MEPS HC-135F:
2010 Outpatient Department Visits

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Agency for Healthcare Research and Quality
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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.

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 non-institutionalized 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 non-institutionalized population and reflects an oversample of blacks and Hispanics. In 2007, 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. MEPS further oversamples additional policy relevant sub-groups such as low income households. 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 visit, 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.

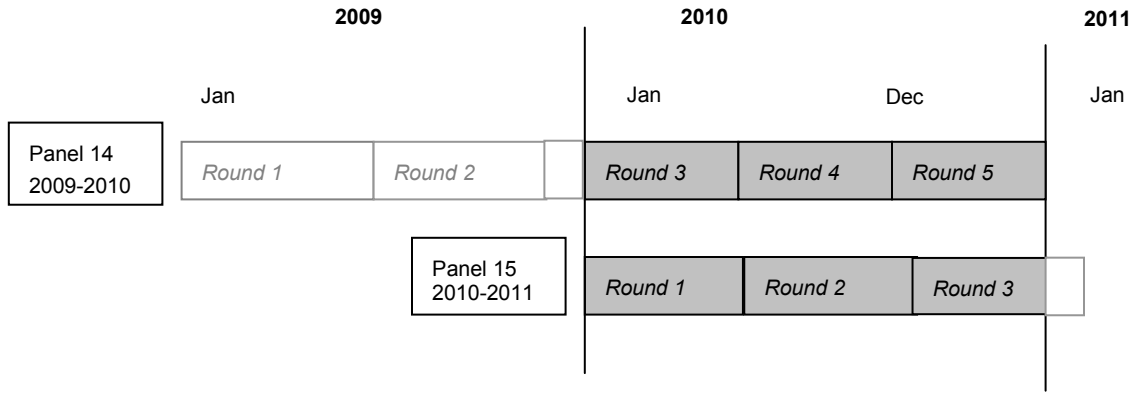
As soon as data collection and editing are completed, the MEPS survey data are released to the public in staged releases of summary reports, micro data files, and tables via the MEPS Web site: meps.ahrq.gov. Selected data can be analyzed through MEPSnet, an on-line interactive tool designed to give data 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, 540 Gaither Road, Rockville, MD 20850 (301-427-1407).

C. Technical and Programming Information

1.0 General Information

This documentation describes one in a series of public use event files from the 2010 Medical Expenditure Panel Survey (MEPS) Household (HC) and Medical Provider Components (MPC). Released as an ASCII data file (with related SAS, SPSS, and Stata programming statements) and SAS transport file, this public use file provides detailed information on outpatient visits for a nationally representative sample of the civilian noninstitutionalized population of the United States and can be used to make estimates of outpatient utilization and expenditures for calendar year 2010. The file contains 87 variables and has a logical record length of 385 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 2010 portion of Round 3 and Rounds 4 and 5 for Panel 14, as well as Rounds 1, 2 and the 2010 portion of Round 3 for Panel 15 (i.e., the rounds for the MEPS panels covering calendar year 2010).



Each record on this event file represents a unique outpatient event; that is, an outpatient event reported by the household respondent. Outpatient events reported in Panel 15 Round 3 and known to have occurred after December 31, 2010 are not included on this file. In addition to expenditures related to this event, each record contains household-reported medical conditions and procedures associated with the outpatient visit.

Annual counts of outpatient visits are based entirely on household reports. Information from the MEPS MPC is 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 MEPS HC data files, for purposes of appending person characteristics such as demographic or health insurance characteristics to each outpatient visit record.

This file can also be used to construct summary variables of expenditures, sources of payment, and related aspects of outpatient visits. Aggregate annual person-level information on the use of outpatient departments and other health services is provided on the MEPS 2010 Full Year Consolidated Data File, where each record represents a MEPS sampled person.

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

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

Any variables not found on this file but released on previous years' files were excluded because they contained only missing data.

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. Copies of the HC and the MPC survey instruments used to collect the information on the Outpatient Department Visit file are available in the *Survey Questionnaires* section of the MEPS Web site at the following address: meps.ahrq.gov.

2.0 Data File Information

The 2010 Outpatient Department Visit public use data set consists of one event-level data file. The file contains characteristics associated with the outpatient event and imputed expenditure data.

The 2010 outpatient public use data set contains 10,962 outpatient event records; of these records, 10,760 are associated with persons having a positive person-level weight (PERWT10F). This file includes outpatient event records for all household members who resided in eligible responding households and for whom at least one outpatient event was reported. Starting in 2004, new questions were added inquiring whether someone in the family had a visit to an independent lab or testing facility for x-rays or other tests. An affirmative answer to these questions would lead to the creation of an office-based provider event record or an outpatient department event record.

Each record represents one household-reported outpatient event that occurred during calendar year 2010. Outpatient visits known to have occurred after December 31, 2010 are not included on this file. Some household members may have multiple outpatient events and thus will be represented in multiple records on this file. Other household members may have had no outpatient events reported and thus will have no records on this file. These data were collected during the 2010 portion of Round 3, and Rounds 4 and 5 for Panel 14, as well as Rounds 1, 2, and the 2010 portion of Round 3 for Panel 15 of the MEPS HC. The persons represented on this file had to meet either (a) or (b) below:

a) Be classified as a key in-scope person who responded for his or her entire period of 2010 eligibility (i.e., persons with a positive 2010 full-year person-level weight (PERWT10F > 0)), or

b) Be an eligible member of a family all of whose key in-scope members have a positive person-level weight (PERWT10F > 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 (FAMWT10F >0). Note that FAMIDYR and FAMWT10F are variables on the 2010 Population Characteristics file.

Persons with no outpatient visit events for 2010 are not included on this event-level OP file but are represented on the person-level 2010 Full Year Population Characteristics file.

Each outpatient visit record includes the following information: date of the visit; whether or not the household member saw the doctor; type of care received; type of services (i.e., lab test, sonogram or ultrasound, x-rays, etc) received; medicines prescribed during the visit; flat fee information; imputed sources of payment; total payment and total charge; a full-year person-level weight; variance strata; and variance PSU.

To append person-level information such as demographic or health insurance coverage to each event record, data from this file can be merged with 2010 MEPS HC person-level data (e.g. Full Year Consolidated or Full Year Population Characteristics files) using the person identifier, DUPERSID. Outpatient visit events on this file can also be linked to the MEPS 2010 Medical Conditions File and to the MEPS 2010 Prescribed Medicines File. Please see Section 5.0 for details on how to merge MEPS data files.

2.1 Codebook Structure

For each variable on the Outpatient Department Events file, both weighted and unweighted frequencies are provided in the accompanying codebook. The codebook and data file sequence list variables in the following order:

Unique person identifiers
Unique outpatient visit identifiers
Outpatient characteristic variables
ICD-9-CM condition and procedure codes
Clinical Classification Software (CCS) codes
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 Web site: meps.ahrq.gov/survey_comp/survey_questionnaires.jsp).

2.3 Codebook Format

This 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. All imputed/edited variables end with an "X".

2.4.1 General

Variables on this file were derived from the HC questionnaire itself, the MPC data collection instrument, derived from CAPI, or assigned in sampling. 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;

   - FF- Flat Fee section
   - CP- Charge Payment section
   - OP - Outpatient section

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

4. Variables which have been 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 eight 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 visit	DV - dental visit
OM - other medical equipment	RX - prescribed medicine

For expenditure variables on the OP file, the third character indicates whether the expenditure (or amount paid) is associated with the facility (F) or the physician (D).

In the case of the source of payment variables, the fourth and fifth 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 sixth and seventh characters indicate the year (10). The eighth character, "X", indicates whether the variable is edited/imputed.

For example, OPFSF10X is the edited/imputed amount paid by self or family for the facility portion of the expenditure associated with an outpatient visit.

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 2010 Full Year Population Characteristics File.

2.5.1.2 Record Identifiers (EVNTIDX, FFEEIDX)

EVNTIDX uniquely identifies each outpatient event (i.e., each record on the outpatient file) and is the variable required to link outpatient events to data files containing details on conditions and/or prescribed medicines (MEPS 2010 Medical Condition file and MEPS 2010 Prescribed Medicine file, respectively). For details on linking see Section 5.0 or the MEPS 2010 Appendix File, HC-135I.

FFEEIDX is a constructed variable that uniquely identifies a flat fee group, that is, all events that were part of a flat fee payment. For example, if a patient receives stitches during an outpatient visit and comes back to have the stitches removed ten days later in a follow-up outpatient visit, both visits are covered under one flat fee dollar amount. These two events (the initial outpatient visit and the subsequent outpatient visit) would have the same value for FFEEIDX. A "mixed" flat fee group could contain both outpatient and office-based visits. Only outpatient and office-based events are allowed in a mixed bundle. Please note that FFEEIDX should be used to link up the outpatient and office-based events in order to determine the full set of events that are part of a flat fee group.

2.5.1.3 Round Indicator (EVENTRN)

EVENTRN indicates the round in which the outpatient event was reported. Please note: Rounds 3, 4, and 5 are associated with MEPS survey data collected from Panel 14. Likewise, Rounds 1, 2, and 3 are associated with data collected from Panel 15.

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 14 or Panel 15 for each person on the file. Panel 14 is the panel that started in 2009, and Panel 15 is the panel that started in 2010.

2.5.2 MPC Data Indicator (MPCDATA)

MPCDATA is a constructed variable that indicates whether or not MPC data were collected for the outpatient visit. While all outpatient events are sampled into the Medical Provider Component, not all outpatient event records have MPC data associated with them. This is dependent upon the cooperation of the household respondent to provide permission forms to contact the outpatient facility as well as the cooperation of the outpatient facility to participate in the survey.

2.5.3 Outpatient Visit Event Variables

This file contains variables describing outpatient events reported by respondents in the Outpatient Department section of the MEPS HC questionnaire. The questionnaire contains specific probes for determining details about the outpatient visit. These variables have not been edited.

2.5.3.1 Visit Details (OPDATEYR-VSTRELCN)

When a person reported having had a visit to a hospital outpatient department or special clinic, the year, month, and day of the outpatient visit was reported (OPDATEYR, OPDATEMM, OPDATEDD). Also reported is whether the person actually saw the provider or talked to the provider on the telephone (SEETLKPV). It also establishes whether the person saw or spoke to a medical doctor (SEEDOC). If the person did not see a specialty doctor (DRSPLTY), or, if the person did not see a physician (i.e., medical doctor), the respondent was asked to identify the type of medical person that was seen (MEDPTYPE). The type of care the person received (VSTCTGRY), and whether or not the visit or telephone call was related to a specific condition (VSTRELCN) were also determined.

2.5.3.2 Treatment, Services, Procedures, and Prescription Medicines (PHYSTH-MEDPRESC)

Types of treatment received during the outpatient visit include physical therapy (PHYSTH), occupational therapy (OCCUPTH), speech therapy (SPEECHTH), chemotherapy (CHEMOTH), radiation therapy (RADIATTH), kidney dialysis (KIDNEYD), IV therapy (IVTHER), drug or alcohol treatment (DRUGTRT), allergy shots (RCVSHOT), psychotherapy/counseling (PSYCHOTH), and shots other than allergy (OTHSHOT).

Services received during the visit included whether or not the person received lab tests (LABTEST), a sonogram or ultrasound (SONOGRAM), x-rays (XRAYS), a mammogram (MAMMOG), an MRI or CAT scan (MRI), an electrocardiogram (EKG), an electroencephalogram (EEG), a vaccination (RCVVAC), anesthesia (ANESTH), a throat swab (THRTSWAB), and other diagnostic tests or exams (OTHSVCE). Minimal editing was done across treatment, services, and procedures to ensure consistency across "inapplicable," "not ascertained," "don't know," "refused," and "no services received" values.

Whether or not a surgical procedure was performed during the visit was asked (SURGPROC).

Finally, the questionnaire determined if a medicine was prescribed for the person during the visit (MEDPRESC). For a repeat visit event group, if a prescribed medicine is linked to the stem event (MEDPRESC=1), then the value of MEDPRESC is copied to the leaf events without linking the leaf events to the prescribed medicine. Beginning in 2009, MEDPRESC=1 was recoded to -9 for all leaf events.

2.5.4 Conditions and Procedures Codes (OPICD1X-OPICD4X, OPPRO1X-OPPRO2X), and Clinical Classification Codes (OPCCC1X-OPCCC4X)

Information on household-reported medical conditions and procedures associated with each outpatient visit is provided on this file. There are up to four condition and CCS codes (OPICD1X-OPICD4X, OPCCC1X-OPCCC4X) and up to two procedure codes (OPPRO1X-OPPRO2X) listed for each outpatient visit. In order to obtain complete information on conditions and procedures associated with an event, the analyst must link to the Medical Conditions File. Please see Section 5.0 for details on how to link this file to the Medical Conditions File. The user should note that due to confidentiality restrictions, provider-reported condition information is not publicly available.

The medical conditions and procedures reported by the Household Component respondent were recorded by the interviewer as verbatim text, which were then coded to fully-specified 2010 ICD-9-CM codes, including medical condition and V codes (see Health Care Financing Administration, 1980), by professional coders. Although codes were verified and error rates did not exceed 2.5 percent for any coder, data users/analysts should not presume this level of precision in the data; the ability of household respondents to report condition data that can be coded accurately should not be assumed (see Cox and Cohen, 1985; Cox and Iachan, 1987; Edwards, et al, 1994; and Johnson and Sanchez, 1993). For detailed information on conditions, please refer to the documentation on the Medical Conditions File.

The ICD-9-CM condition codes were aggregated into clinically meaningful categories. These categories, included on the file as OPCCC1X-OPCCC4X, were generated using Clinical Classification Software [formerly known as Clinical Classifications for Health Care Policy Research (CCHPR)], (Elixhauser, et al., 1998), which aggregates conditions and V-codes into mutually exclusive categories, most of which are clinically homogeneous.

In order to preserve household member confidentiality, nearly all of the condition codes provided on this file have been collapsed from fully-specified codes to three-digit code categories. The reported ICD-9-CM code values were mapped to the appropriate clinical classification category prior to being collapsed to the three-digit categories. Similarly, the procedure codes have been collapsed from fully-specified codes to two-digit code categories. Because of this collapsing, it is possible for there to be duplicate ICD-9-CM condition or procedure codes linked to a single medical event when different fully-specified codes are collapsed into the same code. For more information on ICD-9-CM codes, see the HC-137 documentation.

The condition codes, and clinical classification and procedure codes, linked to each outpatient visit are sequenced in the order in which the conditions were reported by the household respondent, which was in order of input into the database and not in order of importance or severity. Data users/analysts who use the MEPS 2010 Medical Conditions file in conjunction with this outpatient visit file should note that the order of conditions on this file is not identical to that on the Medical Conditions file.

Analysts should use the clinical classification codes listed in the Conditions PUF document (HC-137) and the Appendix to the Event Files (HC-135I) document when analyzing MEPS conditions data. Although there is a list of clinical classification codes and labels on the Healthcare Cost and Utilization Project (HCUP) Web site, if updates to these codes and/or labels are made on the HCUP Web site after the release of the 2010 MEPS PUFs, these updates will not be reflected in the 2010 MEPS data.

2.5.5 Flat Fee Variables (FFEEIDX, FFOPTYPE, FFBEF10, FFTOT11)

2.5.5.1 Definition of Flat Fee Payments

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. Examples would be: an obstetrician's fee covering a normal delivery, as well as pre- and post-natal care; or a surgeon's fee covering surgical procedure along with post-surgical care. A flat fee group is the set of medical services (i.e.,

events) that are covered under the same flat fee payment. The flat fee groups represented on this file include flat fee groups where at least one of the health care events, as reported by the HC respondent, occurred during 2010. By definition a flat fee group can span multiple years. Furthermore, a single person can have multiple flat fee groups.

2.5.5.2 Flat Fee Variable Descriptions

2.5.5.2.1 Flat Fee ID (FFEEIDX)

As noted earlier in Section 2.5.1.2 "Record Identifiers," the variable FFEEIDX uniquely identifies all events that are part of the same flat fee group for a person. On any 2010 MEPS event file, every event that was a part of a specific flat fee group will have the same value for FFEEIDX. Note that prescribed medicine and home health events are never included in a flat fee group and FFEEIDX is not a variable on those event files.

2.5.5.2.2 Flat Fee Type (FFOPTYPE)

FFOPTYPE indicates whether the 2010 outpatient visit is the "stem" or "leaf" of a flat fee group. A stem (records with FFOPTYPE = 1) is the initial medical service (event) which is followed by other medical events that are covered under the same flat fee payment. The leaves of the flat fee group (records with FFOPTYPE = 2) are those medical events that are tied back to the initial medical event (the stem) in the flat fee group. These "leaf" records have their expenditure variables set to zero. For the outpatient visits that are not part of a flat fee payment, the FFOPTYPE is set to -1, "INAPPLICABLE."

2.5.5.2.3 Counts of Flat Fee Events that Cross Years (FFBEF10, FFTOT11)

As described above, a flat fee payment covers multiple events and the multiple events could span multiple years. For situations where the outpatient visit occurred in 2010 as a part of a group of events, and some of the events occurred before or after 2010, counts of the known events are provided on the outpatient visit record. Variables indicating events that occurred before or after 2010 are as follows:

> FFBEF10 – total number of pre-2010 events in the same flat fee group as the 2010 outpatient visit. This count would not include the 2010 outpatient visit(s).
>
> FFTOT11 – the number of 2011 outpatient visits expected to be in the same flat fee group as the outpatient visit record that occurred in 2010. Because there were no 2011 events expected for any flat fee group, this variable was omitted from this file.

If there are no 2009 events on the file, FFBEF10 will be omitted. Likewise, if there are no 2011 events on the file, FFTOT11 will be omitted. If there are no flat fee data related to the records in this file, FFEEIDX and FFOPTYPE will be omitted as well. Please note that the crosswalk in this document lists all possible flat fee variables.

2.5.5.3 Caveats of Flat Fee Groups

There are 246 outpatient visits that are identified as being part of a flat fee payment group. In general, every flat fee group should have an initial visit (stem) and at least one subsequent visit (leaf). There are some situations where this is not true. For some of these flat fee groups, the initial visit reported occurred in 2010 but the remaining visits that were part of this flat fee group occurred in 2011. In this case, the 2010 flat fee group represented on this file would consist of one event (the stem). The 2011 events that are part of this flat fee group are not represented on the file. Similarly, the household respondent may have reported a flat fee group where the initial visit began in 2009 but subsequent visits occurred during 2010. In this case, the initial visit would not be represented on the file. This 2010 flat fee group would then only consist of one or more leaf records and no stem. Another reason for which a flat fee group would not have a stem and at least one leaf record is that the stem or leaves could have been reported as different event types. Outpatient and Office-based medical provider visits are the only two event types allowed in a single flat fee group. The stem may have been reported as an outpatient department visit and the leaves may have been reported as office-based medical provider visits.

2.5.6 Expenditure Data

2.5.6.1 Definition of Expenditures

Expenditures on this file refer to what is paid for outpatient services. More specifically, expenditures in MEPS are defined as the sum of payments for care received for each outpatient visit, 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, the estimates do not incorporate any payment not directly tied to specific medical care visits, 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. For details on expenditure definitions, please reference the following: "Informing American Health Care Policy" (Monheit, et al., 2000). 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 Web site meps.ahrq.gov/data_stats/onsite_datacenter.jsp.

Expenditure data related to outpatient visits are broken out by facility and separately billing doctor expenditures. This file contains six categories of expenditure variables per visit: basic hospital outpatient facility expenses; expenses for doctors who billed separately from the outpatient facility for any services provided during the outpatient visit; total expenses, which is the sum of the facility and physician expenses; facility charge; physician charge; and total

charges, which is the sum of the facility and physician charges. If examining trends in MEPS expenditures, please refer to Section 3.3 for more information.

2.5.6.2 Data Editing and Imputation Methodologies of Expenditure Variables

The expenditure data included on this file were derived from both the MEPS Household (HC) and the Medical Provider Components (MPC). The MPC contacted medical providers identified by household respondents. The charge and payment data from medical providers were used in the expenditure imputation process to supplement missing household data. For all outpatient visits, MPC data were used if available; otherwise, HC data were used. Missing data for outpatient visits where HC data were not complete and MPC data were not collected, or MPC data were not complete, were derived through the imputation process.

2.5.6.2.1 General Data Editing Methodology

Logical edits were used to resolve internal inconsistencies and other problems in the HC and 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 misclassifications 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.

2.5.6.2.2 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.

Expenditures for services provided by separately billing doctors in hospital settings were also edited and imputed. These expenditures are shown separately from hospital facility charges for hospital inpatient, outpatient, and emergency room care.

2.5.6.2.3 Outpatient Visit Data Editing and Imputation

Facility expenditures for outpatient services were developed in a sequence of logical edits and imputations. "Household" edits were applied to sources and amounts of payment for all events reported by HC respondents. "MPC" edits were applied to provider-reported sources and amounts of payment for records matched to household-reported events. Both sets of edits were used to correct obvious errors in the reporting of expenditures. After the data from each source were edited, a decision was made as to whether household- or MPC-reported information would

be used in the final editing and predictive mean matching imputations for missing expenditures. The general rule was that MPC data would be used where a household-reported event corresponded to an MPC-reported event (i.e., a matched event), since providers usually have more complete and accurate data on sources and amounts of payment than households.

One of the more important edits separated flat fee events from simple events. This edit was necessary because groups of events covered by a flat fee (i.e., a flat fee bundle) were edited and imputed separately from individual events covered by a single charge (i.e., simple events). (See Section 2.5.5 for more details on flat fee groups).

Logical edits also were used to sort each event into a specific category for the imputations. Events with complete expenditures were flagged as potential donors for the predictive mean matching imputations, 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.

The logical edits produced eight recipient categories in which all events had a common extent of missing data. Separate predictive mean matching imputations were performed on events in each recipient category. For hospital inpatient and emergency room events, the donor pool was restricted to events with complete expenditures from the MPC. Due to the low ratio of donors to recipients for hospital outpatient and office based events there were no donor pool restrictions.

The donor pool included "free events" because, in some instances, providers are not paid for their services. These events represent charity care, bad debt, provider failure to bill, and third party payer restrictions on reimbursement in certain circumstances. If free events were excluded from the donor pool, total expenditures would be over-counted because the distribution of free events among complete events (donors) would not be represented among incomplete events (recipients).

For office-based and outpatient events, the donor pool also included events originally reported by providers as paid on a capitated basis. To obtain the fee-for-service (FFS) equivalent payments for these capitated events, a "capitation imputation" was implemented (see the next section). Once imputed with the FFS equivalent payments, these events became donors for all other incomplete events, particularly for events reported by the household as services covered under managed care plans.

Expenditures for services provided by separately billing doctors in hospital settings were also edited and imputed. These expenditures are shown separately from hospital facility charges for hospital inpatient, outpatient, and emergency room.

2.5.6.3 Capitation Imputation

The imputation process was also used to estimate expenditures at the event level for events that were paid on a per-month per-person (capitated) basis. The capitation imputation procedure was

designed as a reasonable approach to complete event-level expenditures for persons in non-fee for service managed care plans. HMO events reported in the MPC as covered by capitation arrangements were imputed using similar HMO events paid on a fee-for-service, with total charge as a key variable. Then this fully completed set of MPC events was used in the donor pool for the main imputation process for cases in HMOs. By using this strategy, capitated HMO events were imputed as if the provider were reimbursed from the HMO on a discounted fee-for-service basis.

2.5.6.4 Imputation Flag (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 (for OP and MV events only). The following list identifies how the imputation flag is coded; the categories are mutually exclusive.

IMPFLAG = 0 not eligible for imputation (includes zeroed out and flat fee leaf 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

2.5.6.5 Flat Fee Expenditures

The approach used to count expenditures for flat fees was to place the expenditure on the first visit of the flat fee group. The remaining visits have zero facility payments, physician's expenditures may still be present. Thus, if the first visit in the flat fee group occurred prior to 2010, all of the events that occurred in 2010 will have zero payments. Conversely, if the first event in the flat fee group occurred at the end of 2010, the total expenditure for the entire flat fee group will be on that event, regardless of the number of events it covered after 2010. See Section 2.5.5 for details on the flat fee variables.

2.5.6.6 Zero Expenditures

There are some medical events reported by respondents where the payments were zero. Zero payment events can occur in MEPS for the following reasons: (1) the visit was covered under a flat fee arrangement (flat fee payments are included only on the first event covered by the arrangement), (2) there was no charge for a follow-up visit, (3) the provider was never paid directly for services provided by an individual, insurance plan, or other source, (4) charges were included in another bill, or (5) event was paid through government or privately funded research or clinical trials.

The file also contains a small number of events involving a telephone call rather than a visit to the medical provider (SEETLKPV = 2). The expenditure variables for telephone calls have a value of -1 "INAPPLICABLE".

2.5.6.7 Discount Adjustment Factor

An adjustment was also applied to some HC-reported expenditure data because an evaluation of matched HC/MPC data showed that respondents who reported that charges and payments were equal were often unaware that insurance payments for the care had been based on a discounted charge. To compensate for this systematic reporting error, a weighted sequential hot-deck imputation procedure was implemented to determine an adjustment factor for HC-reported insurance payments when charges and payments were reported to be equal. As for the other imputations, selected predictor variables were used to form groups of donor and recipient events for the imputation process.

2.5.6.8 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 Source – 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 these two sources are 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.

2.5.6.9 Imputed Outpatient Expenditure Variables

This file contains two sets of imputed expenditure variables: facility expenditures and physician expenditures.

2.5.6.9.1 Outpatient Facility Expenditure Variables (OPFSF10X-OPFOT10X, OPFTC10X, OPFXP10X)

Outpatient visit expenses include all expenses for treatment, services, tests, diagnostic and laboratory work, x-rays, and similar charges, as well as any physician services included in the hospital outpatient visit charge.

OPFSF10X – OPFOT10X are the 12 sources of payment. The 12 sources of payment are: self/family (OPFSF10X), Medicare (OPFMR10X), Medicaid (OPFMD10X), private insurance (OPFPV10X), Veterans Administration/CHAMPVA (OPFVA10X), TRICARE (OPFTR10X), other Federal sources (OPFOF10X), State and Local (non-federal) government sources (OPFSL10X), Workers' Compensation (OPFWC10X), other private insurance (OPFOR10X), other public insurance (OPFOU10X), and other insurance (OPFOT10X). OPFXP10X is the sum of the 12 sources of payment for the Outpatient Facility expenditures, and OPFTC10X is the total charge. Please note that where an outpatient visit record is linked to a hospital inpatient stay record, all facility sources of payment variables, as well as, OPFTC10X have been zeroed out.

2.5.6.9.2 Outpatient Physician Expenditures (OPDSF10X – OPDOT10X, OPDTC10X, OPDXP10X)

Separately billing doctor (SBD) expenses typically cover services provided to patients in hospital settings by providers like anesthesiologists, radiologists, and pathologists, whose charges are often not included in the outpatient facility bill.

For physicians who bill separately (i.e., outside the outpatient facility bill), a separate data collection effort within the Medical Provider Component was performed to obtain the same set of expenditure information from each separately billing doctor. It should be noted that there could be several separately billing doctors associated with a medical event. For example, an outpatient visit could have a radiologist and a pathologist associated with it. If their services are not included in the outpatient visit bill then this is one medical event with 2 separately billing doctors. The imputed expenditure information associated with the separately billing doctors was summed to the event level and is provided on the file. OPDSF10X – OPDOT10X are the 12 sources of payment, OPDXP10X is the sum of the 12 sources of payments, and OPDTC10X is the physician(s) total charge.

Data users/analysts need to take into consideration whether to analyze facility and SBD expenditures separately, combine them within service categories, or collapse them across service categories (e.g., combine SBD expenditures with expenditures for physician visits to offices and/or outpatient departments).

2.5.6.9.3 Total Expenditures and Charges for Outpatient Visits (OPXP10X, OPTC10X)

Data users/analysts interested in total expenditures should use the variable OPXP10X, which includes both facility and physician amounts. Those interested in total charges should use the variable OPTC10X, which includes both facility and physician charges (see Section 2.5.6.1 for an explanation of the "charge" concept).

2.5.6.10 Rounding

Expenditure variables have been rounded to the nearest penny. Person-level expenditure information released on the MEPS 2010 Person-Level Use and Expenditure File were rounded to the nearest dollar. It should be noted that using the MEPS 2010 event files to create person-level totals will yield slightly different totals than those found on the person-level expenditure 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. Please see the MEPS 2010 Appendix File, HC-135I, for details on such rounding differences.

3.0 Sample Weight (PERWT10F)

3.1 Overview

There is a single full year person-level weight (PERWT10F) 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 2010. A key person either was 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 PERWT10F was developed in several stages. Person-level weights for Panel 14 and Panel 15 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 to Current Population Survey (CPS) population estimates based on five variables. The five variables used in the establishment of the initial person-level control figures were: 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 2010 composite weight was then formed by multiplying each weight from Panel 14 by the factor .51 and each weight from Panel 15 by the factor .49. 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 again raked to the same set of CPS-based control totals. When 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 original five variables used in the previous calibrations.

The raking process also incorporated two additional raking dimensions (sets of control totals) described below in Section 3.2.3.

3.2.1 MEPS Panel 14 Weight

The person-level weight for MEPS Panel 14 was developed using the 2009 full year weight for an individual as a "base" weight for survey participants present in 2009. For key, in-scope members who joined an RU sometime in 2010 after being out-of-scope in 2009, the initially assigned person-level weight was the corresponding 2009 family weight. The weighting process included an adjustment for nonresponse over Rounds 4 and 5 as well as raking to population control figures for December 2010. These control figures were derived by scaling back the population totals obtained from the March 2011 CPS to correspond to a national estimate for the civilian noninstitutionalized population provided by the Census Bureau for December 2010. Variables used in the establishment of person-level control figures included: 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. The final weight for key, responding persons who were not in-scope on December 31, 2010 but were in-scope earlier in the year was the person weight after the nonresponse adjustment.

3.2.2 MEPS Panel 15 Weight

The person-level weight for MEPS Panel 15 was developed using the MEPS Round 1 person-level weight as a "base" weight. For key, in-scope RU 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 Round 2 and the 2010 portion of Round 3 as well as raking to the same population control figures for December 2010 used for the MEPS Panel 14 weights. The same five variables employed for Panel 14 raking (census region, MSA status, race/ethnicity, sex, and age) were used for Panel 15 raking. Again, the final weight for key, responding persons who were not in-scope on December 31, 2010 but were in-scope earlier in the year was the person weight after the nonresponse adjustment.

Note that the MEPS Round 1 weights incorporated the following components: the original household probability of selection for the NHIS; ratio-adjustment to NHIS-based national population estimates at the household (occupied dwelling unit) level; adjustment for nonresponse at the dwelling unit level for Round 1; and poststratification to figures at the family and person level obtained from the March CPS data base of the corresponding year (i.e., 2009 for Panel 14 and 2010 for Panel 15).

3.2.3 The Final Weight for 2010

The composite weights of two groups of persons who were out-of-scope on December 31, 2010 were poststratified. Specifically, the weights of those who were in-scope sometime during the year, out-of-scope on December 31, and entered a nursing home during the year were poststratified to a corresponding control total obtained from the 1996 MEPS Nursing Home Component. Those who died while in-scope during 2010 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.

In developing the final person-level weight for 2010 (PERWT10F), additional raking dimensions were added that reflected the MEPS 2008-09 estimated average annual distributions of office-based visits by age (under 65, 65 and over) and the proportion of persons age 65 and over with care from home health agencies. These additional adjustments were included to better reflect benchmark trends in office-based and home health care utilization. For each marginal category of the dimensions, the table below shows the ratio of the weighted number of persons that resulted from including the additional raking dimensions to that of the corresponding estimate without the additional raking dimensions.

Ratio of Adjusted to Unadjusted Weights

Number of Visits	Nonelderly (AGE10X < 65)	Elderly (AGE10X ≥ 65)
OFFICE-BASED		
0	0.9169	0.8737
1-5	1.0137	0.9270
6-10	1.0415	1.0581
> 10	1.1905	1.1058
HOME HEALTH AGENCY		
0	--	0.9882
> 0	--	1.1564

Overall, the weighted population estimate for the civilian noninstitutionalized population for December 31, 2010 is 304,842,384 (PERWT10F>0 and INSC1231 = 1). The sum of the person-level weights across all persons assigned a positive person-level weight is 308,573,977.

3.2.4 Coverage

The target population for MEPS in this file is the 2010 U.S. civilian noninstitutionalized population. However, the MEPS sampled households are a subsample of the NHIS households interviewed in 2008 (Panel 14) and 2009 (Panel 15). New households created after the NHIS interviews for the respective Panels and consisting exclusively of persons who entered the target

population after 2008 (Panel 14) or after 2009 (Panel 15) 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, it is important to consider a variety of factors when examining trends over time using MEPS. Statistical significance tests 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. Looking at changes over longer periods of time can provide a more complete picture of underlying trends. Analysts of MEPS data may wish to consider using techniques to evaluate, smooth, or stabilize estimates of trends. Such techniques include comparing pooled time periods (e.g. 1996-97 versus 2004-05), 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 (i.e., the chance of declaring an observed difference to be statistically significant when there is no difference in the population parameters). Performing numerous statistical significance tests increases the likelihood of a Type I error.

4.0 Strategies for Estimation

4.1 Developing Event-Level Estimates

The data in this file can be used to develop national 2010 event level estimates for the U.S. civilian noninstitutionalized population on outpatient visits as well as expenditures, and sources of payment for these visits. Estimates of total visits are the sum of the weight variable (PERWT10F) across relevant event records while estimates of other variables must be weighted by PERWT10F to be nationally representative. The tables below contain event-level estimates for selected variables.

Selected Event Level Estimates

Outpatient Visits

Estimate of Interest	Variable Name	Estimate (SE)	Estimate Excluding Zero Payment Events (SE)**
Total number of outpatient visits (including phone call events, in millions)*	PERWT10F	124.1 (8.85)	119.9 (8.73)
Total number of outpatient visits in person and not by telephone (SEETLKPV=1, in millions)	PERWT10F	123.5 (8.85)	119.7 (8.73)
Total number of in-person visits to doctor (SEETLKPV=1 & SEEDOC=1, in millions)	PERWT10F	50.9 (2.55)	49.5 (2.50)
Proportion of outpatient visits with expenditures > 0**	OPXP10X	0.966 (0.0048)	----------

Outpatient Expenditures (SEETLKPV = 1)

Estimate of Interest	Variable Name	Estimate (SE)	Estimate Excluding Zero Payment Events (SE)**
Mean total payments per visit (all sources)	OPXP10X	$925 ($53.0)	$954 ($55.4)
Mean out-of-pocket payment per visit	OPDSF10X +OPFSF10X	$57 ($4.5)	$59 ($4.7)
Mean proportion of total expenditures paid by private insurance per visit	(OPDPV10X +OPFPV10X) /OPXP10X	----------	0.371 (0.0268)

Expenditures: Physician Visits (SEEDOC = 1 & SEETLKPV = 1)

Estimate of Interest	Variable Name	Estimate (SE)	Estimate Excluding Zero Payment Events (SE)**
Mean total payments per visit where person saw medical doctor	OPXP10X	$1,551 ($90.2)	$1,595 ($92.6)

Mean out-of-pocket payment per visit where person saw medical doctor	OPDSF10X +OPFSF10X	$92 ($7.3)	$95 ($7.5)
Mean proportion of total expenditures per visit paid by private insurance where person saw medical doctor	(OPDPV10X +OPFPV10X) /OPXP10X	----------	0.389 (0.0223)

*OPXP10X = -1 (inapplicable) for all phone call events (SEETLKPV = 2).
** Zero payment events can occur in MEPS for the following reasons: (1) the visit was covered under a flat fee arrangement (flat fee payments are included only on the first event covered by the arrangement), (2) there was no charge for a follow-up visit, (3) the provider was never paid directly for services provided by an individual, insurance plan, or other source, (4) charges were included in another bill, or (5) event was paid through government or privately funded research or clinical trials.

4.2 Person-Based Estimates for Outpatient Visits

To enhance analyses of hospital outpatient visits, analysts may link information about outpatient visits 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 (see Section 5 below for more details). Both this file and the full year consolidated file may be used to derive estimates for persons with outpatient 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 outpatient event are represented on this data file. Therefore, the full year consolidated file must be used for person-level analyses that include both persons with and without hospital outpatient 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 minus 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 computing language 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, flat fee, and zero expenditure) are described in Section 2.5.6.

4.4 Variance Estimation (VARSTR, VARPSU)

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. Replicate weights have not been developed for the MEPS data. Instead, 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 variance strata variable is named VARSTR, while the variance PSU variable is named VARPSU. Specifying a "with replacement" design in a computer software package, such as SUDAAN, provides 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 actual number available. For MEPS sample estimates for characteristics generally distributed throughout the country (and thus the sample PSUs), one can expect at least 100 degrees of freedom for the 2010 full year data associated with the corresponding estimates of variance.

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 MEPS data associated with the NHIS sample design used through 2005. Such data can be pooled and the variance strata and PSU variables provided can be used without modification for variance estimation purposes for estimates covering multiple years of data.

As a result of the change in the NHIS sample design in 2006, a new set of variance strata and PSUs have been established for variance estimation purposes for use with MEPS Panel 12 and subsequent MEPS panels. There were 165 variance strata associated with both MEPS Panel 14 and Panel 15, providing a substantial number of degrees of freedom for subgroups as well as the nation as a whole. Each variance stratum contains either two or three variance estimation PSUs.

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 summarizes various scenarios for merging/linking MEPS event files. Each MEPS panel can also be linked back to the previous year's National Health Interview Survey public use data files. For information on obtaining MEPS/NHIS link files please see meps.ahrq.gov/data_stats/more_info_download_data_files.jsp.

5.1 Linking to the Person-Level File

Merging characteristics of interest from other MEPS files (e.g., MEPS 2010 Full Year Consolidated File) expands the scope of potential estimates. For example, to estimate the total number of outpatient visits for persons with specific characteristics (e.g., age, race, sex, and education), population characteristics from a person-level file need to be merged onto the outpatient visit file. This procedure is illustrated below. The MEPS 2010 Appendix File, HC-135I, provides additional detail on how to merge MEPS data files.

1. Create data set PERSX by sorting the Full Year Consolidated file by the person identifier, DUPERSID. Keep only variables to be merged onto the outpatient visit file and DUPERSID.

2. Create data set OPAT by sorting the outpatient visit file by person identifier, DUPERSID.

3. Create final data set NEWOPAT by merging these two files by DUPERSID, keeping only records on the outpatient visit file.

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

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

PROC SORT DATA=OPAT;
    BY DUPERSID;
RUN;

DATA NEWOPAT;
    MERGE OPAT(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 the MEPS event files to the Prescribed Medicine Event File. When using RXLK, data users/analysts should keep in mind that one outpatient event can link to more than one prescribed medicine record. Conversely, a prescribed medicine event may link to more than one outpatient event or different types of events. When this occurs, it is up to the data user/analyst to determine how the prescribed medicine expenditures should be allocated among those medical events. For detailed linking examples, including SAS code, data users/analysts should refer to the MEPS 2010 Appendix File, HC-135I.

5.3 Linking to the Medical Conditions File

The CLNK provides a link from MEPS event files to the 2010 Medical Conditions File. When using the CLNK, data users/analysts should keep in mind that (1) conditions are household-reported, (2) there may be multiple conditions associated with an outpatient visit, and (3) a condition may link to more than one outpatient visit or any other type of visit. Users should also note that not all outpatient visits link to the medical conditions file.

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D. Variable-Source Crosswalk

VARIABLE-SOURCE CROSSWALK

FOR MEPS HC-135F: 2010 OUTPATIENT DEPARTMENT 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
FFEEIDX	Flat Fee ID	CAPI derived
MPCDATA	MPC data flag	Constructed

Outpatient Department Visit Variables

Variable	Description	Source
OPDATEYR	Event date – year	CAPI derived
OPDATEMM	Event date – month	CAPI derived
OPDATEDD	Event date – day	CAPI derived
SEETLKPV	Did person visit provider in person or telephone	OP02
SEEDOC	Did person talk to MD this visit/phone call	OP04
DRSPLTY	OPAT doctor specialty	OP04A
MEDPTYPE	Type of medical person talked to on visit date	OP05
VSTCTGRY	Best category for care person received on visit date	OP07
VSTRELCN	This visit/phone call related to spec condition	OP08
PHYSTH	This visit did person have physical therapy	OP10
OCCUPTH	This visit did person have occupational therapy	OP10
SPEECHTH	This visit did person have speech therapy	OP10
CHEMOTH	This visit did person have chemotherapy	OP10
RADIATTH	This visit did person have radiation therapy	OP10
KIDNEYD	This visit did person have kidney dialysis	OP10

Variable	Description	Source
IVTHER	This visit did person have IV therapy	OP10
DRUGTRT	This visit did person have treatment for drug/alcohol	OP10
RCVSHOT	This visit did person receive an allergy shot	OP10
PSYCHOTH	This visit did person have psychotherapy/counseling	OP10
OTHSHOT	This visit did P have other shot	OP10
LABTEST	This visit did person have lab tests	OP11
SONOGRAM	This visit did person have sonogram or ultrasound	OP11
XRAYS	This visit did person have x-rays	OP11
MAMMOG	This visit did person have a mammogram	OP11
MRI	This visit did person have an MRI/Catscan	OP11
EKG	This visit did person have an EKG or ECG	OP11
EEG	This visit did person have an EEG	OP11
RCVVAC	This visit did person receive a vaccination	OP11
ANESTH	This visit did person receive anesthesia	OP11
THRTSWAB	This visit did P have a throat swab	OP11
OTHSVCE	This visit did person have other diagnostic tests or exams	OP11
SURGPROC	Was surgical procedure performed on person this visit	OP12
MEDPRESC	Any medicine prescribed for person during visit	OP14
OPICD1X	3-digit ICD-9-CM condition code	Edited
OPICD2X	3-digit ICD-9-CM condition code	Edited
OPICD3X	3-digit ICD-9-CM condition code	Edited
OPICD4X	3-digit ICD-9-CM condition code	Edited
OPPRO1X	2-digit ICD-9-CM procedure code	Edited
OPPRO2X	2-digit ICD-9-CM procedure code	Edited
OPCCC1X	Modified Clinical Classification Code	Constructed/ Edited
OPCCC2X	Modified Clinical Classification Code	Constructed/ Edited
OPCCC3X	Modified Clinical Classification Code	Constructed/ Edited
OPCCC4X	Modified Clinical Classification Code	Constructed/ Edited

Flat Fee Variables

Variable	Description	Source
FFOPTYPE	Flat fee bundle	Constructed
FFBEF10	Total # of visits in FF before 2010	FF05
FFTOT11	Total # of visits in FF after 2010	FF10

Imputed Expenditure Variables

Variable	Description	Source
OPXP10X	Total expenditure for event (OPFXP10X+OPDXP10X)	Constructed
OPTC10X	Total charge for event (OPFTC10X+OPDTC10X)	Constructed
OPFSF10X	Facility amount paid, self/family (Imputed)	CP Section (Edited)
OPFMR10X	Facility amount paid, Medicare (Imputed)	CP Section (Edited)
OPFMD10X	Facility amount paid, Medicaid (Imputed)	CP Section (Edited)
OPFPV10X	Facility amount paid, private insurance (Imputed)	CP Section (Edited)
OPFVA10X	Facility amount paid, Veterans/CHAMPVA (Imputed)	CP Section (Edited)
OPFTR10X	Facility amount paid, TRICARE (Imputed)	CP Section (Edited)
OPFOF10X	Facility amount paid, other federal (Imputed)	CP Section (Edited)
OPFSL10X	Facility amount paid, state & local government (Imputed)	CP Section (Edited)
OPFWC10X	Facility amount paid, workers' compensation (Imputed)	CP Section (Edited)
OPFOR10X	Facility amount paid, other private insurance (Imputed)	Constructed
OPFOU10X	Facility amount paid, other public insurance (Imputed)	Constructed
OPFOT10X	Facility amount paid, other insurance (Imputed)	CP Section (Edited)
OPFXP10X	Facility sum payments OPFSF10X –OPFOT10X	Constructed
OPFTC10X	Total facility charge (Imputed)	CP Section (Edited)
OPDSF10X	Doctor amount paid, self/family (Imputed)	Constructed
OPDMR10X	Doctor amount paid, Medicare (Imputed)	Constructed

Variable	Description	Source
OPDMD10X	Doctor amount paid, Medicaid (Imputed)	Constructed
OPDPV10X	Doctor amount paid, private insurance (Imputed)	Constructed
OPDVA10X	Doctor amount paid, Veterans/CHAMPVA (Imputed)	Constructed
OPDTR10X	Doctor amount paid, TRICARE (Imputed)	Constructed
OPDOF10X	Doctor amount paid, other federal (Imputed)	Constructed
OPDSL10X	Doctor amount paid, state & local government (Imputed)	Constructed
OPDWC10X	Doctor amount paid, workers' compensation (Imputed)	Constructed
OPDOR10X	Doctor amount paid, other private insurance (Imputed)	Constructed
OPDOU10X	Doctor amount paid, other public insurance (Imputed)	Constructed
OPDOT10X	Doctor amount paid, other insurance (Imputed)	Constructed
OPDXP10X	Doctor sum payments OPDSF10X –OPDOT10X	Constructed
OPDTC10X	Total doctor charge (Imputed)	Constructed
IMPFLAG	Imputation status	Constructed

Weights

Variable	Description	Source
PERWT10F	Expenditure file person weight, 2010	Constructed
VARSTR	Variance estimation stratum, 2010	Constructed
VARPSU	Variance estimation PSU, 2010	Constructed