MEPS HC-197H:
2017 Home Health Visits

May 2019

NOTE: The MEPS instrument design changed beginning in Spring of 2018, affecting Panel 23 Round 1, Panel 22 Round 3, and Panel 21 Round 5. For the Full-Year 2017 PUFs, the Panel 22 Round 3 and Panel 21 Round 5 data were transformed to the degree possible to conform to the previous design. For the Full-Year 2018 PUFs, Panel 22 Rounds 1 and 2, collected under the old design, were transformed to the degree possible to conform to the new design. **Data users should be aware of possible impacts on the data and especially trend analysis for these data years due to the design transition.**

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A. Data Use Agreement

Individual identifiers have been removed from the micro-data contained in these files. Nevertheless, under sections 308 (d) and 903 (c) of the Public Health Service Act (42 U.S.C. 242m and 42 U.S.C. 299 a-1), data collected by the Agency for Healthcare Research and Quality (AHRQ) and/or the National Center for Health Statistics (NCHS) may not be used for any purpose other than for the purpose for which they were supplied; any effort to determine the identity of any reported cases is prohibited by law.

Therefore in accordance with the above referenced Federal Statute, it is understood that:

1. No one is to use the data in this data set in any way except for statistical reporting and analysis; and

2. If the identity of any person or establishment should be discovered inadvertently, then (a) no use will be made of this knowledge, (b) the Director Office of Management AHRQ will be advised of this incident, (c) the information that would identify any individual or establishment will be safeguarded or destroyed, as requested by AHRQ, and (d) no one else will be informed of the discovered identity; and

3. No one will attempt to link this data set with individually identifiable records from any data sets other than the Medical Expenditure Panel Survey or the National Health Interview Survey. Furthermore, linkage of the Medical Expenditure Panel Survey and the National Health Interview Survey may not occur outside the AHRQ Data Center, NCHS Research Data Center (RDC) or the U.S. Census RDC network.

By using these data you signify your agreement to comply with the above stated statutorily based requirements with the knowledge that deliberately making a false statement in any matter within the jurisdiction of any department or agency of the Federal Government violates Title 18 part 1 Chapter 47 Section 1001 and is punishable by a fine of up to $10,000 or up to 5 years in prison.

The Agency for Healthcare Research and Quality requests that users cite AHRQ and the Medical Expenditure Panel Survey as the data source in any publications or research based upon these data.

B. Background

1.0 Household Component

The Medical Expenditure Panel Survey (MEPS) provides nationally representative estimates of health care use, expenditures, sources of payment, and health insurance coverage for the U.S. civilian noninstitutionalized population. The MEPS Household Component (HC) also provides estimates of respondents' health status, demographic and socio-economic characteristics, employment, access to care, and satisfaction with health care. Estimates can be produced for individuals, families, and selected population subgroups. The panel design of the survey, which includes 5 Rounds of interviews covering 2 full calendar years, provides data for examining person-level changes in selected variables such as expenditures, health insurance coverage, and health status. Using computer assisted personal interviewing (CAPI) technology, information about each household member is collected, and the survey builds on this information from interview to interview. All data for a sampled household are reported by a single household respondent.

The MEPS-HC was initiated in 1996. Each year a new panel of sample households is selected. Because the data collected are comparable to those from earlier medical expenditure surveys conducted in 1977 and 1987, it is possible to analyze long-term trends. Each annual MEPS-HC sample size is about 15,000 households. Data can be analyzed at either the person or event level. Data must be weighted to produce national estimates.

The set of households selected for each panel of the MEPS HC is a subsample of households participating in the previous year's National Health Interview Survey (NHIS) conducted by the National Center for Health Statistics. The NHIS sampling frame provides a nationally representative sample of the U.S. civilian noninstitutionalized population and reflects an oversample of Blacks and Hispanics. In 2006, the NHIS implemented a new sample design, which included Asian persons in addition to households with Black and Hispanic persons in the oversampling of minority populations. NHIS introduced a new sample design in 2016 that discontinued oversampling of these minority groups. The linkage of the MEPS to the previous year's NHIS provides additional data for longitudinal analytic purposes.

2.0 Medical Provider Component

Upon completion of the household CAPI interview and obtaining permission from the household survey respondents, a sample of medical providers are contacted by telephone to obtain information that household respondents can not accurately provide. This part of the MEPS is called the Medical Provider Component (MPC) and information is collected on dates of visits, diagnosis and procedure codes, charges and payments. The Pharmacy Component (PC), a subcomponent of the MPC, does not collect charges or diagnosis and procedure codes but does collect drug detail information, including National Drug Code (NDC) and medicine name, as well as date filled and sources and amounts of payment. The MPC is not designed to yield national estimates. It is primarily used as an imputation source to supplement/replace household reported expenditure information.

3.0 Survey Management and Data Collection

MEPS HC and MPC data are collected under the authority of the Public Health Service Act. Data are collected under contract with Westat, Inc. (MEPS HC) and Research Triangle Institute (MEPS MPC). Data sets and summary statistics are edited and published in accordance with the confidentiality provisions of the Public Health Service Act and the Privacy Act. The National Center for Health Statistics (NCHS) provides consultation and technical assistance.

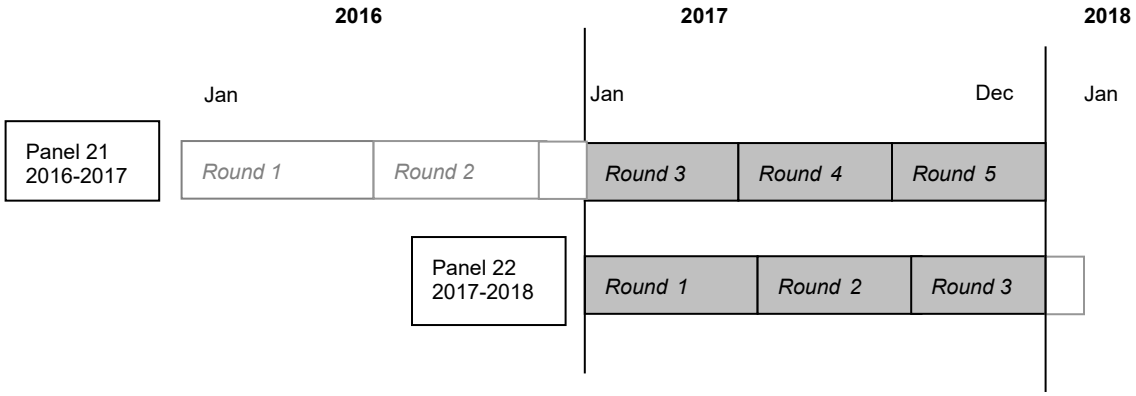
As soon as data collection and editing are completed, the MEPS survey data are released to the public in staged releases of summary reports, micro data files, and tables via the MEPS website. Selected data can be analyzed through MEPSnet, an on-line interactive tool designed to give data users the capability to statistically analyze MEPS data in a menu-driven environment.

Additional information on MEPS is available from the MEPS project manager or the MEPS public use data manager at the Center for Financing, Access, and Cost Trends, Agency for Healthcare Research and Quality, 5600 Fishers Lane, Rockville, MD 20857 (301-427-1406).

C. Technical and Programming Information

1.0 General Information

This documentation describes one in a series of public use event files from the 2017 Medical Expenditure Panel Survey (MEPS) Household Component (HC) and Medical Provider Component (MPC). Released as an ASCII data file (with related SAS, SPSS, and Stata programming statements) and a SAS transport file, the 2017 Home Health Event public use file provides detailed information on home health events for a nationally representative sample of the civilian noninstitutionalized population of the United States. Data from the Home Health event file can be used to make estimates of home health (HH) event utilization and expenditures for calendar year 2017. The file contains 52 variables and has a logical record length of 205 with an additional 2-byte carriage return/line feed at the end of each record. As illustrated below, this file consists of MEPS survey data obtained in the 2017 portion of Round 3, and Rounds 4 and 5 for Panel 21, as well as Rounds 1, 2, and the 2017 portion of Round 3 for Panel 22 (i.e., the rounds for the MEPS panels covering calendar year 2017).



Counts of home health utilization are based entirely on household reports. Agency home health providers were sampled into the MEPS MPC (see Section B. 2.0). Only those providers for whom the respondent signed a permission form were included in the MPC. Information from the MPC was used to supplement expenditure and payment data reported by the household, and does not affect use estimates.

Data from this event file can be merged with other 2017 MEPS HC data files for the purposes of appending person-level data such as demographic characteristics or health insurance coverage to each home health record.

This file can also be used to construct summary variables for expenditures, sources of payment, and related aspects of home health events for calendar year 2017. Aggregate annual person-level information on the use of home health providers and other health services is provided on the 2017 Population Characteristics file, where each record represents a MEPS sampled person.

The following documentation offers a brief overview of the types and levels of data provided, and the content and structure of the file and the codebook. It contains the following sections:

Data File Information
Sample Weight
Strategies for Estimation
Merging/Linking MEPS Data Files
References
Variable-Source Crosswalk

For more information on MEPS HC survey design see T. Ezzati-Rice, et al. (1998-2007) and S. Cohen (1996). For information on the MEPS MPC design, see S. Cohen (1998). A copy of the survey instruments used to collect the information on this file are available on the MEPS website.

2.0 Data File Information

The 2017 Home Health event public use data set consists of one event-level data file. The file contains characteristics associated with the home health event and imputed expenditure data.

The home health services represented on this file are provided by three kinds of home health providers: formal (paid) home health agency providers, paid independent providers (self-employed), and informal providers who do not reside in the same household as the MEPS sampled person (care from informal providers who live in the same household as the sampled person are not represented on this file).

Each record on this file represents a household-reported home health event. A home health event represents a MONTH of similar services provided to a sampled person by the same PROVIDER (i.e., an employer in the case of formal agency care and an individual in the case of paid independent and informal care providers). For example, if a person received, from Provider Agency A, four visits from a nurse, ten visits from a homemaker, and four visits from a physical therapist each month during the months of January, February, and March, and also received, from Provider B, a physician visit in the months of January and February, there would be five event records on the file (NOT 56 records). There would be one event record representing all the visits from Provider A for the month of January, another record for Provider A February visits, a third Provider A record for the March visits, a fourth record representing the Provider B physician visit in January and a fifth representing the Provider B physician visit in February. Data were collected (and represented on this file) in this manner because agencies, hospitals, and nursing homes provide MEPS expenditure data in this manner. In order to be consistent with the definition of what is considered a home health event on this file, this same definition (i.e., a month of similar services) was applied to all types of home health providers.

This public use data set contains 7,051 home health records; of these records, 6,971 are associated with persons having a positive person-level weight (PERWT17F). It includes all records related to home health events for all household members who resided in eligible responding households and for whom at least one home health event was reported. Each record represents one household-reported home health event that occurred during calendar year 2017. Some persons may have been reported to have multiple events and thus will be represented in multiple records on the file. Other persons may have been reported to have no events and thus will have no records on this file. These data were collected during the 2017 portion of Round 3,

and Rounds 4 and 5 for Panel 21, as well as Rounds 1, 2, and the 2017 portion of Round 3 for Panel 22 of the MEPS HC. The persons represented on this file had to meet either (a) or (b):

a) Be classified as a key in-scope person who responded for his or her entire period of 2017 eligibility (i.e., persons with a positive 2017 full-year person-level weight (PERWT17F > 0)), or

b) Be an eligible member of a family all of whose key in-scope members have a positive person-level weight (PERWT17F > 0). (Such a family consists of all persons with the same value for FAMIDYR.) That is, the person must have a positive full-year family-level weight (FAMWT17F > 0). Note that FAMIDYR and FAMWT17F are variables on the 2017 Full-Year Consolidated Data file.

Persons with no home health events for 2017 are not included on this event-level Home Health file but are represented on the person-level 2017 Full-Year Population Characteristics file.

Home health providers include formal, i.e., paid, and informal, i.e., unpaid, providers. Formal or paid providers include home health agency and other independent paid providers. Informal or unpaid providers include family and friends that reside outside of the sampled person's household.

For home health agencies it is important to distinguish between the provider and the home health worker. In these cases, the provider is the agency or the facility that employs the workers. The home health workers are the people who administer the care. Examples of home health care workers are the following: nurses, physical therapists, home health aides, homemakers, and hospice workers, among others. These examples are generally the types of workers associated with agencies. Paid independent providers generally include companions, nursing assistants, physicians, etc. For each record on this file, one or more types of workers can be reported. The respondent is asked to mention all of the types of home health workers who provided home health care (since records represent a month of service, there can be more than one type of worker on a single record). For example, an agency that provides two types of aides that provide home health care to the same person during a specific month is represented as one event on the file even though two workers employed at the same agency provided care. When using this file, analysts must keep in mind that a record on the file corresponds to a provider entity, not an individual or particular worker.

Expenditure data for home health agency events are collected exclusively in the MPC. Expenditure data for other paid independent home health care events are collected from the household, since these types of events are not included in the MPC. Friends, family, and volunteers providing home health care to a person are considered unpaid and are not included in the MPC. No expenditure information is available for them.

Each home health record also includes the following: the month the provider visited the household; type of provider; types of services provided and if this was a repeat event; whether or not care was received due to hospitalization; whether or not a person was taught how to use medical equipment; imputed sources of payment, total payment, and total charge for the home health event expenditure; and a full-year person-level weight.

To append person-level information such as demographic or health insurance coverage to each event record, data from this file can be merged with 2017 MEPS HC person-level data (e.g. Full-Year Consolidated or Full-Year Population Characteristics files) using the person identifier, DUPERSID. Home Health events can also be linked to the MEPS 2017 Medical Conditions file. Please see Section 5.0 or the MEPS 2017 Appendix File, HC-197I, for details on how to link MEPS data files.

2.1 Codebook Structure

For most variables on the Home Health event file, both weighted and unweighted frequencies are provided in the accompanying codebook. The exceptions to this are weight variables and variance estimation variables. Only unweighted frequencies of these variables are included in the accompanying codebook file. See the Weights Variables list in Section D, Variable-Source Crosswalk.

The codebook and data file sequence list variables in the following order:

Unique person identifier
Unique home health event identifier
Home health characteristic variables
Imputed expenditure variables
Weight and variance estimation variables

Note that the person identifier is unique within this data year.

2.2 Reserved Codes

The following reserved code values are used:

Value	Definition
-1 INAPPLICABLE	Question was not asked due to skip pattern
-7 REFUSED	Question was asked and respondent refused to answer question
-8 DK	Question was asked and respondent did not know answer
-9 NOT ASCERTAINED	Interviewer did not record the data

Generally, values of -1, -7, -8, and -9 for non-expenditure variables have not been edited on this file. The values of -1 and -9 can be edited by the data users/analysts by following the skip patterns in the HC survey questionnaire located on the MEPS website.

2.3 Codebook Format

The codebook describes an ASCII data set (although the data are also being provided in a SAS transport file). The following codebook items are provided for each variable:

Identifier	Description
Name	Variable name (maximum of 8 characters)
Description	Variable descriptor (maximum of 40 characters)
Format	Number of bytes
Type	Type of data: numeric (indicated by NUM) or character (indicated by CHAR)
Start	Beginning column position of variable in record
End	Ending column position of variable in record

2.4 Variable Source and Naming Conventions

In general, variable names reflect the content of the variable, with an eight-character limitation. Generally, imputed/edited variables end with an "X".

2.4.1 Variable-Source Crosswalk

Variables were derived either from the HC questionnaire itself, the MPC data collection instrument, or from the CAPI. The source of each variable is identified in Section D Variable-Source Crosswalk in one of four ways:

1. Variables derived from CAPI or assigned in sampling are so indicated as "CAPI derived" or "Assigned in sampling," respectively;

2. Variables which come from one or more specific questions have those questionnaire sections and question numbers indicated in the "Source" column; questionnaire sections are identified as:

    - EV – Event Roster section
    - HH – Home Health Event section
    - CP – Charge Payment section

3. Variables constructed from multiple questions using complex algorithms are labeled "Constructed" in the "Source" column; and

4. Variables that have been edited or imputed are so indicated.

2.4.2 Expenditure and Source of Payment Variables

The names of the expenditure and source of payment variables follow a standard convention, are seven characters in length, and end in an "X" indicating edited/imputed. Please note that imputed means that a series of logical edits, as well as an imputation process to account for missing data, have been performed on the variable.

The total sum of payments and the 12 source of payment variables are named in the following way:

The first two characters indicate the type of event:

IP - inpatient stay	OB - office-based visit
ER - emergency room visit	OP - outpatient visit
HH - home health event	DV - dental visit
OM - other medical equipment	RX - prescribed medicine

In the case of source of payment variables, the third and fourth characters indicate:

SF - self or family	OF - other federal government
MR - Medicare	SL - state/local government
MD - Medicaid	WC - Workers' Compensation
PV - private insurance	OT - other insurance
VA - Veterans Administration/CHAMPVA	OR - other private
TR - TRICARE	OU - other public
	XP - sum of payments

In addition, the total charge variable is indicated by TC in the variable name.

The fifth and sixth characters indicate the year (17). The seventh character, "X", indicates the variable is edited/imputed.

For example, HHSF17X is the edited/imputed amount paid by self or family for 2017 home health expenditures.

2.5 File Contents

2.5.1 Survey Administration Variables

2.5.1.1 Person Identifiers (DUID, PID, DUPERSID)

The dwelling unit ID (DUID) is a five-digit random number assigned after the case was sampled for MEPS. The three-digit person number (PID) uniquely identifies each person within the dwelling unit. The eight-character variable DUPERSID uniquely identifies each person represented on the file and is the combination of the variables DUID and PID. For detailed information on dwelling units and families, please refer to the documentation for the 2017 Full-Year Population Characteristics file.

2.5.1.2 Record Identifier (EVNTIDX)

EVNTIDX uniquely identifies each event (i.e., each record on the home health file) and is the variable required to link home health events to data files containing details on conditions (MEPS 2017 Medical Conditions file). For details on linking see Section 5.0 or the MEPS 2017 Appendix File, HC-197I.

2.5.1.3 Round Indicator (EVENTRN)

EVENTRN indicates the round in which the home health event was reported. Please note: Rounds 3, 4, and 5 are associated with MEPS survey data collected from Panel 21. Likewise, Rounds 1, 2, and 3 are associated with data collected from Panel 22.

2.5.1.4 Panel Indicator (PANEL)

PANEL is a constructed variable used to specify the panel number for the person. PANEL will indicate either Panel 21 or Panel 22 for each person on the file. Panel 21 is the panel that started in 2016, and Panel 22 is the panel that started in 2017.

2.5.2 Home Health Event Variables

This file contains variables describing home health events reported by household respondents in the Home Health Section of the MEPS HC survey questionnaire.

2.5.2.1 Date of Event (HHDATEYR, HHDATEMM)

The date variables (HHDATEYR and HHDATEMM) indicate the year and month that the household respondent reported as the year and month of occurrence for this type of home health event. An artifact of the data collection for the variable HHDATEYR is that a person may have started receiving that type of home health care from that provider prior to 2017. These variables should not be interpreted as "true" start dates.

2.5.2.2 Characteristics of Event (MPCELIG-OTHRHCW)

The HC questionnaire asked the respondent to indicate whether the home health provider event(s) for each month's services were provided through an agency or an independent paid provider (SELFAGEN). The response to the SELFAGEN question dictated the skip pattern CAPI followed regarding the questions in the home health section of the HC questionnaire. The questionnaire also asked respondents if the provider was paid or whether a friend, relative, or volunteer (HHTYPE) provided the home health services. The constructed variable MPCELIG indicates whether the home health provider event was eligible for MPC data collection and the type of imputation process the event went through. MPCELIG is a more accurate variable for determining whether the event was an agency, a paid independent, or an informal care event. However, SELFAGEN is a more accurate variable for determining the home health questions asked of the respondent. For all members receiving care from an agency, hospital, or nursing home, the respondent was asked to identify the type of skilled home health worker (CNA-SPEECTHP) and the type of non-skilled home health worker (COMPANION-OTHRHCW) they saw – for example, a certified nursing assistant as the skilled worker and a home health aide as the non-skilled worker.

Analysts should keep in mind that these identifications by household respondents are subjective in nature, are not mutually exclusive or collectively exhaustive, and should not be used to make certain estimates. For example, a person on one type of insurance may identify an individual providing home health care services to them as a personal care attendant while an individual having a different type of insurance coverage may identify that same worker as a home care aide.

Making estimates of personal care attendants or home care aides based on their identification by household respondents and treating these types of workers as mutually exclusive groups will result in inaccurate estimates. Respondents may also have indicated that a person was seen by more than one home health care worker during a single event. For example, since an event is a month of services, a respondent may have reported that a person was seen by a nurse, a physical therapist, and/or a home health aide during a single event. In FY2017, the types of health care workers who provided home care services were collected separately in skilled home health worker variables (CNA-SPEECTHP) and non-skilled home health worker variables (COMPANION-OTHRHCW). As a result, the variables NONSKILL (other non-skilled), SKILLED (other skilled), and the "other specify" variables SKILLWOS and OTHCWOS are dropped from the file.

2.5.2.3 Treatments, Therapies, and Services

In FY2017, HOSPITAL (if the service received are due to the hospitalization), DAILYACT (if the person was helped with daily activities), COMPANY (if the person received companionship services), OTHSVCE and OTHSVCOS (whether or not the person received any other type of services) are dropped from the file. MEDEQUIP (if person was taught how to use medical equipment) and TREATMT (whether or not the person received medical treatment from a formal provider) are also dropped.

2.5.2.4 Frequency of Event and Visit Details (FREQCY-VSTRELCN)

Several variables identify the frequency and length of home health events (FREQCY-DAYSPMO) and whether or not the same services were received during each month (SAMESVCE). Frequency of event variables (FREQCY- DAYSPMO) were used as building blocks to construct HHDAYS. HHDAYS indicates the number of days the person received care during that event (i.e., month of care). Frequency variables can be combined to get a measure of the intensity of care. Regardless of the type of provider, all respondents were asked if the home health services received were due to a medical condition (VSTRELCN).

2.5.3 Flat Fee Variables

A flat fee is the fixed dollar amount a person is charged for a package of health care services provided during a defined period of time. Because MEPS does not collect flat fee information about home health events, no flat fee variables are included in this file.

2.5.4 Condition Codes

Information on household-reported medical conditions associated with each home health event are NOT provided on this file. To obtain complete condition information associated with an event, the analyst must link to the 2017 Medical Conditions file. Details on how to link to the MEPS 2017 Medical Conditions file are provided in the MEPS 2017 Appendix File, HC-197I.

2.5.5 Expenditure Data

2.5.5.1 Definition of Expenditures

Expenditures on this file refer to what is paid for health care services. More specifically, expenditures in MEPS are defined as the sum of payments for care received, including out-of-pocket payments and payments made by private insurance, Medicaid, Medicare, and other sources. The definition of expenditures used in MEPS differs slightly from its predecessors, the 1987 NMES and 1977 NMCES surveys, where "charges" rather than sum of payments were used to measure expenditures. This change was adopted because charges became a less appropriate proxy for medical expenditures during the 1990s due to the increasingly common practice of discounting. Although measuring expenditures as the sum of payments incorporates discounts in the MEPS expenditure estimates, these estimates do not incorporate any payment not directly tied to specific medical care events, such as bonuses or retrospective payment adjustments paid by third party payers. Another general change from the two prior surveys is that charges associated with uncollected liability, bad debt, and charitable care (unless provided by a public clinic or hospital) are not counted as expenditures because there are no payments associated with those classifications. While charge data are provided on this file, data users/analysts should use caution when working with these data because a charge does not typically represent actual dollars exchanged for services or the resource costs of those services, nor are they directly comparable to the expenditures defined in the 1987 NMES. For details on expenditure definitions, please refer to the following, "Informing American Health Care Policy" (Monheit et al., 1999). AHRQ has developed factors to apply to the 1987 NMES expenditure data to facilitate longitudinal analysis. These factors can be accessed via the CFACT Data Center. For more information, see the Data Center section of the MEPS website. If examining trends in MEPS expenditures, please refer to Section 3.3 for more information.

2.5.5.2 Data Editing and Imputation Methodologies of Expenditure Variables

The general methodology used for editing and imputing expenditure data is described below. However, please note, the MPC included home health events provided by an agency and did not include home health care provided by paid independent providers. Although the general procedures remain the same for all home health events, there were some differences in the editing and imputation methodologies applied to those events followed in the MPC and those events not followed in the MPC. Analysts should note that home health care provided by friends, family, or volunteers was assumed to be free and was not included in any imputation process. Please see below for details on the differences between these editing/imputation methodologies.

Home health expenditure data for agency, hospital, and nursing home providers were collected exclusively from the MPC (i.e., household respondents were not asked to report home health expenditures from these types of providers). The MPC contacted 100 percent of the agency, hospital, and nursing home health providers identified by household respondents. Since paid independent home health providers were not included in the MPC, all expenditure data from these providers were collected from household respondents.

2.5.5.2.1 General Data Editing Methodology

Logical edits were used to resolve internal inconsistencies and other problems in the HC and the MPC survey-reported data. The edits were designed to preserve partial payment data from households and providers, and to identify actual and potential sources of payment for each household-reported event. In general, these edits accounted for outliers, co-payments or charges reported as total payments, and reimbursed amounts that were reported as out-of-pocket payments. In addition, edits were implemented to correct for mis-classifications between Medicare and Medicaid and between Medicare HMOs and private HMOs as payment sources. These edits produced a complete vector of expenditures for some events, and provided the starting point for imputing missing expenditures in the remaining events.

2.5.5.2.2 Imputation Methodologies

The predictive mean matching imputation method was used to impute missing expenditures. This procedure uses regression models (based on events with completely reported expenditure data) to predict total expenses for each event. Then, for each event with missing payment information, a donor event with the closest predicted payment with the same pattern of expected payment sources as the event with missing payment was used to impute the missing payment value.

The weighted sequential hot-deck procedure was used to impute the missing total charges. This procedure uses survey data from respondents to replace missing data while taking into account the persons' weighted distribution in the imputation process.

2.5.5.2.3 Home Health Data Editing and Imputation

Expenditures for home health events were developed in a sequence of logical edits and imputations. (Analysts should note that home health care provided by friends, family, or volunteers was assumed not to have associated expenditures and was not included in any imputation process. All expenditures for home health care provided by informal care providers were assigned "-1" (Inapplicable) because those types of events were skipped out of (never asked) the questions regarding expenditures.) "Household" edits were applied to sources and amounts of payment for all household-reported events for paid independent providers and unmatched agency providers. "MPC" edits were applied to provider-reported sources and amounts of payment for records matched to household-reported events for all agency home health providers. Both sets of edits were used to correct obvious errors in the reporting of expenditures. Imputations for independent paid providers and for agencies were conducted separately. Within this file, separate imputations were performed for simple events.

Logical edits were used to sort each event into a specific category for the imputations. Events with complete expenditures were flagged as potential donors while events with missing expenditure data were assigned to various recipient categories. Each event with missing expenditure data was assigned to a recipient category based on the extent of its missing charge and expenditure data. For example, an event with a known total charge but no expenditure information was assigned to one category, while an event with a known total charge and partial expenditure information was assigned to a different category. Similarly, events without a known

total charge and no or partial expenditure information were assigned to various recipient categories.

Expenditures were imputed using a predictive mean matching method. The donor pool in these imputations includes events with complete expenditures from the HC for HHP and restricted to the MPC for HHA. As stated previously, home health care provided by friends, family, or volunteers (informal, MPCELIG = 3) was assumed not to have expenditures associated with it and was not included in any imputation process.

2.5.5.3 Imputation Flag Variable (IMPFLAG)

IMPFLAG is a six-category variable that indicates if the event contains complete Household Component (HC) or Medical Provider Component (MPC) data, was fully or partially imputed, or was imputed in the capitated imputation process. The following list identifies how the imputation flag is coded; the categories are mutually exclusive.

IMPFLAG = 0 not eligible for imputation (includes zeroed out events)

IMPFLAG = 1 complete HC data

IMPFLAG = 2 complete MPC data

IMPFLAG = 3 fully imputed

IMPFLAG = 4 partially imputed

IMPFLAG = 5 complete MPC data through capitation imputation (not applicable to HH)

2.5.5.4 Flat Fee Expenditures

A flat fee is the fixed dollar amount a person is charged for a package of health care services provided during a defined period of time. Because MEPS does not collect flat fee information about home health events, there are no flat fee expenditure data included in this file.

2.5.5.5 Zero Expenditures

There are some medical events reported by respondents for which the payments were zero. This could occur for several reasons including (1) free care was provided, (2) bad debt was incurred, (3) follow-up events were provided without a separate charge (e.g., after a surgical procedure), or (4) the event was paid for through government or privately-funded research or clinical trials. If all of the medical events for a person fell into one of these categories, then the total annual expenditures for that person would be zero. All expenditures for home health care provided by informal care providers (family, friends, or volunteers, MPCELIG = 3) were assigned “-1” (Inapplicable) because those types of events were skipped out of (never asked) questions regarding expenditures.

2.5.5.6 Sources of Payment

In addition to total expenditures, variables are provided which itemize expenditures according to major source of payment categories. These categories are:

1. Out-of-pocket by User or Family,
2. Medicare,
3. Medicaid,
4. Private Insurance,
5. Veterans Administration/CHAMPVA, excluding TRICARE,
6. TRICARE,
7. Other Federal Sources - includes Indian Health Service, military treatment facilities, and other care by the federal government,
8. Other State and Local Sources - includes community and neighborhood clinics, state and local health departments, and state programs other than Medicaid,
9. Workers' Compensation, and
10. Other Unclassified Sources - includes sources such as automobile, homeowner's, and liability insurance, and other miscellaneous or unknown sources.

Two additional source of payment variables were created to classify payments for events with apparent inconsistencies between insurance coverage and sources of payment based on data collected in the survey. These variables include:

11. Other Private - any type of private insurance payments reported for persons not reported to have any private health insurance coverage during the year as defined in MEPS, and
12. Other Public - Medicare/Medicaid payments reported for persons who were not reported to be enrolled in the Medicare/Medicaid program at any time during the year.

Though relatively small in magnitude, data users/analysts should exercise caution when interpreting the expenditures associated with these two additional sources of payment. While these payments stem from apparent inconsistent responses to health insurance and source of payment questions in the survey, some of these inconsistencies may have logical explanations. For example, private insurance coverage in MEPS is defined as having a major medical plan covering hospital and physician services. If a MEPS sampled person did not have such coverage but had a single service type insurance plan (e.g., dental insurance) that paid for a particular episode of care, those payments may be classified as "other private." Some of the "other public" payments may stem from confusion between Medicaid and other state and local programs or may be from persons who were not enrolled in Medicaid, but were presumed eligible by a provider who ultimately received payments from the public payer.

2.5.5.7 Home Health Expenditure Variables (HHSF17X - HHXP17X)

Home health agency, hospital, and nursing home events are sampled at a rate of 100% for the MPC. Households were not asked any expenditure-related questions regarding these types of events; therefore, there are no household-reported expenditure data for these events. Conversely,

paid independent providers are not included in the MPC. Household-reported responses are the only data available for these types of events. All expenditure data for paid independent providers are fully imputed from household-reported expenditures. There are no expenditure data for informal care providers. Informal care (MPCELIG = 3, unpaid care provided by family, friends, or volunteers) was assigned "-1", (Inapplicable), in all expenditure categories.

The constructed variable MPCELIG is provided on this file. MPCELIG indicates whether the home health provider event was eligible for MPC data collection, and MPCELIG determines the imputation process applied to that event.

All of these expenditures have gone through an editing and imputation process and have been rounded to the nearest penny. HHSF17X – HHOT17X are the 12 sources of payment. HHXP17X is the sum of the 12 sources of payment for the home health expenditures, and HHTC17X is the total charge. The 12 sources of payment are: self/family (HHSF17X), Medicare (HHMR17X), Medicaid (HHMD17X), private insurance (HHPV17X), Veterans Administration/CHAMPVA (HHVA17X), TRICARE (HHTR17X), other federal sources (HHOF17X), state and local (non-federal) government sources (HHSL17X), Workers' Compensation (HHWC17X), other private insurance (HHOR17X), other public insurance (HHOU17X), and other insurance (HHOT17X). Analysts can determine if a home health event was provided by an agency or by some other paid independent provider by subsetting the variable MPCELIG to the appropriate and desired value.

2.5.5.8 Rounding

Expenditure variables on the 2017 home health event file have been rounded to the nearest penny. Person-level expenditure information released on the MEPS 2017 Full-Year Consolidated File was rounded to the nearest dollar. It should be noted that using the 2017 MEPS event files to create person-level totals will yield slightly different totals than those on the consolidated file. These differences are due to rounding only. Moreover, in some instances, the number of persons having expenditures on the event files for a particular source of payment may differ from the number of persons with expenditures on the person-level expenditure file for that source of payment. This difference is also an artifact of rounding only.

3.0 Sample Weight (PERWT17F)

3.1 Overview

There is a single full-year person-level weight (PERWT17F) assigned to each record for each key, in-scope person who responded to MEPS for the full period of time that he or she was in-scope during 2017. A key person was either a member of a responding NHIS household at the time of interview or joined a family associated with such a household after being out-of-scope at the time of the NHIS (the latter circumstance includes newborns as well as those returning from military service, an institution, or residence in a foreign country). A person is in-scope whenever he or she is a member of the civilian noninstitutionalized portion of the U.S. population.

3.2 Details on Person Weight Construction

The person-level weight PERWT17F was developed in several stages. Person-level weights for Panel 21 and Panel 22 were created separately. The weighting process for each panel included an

adjustment for nonresponse over time and calibration to independent population figures. The calibration was initially accomplished separately for each panel by raking the corresponding sample weights for those in-scope at the end of the calendar year to Current Population Survey (CPS) population estimates based on six variables. The six variables used in the establishment of the initial person-level control figures were: educational attainment of the reference person (no degree, high school/GED no college, some college, bachelor's degree or higher; census region (Northeast, Midwest, South, West); MSA status (MSA, non-MSA); race/ethnicity (Hispanic; Black, non-Hispanic; Asian, non-Hispanic; and other); sex; and age. A 2017 composite weight was then formed by multiplying each weight from Panel 21 by the factor .500 and each weight from Panel 22 by the factor .500. The choice of factors reflected the relative sample sizes of the two panels, helping to limit the variance of estimates obtained from pooling the two samples. The composite weight was raked to the same set of CPS-based control totals. When the poverty status information derived from income variables became available, a final raking was undertaken on the previously established weight variable. Control totals were established using poverty status (five categories: below poverty, from 100 to 125 percent of poverty, from 125 to 200 percent of poverty, from 200 to 400 percent of poverty, at least 400 percent of poverty) as well as the other five variables previously used in the weight calibration.

3.2.1 MEPS Panel 21 Weight Development Process

The person-level weight for MEPS Panel 21 was developed using the 2016 full-year weight for an individual as a "base" weight for survey participants present in 2016. For key, in-scope members who joined an RU some time in 2017 after being out-of-scope in 2016, the initially assigned person-level weight was the corresponding 2016 family weight. The weighting process included an adjustment for person-level nonresponse over Rounds 4 and 5 as well as raking to population control totals for December 2017 for key, responding persons in-scope on December 31, 2017. These control figures were derived by scaling back the population distribution obtained from the March 2018 CPS to reflect the December 31, 2017 estimated population total (estimated based on Census projections for January 1, 2018). Variables used for person-level raking included: educational attainment of the reference person (no degree, high school/GED no college, some college, bachelor's degree or higher); census region (Northeast, Midwest, South, West); MSA status (MSA, non-MSA); race/ethnicity (Hispanic; Black non-Hispanic; Asian non-Hispanic; and other); sex; and age. (Poverty status is not included in this version of the MEPS full year database because of the time required to process the income data collected and then assign persons to a poverty status category). The final weight for key, responding persons who were not in-scope on December 31, 2017 but were in-scope earlier in the year was the person weight after the nonresponse adjustment.

Note that the 2016 full-year weight that was used as the base weight for Panel 21 was derived as follows; adjustment of the MEPS Round 1 weight for nonresponse over the remaining data collection rounds in 2016; and raking the resulting nonresponse adjusted weight to December 2016 population control figures.

3.2.2 MEPS Panel 22 Weight Development Process

The person-level weight for MEPS Panel 22 was developed using the 2017 MEPS Round 1 person-level weight as a "base" weight. For key, in-scope members who joined an RU after

Round 1, the Round 1 family weight served as a "base" weight. The weighting process included an adjustment for nonresponse over the remaining data collection rounds in 2017 as well as raking to the same population control figures for December 2017 used for the MEPS Panel 21 weights for key, responding persons in-scope on December 31, 2017. The same six variables employed for Panel 21 raking (educational attainment of the reference person, census region, MSA status, race/ethnicity, sex, and age) were used for Panel 22 raking. Again, the final weight for key, responding persons who were not in-scope on December 31, 2017 but were in-scope earlier in the year was the person weight after the nonresponse adjustment.

Note that the MEPS Round 1 weights for Panel 22 incorporated the following components: the original household probability of selection for the NHIS; proportion of the NHIS sample reserved for MEPS; adjustment for NHIS nonresponse; the probability of selection of NHIS responding households for MEPS; an adjustment for nonresponse at the dwelling unit level for Round 1; and poststratification to U.S. civilian noninstitutionalized population estimates at the family and person level obtained from the corresponding March CPS databases.

3.2.3 The Final Weight for 2017

The final raking of those in-scope at the end of the year has been described above. In addition, the composite weights of two groups of persons who were out-of-scope on December 31, 2017 were poststratified. Specifically, the weights of those who were in-scope some time during the year, out-of-scope on December 31, and entered a nursing home during the year were adjusted to compensate for expected undercoverage for this subpopulation. The weights of persons who died while in-scope during 2017 were poststratified to corresponding estimates derived using data obtained from the Medicare Current Beneficiary Survey (MCBS) and Vital Statistics information provided by the National Center for Health Statistics (NCHS). Separate decedent control totals were developed for the "65 and older" and "under 65" civilian noninstitutionalized populations.

Overall, the weighted population estimate for the civilian noninstitutionalized population for December 31, 2017 is 321,529,965 (PERWT17F>0 and INSC1231 = 1). The sum of person-level weights across all persons assigned a positive person-level weight is 324,779,909.

3.2.4 Coverage

The target population for MEPS in this file is the 2017 U.S. civilian noninstitutionalized population. However, the MEPS sampled households are a subsample of the NHIS households interviewed in 2015 (Panel 21) and 2016 (Panel 22). New households created after the NHIS interviews for the respective Panels and consisting exclusively of persons who entered the target population after 2015 (Panel 21) or after 2016 (Panel 22) are not covered by MEPS. Neither are previously out-of-scope persons who join an existing household but are unrelated to the current household residents. Persons not covered by a given MEPS panel thus include some members of the following groups: immigrants; persons leaving the military; U.S. citizens returning from residence in another country; and persons leaving institutions. The set of uncovered persons constitutes only a small segment of the MEPS target population.

3.3 Using MEPS Data for Trend Analysis

MEPS began in 1996, and the utility of the survey for analyzing health care trends expands with each additional year of data; however, there are a variety of methodological and statistical considerations when examining trends over time using MEPS. Tests of statistical significance should be conducted to assess the likelihood that observed trends may be attributable to sampling variation. The length of time being analyzed should also be considered. In particular, large shifts in survey estimates over short periods of time (e.g. from one year to the next) that are statistically significant should be interpreted with caution unless they are attributable to known factors such as changes in public policy, economic conditions, or MEPS survey methodology.

With respect to methodological considerations, in 2013 MEPS introduced an effort to obtain more complete information about health care utilization from MEPS respondents with full implementation in 2014. This effort likely resulted in improved data quality and a reduction in underreporting starting in FY 2014 and could have some modest impact on analyses involving trends in utilization across years.

There are also statistical factors to consider in interpreting trend analyses. Looking at changes over longer periods of time can provide a more complete picture of underlying trends. Analysts may wish to consider using techniques to evaluate, smooth, or stabilize analyses of trends using MEPS data such as comparing pooled time periods (e.g. 1996-97 versus 2011-13), working with moving averages, or using modeling techniques with several consecutive years of MEPS data to test the fit of specified patterns over time. Finally, researchers should be aware of the impact of multiple comparisons on Type I error. Without making appropriate allowance for multiple comparisons, undertaking numerous statistical significance tests of trends increases the likelihood of concluding that a change has taken place when one has not.

4.0 Strategies for Estimation

4.1 Developing Event-Level Estimates

The data in this file can be used to develop national 2017 event-level (i.e., monthly) estimates for the U.S. civilian noninstitutionalized population on expenditures and sources of payment for home health care medical provider visits. The weight assigned to each home health care medical provider event reported is the person-level weight of the person who was visited. If a person had several events reported, each event is assigned that individual's person-level weight. Estimates must be weighted by PERWT17F to be nationally representative. For example, the appropriate estimate for the overall mean out-of-pocket payment per month of care is computed as follows (the subscript 'j' identifies each event and represents a numbering of events from 1 through the total number of events in the file):

$(\sum W_j X_j)/(\sum W_j)$, where

W_j = PERWT17F$_j$ (full-year person weight for the person associated with event j) and

X_j = HHSF17X$_j$ (amount paid by self/family for event j)

Estimates and corresponding standard errors (SE) can be derived using an appropriate computer software package for complex survey analysis such as SAS, Stata, SUDAAN or SPSS.

The tables below contain the event-level estimates for several key variables on this file. Informal care (MPCELIG = 3) is not included in the tables because, by definition, there are no payments for those events and, therefore, no expenditure data are collected.

Selected Event-Level Estimates

Expenditures: Home Health Agency & Paid Independents (MPCELIG = 1, 2)

Estimate of Interest	Variable	Estimate (SE)	Estimate Excluding Zero Payment Events (SE)
Proportion of events with expenditures > 0*	HHXP17X	0.992 (0.0018)	_____
Mean total payments per month of care	HHXP17X	$1,757 (86.2000)	$1,772 (86.8000)
Mean out-of-pocket payments per month of care	HHSF17X	$173 (63.5000)	$174 (64.0000)
Mean proportion of total monthly expenditures paid out of pocket	HHSF17X/ HHXP17X	_____	0.091 (0.0155)

Expenditures: Home Health Agency Providers only (MPCELIG = 1)

Estimate of Interest	Variable	Estimate (SE)	Estimate Excluding Zero Payment Events (SE)
Proportion of events with expenditures > 0*	HHXP17X	0.991 (0.0019)	_____
Mean total payments per month of care	HHXP17X	$1,812 (89.5000)	$1,827 (90.0000)
Mean out-of-pocket payments per month of care	HHSF17X	$103 (60.7000)	$104 (61.2000)
Mean proportion of total monthly expenditures paid out of pocket	HHSF17X/ HHXP17X	_____	0.034 (0.0092)

Expenditures: Paid Independent Providers only (MPCELIG = 2)

Estimate of Interest	Variable	Estimate (SE)	Estimate Excluding Zero Payment Events (SE)
Proportion of events with expenditures > 0*	HHXP17X	0.993 (0.0043)	_____
Mean total payments per month of care	HHXP17X	$1,279 (298.6000)	$1,288 (300.6000)
Mean out-of-pocket payments per month of care	HHSF17X	$785 (276.6000)	$791 (278.5000)
Mean proportion of total monthly expenditures paid out of pocket	HHSF17X/ HHXP17X	_____	0.598 (0.0694)

*Zero payment events can occur in MEPS for the following reasons: (1) there was no charge for a follow-up event, (2) the provider was never paid by an individual, insurance plan, or other source for services provided, (3) the charges were included in another bill, or (4) the event was paid for through government or privately-funded research or clinical trials.

4.2 Person-Based Estimates for Home Health Care

To enhance analyses of home health care, analysts may link information about the home health care received by sample persons in this file to the annual full-year consolidated file (which has data for all MEPS sample persons), or conversely, link person-level information from the full-year consolidated file to this event-level file. Both this file and the full-year consolidated file may be used to derive estimates relative to persons with home health care and annual estimates of total expenditures. However, if the estimate relates to the entire population, this file cannot be used to calculate the denominator, as only those persons with at least one month in which home health care was provided are represented on this data file. Therefore, the full-year consolidated file must be used for person-level analyses that include both those with and without home health care.

4.3 Variables with Missing Values

It is essential that the analyst examine all variables for the presence of negative values used to represent missing values. For continuous or discrete variables, where means or totals may be taken, it may be necessary to set negative values to values appropriate to the analytic needs. That is, the analyst should either impute a value or set the value to one that will be interpreted as missing by the software package used. For categorical and dichotomous variables, the analyst may want to consider whether to recode or impute a value for cases with negative values or whether to exclude or include such cases in the numerator and/or denominator when calculating proportions. Methodologies used for the editing/imputation of expenditure variables (e.g., sources of payment and zero expenditures) are described in Section 2.5.5.2.

4.4 Variance Estimation (VARPSU, VARSTR)

The MEPS has a complex sample design. To obtain estimates of variability (such as the standard error of sample estimates or corresponding confidence intervals) for MEPS estimates, analysts need to take into account the complex sample design of MEPS for both person-level and family-level analyses. Several methodologies have been developed for estimating standard errors for surveys with a complex sample design, including the Taylor-series linearization method, balanced repeated replication, and jackknife replication. Various software packages provide analysts with the capability of implementing these methodologies. MEPS analysts most commonly use the Taylor Series approach. However, the capability of employing the Balanced Repeated Replication (BRR) methodology is also provided if needed to develop variances for more complex estimators.

4.4.1 Taylor-series Linearization Method

The variables needed to calculate appropriate standard errors based on the Taylor-series linearization method are included on this file as well as all other MEPS public use files. Software packages that permit the use of the Taylor-series linearization method include SUDAAN, Stata, SAS (version 8.2 and higher), and SPSS (version 12.0 and higher). For complete information on the capabilities of each package, analysts should refer to the corresponding software user documentation.

Using the Taylor-series linearization method, variance estimation strata and the variance estimation PSUs within these strata must be specified. The variables VARSTR and VARPSU on this MEPS data file serve to identify the sampling strata and primary sampling units required by the variance estimation programs. Specifying a “with replacement” design in one of the previously mentioned computer software packages will provide estimated standard errors appropriate for assessing the variability of MEPS survey estimates. It should be noted that the number of degrees of freedom associated with estimates of variability indicated by such a package may not appropriately reflect the number available. For variables of interest distributed throughout the country (and thus the MEPS sample PSUs), one can generally expect to have at least 100 degrees of freedom associated with the estimated standard errors for national estimates based on this MEPS database.

Prior to 2002, MEPS variance strata and PSUs were developed independently from year to year, and the last two characters of the strata and PSU variable names denoted the year. However, beginning with the 2002 Point-in-Time PUF, the variance strata and PSUs were developed to be compatible with all future PUFs until the NHIS design changed. Thus, when pooling data across years 2002 through the Panel 11 component of the 2007 files, the variance strata and PSU variables provided can be used without modification for variance estimation purposes for estimates covering multiple years of data. There were 203 variance estimation strata, each stratum with either two or three variance estimation PSUs.

From Panel 12 of the 2007 files, a new set of variance strata and PSUs were developed because of the introduction of a new NHIS design. There are 165 variance strata with either two or three variance estimation PSUs per stratum, starting from Panel 12. Therefore, there are a total of 368 (203+165) variance strata in the 2007 Full-Year file as it consists of two panels that were

selected under two independent NHIS sample designs. Since both MEPS panels in the Full-Year files from 2008 through 2016 are based on the next NHIS design, there are only 165 variance strata. These variance strata (VARSTR values) have been numbered from 1001 to 1165 so that they can be readily distinguished from those developed under the former NHIS sample design in the event that data are pooled for several years.

As discussed, the most recent change in the NHIS sample design took place in 2016, effectively changing the MEPS design beginning with calendar year 2017, where Panel 22 is based on the new NHIS design while Panel 21 is based on the old one. There were 117 variance strata formed for Panel 22. With the 165 strata available from Panel 21, there are a total of 282 variance strata appearing on the 2017 Full Year PUF.

In order to make the pooling of data across multiple years of MEPS more straightforward, the numbering system for the variance strata has changed. Those strata associated with the new design have four digit values with a "2" as the first digit. Those associated with the previous design have "1" as the first of four digits.

If analyses call for pooling MEPS data across several years, in order to ensure that variance strata are identified appropriately for variance estimation purposes, one can proceed as follows:

1. When pooling any year from 2002 or later, one can use the variance strata numbering as is.

2. When pooling any year from 1996 to 2001 with any year from 2002 or later, use the H36 file.

3. A new H36 file was constructed to allow pooling of 2007 and later years with 1996 to 2006.

4.4.2 Balanced Repeated Replication (BRR) Method

BRR replicate weights are not provided on this MEPS PUF for the purposes of variance estimation. However, a file containing a BRR replication structure is made available so users can form replicate weights, if desired, from the final MEPS weight to compute variances of MEPS estimates using either BRR or Fay's modified BRR (Fay 1989) methods. The replicate weights are useful to compute variances of complex non-linear estimators for which a Taylor linear form is not easy to derive and not available in commonly used software. For instance, it is not possible to calculate the variances of a median or the ratio of two medians using the Taylor linearization method. For these types of estimators, users may calculate a variance using BRR or Fay's modified BRR methods. However, it should be noted that the replicate weights have been derived from the final weight through a shortcut approach. Specifically, the replicate weights are not computed starting with the base weight and all adjustments made in different stages of weighting are not applied independently in each replicate. Thus, the variances computed using this one-step BRR do not capture the effects of all weighting adjustments that would be captured in a set of fully developed BRR replicate weights. The Taylor Series approach does not fully capture the effects of the different weighting adjustments either.

The dataset, HC-036BRR, contains the information necessary to construct the BRR replicates. It contains a set of 128 flags (BRR1—BRR128) in the form of half sample indicators, each of which is coded 0 or 1 to indicate whether the person should or should not be included in that particular replicate. These flags can be used in conjunction with the full-year weight to construct the BRR replicate weights. For analysis of MEPS data pooled across years, the BRR replicates can be formed in the same way using the HC-036 file. For more information about creating BRR replicates, users can refer to the documentation for the HC-036BRR pooled linkage file.

5.0 Merging/Linking MEPS Data Files

Data from this file can be used alone or in conjunction with other files for different analytic purposes. This section provides instructions, or the details on where to find the instructions, for linking the 2017 home health provider events with other 2017 MEPS public use files, including the 2017 person-level and conditions files. Each MEPS panel can also be linked back to the previous years' National Health Interview Survey public use data files. For information on MEPS/NHIS link files please see the MEPS website.

5.1 Linking to the Person-Level File

Merging characteristics of interest from other 2017 MEPS files (e.g., the 2017 Full-Year Consolidated File or the 2017 Prescribed Medicines File) expands the scope of potential estimates. For example, to estimate the total number of home health provider events of persons with specific characteristics (e.g., age, race, and sex), population characteristics from a person-level file need to be merged onto the home health visits event file. This procedure is illustrated below. The MEPS 2017 Appendix File, HC-197I, provides additional details on how to merge 2017 MEPS data files.

1. Create data set PERSX by sorting the 2017 Full-Year Consolidated File by the person identifier, DUPERSID. Keep only variables to be merged on to the home health visits event file and DUPERSID.

2. Create data set HVIS by sorting the home health visits event file by person identifier, DUPERSID.

3. Create final data set NEWHVIS by merging these two files by DUPERSID, keeping only records on the home health visits event file.

The following is an example of SAS code, which completes these steps:

```
PROC SORT DATA=HCXXX (KEEP=DUPERSID AGE31X AGE42X
AGE53X SEX RACEV1X EDUCYR HIDEG)
OUT=PERSX;
    BY DUPERSID;
RUN;

PROC SORT DATA=HVIS;
    BY DUPERSID;
RUN;
```

```
DATA NEWHVIS;
    MERGE HVIS (IN=A) PERSX (IN=B);
    BY DUPERSID;
    IF A;
RUN;
```

5.2 Linking to the Prescribed Medicines File

The RXLK file provides a link from 2017 MEPS event files to the 2017 Prescribed Medicines File. Because prescribed medicines data are not collected for home health events, this Home Health event file cannot be linked to the 2017 Prescribed Medicines File.

5.3 Linking to the Medical Conditions File

The CLNK file provides a link from 2017 MEPS event files to the 2017 Medical Conditions file. When using the CLNK file, data users/analysts should keep in mind that (1) conditions are household reported and (2) there may be multiple conditions associated with a home health provider event. Data users/analysts should also note that not all home health provider events link to the conditions file. For detailed linking examples, including SAS code, data users/analysts should refer to the MEPS 2017 Appendix File, HC-197I.

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D. Variable-Source Crosswalk

VARIABLE-SOURCE CROSSWALK

FOR MEPS HC-197H: 2017 HOME HEALTH VISITS

Survey Administration Variables

Variable	Description	Source
DUID	Dwelling unit ID	Assigned in sampling
PID	Person number	Assigned in sampling
DUPERSID	Person ID (DUID + PID)	Assigned in sampling
EVNTIDX	Event ID	Assigned in sampling
EVENTRN	Event round number	CAPI derived
PANEL	Panel Number	Constructed

Home Health Events Variables

Variable	Description	Source
HHDATEYR	Event date – year	CAPI derived
HHDATEMM	Event date – month	CAPI derived
MPCELIG	MPC eligibility flag	Constructed
SELFAGEN	Does provider work for agency or self	EV06A
HHTYPE	Home health event type	EV06
CNA	Type of hlth care wrkr – cert nurse asst	HH01
COMPANN	Type of hlth care wrkr – companion	HH01
DIETICN	Type of hlth care wrkr – dietitian/nutrt	HH01
HHAIDE	Type of hlth care wrkr – home care aide	HH01
HOSPICE	Type of hlth care wrkr – hospice worker	HH01
HMEMAKER	Type of hlth care wrkr – homemaker	HH01
IVTHP	Type of hlth care wrkr – IV therapist	HH01
MEDLDOC	Type of hlth care wrkr – medical doctor	HH01
NURPRACT	Type of hlth care wrkr – nurse/practr	HH01
NURAIDE	Type of hlth care wrkr – nurse’s aide	HH01
OCCUPTHP	Type of hlth care wrkr – occup therap	HH01
PERSONAL	Type of hlth care wrkr – pers care attdt	HH01

Variable	Description	Source
PHYSLTHP	Type of hlth care wrkr – physicl therapy	HH01
RESPTHP	Type of hlth care wrkr – respira therapy	HH01
SOCIALW	Type of hlth care wrkr – social worker	HH01
SPEECTHP	Type of hlth care wrkr – speech therapy	HH01
OTHRHCW	Type of hlth care wrkr – other	HH01
VSTRELCN	Any hh care svce related to hlth cond	HH04
FREQCY	Provider helped every week/some weeks	HH11
DAYSPWK	# days / week provider came	HH12
DAYSPMO	# days / month provider came	HH13
SAMESVCE	Any oth mons per received same services	HH17
HHDAYS	Days per month in home health, 2017	Constructed

Imputed Expenditure Variables

Variable	Description	Source
HHSF17X	Amount paid, family (Imputed)	CP Section (Edited)
HHMR17X	Amount paid, Medicare (Imputed)	CP Section (Edited)
HHMD17X	Amount paid, Medicaid (Imputed)	CP Section (Edited)
HHPV17X	Amount paid, private insurance (Imputed)	CP Section (Edited)
HHVA17X	Amount paid, Veterans/CHAMPVA (Imputed)	CP Section (Edited)
HHTR17X	Amount paid, TRICARE (Imputed)	CP Section (Edited)
HHOF17X	Amount paid, other federal (Imputed)	CP Section (Edited)
HHSL17X	Amount paid, state & local gov (Imputed)	CP Section (Edited)
HHWC17X	Amount paid, workers comp (Imputed)	CP Section (Edited)
HHOR17X	Amount paid, other private (Imputed)	Constructed
HHOU17X	Amount paid, other public (Imputed)	Constructed
HHOT17X	Amount paid, other insurance (Imputed)	CP Section (Edited)
HHXP17X	Sum of HHSF17X – HHOT17X (Imputed)	Constructed
HHTC17X	Hhld reported total charge (Imputed)	CP Section (Edited)
IMPFLAG	Imputation status	Constructed

Weights Variables

Variable	Description	Source
PERWT17F	Expenditure file person weight, 2017	Constructed

VARSTR	Variance estimation stratum, 2017	Constructed
VARPSU	Variance estimation PSU, 2017	Constructed