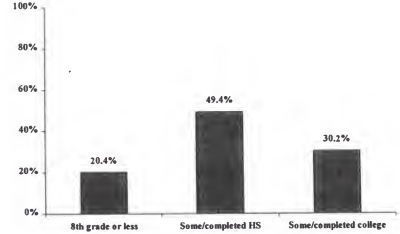


Exhibit G7
Independent Variables Used in Multivariate Analysis
Self-Reported Health Status

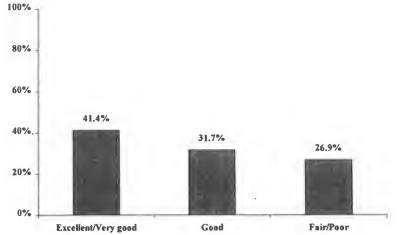


Exhibit G8
Independent Variables Used in Multivariate Analysis
Proxy Respondent Answered MCBS Survey Questions

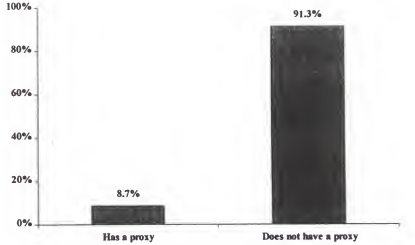


Exhibit G9
Independent Variables Used in Multivariate Analysis
Does Beneficiary Need Help in Making Health Insurance Decisions?

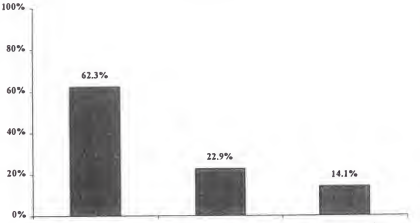


Exhibit G10
Independent Variables Used in Multivariate Analysis
Any Managed Care Enrollment

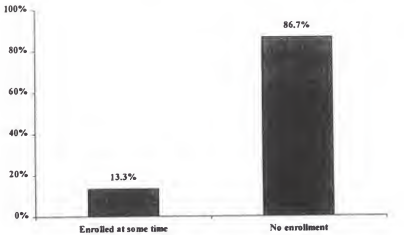


Exhibit G11
Independent Variables Used in Multivariate Analysis
Type of Health Insurance

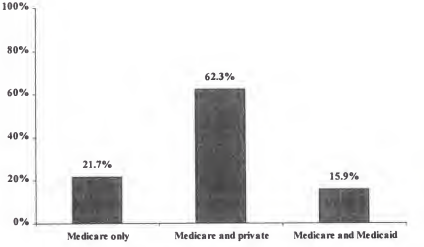


Exhibit G12
Independent Variables Used in Multivariate Analysis
Amount of Total Medicare Charges

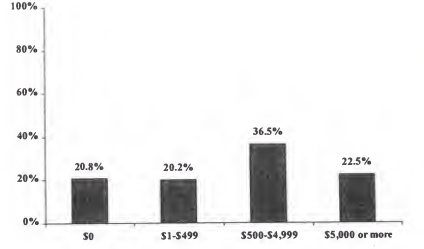


Exhibit G13
Independent Variables Used in Multivariate Analysis
Whether Beneficiary Has Cable TV in Their Home

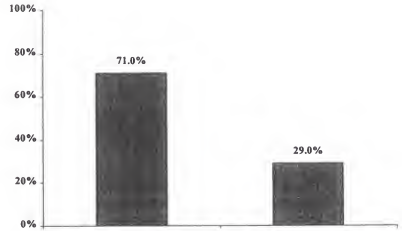


Exhibit G14
Independent Variables Used in Multivariate Analysis
Whether Beneficiary Has a Personal Computer
in Their Home

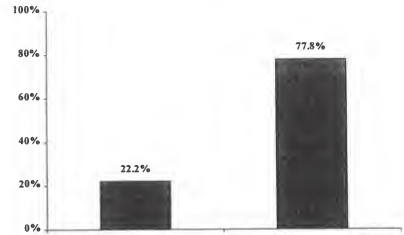
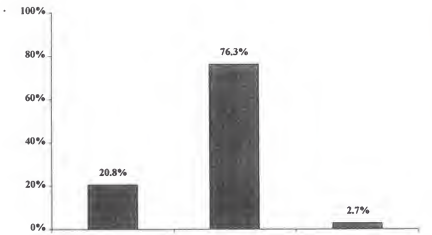


Exhibit G15
Independent Variables Used in Multivariate Analysis
Whether Beneficiary Has Access to the Internet



Appendix H
Sample Sizes for Bar Charts Presented in Appendices B-G

Sample Sizes for Bar Charts Presented in Appendices B-G

Exhibit	Sample size
B1	30,105,201
B2	30,056,367
B3	30,105,201
B4	30,055,322
B5	19,896,620
B6	30,105,201
B7	30,105,201
C1	30,087,808
C2	30,084,343
C3	28,640,986
C4	28,640,986
D1	29,917,640
D2	4,907,975
D3	7,222,037
D4	2,442,400
D5	1,578,905
D6	7,226,544
D7	1,582,545
D8	2,443,881
D9	30,069,559
D10	30,067,220
D11	30,067,220
D12	30,067,220
D13	30,067,220
D14	30,067,220
D15	30,067,220
D16	30,066,053
D17	28,640,986
D18	28,640,986
D19	28,640,986
D20	28,640,986
D21	28,640,986
D22	28,640,986
D23	28,640,986
D24	28,640,986
E1	30,105,201
E2	10,881,368
E3	27,011,316
E4	26,413,420
E5	26,203,604

Exhibit	Sample size
F1	30,079,354
F2	8,014,428
F3	648,650
F4	10,884,499
G1	30,105,201
G2	30,105,201
G3	30,089,739
G4	30,089,739
G5	29,930,958
G6	30,089,739
G7	30,038,927
G8	30,089,739
G9	30,105,201
G10	30,089,739
G11	30,089,739
G12	30,089,739
G13	28,600,372
G14	28,603,672
G15	28,612,206