

**MEPS HC-094C:
2005 Other Medical Expenses**

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**Agency for Healthcare Research and Quality
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Table of Contents

A. Data Use Agreement	A-1
B. Background	B-1
1.0 Household Component	B-1
2.0 Medical Provider Component.....	B-1
3.0 Survey Management and Data Collection.....	B-2
C. Technical and Programming Information	C-1
1.0 General Information	C-1
2.0 Data File Information	C-3
2.1 Codebook Structure.....	C-4
2.2 Reserved Codes	C-5
2.3 Codebook Format.....	C-5
2.4 Variable Source and Naming Conventions	C-5
2.4.1 Variable-Source Crosswalk	C-5
2.4.2 Expenditure and Source of Payment Variables	C-6
2.5 File Contents	C-7
2.5.1 Survey Administration Variables	C-7
2.5.1.1 Person Identifiers (DUID, PID, DUPERSID)	C-7
2.5.1.2 Record Identifiers (EVNTIDX, FFEEIDX)	C-7
2.5.1.3 Round Indicator (EVENTRN).....	C-7
2.5.1.4 Panel Indicator (PANEL)	C-8
2.5.2 Other Medical Type Variables (OMTYPEX, OMTYPE, OMOTHOS, OMOTHOS)	C-8
2.5.3 Flat Fee Variables (FFEEIDX, FFOMTYPE, FFBEF05, FFTOT06).....	C-9
2.5.3.1 Definition of Flat Fee Payments	C-9
2.5.3.2 Flat Fee Variable Descriptions	C-9
2.5.3.2.1 Flat Fee ID (FFEEIDX).....	C-9
2.5.3.2.2 Flat Fee Type (FFOMTYPE)	C-9
2.5.3.2.3 Counts of Flat Fee Events that Cross Years (FFBEF05, FFTOT06)	C-9
2.5.3.3 Caveats of Flat Fee Groups.....	C-10
2.5.4 Condition, Procedure, and Clinical Classification Codes.....	C-10
2.5.5 Expenditure Data	C-10
2.5.5.1 Definition of Expenditures	C-10
2.5.5.2 Data Editing and Imputation Methodologies of Expenditure Variables	C-11
2.5.5.2.1 General Data Editing Methodology	C-11
2.5.5.2.2 General Hot-Deck Imputation	C-11

2.5.5.2.3 Other Medical Expenses Data Editing and Imputation	C-12
2.5.5.3 Imputation Flag Variable (IMPFLAG).....	C-13
2.5.5.4 Flat Fee Expenditures	C-13
2.5.5.5 Zero Expenditures.....	C-13
2.5.5.6 Sources of Payment	C-14
2.5.5.7 Other Medical Expenditure Variables (OMSF05X-OMTC05X).....	C-15
2.5.5.8 Rounding.....	C-15
3.0 Sample Weight (PERWT05F)	C-15
3.1 Overview	C-15
3.2 Details on Person Weight Construction	C-16
3.2.1 MEPS Panel 9 Weight	C-16
3.2.2 MEPS Panel 10 Weight	C-16
3.2.3 The Final Weight for 2005	C-17
3.2.4 Coverage	C-17
3.3 Using MEPS Data for Trend Analysis	C-18
4.0 Strategies for Estimation	C-18
4.1 Basic Estimates of Utilization, Expenditures, and Sources of Payment	C-18
4.1.1 Type of records on file (OMTYPEX).....	C-19
4.2 Variables with Missing Values	C-20
4.3 Variance Estimation (VARPSU, VARSTR).....	C-20
5.0 Merging/Linking MEPS Data Files.....	C-21
5.1 Linking to the Person-Level File.....	C-21
5.2 Linking to the Prescribed Medicines File.....	C-22
5.3 Linking to the Medical Conditions File.....	C-23
5.4 Pooling Annual Files	C-23
5.5 Longitudinal Analysis.....	C-23
References.....	C-24
D. Variable-Source Crosswalk	D-1

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. MEPS oversamples additional policy relevant sub-groups such as Asians and 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. 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: www.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.

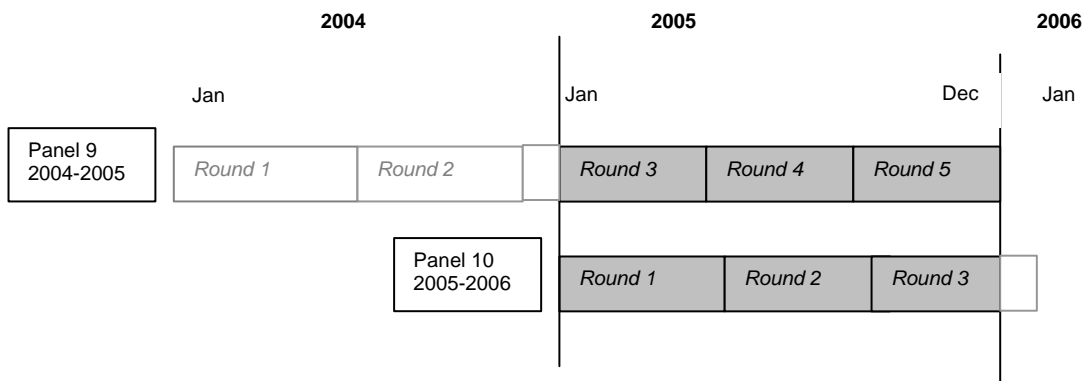
Additional information on MEPS is available from the MEPS project manager or the MEPS public use data manager at the Center for Financing Access and Cost Trends, Agency for Healthcare Research and Quality, 540 Gaither Road, Rockville, MD 20850 (301-427-1406).

C. Technical and Programming Information

1.0 General Information

This documentation describes one in a series of public use event files from the 2005 Medical Expenditure Panel Survey (MEPS) Household Component (HC). Released as an ASCII data file (with related SAS and SPSS programming statements) and a SAS transport file, the 2005 Other Medical public use event file provides information on the purchases of and expenditures for visual aids, medical equipment, supplies, and other medical items for a nationally representative sample of the civilian noninstitutionalized population of the United States. Data from the Other Medical event file can be used to make estimates of the Other Medical event expenditures associated with medical items for calendar year 2005. The purchase of medical equipment, supplies, and other medical items is based entirely on household reports. They were not included in the Medical Provider Component (MPC); therefore, all expenditure and payment data on the Other Medical event file are reported by the household.

This file contains 31 variables and has a logical record length of 217 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 2005 portion of Round 3, and Rounds 4 and 5 for Panel 9, as well as Rounds 1, 2, and the 2005 portion of Round 3 for Panel 10 (i.e., the rounds for the MEPS panels covering calendar year 2005).



The Other Medical event file contains one record for each type of medical item reported as being purchased or otherwise obtained by the household respondent during the specified reference period. It should be noted that reference periods for reporting expenditures vary by type of medical item obtained. Expenditure data for visual aids are collected during Rounds 3, 4, and 5 of Panel 9 and Rounds 1, 2 and 3 of Panel 10. Therefore, each round is a reference period for purchases of visual aids. Expenditure data for other medical items, which include ambulance services, orthopedic items, hearing devices, prostheses, bathroom aides, medical equipment, disposable supplies, and home alterations are collected only in Rounds 5 (Panel 9) and 3 (Panel 10); for these items, the reference period is the entire year. A record can represent one or more purchases of an

item or service during a reference period. For example, expenditures for glasses and contact lenses are asked every round. If a respondent reported spending \$400 for glasses and/or contact lenses in Round 2, it is unknown if the person purchased one or more pair of glasses and/or contact lenses during that round. Similarly, if \$800 were spent for ambulance services (which has a reference period of a year), it is not known if the respondent used an ambulance once or more than once during the year.

Following is a summary of other medical expense categories included in this file:

Other medical events in file collected every round

- Glasses and contact lenses

Other medical events in file collected once a year

- Ambulance services
- Orthopedic items (such as corrective shoes or inserts, braces, crutches, canes, walkers, wheelchairs, and scooters)
- Hearing devices (such as hearing aids, amplifiers for a telephone, adaptive speech equipment, and speech synthesizers)
- Prostheses (such as artificial limbs)
- Bathroom aids (such as portable commodes, raised toilet seats, portable tub seats, and handrails)
- Medical equipment (such as hospital beds, lifts, monitors, special chairs, oxygen, bed pans, adaptive feeding equipment, vaporizers or nebulizers, and blood pressure monitors)
- Disposable Supplies (such as ostomy supplies, bandages, dressings, tape, diapers, catheters, syringes, and IV supplies)
- Home alterations and modifications (such as ramps, handrails, elevators, and automobile modifications)
- Any other medical item

Records for purchases of insulin and diabetic supplies in a round were included in the Other Medical Expenses event files for 1996-2004. Beginning with the 2005 file, it was decided to exclude these records from the Other Medical Expenses file since the expenditures have always been included on the Prescribed Medicines file. The Prescribed Medicines file is a more appropriate source for estimates of both utilization and expenditures for insulin and diabetic supplies. As a consequence, there are no records on this file where the variable OMTYPEX = 2 or 3 (the values used in 1996-2004 to identify records for purchases of insulin and diabetic supplies, respectively).

Data from this event file can be merged with other 2005 MEPS HC data files for the purpose of appending person-level data, such as demographic characteristics or health insurance coverage, to each other medical record.

This file can also be used to construct summary variables of expenditures, source of payment, and related aspects of the purchase of medical items. Aggregate annual person-level information on expenditures for other medical equipment is provided on the MEPS 2005 Full Year Consolidated Data File where each record represents a MEPS sampled person. This aggregate information is provided for vision aids only and not other types of other medical equipment.

The following 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

For more information on MEPS HC survey design, see S. Cohen, 1997; J. Cohen, 1997; and S. Cohen, 1996. A copy of the MEPS HC survey instrument used to collect the information on the dental file is available on the MEPS Web site at the following address: www.meps.ahrq.gov.

2.0 Data File Information

The 2005 Other Medical Expenses public use data set consists of one event-level data file. The file contains characteristics associated with the Other Medical event and imputed expenditure data.

The 2005 Other Medical public use data set contains 7,640 other medical expenditure records; of these records, 7,425 are associated with persons having a positive person-level weight (PERWT05F). This file includes records for all household survey respondents who resided in eligible responding households and reported purchasing or otherwise obtaining at least one type of medical item, such as medical equipment, glasses, hearing devices, etc., during calendar year 2005. Some household respondents may have reported obtaining more than one type of medical item and, therefore, have several records on this file. Likewise, respondents who did not report obtaining a medical item in 2005 have no records on this file. These data were collected during the 2005 portion of Round 3, and Rounds 4 and 5 for Panel 9, as well as Rounds 1, 2, and the 2005 portion of Round 3 for Panel 10 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 2005 eligibility (i.e., persons with a positive 2005 full-year person-level weight ($PERWT05F > 0$)), or
- b) Be an eligible member of a family all of whose key in-scope members have a positive person-level weight ($PERWT05F > 0$). (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 ($FAMWT05F > 0$). Note that $FAMIDYR$ and $FAMWT05F$ are variables on the 2005 Population Characteristics file.

Persons with no other medical events for 2005 are not included on this event-level OM file but are represented on the person-level 2005 Full Year Population Characteristics file.

Each record includes the following: type of medical item obtained; flat fee information; imputed sources of payment; total payment and total charge for the medical item; and a full-year person-level weight.

Data from this file can be merged with the MEPS 2005 Full Year Population Characteristics File using the person identifier, $DUPERSID$, to append person-level information, such as demographic or health insurance characteristics, to each record. Please see section 5.0 for details on how to merge MEPS data files.

2.1 Codebook Structure

For each variable on the Other Medical event 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 identifier
- Unique other medical expenses identifier
- Type of other medical expenses
- Imputed expenditure variables
- Weight and variance estimation variables

Note that the person identifier is unique within this data year. See the section on pooling annual files, 5.3, for details.

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: www.meps.ahrq.gov/survey_comp/survey_questionnaires.jsp).

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

2.4.1 Variable-Source Crosswalk

Variables were derived from the HC survey questionnaire 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
 - FF – Flat Fee 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 12 source of payment 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

In the case of the 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	OR - other private
TR – TRICARE/CHAMPVA	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 (05). The seventh character, “X”, indicates whether the variable is edited/imputed.

For example, OMSF05X is the edited/imputed amount paid by self or family for 2005 other medical equipment and 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 2005 Full Year Population Characteristics File.

2.5.1.2 Record Identifiers (EVNTIDX, FFEEIDX)

EVNTIDX uniquely identifies each other medical expense event (i.e., each record on the OME file) and is the variable required to link other medical events to data files containing details on prescribed medicines (MEPS 2005 Prescribed Medicines File). For details on linking, see Section 5.0, or the MEPS 2005 Appendix File, HC-094I.

FFEEIDX is a constructed variable that uniquely identifies a flat fee group, that is, all events that were part of a flat fee payment. FFEEIDX identifies a flat fee payment that was identified using information from the Household Component.

2.5.1.3 Round Indicator (EVENTRN)

EVENTRN indicates the round in which the other medical event was reported. For most types of other medical expenditures on this file, data were collected only in Round 5 for Panel 9 and Round 3 for Panel 10; each record represents a summary of expenditures for items purchased or otherwise obtained for 2005. There is one exception:

Expenditure data for the purchase of glasses and/or contact lenses were collected in Rounds 3, 4, and 5 for Panel 9 and Rounds 1, 2, and 3 for Panel 10. For vision items purchased in Round 3 for Panel 10, it could not be determined if the purchases occurred in 2005 or 2006. Therefore, records with expenses reported in Round 3 were only included if the number of glasses purchased in 2005 was greater than or equal to the number of purchases in 2006.

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 9 or Panel 10 for each person on the file. Panel 9 is the panel that started in 2004, and Panel 10 is the panel that started in 2005.

2.5.2 Other Medical Type Variables (OMTYPEX, OMTYPE, OMOTHOS, OMOTHOS)

Other medical expenditures (OMTYPE) include glasses or contact lenses, ambulance services, orthopedic items, hearing devices, prostheses, bathroom aids, medical equipment, disposable supplies, and alterations/modifications (to homes). When the interviewer did not know how to categorize types of medical item expenditures, these items were specified in the variable OMOTHOS (OMTYPE other specify). As a part of the editing process, other medical expenditures identified in OMOTHOS have been edited to appropriate OMTYPE categories. The edited (OMTYPEX, OMOTHOS) and unedited (OMTYPE, OMOTHOS) versions of both of these variables are included on this file.

Records for purchases of insulin and diabetic supplies in a round were included in the Other Medical Expenses event files for 1996-2004. Beginning with the 2005 file, it was decided to exclude these records from the Other Medical Expenses file since the expenditures have always been included on the Prescribed Medicines file. The Prescribed Medicines file is a more appropriate source for estimates of both utilization and expenditures for insulin and diabetic supplies. As a consequence, there are no records on this file where the variable OMTYPEX = 2 or 3 (the values used in 1996-2004 to identify records for purchases of insulin and diabetic supplies, respectively).

Other Medical Expenses Event File 1996- 2004 (OMTYPEX)	Other Medical Expenses Event File 2005 and up (OMTYPEX)
1 = Glasses or Contact Lenses	1 = Glasses or Contact Lenses
2 = Insulin	2 = not used
3 = Diabetic Equipment/Supplies	3 = not used
4 = Ambulance Services	4 = Ambulance Services
5 = Orthopedic Items	5 = Orthopedic Items
6 = Hearing Devices	6 = Hearing Devices
7 = Prosthesis	7 = Prosthesis
8 = Bathroom Aids	8 = Bathroom Aids
9 = Medical Equipment	9 = Medical Equipment
10 = Disposable Supplies	10 = Disposable Supplies
11 = Alterations/modifications	11 = Alterations/modifications
91 = Other	91 = Other

2.5.3 Flat Fee Variables (FFEEIDX, FFOMTYPE, FFBEF05, FFTOT06)

2.5.3.1 Definition of Flat Fee Payments

A flat fee is the fixed dollar amount a person is charged for a package of services provided during a defined period of time. A flat fee group is the set of medical services that are covered under the same flat fee payment. The flat fee groups represented on the Other Medical file include flat fee groups where at least one of the other medical events, as reported by the HC respondent, occurred during 2005. By definition, a flat fee group can span multiple years. Furthermore, a single person can have multiple flat fee groups.

2.5.3.2 Flat Fee Variable Descriptions

2.5.3.2.1 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 2005 MEPS event file, every event that is 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 none of the flat fee variables are on those event files.

2.5.3.2.2 Flat Fee Type (FFOMTYPE)

FFOMTYPE indicates whether the 2005 other medical expenditure is the “stem” or “leaf” of a flat fee group. A stem (records with FFOMTYPE = 1) is the initial other medical service event, which is followed by other medical expense events that are covered under the same flat fee payment. The leaves of the flat fee group (records with FFOMTYPE = 2) are those other medical events that are tied back to the initial event (the stem) in the flat fee group. These “leaf” records have their expenditure variables set to zero. For the other medical events that are not part of a flat fee payment, the FFOMTYPE is set to -1, “INAPPLICABLE”.

2.5.3.2.3 Counts of Flat Fee Events that Cross Years (FFBEF05, FFTOT06)

As described in Section 2.5.3.1, a flat fee payment covers multiple events and the multiple events could span multiple years. For situations where the medical item was obtained in 2005 as part of a group of events, and some of the events occurred before or after 2005, counts of the known events are provided on the other medical record. Variables that indicate events occurring before or after 2005 are the following:

FFBEF05 – indicates total number of 2004 events in the same flat fee group as the medical item that was obtained in 2005. This count would not include the medical item obtained in 2005.

FFTOT06 – indicates the number of 2006 medical events, including the purchase of any additional medical items, expected to be in the same flat fee group as the medical item obtained in 2005.

If there are no 2004 events on the file, FFBEF05 will be omitted. Likewise, if there are no 2006 events on the file, FFTOT06 will be omitted. If there are no flat fee data related to the records in this file, FFEEIDX and FFOMTYPE will be omitted as well. Please note that the crosswalk in this document lists all possible flat fee variables.

2.5.3.3 Caveats of Flat Fee Groups

Data users/analysts should note that flat fee payments are not common on the Other Medical file. There are only 25 records 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 2005, but the remaining visits that were part of this flat fee group occurred in 2006. In this case, the 2005 flat fee group represented on this file would consist of one event (the stem). The 2006 “leaf 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 2004 but subsequent visits occurred during 2005. In this case, the initial visit would not be represented on the file. This 2005 flat fee group would then only consist of one or more leaf records and no stem.

2.5.4 Condition, Procedure, and Clinical Classification Codes

Conditions data are not collected for Other Medical events; therefore, this file cannot be linked to the Conditions File.

2.5.5 Expenditure Data

2.5.5.1 Definition of Expenditures

Expenditures on this file refer to what is paid for the medical item. More specifically, expenditures in MEPS are defined as the sum of payments for each medical item that was obtained, 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 this 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., 2000). AHRQ has developed factors to apply to the 1987 NMES expenditure data to facilitate longitudinal analysis. These factors can be assessed via the CFACT data center. For more information see the Data Center section of the MEPS Web site at www.meps.ahrq.gov/data_stats/onsite_datacenter.jsp. If examining trends in MEPS expenditures or performing longitudinal analysis on MEPS expenditures, please refer to section C, sub-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. The MPC did not include either the dental events or other medical expenditures (such as glasses, contact lenses, and hearing devices). Therefore, although the general procedures remain the same for dental and other medical expenditures, editing and imputation methodologies were applied only to household-reported data. Please see below for details on the differences between these editing/imputation methodologies. Separate imputations were performed for flat fee and simple events, as well.

2.5.5.2.1 General Data Editing Methodology

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

2.5.5.2.2 General Hot-Deck Imputation

A weighted sequential hot-deck procedure was used to impute for missing expenditures, as well as total charge. This procedure uses survey data from respondents to replace missing data, while taking into account the respondents’ weighted distribution in the imputation process. Classification variables vary by event type in the hot-deck imputations, but total charge and insurance coverage are key variables in all of the imputations. Separate imputations were performed for nine categories of medical

provider care: inpatient hospital stays, outpatient hospital department visits, emergency room visits, visits to physicians, visits to non-physician providers, dental services, home health care by certified providers, home health care by paid independents, and other medical expenses. Within each file, separate imputations were performed for flat fee and simple events. After the imputations were finished, visits to physician and non-physician providers were combined into a single medical provider file. The two categories of home care also were combined into a single home health file.

2.5.5.2.3 Other Medical Expenses Data Editing and Imputation

Expenditures on other medical equipment and services were developed in a sequence of logical edits and imputations. The household edits were used to correct obvious errors in the reporting of expenditures, and to identify actual and potential sources of payments. Some of the edits were global (i.e., applied to all events). Others were hierarchical and mutually exclusive. 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 each covered by a single charge (i.e., simple events). Other medical services were imputed as flat fee events if the charges covered a package of health care services (e.g., optical), and all of the services were part of the same event type (i.e., a pure bundle). If a bundle contained any OM events with any other types of events, the services were treated as simple events in the imputations (See Section 2.5.3 for more detail on the definition and imputation of events in flat fee bundles.)

Logical edits were used to sort each event into a specific category for the imputations. Events with complete expenditures were flagged as potential donors for the hot-deck 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 nine recipient categories for events with missing data. Eight of the categories were for events with a common pattern of missing data and a primary payer other than Medicaid. Medicaid events were imputed separately because persons on Medicaid rarely know the provider's charge for services or the amount paid by the state Medicaid program. As a result, the total charge for Medicaid-covered services was imputed and discounted to reflect the amount that a state program might pay for the care. Separate hot-deck imputations were used to impute missing data in each of the other eight recipient categories. 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) is not represented among incomplete events (recipients).

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 (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 (not applicable to OM events)

IMPFLAG=3 fully imputed

IMPFLAG=4 partially imputed

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

2.5.5.4 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 payments. Thus, if the first visit in the flat fee group occurred prior to 2005, all of the events that occurred in 2005 will have zero payments. Conversely, if the first event in the flat fee group occurred at the end of 2005, the total expenditure for the entire flat fee group will be on that event, regardless of the number of events it covered after 2005. See section 2.5.3 for details on the flat fee variables.

2.5.5.5 Zero Expenditures

Some respondents reported obtaining medical items where the payments were zero. This could occur for several reasons including (1) item or service was free, (2) bad debt was incurred, or (3) the item was covered under a flat fee arrangement beginning in an earlier year. 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.

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 (self) or family,
2. Medicare,
3. Medicaid,
4. Private Insurance,
5. Veterans Administration, excluding TRICARE/CHAMPVA,
6. TRICARE/CHAMPVA,
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 insurances, 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 Other Medical Expenditure Variables (OMSF05X-OMTC05X)

Other medical expenditure data were obtained only through the Household Component Survey. For cases with missing expenditure data, other medical expenditures were imputed using the procedures described above.

OMSF05X - OMOT05X are the 12 sources of payment. OMTC05X is the total charge, and OMXP05X is the sum of the 12 sources of payment for the other medical expenditures. The 12 source of payment are: self/family (OMSF05X), Medicare (OMMR05X), Medicaid (OMMD05X), private insurance (OMPV05X), Veterans Administration (OMVA05X), TRICARE/CHAMPVA (OMTR05X), other Federal sources (OMOF05X), State and Local (non-federal) government sources (OMSL05X), Workers' Compensation (OMWC05X), other private insurance (OMOR05X), other public insurance (OMOU05X), and other insurance (OMOT05X).

2.5.5.8 Rounding

Expenditure variables on the 2005 other medical file have been rounded to the nearest penny. Person-level expenditure information released on the MEPS 2005 Person-Level Expenditure File will be rounded to the nearest dollar. It should be noted that using the MEPS 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 2005 Appendix File, HC-094I, for details on rounding differences.

3.0 Sample Weight (PERWT05F)

3.1 Overview

There is a single full year person-level weight (PERWT05F) 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 2005. A key person either was a member of an NHIS household at the time of the NHIS interview, or became a member of 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 persons returning from military service, an institution, or living outside the United States). 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 PERWT05F was developed in several stages. Person-level weights for Panels 9 and 10 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, non-Hispanic with black as sole reported race, non-Hispanic with Asian as sole reported race, and other); sex; and age. A 2005 composite weight was then formed by multiplying each weight from Panel 9 by the factor .5 and each weight from Panel 10 by the factor .5. 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.

3.2.1 MEPS Panel 9 Weight

The person-level weight for MEPS Panel 9 was developed using the 2004 full year weight for an individual as a “base” weight for survey participants present in 2004. For key, in-scope respondents who joined an RU some time in 2005 after being out-of-scope in 2004, the 2004 family weight associated with the family the person joined served as a “base” weight. The weighting process included an adjustment for nonresponse over Rounds 4 and 5 as well as raking to population control figures for December 2005. These control figures were derived by scaling back the population totals obtained from the March 2005 CPS to correspond to a national estimate for the civilian noninstitutionalized population provided by the Census Bureau for December 2005. 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 but non-Hispanic, Asian but non-Hispanic, and other); sex; and age. Overall, the weighted population estimate for the civilian noninstitutionalized population on December 31, 2005 is 292,372,718. Key, responding persons not in-scope on December 31, 2005 but in-scope earlier in the year retained, as their final Panel 9 weight, the weight after the nonresponse adjustment.

3.2.2 MEPS Panel 10 Weight

The person-level weight for MEPS Panel 10 was developed using the MEPS Round 1 person-level weight as a “base” weight. For key, in-scope respondents 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 2005 portion of Round 3 as well as raking to the same population control figures for December 2005 used for the MEPS Panel 9 weights. The same five variables employed for Panel 9 raking (census region, MSA status, race/ethnicity, sex, and age) were used for Panel 10 raking. Similarly, for Panel 10, key, responding persons not in-scope on December 31, 2005 but in-scope earlier in the year retained, as their final Panel 10 weight, the weight after the nonresponse adjustment.

Note that the MEPS Round 1 weights (for both panels with one exception as noted below) 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 2005 CPS data base.

3.2.3 The Final Weight for 2005

Variables used in the establishment of person-level control figures included: poverty status (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); census region (Northeast, Midwest, South, West); MSA status (MSA, non-MSA); race/ethnicity (Hispanic, non-Hispanic with black as sole reported race, non-Hispanic with Asian as sole reported race, and other); sex; and age. Overall, the weighted population estimate for the civilian noninstitutionalized population for December 31, 2005 is 292,372,718 (PERWT05F>0 and INSC1231=1). The weights of some persons out-of-scope on December 31, 2005 were also calibrated, this time using poststratification. Specifically, the weights of persons out-of-scope on December 31, 2005 who were in-scope some time during the year and also entered a nursing home during the year were poststratified to a corresponding control total obtained from the 1996 MEPS Nursing Home Component. The weights of persons who died while in-scope during 2005 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 control totals were developed for the “65 and older” and “under 65” civilian noninstitutionalized populations. The sum of the person-level weights across all persons assigned a positive person level weight is 292,372,718.

3.2.4 Coverage

The target population for MEPS in this file is the 2005 U.S. civilian noninstitutionalized population. However, the MEPS sampled households are a subsample of the NHIS households interviewed in 2003 (Panel 9) and 2004 (Panel 10). New households created after the NHIS interviews for the respective Panels and consisting exclusively of persons who entered the target population after 2003 (Panel 9) or after 2004 (Panel 10) 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 may wish to consider using techniques to smooth or stabilize analyses of trends using MEPS data such as 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. Without making appropriate allowance for multiple comparisons, undertaking numerous statistical significance tests of trends increases the likelihood of inappropriately concluding that a change has taken place.

4.0 Strategies for Estimation

This file is constructed for estimation of utilization, expenditures, and sources of payment for other medical expenditures and to allow for estimates for the number of persons who obtained medical items in 2005.

4.1 Basic Estimates of Utilization, Expenditures, and Sources of Payment

In contrast to the other types of event files, the unit and/or period of time covered are not consistent across all records within this file. More specifically, this file contains round-specific expenditure data on purchases of eyeglasses or contact lenses and annual data on certain other types of medical equipment, supplies, and services (see description below and OMTYPEX variable in codebook for more details). Data are not collected on the actual number of purchases of the items/services represented on this file, so it is not possible to estimate the average expenditure per unit of service.

4.1.1 Type of records on file (OMTYPEX)

Records for purchases of insulin and diabetic supplies were included in the Other Medical Expenses event files for 1996-2004. Beginning with the 2005 file, it was decided to exclude these records from the Other Medical Expenses file since the expenditures have always been included on the Prescribed Medicines file. The Prescribed Medicines file is a more appropriate source for estimates of both utilization and expenditures for insulin and diabetic supplies. As a consequence, there are no records on this file where the variable OMTYPEX=2 or 3 (the values used in 1996-2004 to identify records for purchases of insulin and diabetic supplies, respectively).

Eyeglasses and contact lenses: Each record on this file where OMTYPEX=1 contains information on total expenditures during a specific round for eyeglasses and/or contact lenses (a maximum of 3 records for a sample person). Variables for annual expenditure data for eyeglasses/contact lenses (obtained by cumulating across round specific data in this file) are included on the annual full-year consolidated file.

Other medical equipment, supplies and services: Each of the records in this file where OMTYPEX does not equal 1 contains person-specific information on annual expenditures for a specific category of medical equipment and supplies asked about in the survey. Estimates of the total number of persons with expenditures for an item during the year are the sum of the weight variable (PERWT05F) across relevant records (e.g., for ambulance services, records where OMTYPEX=4). Estimates of expenditure variables must be weighted by PERWT05F to be nationally representative. For example, the estimate for the total expenditures for ambulance services paid out of pocket is produced by summing the product of the variables PERWT05F and OMSF05X across all the events in the file where OMTYPEX=4 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):

$\sum W_j X_j$, where

$W_j = \text{PERWT05F}_j$ (full year weight for the person associated with event j) and

$X_j = \text{OMSF05X}_j$ (amount paid by self/family for event j) where
OMTYPEX = 4.

The estimate for the total annual expenditures for ambulance services paid out of pocket per person with that type of expenses is produced 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):

$$\frac{\sum W_j X_j}{\sum W_j}, \text{ where}$$

$W_j = \text{PERWT05F}_j$ (full year weight for the person associated with event j) and

$X_j = \text{OMSF05X}_j$ (amount paid by self/family for event j) where $\text{OMTYPEX} = 4$.

This type of estimate and corresponding standard error (SE) can be derived using an appropriate computer software package for complex survey analysis such as SAS, Stata, SUDAAN or SPSS (www.meeps.ahrq.gov/survey_comp/standard_errors.jsp). Variables are contained on the full year annual file for aggregate expenditures across all of these types of services/items ($\text{OMTYPEX}=4-11$ or 91), but it is necessary to use this file to produce an annual estimate for a specific category of service. Small sample sizes make it advisable to pool multiple years of MEPS data to produce statistically reliable estimates for some of the items.

4.2 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 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 expenditures) are described in Section 2.5.4.

4.3 Variance Estimation (VARPSU, VARSTR)

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

and sex), population characteristics from a person-level file need to be merged onto the Other Medical event file. This procedure is shown below. The MEPS 2005 Appendix File, HC-094I, provides additional details on how to merge other MEPS data files.

1. Create data set PERSX by sorting the 2005 Full Year Population Characteristics File, by the person identifier, DUPERSID. Keep only variables to be merged onto the other medical events file and DUPERSID.
2. Create data set OMEXP by sorting the other medical event file by person identifier, DUPERSID.
3. Create final data set NEWOME by merging these two files by DUPERSID, keeping only records on the other medical event 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=OMEXP;
  BY DUPERSID;
RUN;

DATA NEWOME;
  MERGE OMEXP (IN=A) PERSX(IN=B);
  BY DUPERSID;
  IF A;
RUN;
```

5.2 Linking to the Prescribed Medicines File

The RXLK provides a link from 2005 MEPS event files to the 2005 Prescribed Medicines File. Because prescribed medicines data are not collected for other medical event types included on this file, this Other Medical File cannot be linked to the 2005 Prescribed Medicines File.

5.3 Linking to the Medical Conditions File

Conditions data are not collected for Other Medical events; therefore, this file cannot be linked to the Conditions File.

5.4 Pooling Annual Files

To facilitate analysis of subpopulations and/or low prevalence events, it may be desirable to pool together more than one year of data to yield sample sizes large enough to generate reliable estimates. For more details on pooling MEPS data files see

www.meps.ahrq.gov/data_stats/download_data_files_detail.jsp?cboPufNumber=HC-036.

Starting in Panel 9, values for DUPERSID from previous panels will occasionally be re-used. Therefore, it is necessary to use the panel variable (PANEL) in combination with DUPERSID to ensure unique person-level identifiers across panels. Creating unique records in this manner is advised when pooling MEPS data across multiple annual files that have one or more identical values for DUPERSID.

5.5 Longitudinal Analysis

MEPS Panel Longitudinal Weight files containing estimation variables to facilitate longitudinal analysis are available for downloading in the data section of the MEPS Web site.

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D. Variable-Source Crosswalk

VARIABLE-SOURCE CROSSWALK

FOR MEPS HC-094C: 2005 OTHER MEDICAL EXPENSES

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

Other Medical Events Variables

Variable	Description	Source
OMTYPEX	Other medical expense type – edited	EV03 (edited)
OMTYPE	Other medical expense type	EV03
OMOTHOX	OMTYPE other specify – edited	EV03A (edited)
OMOTHOS	OMTYPE other specify	EV03A

Flat Fee Variables

Variable	Description	Source
FFOMTYPE	Flat Fee Bundle	Constructed
FFBEF05	Total # of visits in FF before 2005	FF05
FFTOT06	Total # of visits in FF after 2005	FF10

Imputed Expenditure Variables

Variable	Description	Source
OMSF05X	Amount paid, family (Imputed)	CP Section (Edited)
OMMR05X	Amount paid, Medicare (Imputed)	CP Section (Edited)
OMMD05X	Amount paid, Medicaid (Imputed)	CP Section (Edited)
OMPV05X	Amount paid, private insurance (Imputed)	CP Section (Edited)
OMVA05X	Amount paid, Veterans Administration (Imputed)	CP Section (Edited)
OMTR05X	Amount paid, TRICARE/CHAMPVA (Imputed)	CP Section (Edited)
OMOF05X	Amount paid, other federal (Imputed)	CP Section (Edited)
OMSL05X	Amount paid, state & local government (Imputed)	CP Section (Edited)
OMWC05X	Amount paid, workers' compensation (Imputed)	CP Section (Edited)
OMOR05X	Amount paid, other private insurance (Imputed)	Constructed
OMOU05X	Amount paid, other public insurance (Imputed)	Constructed
OMOT05X	Amount paid, other insurance (Imputed)	CP Section (Edited)
OMXP05X	Sum of OMSF05X–OMOT05X (Imputed)	Constructed
OMTC05X	Household reported total charge (Imputed)	CP Section (Edited)
IMPFLAG	Imputation status	Constructed

Weights

Variable	Description	Source
PERWT05F	Expenditure file person weight, 2005	Constructed
VARSTR	Variance estimation stratum, 2005	Constructed
VARPSU	Variance estimation PSU, 2005	Constructed