

**Methodological Report:  
Dartmouth-NIA-CMS Beneficiary Survey About  
Regional Variations in Practice Intensity**

**Nationwide Sample**

**Introduction**

The Center for Survey Research (CSR) worked with Dartmouth Medical School (DMS) to develop an instrument and conduct a survey of Medicare beneficiaries. The goal of the study was to better understand the causes and consequences of geographic variation in per capita expenditures for Medicare beneficiaries. This report of the methods employed in the patient survey centers on the national random sample, also referred to as the Nationwide Cross-Sectional Sample. A brief report of instrument development, data collection methods, and field results follows.

**1.1 Study Population**

Through a collaborative agreement between the Centers for Medicare and Medicaid Services (CMS) and researchers at the Dartmouth Medical School Center for the Evaluative Clinical Sciences (CECS), CMS supplied the sampling frame for this beneficiary survey. CMS completed the linkage of the Dartmouth Medical School CECS developed Finder File to the Names and Addresses file and the Vital Status files and provided to the Center for Survey Research a machine-readable list of HICs, names and addresses and vital status from the most recent version available as of February 1, 2005 for the 2004 Denominator File quarterly update. The sampling frame was all Medicare beneficiaries in the 20% denominator file who were age 65 or older on July 1, 2003, alive and entitled to part A, part B, or both, between July 1, 2003 and June 30, 2004, and residents of a US Hospital Resource Region in 2003 and 2004 (N=6,384,199). A simple random sample of 4000 was selected from this frame and telephone numbers were identified from an electronic telephone matching service and by contacting directory assistance.

**1.2 Instrument Development**

We designed the survey instrument to assess beneficiaries' preferences for tests, treatments and referrals for common health care conditions and their general concerns and preferences for care in the event of a terminal illness, in addition to socio-demographics, health status, social networks, and perceptions of quality and access to health care. A nearly final version of the instrument was cognitively tested with 10 seniors in intensive one-on-one interviews to test construct validity and to make sure we were asking questions that people consistently can understand and can answer. A total of 10 Medicare recipients were interviewed. The subjects, 4 male and 6 female, ranged in age from 70 to 85 (mean age 75). One subject was African American and the rest were white. The sample represented a broad range of educational attainment from 8<sup>th</sup> grade or less to a Baccalaureate degree.

The computer-assisted telephone interview (CATI) (CASES, Berkeley, CA) then underwent pilot testing with 20 seniors. We audiotaped and behavior-coded the pilot interviews for interviewer-respondent interactions to identify questions that were difficult to administer in a standardized format or that were difficult for respondents to understand and revised the survey accordingly.

### **1.3 Administration**

This dual-language, mixed-mode survey was fielded between March and October, 2005. All sample members were mailed two prenotification letters prior to receiving a call from an interviewer. One was a letter required by CMS on their letterhead followed by another on CECS letterhead. Both letters were sent with English on one side and a Spanish translation on the obverse.

Telephone interviewers attempted to call sample members at least six times, with calls placed on different days of the week, at different times of the day, on weekdays and on weekends, in different weeks. At CMS' request, there were no attempted refusal conversions. All refusals were considered final refusals.

Bi-lingual (English /Spanish) telephone interviewers were available for those who preferred to be interviewed in Spanish. If we could not contact the beneficiary by phone after a minimum of 6 call attempts to administer the CATI, we mailed a dual-language, Canadian-style questionnaire that paralleled the telephone interview along with a five-dollar cash incentive. A thank you/reminder postcard was mailed two weeks later and mail non-respondents were sent a replacement questionnaire packet (without a cash incentive) about four weeks after the initial mailing. It is worth noting that to be equitable, all who had responded by telephone were also mailed \$5 as a token of gratitude for their participation. The average time to complete the instrument by telephone administration was 22 minutes.

## **2. Field Results**

The overall response rate for this sample of Medicare beneficiaries was 65% (AAPOR RR1). See Table 1 for a comparison of data collection results by demographic characteristics and Table 2 for sample comparison by demographic and utilization characteristics of respondents.

**Table 1. Data Collection Results by Demographic Characteristics**

<b>Demographics</b>	<b>Interviews</b>	<b>Refusals</b>	<b>LIMIT*</b>	<b>OTHER**</b>	<b>NER***</b>	<b>Deceased</b>	<b>Total</b>
	65% (n=2515)	5% (n=222)	24% (n=944)	4% (n=159)	3% (n=113)	1% (n=47)	100% (n=4000)
<b>Overall</b>							
<b>Age</b>							
64-74	69%	4%	23%	2%	1%	1%	100%
75-84	65	7	22	3	2	1	100%
85+	44	6	28	10	10	2	100%
<b>Gender</b>							
Male	63	6	24	3	2	2	100%
Female	63	6	23	4	3	1	100%
<b>Race</b>							
White	65	6	22	3	3	1	100%
Non-white	50	4	37	6	1	2	100%
<b>RUCA</b>							
Urbanized core	61	6	26	4	2	1	100%
Sub and non-urban	66	5	21	4	3	1	100%

\* No response after a min. of 6 call attempts and 3 contacts by mail (questionnaire packet, postcard, replacement questionnaire)

\*\* Ill (1% overall), cognitively impaired (<1%), bad addresses (2%), and other non-interviews (<1%)

\*\*\* Institutionalized individuals, e.g. in nursing homes, were considered Non Eligible Respondents (NER)

**Table 2. Sample Comparison by Demographic Characteristics of Respondents and Utilization**

	<i>Initial Mode</i>	<i>Secondary Mode</i>	Total Interviewed (n=2515)	Total Sample (n=4000)
	Interviewed by Phone (n=1384)	Interviewed by Mail (n=1131)		
<b>Demographics</b>				
<b>Age</b>	%	%	%	%
64-69	17	17	17	15
70-74	29	27	28	26
75-79	26	24	25	23
80-84	18	19	18	19
85+	10	14	12	17
	100	100	100	100
<b>Gender</b>				
Male	41	44	42	42
Female	59	56	58	58
	100	100	100	100
<b>Race</b>				
White	92	87	90	87
Non-white	8	13	10	13
	100	100	100	100
<b>RUCA</b>				
Urbanized core	57	61	59	61
Sub or non-urban	43	39	41	39
	100	100	100	100
<b>Utilization</b>				
<b># of visits in 2004*</b>				
No visits	7	10	9	11
1-12 visits	50	51	50	47
13 + visits	27	22	25	27
<b># of hospital admissions*</b>				
No admissions	70	71	70	69
1 hospital admission	11	9	10	11
2+ hospital admissions	3	4	4	5
<b># of comorbidities*</b>				
None	53	56	55	53
1 comorbidity	21	19	20	21
2+ comorbidities	10	9	9	11
<b>HMO coverage</b>				
Not HMO	84	84	84	85
HMO	16	16	16	15

\* Do not sum to 100% because data not available for those covered by HMO

Using a mixed-mode approach to data collection allowed us to achieve an acceptable response rate in this study of a nationwide sample of Medicare beneficiaries. The data emphasize the interaction between responding and the amount of resources devoted to data collection, both in terms of the number of contacts and in offering different ways to respond. The oldest old (85+), non-whites, and those with no doctor visits in the preceding year were the least likely to respond by telephone. With the addition of the mail mode, the final group of respondents looked more like the total sample than the group of respondents that would have resulted based on telephone alone.