SUPPORTING STATEMENT

Part B

Medical Expenditure Panel Survey (MEPS) Household Component and the MEPS Medical Provider Component

Version: August 28th, 2012

Agency of Healthcare Research and Quality (AHRQ)

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B. Collections of Information Employing Statistical Methods

To fill in major data gaps identified by the Department of Health and Human Services, the Medical Expenditure Panel Survey (MEPS) is specified as a continuous survey. Each year, a new nationally representative MEPS sample will be selected from a subset of households that participated in the prior year's National Health Interview Survey (NHIS). A preliminary contact with the NHIS responding households selected for the MEPS study will take place to announce the MEPS survey and introduce records keeping activities.

1. Respondent Universe and Sampling Methods

1a. Sample Selection and Universe for the Household Component

The initial MEPS Household Component (HC) sample consists of households that responded to the prior year's NHIS, in the panels reserved for the MEPS. The basic analysis unit in the MEPS is defined as the person.

A Reporting Unit (RU) is a person or group of persons in the sampled dwelling unit that are related by blood, marriage, adoption or other family associations, for whom data are to be collected during the MEPS-HC interview. Typically, one adult family member provides information for the entire family, however all adult family members are encouraged to participate. Each year's MEPS-HC sample will be surveyed to collect annual data for two consecutive years. Each new MEPS-HC sample will be selected as a nationally representative subsample from households that responded to the prior year's NHIS. The NHIS is based on a stratified multi-stage cluster sample design (see http://www.cdc.gov/nchs/nhis/about_nhis.htm for more information about the NHIS). The NHIS sample reflects an oversample of Hispanics, blacks, and Asians. The oversampling of minorities carries over to the MEPS-HC. See http://meps.ahrq.gov/mepsweb/data_stats/download_data/pufs/h129/h129doc.pdf for more detailed information about the MEPS-HC.

Table 1 shows the expected eligible sample sizes, response rates and number of respondents associated with producing calendar year estimates for the 2013 to 2015 MEPS-HC data collection components. The target number of completed respondents to produce calendar year estimates for the MEPS-HC is approximately 14,500 originally sampled RUs (families), containing about 37,500 persons. As indicated in Table 1, a larger initial sample is selected to achieve the targeted number of respondents necessary to satisfy survey precision requirements.

Table 1. MEPS-HC expected annual sample for 2013 to 2015

_	Sample	Response	Number of	
Data collection component	size	rate	respondents/	
			completed forms	
MEPS-HC Core Interview (RUs)	20,522a	70.6 ^b	14,489	
Adult SAQ	28,254 ^c	93.2 ^d	26,333	
Diabetes care SAQ	2,345 ^e	89.8 ^d	2,106	
Authorization form for the MEPS-	07.600	86.0 ^d	75 242	
MPC Provider Survey	87,608	06.0	75,343	
Authorization form for the MEPS-	56,856	EC 0EC	79.0 ^d	44,916
MPC Pharmacy Survey		/ 3.0	44,910	
MEPS-HC Validation Interview	4,980	96.0 ^d	4,781	

^a Expected sample size; each RU has an average of 2.6 persons

The overall MEPS-HC response rate is a product of the response rate for each round of data collection in the MEPS and the response rate for the previous year NHIS survey from which the MEPS-HC sample was drawn. Table 2 shows the sample data by panel and round for the 2009 MEPS-HC. In order to produce annual health care estimates for calendar year 2009 based on the full MEPS sample data from the MEPS Panel 13 and Panel 14, the two panels are combined. More specifically, full calendar year 2009 data collected in Rounds 3 through 5 for the MEPS Panel 13 sample are combined with data from the first three rounds of data collection for the MEPS Panel14 sample. The overall response rate for 2009 was 57.2 percent. Beginning in 2011 RUs (families) began receiving a \$50 incentive to participate in the MEPS-HC so higher response rates are expected for the 3 years covered by this clearance request.

Table 2. Sample size and Unweighted Response Rates for 2009 Full Year file (Panel 14 Rounds 1-3/Panel 13, Rounds 3-5)

	Panel 13	Panel 14	2009 Combined
A. Percentage of NHIS households designated for use in MEPS (those initially characterized as responding)	87.4%	85.2%	
B. Number of households sampled from the NHIS	9,703	9,700	
C. Number of Households sampled from the NHIS and fielded for MEPS	9,688	9,672	
D. Round 1 – Number of RUs eligible for interviewing	10,325	10,227	
E. Round 1 – Number of RUs with completed interviews	8,017	7,650	

^b Expected response rate; conditioned on response to the NHIS

^c Based on 1.95 adults per responding RU

^d Conditioned on response to the MEPS-HC core interview

^e Based on 8.3% prevalence of diagnosed diabetes among adults.

F. Round 2 – Number of RUs eligible for interviewing	8,252	7,883	
G. Round 2 – Number of RUs with completed interviews	7,809	7,239	
H. Round 3 – Number of RUs eligible for interviewing	7,982	7,359	
I. Round 3 – Number of RUs with completed interviews	7,684	6,980	
J. Round 4 – Number of RUs eligible for interviewing	7,809		
K. Round 4 – Number of RUs with completed interviews	7,576		
L. Round 5 – Number of RUs eligible for interviewing	7,623		
M. Round 5 – Number of RUs with completed interviews	7,461		
Overall annual unweighted response rates P14: A x (E/D) x (G/F) x (I/H) P13: A x (E/D) x (G/F) x (I/H) x (K/J) x (M/L) Combined: 0.52 x P13 + 0.48 x P14	58.7% (Panel 13 through Round 5)	55.5% (Panel 14 through Round 3)	57.2%

The sample size specifications for the MEPS-HC have been set to meet specific precision requirements. For each estimation year, the relative standard error for a population estimate of 20 percent for the overall population at the family level was specified to average 2.6 percent; and the relative standard error for a population estimate of 20 percent for the overall population at the person level was specified to average 1.6 percent. For example, in 2009 the national population estimate at the person level of the percent of women with no usual source of care was 16.7 percent with a standard error of 0.5 percent. That translates to a 95 percent confidence interval of (15.72%, 17.68%) for the access to care measure that characterized women in the nation.

It is important to note that current budget assumptions for FY 2013 will necessitate a reduction of the 2013 MEPS household sample by10 percent. The impact of this reduction on the capacity of the survey to detect significant changes between policy-relevant population subgroups can be illustrated as follows. Based on the 2009 MEPS, the mean health care expenditure estimate for persons with an expense who were under the age of 65 with some private coverage over the course of the year was \$4,014 (s.e.= \$175), which was determined to be significantly different at the .05 level from the mean estimate of \$4,690 (s.e.=\$277) for those <65 whose only source of coverage during the year was public coverage. Alternatively, under a 10 percent reduction in the 2013 MEPS sample size, one could not detect a significant difference in these estimates across these population subgroups.

1b. Sample Selection and Universe for the Medical Provider Component

The sample for the MEPS Medical Provider Component (MPC) is designed to provide data on events for which household respondents are unlikely to know charges and payments, to enrich

the sample of events available as donors for imputation, and to provide a basis for methodological analysis of household reported charges and payments for all types of events.

Table 3 below shows the expected sample sizes, response rates and number of respondents for the MEPS-MPC, by provider type. The overall response rate for the MEPS-MPC is 75.4 percent, based on response rates from the 2010 data collection, the most current year for which complete data is available.

Table 3. MEPS-MPC expected sample by provider type for 2013 to 2015

Provider type	Sample size	Response rate*	Number of
Provider type			respondents
Home care health care providers	594	78.3	465
Home care – non-health care providers	45	77.8	35
Office-based providers	13,139	82.2	10,800
Separately billing doctors	16,744	64.5	10,800
Hospitals	5,988	83.5	5,000
Institutions (non-hospital)	114	87.9	100
Pharmacies	8,458	80.4	6,800
Total	45,082	75.4	34,000

^{*} Based on results from the 2010 MEPS-MPC data collection

All hospitals and home health care agency providers are "in-scope" for the MEPS-MPC. Other providers and sites of care are in-scope if the provider is either a doctor of medicine or osteopathy, or if the provider practices under the direction or supervision of a MD or DO. For example, physician assistants and nurse practitioners working in clinics are medical providers considered in-scope for the MEPS-MPC. Chiropractors and dentists are out of scope (unless practicing in a hospital).

All office based physicians are eligible for inclusion in the MEPS-MPC sample. However, to align sample size with available budget, the office based physician sample has been sampled at a rate of 50% for the past several years. The process for determining this subsample of the office based providers is the following: all non-Medicaid households with office based providers eligible for the MPC are allocated to 20 replicate samples, calculating for each replicate the number of office based patient provider pairs associated with the households in that replicate. Based on the sample target size (based on available budget), the amount of pairs to exclude from the sample is determined and consecutive replicates for exclusion are selected, counting the number of associated pairs until the target number of pairs for exclusion is reached. The MEPS-MPC sample includes 100 percent of hospitals identified as providers of care by household respondents, including all inpatient stays, emergency room, and outpatient department visits. All physicians identified by hospitals and/or households as providing care to sampled persons during the course of inpatient, outpatient department or emergency room care, but who bill separately from the hospital are included in the MPC sample. All home health agencies that provided care to household sampled persons are also included in the MPC sample. Finally, all pharmacies that have dispensed prescribed medicines to sampled persons are included in the MPC.

2. Data Collection Procedures

Household Component

Preliminary Contact. Households responding to the NHIS and subsampled as part of a MEPS-HC panel will be contacted by mail prior to their first interview. The mailing contains an advance letter, brochure, and MEPS record keeping materials (see Attachments 2 to 20 for all of the respondent materials). After the advance contact, households will be contacted for the first of five in-person interviews. The interviews are conducted as a computer assisted personal interview (CAPI). The CAPI instrument is organized as a core instrument that will repeat unchanged in each of the rounds. Additional sections are asked only once a year and provide greater depth. Dependent interviewing methods in which respondents are asked to confirm or revise data provided in earlier interviews will be used to update information such as employment and health insurance data after the round in which such data are usually collected. The MEPS brochure will introduce the study. The Assurance of Confidentiality is covered in both the letter and the brochure and the Reporting Burden statement appears in the brochure. A calendar will be mailed to the MEPS-HC family respondent for the purposes of recording medical events. The interviewer will call to verify the arrival of the materials, answer any questions the respondent may have and obtain the best times for the round 1 interview.

Rounds 1-5. Five interviews will be conducted with each sampled household at 4-6 month intervals over a 30 month time period. All interviews will be conducted in person with CAPI as the principal data collection mode. Round 1 will ask about the period since January 1 to the date of the interview. Round 2 will ask about the time since the Round 1 interview through the date of the Round 2 interview. Subsequent interviews will all cover the interview to interview interval.

Questionnaires for these field periods are largely parallel to those used in prior MEPS interviews. The instruments contain items that are asked once in the life of the study, items that are asked in each round, and items that are updated from round to round. Items only asked once include basic sociodemographics. Core questions asked include health status, health insurance coverage, employment status, days of restricted activity due to health problems, medical utilization, hospital admissions, and purchase of medicines. For each health encounter identified, data will be obtained on the nature of health conditions, the services provided, the associated charges and sources (and amounts) of payments. Permission forms for medical providers will be collected in the field.

Medical Provider Component

The MEPS-MPC survey begins with the selection of the sample during the household interview. For those medical events and prescribed medicines+ reported in a household interview that meet the targeting criteria described above, a permission form is generated for each provider of the sampled person/provider pairs involved. This form describes the purpose of the survey and the information that is being collected, and authorizes the provider to release that information. The form is signed by the patient (or patient or guardian if person is under 18 years of age, or witness

or proxy if patient is disabled or deceased). To expedite the identification of providers and assist with the preparation of an unduplicated provider list for the fielding of the MEPS-MPC, interviewers use a computerized database of medical providers, the National Provider Identifier (NPI) Provider Directory, which has been loaded onto the laptop. The NPI database is directly from the National Plan and Provider Enumeration System (NPPES) and Centers for Medicare & Medicaid Services. The NPI is a unique identification number for covered health care providers and uniquely identifies a health care provider. If a match is found with a provider identified by the household respondent, the matched directory record will be associated with the household event. The NPI directory records include, for each provider: a unique provider ID, the provider's name, and the provider's practicing address and phone number(s). The MPC is conducted by telephone and record abstraction. The data collection process contains three basic steps:

- 1) an initial telephone screening to confirm provider eligibility and determine the appropriate person to whom the survey materials should be sent;
- 2) the mailing or faxing of an advance package to the provider which describes the survey and the types of information that will be collected and also includes the permission forms for each patient; and
- 3) a phone call to actually collect the data. However, many providers prefer to send in records rather than provide information over the telephone. The information is abstracted from the records, when records are sent in; when necessary, follow-up phone calls are made to the providers to clarify items in the records or to retrieve critical data items not contained in the records. The majority (90 percent) of hospital providers choose to mail or fax records and approximately 50 percent of office based providers mail or fax records. The rest are obtained by telephone. Very few, other than some pharmacy chain providers, submit electronically.

For office-based physicians, home health agencies, clinics, and separately billing doctors the data collection call is directed to the person who handles the billing for the provider. Often this is not someone in the provider's office, but an outside billing organization.

In the case of hospitals, data are collected not only from the billing department but from the medical records department and administrative office. Previous experience has shown that the names of the separately billing doctors usually can not be obtained from the hospital's billing department. Consequently, there is an additional call to the medical records department to determine the names of all the doctors who treated the patient during a stay or visit. Moreover, in some cases the hospital's administrative office must be contacted to determine whether or not the doctors identified by medical records bill separately from the hospital itself.

Although experience has shown that telephone interviewing tends to be a very efficient method of collecting MEPS-MPC data and imposes minimal burden on providers, the MEPS-MPC data collection process has been designed to be as flexible as possible to accommodate the needs of respondents. Procedures for self-administration are available, should respondents prefer that mode of data collection, and in-person interviewing, for a small number of hospitals which may be identified by multiple persons in the household sample.

The pharmacy data collection process -- for individual, non-chain pharmacies -- consists of: (1) an initial phone call to the pharmacy to solicit cooperation and determine how to send the survey materials; (2) materials are faxed or mailed to the pharmacy; (3) pharmacies respond by sending in, by fax or mail, patient profiles. Sometimes the pharmacist is willing to give the information over the phone and the data is collected into an Integrated Data Collection System (IDCS) on a secure web portal; (4) pharmacies are followed-up to prompt for response or if data items in submitted profiles are not clear. The process for the larger chains that have requested centralized corporate contacts can vary, depending on the preferences of the chain. All begin with a telephone contact and include a step in which the authorization forms are sent to the company, but then data collection proceeds as desired by the chain: some respond in electronic format (approximately 2 to 5 percent); many send in (hard copy) profiles (approximately 90 to 95 percent reply by mail or fax with the split between the two modes fairly evenly divided; and some prefer to provide data over the phone (approximately 2 to 5 percent).

3. Methods to Maximize Response Rates

Household Component

Households in the MEPS-HC sample are interviewed in person by trained interviewers using a CAPI application to record the respondent's answers to the survey questions. In addition to providing information on family composition, health status, employment, and health insurance, household respondents are asked to report details on health events for all members of the family. The interviews vary in length depending upon the number of persons in the family and the number of health care events the family has to report. Round 1 interviews typically last between one and a half and two hours. Subsequent round interviews are somewhat shorter.

Over time, the MEPS-HC has refined a series of activities and procedures designed to build and maintain response rates. These activities begin with a sequence of advance mailings that provide a first introduction to the study and continue through concerted followup efforts to gain the participation of the households that are difficult to contact or reluctant to participate. These efforts are particularly concentrated in the first round of a new panel's participation, but continue with efforts to maintain cooperation through the full five rounds of interviewing. The standard practices include:

- Pre-interview contacts. Before an interviewer makes the first attempt to contact a sampled household in person, the household receives a series of two mailings and one advance telephone contact. The first mailing notifies the family of its selection for the survey, and includes a brochure explaining the study and the nature of participation and a 2 year monthly planner for keeping records for the MEPS interview. The second mailing is a brief reminder of the coming interview, timed to arrive shortly before the interviewer's first attempt to contact the family in person. Shortly following the first mailing, respondents are contacted by telephone to verify their receipt of the package and to answer their questions about the study. These calls serve to provide an early indication of the households that have moved since the NHIS and require tracking and an early assessment of the likelihood of the household's participation when contacted.
- Careful attention to the selection and training of data collection staff. Training sessions are designed to prepare interviewers to be knowledgeable about the study,

comfortable in using study materials, and prepared with answers to common respondent questions. In recent years, as the level of effort required to obtain cooperation has increased, more attention has been given to training interviewers in techniques for avoiding refusals. For some segments of the training, bilingual interviewers meet separately to practice introducing and administering the survey in Spanish.

- Attention to the appropriate assignment of cases to interviewers. Information available from the NHIS interview and from the advance contact calls is taken into account by field supervisors when making assignments and by individual interviewers when planning their first contact attempts. When the NHIS information indicates that a case was only "partially completed" it usually indicates that the NHIS household was reluctant to participate and only willing to complete part of the NHIS interview. These cases are assigned to interviewers who have demonstrated skill with refusal aversion techniques. Similarly, if the interviewer conducting the advance contact call indicates that the household seems hesitant to participate, the case is also assigned to an interviewer skilled in refusal aversion.
- Close monitoring of the field data collection effort by field supervisors and project managers. Paradata documenting every interviewer attempt to contact a household is made available to supervisors to guide interviewers' timing of contact attempts. In weekly calls, supervisors and interviewers discuss work plans and alternative approaches for contacting and gaining cooperation of individual cases. Weekly calls among the managers of the field operation allow discussion of solutions to common response problems, planning and coordination of efforts to follow-up non-responding households, and efficient allocation of field resources.

Determining where to place resources to build the response rate requires reliable data on production and response rates, contact efforts, interviewer availability, location of pending work, and dispositions of remaining cases. All of this information is contained within the MEPS-HC management database and available in reports. Each week of the field period, production and response rates by domain, PSU, and region are carefully examined to make sure the work is progressing toward schedule and response rate goals. The key to the approach is early identification of response rate issues that allows sufficient time to formulate and implement plans for conversion.

- Interviewers are provided with a variety of materials to support their efforts to gain cooperation: handouts printed in Spanish and English that explain different aspects of the study and research highlights and news items reporting findings from MEPS data are provided for the interviewers to use as needed to address concerns expressed by respondents.
- In return for the time respondents spend preparing for the MEPS-HC interview, households receive a gift of \$50 per interview. The \$50 gift has been in effect since the start of Panel 16 in 2011.
- The project has developed a number of letters that address areas of concern commonly raised by respondents who do not respond when initially contacted by an

interviewer. Supervisors can request mailing of the specific letter (available in English and Spanish) that is most appropriate for a given household.

- For households that are difficult to contact, interviewers make multiple contact attempts, at different times of day and days of the week, using information from the NHIS and their own prior contact attempts to determine the best time for each successive attempt.
- For households that refuse an initial request to participate, the interviewer and supervisor decide on an approach for attempting to convert the refusal, taking into account all information available from the NHIS and prior contact efforts. Depending on the specifics of each case, one of the refusal conversion letters may be sent before another attempt is made in person, points to be made to address the reasons for the refusal are discussed, and frequently, a different interviewer will be assigned to make the next attempt.
- For households that require tracking, the interviewer who determines that the household has moved makes initial, local attempts to obtain new locating information. When those local sources are not successful, the case is referred for additional searching from the home office.

Since resources—time, budget, and staff—are not limitless, selection of the areas and specific cases on which to concentrate effort is critical. To guide these decisions, the project draws on multiple sources of information: information from prior panels on the characteristics of responders and nonresponders, information from the NHIS on the characteristics of the sampled households, paradata from the project management system, and information on the location, experience level, and skill sets of the interviewing field force.

Nonresponse Bias Studies

Response rates calculated for MEPS-HC follow standard practice and are computed as the ratio of completed cases to the number of in scope sample cases. Both unweighted and weighted response rates are calculated, with the weighted response rates based on the probability of selection. As in prior MEPS-HC Panels nonresponse bias analyses will be developed and implemented.

Nonresponse bias concerns arise to the extent that nonrespondents differ from respondents, particularly on key analytic variables, and how well do the responders represent the target populations of interest. Since the MEPS-HC sample is drawn from NHIS participant households, the NHIS provides the best source for identifying characteristics of responders and nonresponders. The analyses will also include across panel comparisons in MEPS.

Using weighted response rates, the analyses will look at:

- How well do responders represent the target population on key characteristics such as race and ethnicity, urban/rural status, age, household size, income level, etc.
- Do responders and nonresponders differ on key analytic variables such as health insurance status, chronic disease status, health care utilization all of these items are

collected in both the NHIS and MEPS-HC. Comparisons can be made between the NHIS and MEPS as well as across panels in MEPS-HC.

What are the contact patterns for responders and can they predict a propensity to respond.
These analyses will use paradata from both the NHIS and MEPS-HC such as length of the
interview, number of contacts, mode of contact, etc. Logistic regression will be employed to
determine if contact data correlates with propensity to respond.

A weighting strategy used on earlier MEPS-HC panels will also be employed that includes adjustments for nonresponse to reduce the potential for bias in the estimates. Also, the MEPS-HC weighting process has been developed in such a way as to reduce the potential for bias due to either NHIS household level nonresponse or undercoverage. As part of the weighting process for the MEPS-HC, the base weights for NHIS responding households sampled for MEPS are poststratified to national estimates for households. Such poststratification was designed to reduce the potential bias for NHIS nonresponse being incurred by MEPS-HC as well as to calibrate the household level weights to national estimates for households. The control totals used were originally NHIS household level estimates. However, due to recent concerns about undercoverage in the NHIS sample design, AHRQ now poststratifies to household level estimates based on the Current Population Survey. Thus, this poststratification now serves to help reduce bias due to NHIS nonresponse at the household level and household level undercoverage.

Medical Provider Component

MEPS-MPC staff plan to maintain the high response rates for the MEPS-MPC by bringing forward to the current data collection effort the methods that have been successful in maintaining provider cooperation in the past. An initial telephone screening to confirm provider eligibility and determine the appropriate person to whom the survey materials should be sent and the mailing or faxing of an advance package to the provider which describes the survey and the types of information that will be collected (and includes the permission forms) helps to maintain the high response rates.

Data collection staff who appreciate the difficulty and importance of the task, and are capable of establishing good rapport with providers and placing as little burden on them as possible to accurately collect the data, will be recruited and retained. All data collection staff participate in an in-depth initial training as well as on-going performance improvement activities. MEPS-MPC identity and logos will be maintained so that providers who have participated in the past will recognize the study, but data collection materials will be customized to the current year's data collection so providers understand what is currently being requested of them. Data collection protocols and instruments are also customized to the different types of providers to make it as easy as possible for providers to provide data in the manner in which it appears in their records. Providers with a previous history of being reluctant to participate will be assigned to data collection staff specializing in working with such respondents to maximize the possibility that they will participate. Providers with particularly large numbers of study patients will be assigned to staff capable of working out means of obtaining the large number of records with a minimum of burden to the provider. Finally, the introduction and use of an electronic data capture system, which allows real-time checking for the entry of complete and accurate information into the data

collection forms while they are being filled out, will help minimize return calls to providers to resolve missing or confusing items and make it more likely that their cooperation will be maintained in future data collection efforts.

4. Tests of Procedures

The MEPS uses well established data collection methods. Whenever major changes are made to the MEPS they are pretested to ensure that the data quality is not negatively impacted. No significant changes that would require pretesting are being implemented at this time.

5. Statistical Consultants

The following are responsible for statistical aspects of the MEPS Study:

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