CONCEPT AND DEVELOPMENT OF THE MEDICARE CURRENT BENEFICIARY SURVEY

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The Medicare Current Beneficiary Survey (MCBS) is a continuous, multi-purpose survey of a representative sample of the Medicare population, conducted by the Office of Strategic Planning of the Health Care Financing Administration (HCFA) through a contract with Westat, Inc. The central goals of the MCBS are to determine expenditures and sources of payment for all services used by Medicare beneficiaries, including co-payments, deductibles, and non-covered services; to ascertain all types of health insurance coverage and relate coverage to sources of payment; and to trace processes over time, such as changes in health status, spending down to Medicaid eligibility, and the impacts of program changes.

The MCBS is unique in covering the entire Medicare population, whether aged or disabled, living in the community or in institutions; over sampling significant sub-populations; and following and reinterviewing the sample to obtain a continuous longitudinal picture. Other features include collecting a wide variety of data on each sample person, including special supplements; combining survey and administrative data; and being able to retrieve data on timely issues. Beneficiaries sampled from Medicare enrollment files (or appropriate proxies) are interviewed in person three times a year using Computer Assisted Personal Interviewing (CAPI). The first round of interviewing was conducted from September through December 1991. The data are designed to support both cross-sectional and longitudinal analyses.

MCBS SAMPLE

The sample for the MCBS was drawn from HCFA's Medicare enrollment file. Medicare enrollment files also provided mailing addresses for the sample. Newly eligible beneficiaries are added to the sample once a year; deaths in the sample are handled by interviewing designated proxies.

Medicare administrative files provide not the sample frame but also service, diagnosis, and charge details for covered events, month-by-month information on enrollment status, payments for Medicaid buy-ins and HMO membership, and data for non-respondents to the interview.

The first stage of sampling was the selection of 107 geographic primary sampling units (PSUs), consisting of groups of counties chosen to represent the Nation. PSUs are used in national surveys to reduce costs of traveling for interviews while maintaining national representation. Several PSUs were added or replaced so that the MCBS would better represent those areas of the Nation--primarily Western and Southwestern--that had experienced major growth in their 65 years of age or over populations since the 1980 census. Puerto Rico was included in the list in response to Government specifications. Within PSUs, the sample was further restricted to addresses within certain geographic subareas corresponding to postal ZIP Codes.

Beneficiaries residing in these areas were selected by systematic random sampling within age strata. Sampling rates varied by age (0-44, 45-64, 65-69,70-74, 75-79, 80-84, and 85 or over) in order to over represent the disabled (under 65 years of age) and the oldest-old (85 years of age or over) by a factor of about 1.5. Given the initial sample size of about 12,000 persons permitted by the budget, allocation by age allows analyses by gender, region, and metropolitan versus non-metropolitan areas, but data for finer subgroups, such as elderly black or Hispanic men, are subject to substantial sampling errors.

One sample is used for both community and institutional beneficiaries, without drawing a separate institutional sample. Sample persons are interviewed wherever they reside, whether in the community or in a long-term care facility, using the appropriate protocol. A sample person who is in the community for part of the reference period and in a nursing home for another part will essentially receive two interviews: one in the home for the community portion and the other with the facility staff. Thus, the survey accounts for utilization of care during the entire time in the reference period, typically the 4 months since the last interview. About 1000 facility interviews are conducted each round.

The sample is replenished annually in the September-December round. This supplementary sample brings in newly eligible Medicare beneficiaries, replenishes sample cells depleted by refusals and death, and corrects for coverage errors in the initial sample frame. The first supplementary sample, fielded in September 1992, included 2,366 new sample members.

In the fourth year of the survey, HCFA began the rotation of the sample, i.e. about a fourth of the sample members were retired from the survey each Fall and replaced by newly-recruited members. This was done mainly to correct for selective sample attrition and to control respondent burden.

INTERVIEW CONTENTS

Interviews at four month intervals are designed

to yield longitudinal series of data on the use of health services, medical care expenditures, health insurance coverage, sources of payment (public and private, including out-of-pocket payments), health status and functioning, and a variety of demographic and behavioral information, such as income, assets, living arrangements, family supports, and access to medical care. An effort is made to interview the sampled person directly, but if the person is unable to answer the questions, he or she is asked to designate a proxy respondent, usually a family member or close acquaintance who is familiar with his or her care. On the average, 15 percent of the community interviews are done with proxy respondents.

The typical MCBS interview lasts one hour. A series of demographic questions is followed by a thorough accounting of the sample person's health insurance coverage, including program participation, Medicare supplements, and HMO membership; this section also ascertains premiums and sources of payment. This is followed by a complete enumeration of health care utilization in the period "since the last interview," asking sequentially about each type of service. Details of services provided, provider characteristics, and medicines prescribed are gathered in this context. The next part of the questionnaire collects a detailed account of charges and payments associated with these health care events.

Some questions are included in the questionnaire on a recurring annual basis, because they are not needed each time. Supplements on access to care, satisfaction with care, health status and functioning, needs for information about Medicare, and income and assets are of this type. Other supplements are more episodic, such as one-time sections on home health providers and the Qualified Medicare Beneficiary provisions.

A prime example of MCBS's responsiveness to urgent Medicare policy issues is the managed care supplement. Our section on HMOs was increased in 1996 in order to capture the experiences of those who had enrolled in managed care, as well as the attitudes of those who had not. The sample of HMO members and fee-for service controls was augmented to permit comparisons in two service areas, as well as nationwide; these additional respondents are interviewed only once, but the managed care supplement has become a permanent feature in the Fall round.

The facility questionnaire includes health status, residence history, insurance coverage, and the use and cost of services, but it does not include the attitudinal or other subjective items asked of community respondents.

MCBS INTERVIEW CYCLE

The introductory interview for each entering respondent occurs in the Fall round. The first questionnaire introduces the respondents to the survey but does not include the detailed questions about use and expenditures for care that are asked in each subsequent round. During the first interview, respondents are provided with a calendar to record details of health care use. They are encouraged to collect their Medicare and insurance statements, supporting bills, receipts, and prescriptions in preparation for the next interview.

The collection of detailed health care use and expenditure data begins in the second interview. In this and subsequent rounds of the survey, respondents are asked about health care events, charges, and payments since the previous interview. As a result, a definite boundary is established for the recall of health care events. The calendar and accumulated insurance statements and receipts are reviewed as part of the interview. For each episode of health care, respondents are asked what charges were billed, who paid them, and what additional bills are expected. Medicare benefit statements (known as Explanation of Medicare Benefits) and any bills, insurance statements, checks, and receipts serve as the framework for collecting charge and payment data. Statements anchor events in time better than recall alone; they also provide claim numbers for later computer linkage to the Medicare files. Anticipated statements and insurance payments not yet received are captured in the next round's summary review. An alternate series of questions is used where statements are not available.

In the third and subsequent rounds, a summary of health care events recorded in the previous round is reviewed by the interviewer and respondent together. The summary review establishes a boundary for reporting new events, probes for changes in household composition or insurance coverage, and prompts for previously missing information.

The complete interview cycle for a respondent, at least since the establishment of sample rotation, consists of 12 interviews over 4 years. As mentioned above, the initial interview is preliminary to collecting use and payment data. The last two interviews of the cycle do not ask about new events, but focus on completing the record of events for the previous calendar year. Thus three full calendar years of medical care utilization and payments are documented over the full four-year course of interviews.

The MCBS conducts interviews for persons in long-term care facilities using a similar instrument. The initial contact for the facility interview is always with the facility administrator. Interviews are subsequently conducted with staff members designated by the director as the most appropriate to answer each section of the questionnaire. It was decided early in the design of the study not to attempt facility interviews with the sample person or family members.

In the community, response rates for initial interviews range in the mid to high 80s; once respondents have completed the first interview their participation in subsequent rounds is 95 percent or more. However, the

cumulative effect of nonresponse after 3 or 4 years was sufficient to lead us to change to a rotating sample. Response rates for facility interviews approach 100 percent.

DATA PREPARATION

Data sent electronically by the interviewers are received by microcomputers in Westat's headquarters and transported to VAX minicomputers. Many of the edits are performed by the CAPI program as the responses are collected. Most of these are logical checks, ensuring that answers to questions are consistent with each other (e.g., a person described as a "son" must be male; the waiting time during an office visit must not be longer than the total time of the visit). Other edits check for correct links between segments of the data base. Errors remaining when the data are reviewed in the central office are examined in the edit shop, which employs about nine full-time staff members for the community and three for the facility questionnaires. The editors spend most of their time on non-automated aspects of editing, such as reviewing interviewer comments and making complex corrections in the data base.

ESTIMATION

The estimation program has two major parts. The first is a set of general purpose small weights that reflect the probabilities of selection for the sample, adjusted for under-coverage and nonresponse. The weights have also been adjusted to reflect the July 1 Medicare enrollment by age and gender. The general purpose weights can be used for most round and annual tables and are part of the public use files.

The second part of the estimation program is a set of replicate weights (using balanced repeated half samples) that are appropriate to calculate variances for data elements collected in a sample with a complex cluster design such as that of the MCBS. These replicate weights are provided so that users may compute their own standard errors for MCBS variables using programs like SUDAAN or Wesvar.

DATA LINKAGE

MCBS interview data are linked to Medicare claims and other administrative data to enhance their analytic power. This results in a data base combining data that can be obtained only from personal interviews with Medicare administrative data. The survey data and Medicare claims data together constitute a more complete data set for the MCBS sample than is available from either source. Administrative data, such as buy--in status and capitated plan membership, are also added to the file. The final file consists of survey, administrative, and claims data. All personal identifying information is removed.

Reconciliation of medical events and charges found in the survey responses and bill files is a major undertaking. While there is a core of matching events reported on both, there are numerous events recorded on the survey only (many of which are not covered by Medicare), and others found only on the claims files. The MCBS staff has developed an elaborate net of reconciliation and imputation rules to preserve as much as possible all partial reports from respondents with regard to events, dates, amounts paid, and sources of payment.

MCBS PRODUCTS

Public use data sets are issued on a calendar year basis. First to be released is the **Access to Care** file, which contains summaries of use and expenditure for the year from Medicare files along with data on coverage, health status and functioning, access to care, information needs, satisfaction with care, and income -- all the areas of questioning, that is, except the reconciled cost and use information. The sample for this file represents the "always-on" population, those who participated in the Medicare program for the entire year. This file excludes important groups who entered the program and those who died, but there are many useful analyses that can be done using this file, and it is made available rapidly -- about 1 year after the conclusion of field work. Cross-sectional and longitudinal weights are included, as well as variables needed to calculate standard errors.

The full **Cost and Use** file is made available about two years after the close of field work. This file contains reconciled information on events, charges, and payments from both survey and claims for the year as well as most of the variables from the Access to Care file. The sample represents the entire Medicare population: all persons who were ever in the program during the calendar year.

AVAILABILITY

MCBS Access to Care files from 1991 through 1996 and Cost and Use from 1992 through 1995 are currently available in various formats for use on mainframe computers; a CD-ROM version of the Cost and Use file is in preparation. Contact the HCFA Office of Strategic Planning at (410) 786-7950 for further information.