

**MEPS HC-051C:  
2000 Other Medical Expenses**

**February 2003**

**Agency for Healthcare Research and Quality  
Center for Cost and Financing Studies**

## 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-2
3.0 Insurance Component.....	B-2
4.0 Survey Management.....	B-3
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-4
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-6
2.5.1 Survey Administration Variables .....	C-6
2.5.1.1 Person Identifiers (DUID, PID, DUPERSID) .....	C-6
2.5.1.2 Record Identifiers (EVNTIDX, FFEEIDX) .....	C-7
2.5.1.3 Round Indicator (EVENTRN).....	C-7
2.5.2 Other Medical Expense Event Variables (OMTYPEX, OMTYPE, OMOTHOX, OMOTHOS).....	C-7
2.5.3 Flat Fee Variables .....	C-8
2.5.3.1 Definition of Flat Fee Payments .....	C-8
2.5.3.2 Flat Fee Variable Descriptions .....	C-8
2.5.3.2.1 Flat Fee ID (FFEEIDX).....	C-8
2.5.3.2.2 Flat Fee Type (FFOMTYPE) .....	C-8
2.5.3.2.3 Counts of Flat Fee Events that Cross Years (FFBEF00, FFTOT01) .....	C-9
2.5.3.3 Caveats of Flat Fee Groups.....	C-9
2.5.4 Expenditure Data .....	C-9
2.5.4.1 Definition of Expenditures .....	C-9
2.5.4.2 Data Editing and Imputation Methodologies of Expenditure Variables .....	C-10
2.5.4.2.1 General Data Editing Methodology .....	C-10
2.5.4.2.2 General Hot-Deck Imputation .....	C-11
2.5.4.2.3 Other Medical Expenses Data Editing and Imputation .....	C-11

2.5.4.3 Imputation Flag Variable (IMPFLAG).....	C-12
2.5.4.4 Flat Fee Expenditures .....	C-13
2.5.4.5 Zero Expenditures.....	C-13
2.5.4.6 Sources of Payment .....	C-13
2.5.4.7 Other Medical Expenses Variables (OMSF00X-OMTC00X) ....	C-14
2.5.4.8 Rounding.....	C-15
3.0 Sample Weight (PERWT00F) .....	C-15
3.1 Overview .....	C-15
3.2 Details on Person Weight Construction .....	C-15
3.2.1 MEPS Panel 4 Weight .....	C-16
3.2.2 MEPS Panel 5 Weight .....	C-16
3.2.3 The Final Weight for 2000 .....	C-17
3.2.4 Coverage.....	C-17
4.0 Strategies for Estimation .....	C-17
4.1 Variables with Missing Values .....	C-18
4.2 Basic Estimates of Utilization, Expenditures, and Sources of Payment .....	C-18
4.3 Estimates of the Number of Persons with Other Medical Expense Events .....	C-19
4.4 Person-Based Ratio Estimates.....	C-20
4.4.1 Person-Based Ratio Estimates Relative to Persons with Other Medical Expense Events.....	C-20
4.4.2 Person-Based Ratio Estimates Relative to the Entire Population.....	C-20
4.5 Sampling Weights for Merging Previous Releases of MEPS Household Data with this Event File.....	C-21
4.6 Variance Estimation (VARPSU00, VARSTR00).....	C-21
5.0 Merging/Linking MEPS Data Files.....	C-22
5.1 Merging a Person-Level File to the Other Medical Expenses File .....	C-22
5.2 Linking the 2000 Other Medical Expenses File to the 2000 Prescribed Medicine File.....	C-23
5.2.1 Limitations/Caveats of RXLK (the Prescribed Medicine Link File) .....	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 18 U.S.C. 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**

The Medical Expenditure Panel Survey (MEPS) provides nationally representative estimates of health care use, expenditures, sources of payment, and insurance coverage for the U.S. civilian noninstitutionalized population. MEPS is cosponsored by the Agency for Healthcare Research and Quality (AHRQ) and the National Center for Health Statistics (NCHS).

MEPS is a family of three surveys. The Household Component (HC) is the core survey and forms the basis for the Medical Provider Component (MPC) and part of the Insurance Component (IC). Together these surveys yield comprehensive data that provide national estimates of the level and distribution of health care use and expenditures, support health services research, and can be used to assess health care policy implications.

MEPS is the third in a series of national probability surveys conducted by AHRQ on the financing and use of medical care in the United States. The National Medical Care Expenditure Survey (NMCES, also known as NMES-1) was conducted in 1977 and the National Medical Expenditure Survey (NMES-2) in 1987. Since 1996, MEPS continues this series with design enhancements and efficiencies that provide a more current data resource to capture the changing dynamics of the health care delivery and insurance systems.

The design efficiencies incorporated into MEPS are in accordance with the Department of Health and Human Services (DHHS) Survey Integration Plan of June 1995, which focused on consolidating DHHS surveys, achieving cost efficiencies, reducing respondent burden, and enhancing analytical capacities. To advance these goals, MEPS includes linkage with the National Health Interview Survey (NHIS) - a survey conducted by NCHS from which the sample for the MEPS HC is drawn - and enhanced longitudinal data collection for core survey components. The MEPS HC augments NHIS by selecting a sample of NHIS respondents, collecting additional data on their health care expenditures, and linking these data with additional information collected from the respondents' medical providers, employers, and insurance providers.

### **1.0 Household Component**

The MEPS HC, a nationally representative survey of the U.S. civilian noninstitutionalized population, collects medical expenditure data at both the person and household levels. The HC collects detailed data on demographic characteristics, health conditions, health status, use of medical care services, charges and payments, access to care, satisfaction with care, health insurance coverage, income, and employment.

The HC uses an overlapping panel design in which data are collected through a preliminary contact followed by a series of five rounds of interviews over a 2 ½-year period. Using computer-assisted personal interviewing (CAPI) technology, data on medical expenditures and use for two calendar years are collected from each household. This series of data collection rounds is launched each subsequent year on a new sample of households to provide overlapping panels of survey data and, when combined with other ongoing panels, will provide continuous and current estimates of health care expenditures.

The sampling frame for the MEPS HC is drawn from respondents to NHIS. NHIS provides a nationally representative sample of the U.S. civilian noninstitutionalized population, with oversampling of Hispanics and blacks.

## **2.0 Medical Provider Component**

The MEPS MPC supplements and/or replaces information on medical care events reported in the MEPS HC by contacting medical providers and pharmacies identified by household respondents. The MPC sample includes all home health agencies and pharmacies reported by HC respondents. Office-based physicians, hospitals, and hospital physicians are also included in the MPC but may be subsampled at various rates, depending on burden and resources, in certain years.

Data are collected on medical and financial characteristics of medical and pharmacy events reported by HC respondents. The MPC is conducted through telephone interviews and record abstraction.

## **3.0 Insurance Component**

The MEPS IC collects data on health insurance plans obtained through private and public-sector employers. Data obtained in the IC include the number and types of private insurance plans offered, benefits associated with these plans, premiums, contributions by employers and employees, eligibility requirements, and employer characteristics.

Establishments participating in the MEPS IC are selected through three sampling frames:

- A list of employers or other insurance providers identified by MEPS HC respondents who report having private health insurance at the Round 1 interview.
- A Bureau of the Census list frame of private-sector business establishments.
- The Census of Governments from Bureau of the Census.

To provide an integrated picture of health insurance, data collected from the first sampling frame (employers and insurance providers identified by MEPS HC respondents) are linked back to data provided by those respondents. Data from the two Census Bureau sampling frames are used to produce annual national and state estimates of the supply and cost of private health insurance available to American workers and to evaluate policy issues pertaining to health insurance. National estimates of employer contributions to group insurance from the MEPS IC are used in the computation of Gross Domestic Product (GDP) by the Bureau of Economic Analysis.

The MEPS IC is an annual panel survey. Data are collected from the selected organizations through a prescreening telephone interview, a mailed questionnaire, and a telephone follow-up for nonrespondents.

#### **4.0 Survey Management**

MEPS data are collected under the authority of the Public Health Service Act. They are edited and published in accordance with the confidentiality provisions of this act and the Privacy Act. 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, microdata files and compendiums of tables. Data are released through MEPSnet, an online interactive tool developed to give users the ability to statistically analyze MEPS data in real time. Summary reports and compendiums of tables are released as printed documents and electronic files. Microdata files are released as electronic files.

Selected printed documents are available through the AHRQ Publications Clearinghouse. Write or call:

AHRQ Publications Clearinghouse  
Attn: (publication number)  
P.O. Box 8547  
Silver Spring, MD 20907  
800-358-9295  
410-381-3150 (callers outside the United States only)  
888-586-6340 (toll-free TDD service; hearing impaired only)

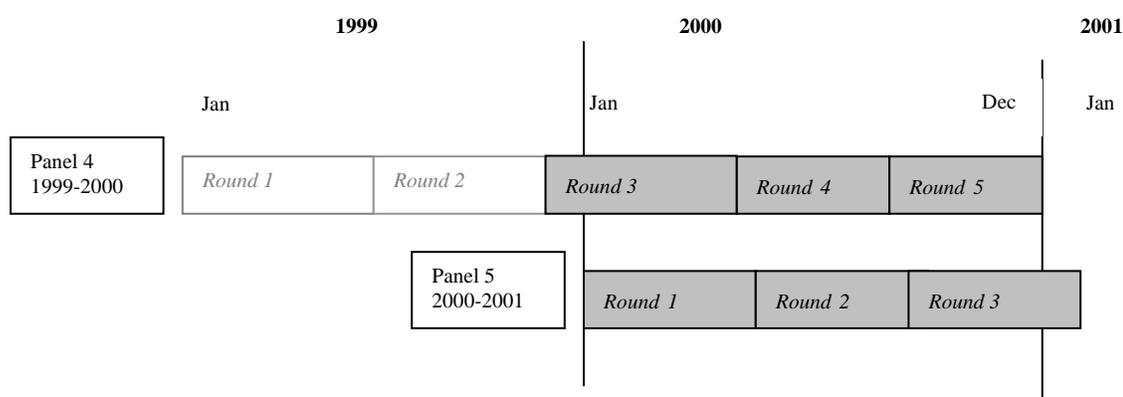
Be sure to specify the AHRQ number of the document you are requesting.

Additional information on MEPS is available from the MEPS project manager or the MEPS public use data manager at the Center for Cost and Financing Studies, Agency for Healthcare Research and Quality.

## C. TECHNICAL AND PROGRAMMING INFORMATION

### 1.0 General Information

This documentation describes one in a series of public-use event files from the 2000 Medical Expenditure Panel Survey (MEPS) Household Component (HC). Released as an ASCII data file and a SAS transport file, the 2000 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 utilization and expenditures associated with medical items for calendar year 2000. As illustrated below, this file consists of MEPS survey data obtained in the 2000 portion of Round 3, and Rounds 4 and 5 for Panel 4, as well as Rounds 1, 2, and the 2000 portion of Round 3 for Panel 5 (i.e., the rounds for the MEPS panels covering calendar year 2000).



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, insulin, and diabetic supplies and equipment are collected during Rounds 3, 4, and 5 of Panel 4 and Rounds 1, 2 and 3 of Panel 5. Therefore, for these items, each round is a reference period. Expenditure data for other medical items, which include orthopedic items, hearing devices, medical equipment, disposable supplies, ambulance services, bathroom aides, and home alterations are collected only in Rounds 5 (Panel 4) and 3 (Panel 5); for these items, the reference period is the entire year.

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.

Data from this event file can be merged with other 2000 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 2000 Full Year Consolidated Data File where each record represents a MEPS sampled person.

Data users/analysts should be aware of the limitations of the Other Medical event file. These limitations include the following:

- a) A record can represent one or more purchases of an item or service during a reference period. For example, 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, it is not known if the respondent used an ambulance once or more than once in 2000.
- b) Expenditure data for insulin and diabetic supplies are not included on this file, but are included on the 2000 Prescribed Medicines File. All records for insulin and diabetic supplies on this file have a value of -1, "INAPPLICABLE," for all expenditure (i.e., charge and payment) variables.

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: <<http://www.meps.ahrq.gov>>.

## 2.0 Data File Information

The 2000 Other Medical 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. For data users/analysts wanting to impute expenditures, pre-imputed data are available through the CCFS Data Center. Please visit the CCFS Data Center web site for details: <<http://www.meps.ahrq.gov/>>. The data user/analyst is forewarned that the imputation of expenditures will necessitate a sizable commitment of resources: financial, staff, and time.

The 2000 Other Medical public-use data set contains 6,586 other medical expenditure records; of these records, 6,446 are associated with persons having a positive person-level weight (PERWT00F). The rest of the records represent persons with positive family weight only. This file include 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 2000. 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 2000 have no records on this file. These data were collected during the 2000 portion of Round 3, and Rounds 4 and 5 for Panel 4, as well as Rounds 1, 2, and the 2000 portion of Round 3 for Panel 5 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 2000 eligibility (i.e., persons with a positive 2000 full-year person-level weight (PERWT00F > 0)), or
- b) Be an eligible member of a family all of whose key in-scope members have a positive person-level weight (PERWT00F > 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 (FAMWT00F > 0). Note that FAMIDYR and FAMWT00F are variables on the 2000 Population Characteristics file.

Persons with no other medical events for 2000 are not included on this file but are represented on the 2000 MEPS person-level files. A codebook for the data file is provided in files H51CCB.PDF and H51CCB.ASP.

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 2000 Full Year Population Characteristics File using the unique 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.

Panel 4 cases (PANEL00=4 on the MEPS 2000 person-level file) can also be linked back to the 1999 MEPS HC public use data files. However, the users should be aware that at this time no weight is being provided to facilitate two-year analysis of Panel 4 data.

## 2.1 Codebook Structure

For each variable on the Other Medical event file, both weighted and unweighted frequencies are provided in the codebook (files H51CCB.PDF and H51CCB.ASP). 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

## 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: <<http://www.meps.ahrq.gov/>>).

## 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:

<b>Identifier</b>	<b>Description</b>
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	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 (00). The seventh character indicates whether the variable is edited/imputed (X).

For example, OMSF00X is the edited/imputed amount paid by self or family for 2000 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 2000 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 (the-MEPS 2000 Prescribed Medicines File). For details on linking, see Section 5.0, or the MEPS 2000 Appendix File, HC-051I.

FFEEIDX is a constructed variable that uniquely identifies a flat fee group, that is, all events that were part of a flat fee payment situation. FFEEIDX identifies a flat fee payment situation 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 4 and Round 3 for Panel 5; each record represents a summary of expenditures for items purchased or otherwise obtained for 2000. There are two exceptions:

- a) Expenditure data for the purchase of glasses and/or contact lenses were collected in Rounds 3, 4, and 5 for Panel 4 and Rounds 1, 2, and 3 for Panel 5. For vision items purchased in Round 3 for Panel 5 it could not be determined if the purchases occurred in 2000 or 2001. Therefore, records with expenses reported in Round 3 were only included if the number of glasses purchased in 2000 is greater than or equal to the number of purchases in 2001.
- b) Respondents were asked whether or not they obtained insulin or diabetic supplies/equipment in Rounds 3, 4, and 5 for Panel 4 and Rounds 1, 2, and 3 for Panel 5. The reported purchases of these medical items are included on this file while the actual expenditures for insulin and diabetic supplies/equipment are not included. Rather, these expenditures are included on the 2000 Prescribed Medicines file. All records for insulin and diabetic supplies on this file have a value of -1, "INAPPLICABLE," for all each expenditure (i.e., charge and payment) variable.

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

Other medical expenditures (OMTYPE) include glasses or contact lenses, insulin, diabetic equipment/supplies, ambulance services, orthopedic items, hearing devices,

prosthesis, 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 (OMTYPEEX, OMOTHOX) and unedited (OMTYPE, OMOTHOS) versions of both of these variables are included on this file.

### **2.5.3 Flat Fee Variables (FFEEIDX, FFOMTYPE, FFBEF00, FFTOT01)**

#### **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 situation. 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 2000. 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)**

The variable FFEEIDX uniquely identifies all events that are part of the same flat fee group for a person. On any 2000 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 2000 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 situation, the FFOMTYPE is set to -1, “INAPPLICABLE”.

### **2.5.3.2.3 Counts of Flat Fee Events that Cross Years (FFBEF00, FFTOT01)**

As described in Section 2.5.3.1, a flat fee payment situation covers multiple events and the multiple events could span multiple years. For situations where the medical item was obtained in 2000 as part of a group of events, and some of the events occurred before or after 2000, counts of the known events are provided on the other medical record. Variables that indicate events occurring before or after 2000 are the following:

FFBEF00 – indicates total number of pre-2000 events in the same flat fee group as the medical item that was obtained in 2000. This count would not include the medical item obtained in 2000.

FFTOT01 – indicates the number of 2001 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 2000. Because there were no 2001 events expected for any flat fee group, this variable was omitted from the 2000 OM file.

### **2.5.3.3 Caveats of Flat Fee Groups**

Data users/analysts should note that flat fee payment situations are not common on the Other Medical file. There are only 20 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 2000, but the remaining visits that were part of this flat fee group occurred in 2001. In this case, the 2000 flat fee group represented on this file would consist of one event (the stem). The 2001 “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 1999 but subsequent visits occurred during 2000. In this case, the initial visit would not be represented on the file. This 2000 flat fee group would then only consist of one or more leaf records and no stem.

## **2.5.4 Expenditure Data**

### **2.5.4.1 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 1990's 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 CCFS data center. For more information see the Data Center section of the MEPS web site at <http://www.meps.ahrq.gov/>.

#### **2.5.4.2 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.

##### **2.5.4.2.1 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.

#### **2.5.4.2.2 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.

#### **2.5.4.2.3 Other Medical 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 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).

#### **2.5.4.3 Imputation Flag Variable (IMPFLAG)**

Only one imputation flag was created for 2000 event files. This flag, 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 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)

#### **2.5.4.4 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 2000, all of the events that occurred in 2000 will have zero payments. Conversely, if the first event in the flat fee group occurred at the end of 2000, the total expenditure for the entire flat fee group will be on that event, regardless of the number of events it covered after 2000. See section 2.5.3 for details on the flat fee variables.

#### **2.5.4.5 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.

#### **2.5.4.6 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,
6. TRICARE, formerly CHAMPUS/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, liability, 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 program.

#### **2.5.4.7 Other Medical Expenditure Variables (OMSF00X-OMTC00X)**

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. However, please note that expenditure data for insulin and diabetic supplies are not included on this file, but are included on the 2000 Prescribed Medicines File. Missing expenditure data associated with these records were not imputed. Charge and Payment variables in these cases carry a value of -1, “INAPPLICABLE.”

OMSF00X - OMOT00X are the 12 sources of payment. OMTC00X is the total charge, and OMXP00X is the sum of the 12 sources of payment for the other medical expenditures. The 12 source of payment are: self/family (OMSF00X), Medicare (OMMR00X), Medicaid (OMMD00X), private insurance (OMPV00X), Veterans Administration (OMVA00X), TRICARE (OMTR00X), other Federal sources (OMOF00X), State and Local (non-federal) government sources (OMSL00X), Worker’s Compensation (OMWC00X), other private insurance (OMOR00X), other public insurance (OMOU00X), and other insurance (OMOT00X).

#### **2.5.4.8 Rounding**

Expenditure variables on the 2000 other medical file have been rounded to the nearest penny. Person-level expenditure information released on the MEPS 2000 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 2000 Appendix File, HC-051I, for details on rounding differences.

### **3.0 Sample Weight (PERWT00F)**

#### **3.1 Overview**

There is a single full year person-level weight (PERWT00F) 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 2000. A key person either was a member of an NHIS household at the time of the NHIS interview, or became a member of such a household after being out-of-scope at the time of the NHIS (examples of the latter situation include newborns and 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 PERWT00F was developed in several stages. Person level weights for Panels 4 and 5 were created separately. The weighting process for each panel included an adjustment for nonresponse over time and poststratification.

Poststratification was achieved by controlling to Current Population Survey (CPS) population estimates based on five variables. Variables used in the establishment of person-level poststratification control figures included: census region (Northeast, Midwest, South, West); MSA status (MSA, non-MSA); race/ethnicity (Hispanic, black but non-Hispanic, and other); sex; and age. A 2000 composite weight was then formed by multiplying each panel weight by .5 and then poststratifying the resulting weight to the same set of CPS-based control totals. When poverty status information derived from income variables became available, a final poststratification was done on the resulting weight variable, including 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) as well as the original five poststratification variables in the establishment of control totals.

### **3.2.1 MEPS Panel 4 Weight**

The person-level weight for MEPS Panel 4 was developed using the 1999 full year weight for an individual as a “base” weight for survey participants present in 1999. For key, in-scope respondents who joined an RU some time in 2000 after being out of scope in 1999, the 1999 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 poststratification to population control figures for December 2000. These control figures were derived by scaling back the population totals obtained from the March 2000 CPS to reflect the December 2000 CPS estimated population distribution across age and sex categories as of December 2000. Variables used in the establishment of person-level poststratification control figures included: census region (Northeast, Midwest, South, West); MSA status (MSA, non-MSA); race/ethnicity (Hispanic, black but non-Hispanic, and other); sex; and age. Overall, the weighted population estimate for the civilian noninstitutionalized population on December 31, 2000 is 275,158,755. Key, responding persons not in-scope on December 31, 2000 but in-scope earlier in the year retained, as their final Panel 4 weight, the weight after the nonresponse adjustment.

### **3.2.2 MEPS Panel 5 Weight**

The person-level weight for MEPS Panel 5 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 2000 portion of Round 3 as well as poststratification to the same population control figures for December 2000 used for the MEPS Panel 4 weights. The same five variables employed for Panel 4 poststratification (census region, MSA status, race/ethnicity, sex, and age) were used for Panel 5 poststratification. Similarly, for Panel 5, key, responding persons not in-scope on December 31, 2000 but in-scope earlier in the year retained, as their final Panel 5 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 2000 CPS data base.

### **3.2.3 The Final Weight for 2000**

Variables used in the establishment of person-level poststratification 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, black but non-Hispanic, and other); sex; and age. Overall, the weighted population estimate for the civilian noninstitutionalized population for December 31, 2000 is 275,158,755 (PERWT00F>0 and INSC1231=1). The weights of some persons out-of-scope on December 31, 2000 were also poststratified. Specifically, the weights of persons out-of-scope on December 31, 2000 who were inscope 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 inscope during 2000 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.

### **3.2.4 Coverage**

The target population for MEPS in this file is the 2000 U.S. civilian noninstitutionalized population. However, the MEPS sampled households are a subsample of the NHIS households interviewed in 1998 (Panel 4) and 1999 (Panel 5). New households created after the NHIS interviews for the respective Panels and consisting exclusively of persons who entered the target population after 1998 (Panel 4) or after 1999 (Panel 5) 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 proportion of the MEPS target population.

## **4.0 Strategies for Estimation**

This file is constructed for efficient estimation of utilization, expenditures, and sources of payment for other medical expenditures and to allow for estimates of number of persons who obtained medical items in 2000.

## 4.1 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 expenditures) are described in Section 2.5.4.

## 4.2 Basic Estimates of Utilization, Expenditures, and Sources of Payment

While the examples described below illustrate the use of event-level data in constructing person-level total expenditures, these estimates can also be derived from the person-level expenditure file unless the characteristic of interest is event specific.

In order to produce national estimates related to other medical expense utilization, expenditures, and sources of payment, the value in each record contributing to the estimates must be multiplied by the weight (PERWT00F) contained on that record.

### Example 1

For example, the total number of other medical expense events for “GLASSES OR CONTACT LENSES” (OMTYPEX=1), for the civilian noninstitutionalized population of the U.S. in 2000 is estimated as the sum of the weight (PERWT00F) across all other medical expense event records with OMTYPEX=1. That is,

$$\sum W_j = 50,353,788 \text{ for all records with OMTYPEX}_j = 1. \quad (1)$$

### Example 2

Subsetting to records based on characteristics of interest expands the scope of potential estimates. For example, the estimate for the mean out-of-pocket payment on “GLASSES OR CONTACT LENSES” (for those who had such expense greater than 0) should be calculated as the weighted mean of amount paid by self/family. That is,

$$(\sum W_j X_j)/(\sum W_j) = \$143.27 \quad (2)$$

where

$$\sum W_j = 49,554,443 \text{ and } X_j = \text{OMSF00}X_j$$

for all records with  $\text{OMTYPE}X_j = 1$  and  $\text{OMXP00}X_j > 0$ .

This gives \$143.27 as the estimated mean amount of out-of-pocket payment of expenditures associated with “GLASSES OR CONTACT LENSES” events and 49,554,443 as an estimate of the total number of such other medical expense events with expenditure. Both of these estimates are for the civilian noninstitutionalized population of the U.S. in 2000.

### Example 3

Another example would be to estimate the average proportion of total expenditures (where event expense is greater than 0) paid by private insurance per “GLASSES OR CONTACT LENSES” event. This should be calculated as the weighted mean of the proportion of the total “GLASSES OR CONTACT LENSES” expense paid by private insurance at the other medical expense event-level. That is,

$$(\sum W_j Y_j) / (\sum W_j) = 0.1383 \tag{3}$$

where

$$\sum W_j = 49,554,443 \text{ and } Y_j = \text{OMPV00}X_j / \text{OMXP00}X_j$$

for all records with  $\text{OMTYPE}X_j = 1$  and  $\text{OMXP00}X_j > 0$ .

This gives 0.1383 as the estimated mean proportion of total expenditures paid by private insurance for “GLASSES OR CONTACT LENSES” events with expenditure for the civilian noninstitutionalized population of the U.S. in 2000.

### 4.3 Estimates of the Number of Persons with Other Medical Expense Events

When calculating an estimate of the total number of persons with other medical expense events, users can use a person-level file or this event file. However, this event file must be used when the measure of interest is defined at the event-level. For example, to estimate the number of persons in the civilian noninstitutionalized population of the U.S. with a medical expense for ambulance service in 2000, this event file must be used. This would be estimated as

$$\sum W_i X_i \quad \text{across all unique persons } i \text{ on this file} \tag{4}$$

where

$W_i$  is the sampling weight (PERWT00F) for person  $i$

and

$X_i = 1$  if OMTYPEX<sub>j</sub> = 4 for any other medical expense record of person

$i$

$= 0$  otherwise.

#### **4.4 Person-Based Ratio Estimates**

##### **4.4.1 Person-Based Ratio Estimates Relative to Persons with Other Medical Expense Events**

This file may be used to derive person-based ratio estimates. However, when calculating ratio estimates where the denominator is persons, care should be taken to properly define and estimate the unit of analysis up to person-level. For example, the mean expense for persons with other medical expense events is estimated as,

$$(\sum W_i Z_i)/(\sum W_i) \quad \text{across all unique persons } i \text{ on this file} \quad (5)$$

where

$W_i$  is the sampling weight (PERWT00F) for person  $i$

and

$Z_i = \sum OMP00X_j$  across all other medical events for person  $i$ .

##### **4.4.2 Person-Based Ratio Estimates Relative to the Entire Population**

If the ratio relates to the entire population, this file cannot be used to calculate the denominator, as only those persons with at least one other medical expense event are represented on this data file. In this case, the Full Year Consolidated File, which has data for all sampled persons, must be used to estimate the total number of persons (i.e., those with events and those without events).

For example, to estimate the proportion of civilian noninstitutionalized population of the U.S. with at least one other medical event for ambulance services, the numerator would be derived from data on this event file, and the denominator would be derived from data on the person-level file. That is,

$$(\sum W_i Z_i)/(\sum W_i) \quad \text{across all unique persons } i \text{ on the MEPS HC person-level file} \quad (6)$$

where

$W_i$  is the sampling weight (PERWT00F) for person  $i$

and

$$Z_i = \begin{cases} 1 & \text{if OMTYPEX}_j = 4 \text{ for any other medical expense record of person } i \\ 0 & \text{otherwise.} \end{cases}$$

#### **4.5 Sampling Weights for Merging Previous Releases of MEPS Household Data with this Event File**

There have been several previous releases of MEPS Household Survey public use data. Unless a variable name common to several files is provided, the sampling weights contained on these data files are file-specific. The file-specific weights reflect minor adjustments to eligibility and response indicators due to birth, death, or institutionalization among respondents.

For estimates from a MEPS data file that do not require merging with variables from other MEPS data files, the sampling weight(s) provided on that data file are the appropriate weight(s). When merging a MEPS Household data file to another, the major analytical variable (i.e., the dependent variable) determines the correct sampling weight to use.

#### **4.6 Variance Estimation (VARPSU00, VARSTR00)**

To obtain estimates of variability (such as the standard error of sample estimates or corresponding confidence intervals) for estimates based on MEPS survey data, one needs to take into account the complex sample design of MEPS. Various approaches can be used to develop such estimates of variance including use of the Taylor Series or various replication methodologies. Replicate weights have not been developed for the MEPS 2000 data. Variables needed to implement a Taylor Series estimation approach are provided in the file and are described in the paragraph below.

Using a Taylor Series approach, variance estimation strata and the variance estimation PSUs within these strata must be specified. The corresponding variables on the MEPS full year utilization database are VARSTR00 and VARPSU00, respectively. Specifying a “with replacement” design in a computer software package such as SUDAAN (Shah, 1996) should provide 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), there are over 100 degrees of freedom associated with the corresponding estimates of variance. The following illustrates these concepts using two examples from Section 4.2.

## **Examples 2 and 3 from Section 4.2**

Using a Taylor Series approach, specifying VARSTR00 and VARPSU00 as the variance estimation strata and PSUs (within these strata) respectively and specifying a “with replacement” design in a computer software package (i.e., SUDAAN) will yield standard error estimates of \$2.71 and 0.0084 for the estimated mean of out-of-pocket payment and the estimated mean proportion of total expenditures paid by private insurance respectively.

### **5.0 Merging/Linking MEPS Data Files**

Data from this file can be used alone or in conjunction with other files. This section provides instructions, or the details on where to find the instructions, for linking the 2000 other medical provider events with other 2000 MEPS public use files, including the 2000 prescribed medicines file and a 2000 person-level file.

#### **5.1 Merging a Person-Level File to the Other Medical Expenses File**

Merging characteristics of interest from other MEPS files (e.g., 2000 Full Year Population Characteristics File or 2000 Prescribed Medicines) expands the scope of potential estimates. For example, to estimate the expenditures for medical equipment, visual aids, etc. for persons with specific demographic characteristics (such as age, race, 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 2000 Appendix File, HC-051I, provides additional details on how to merge other MEPS data files.

1. Create data set PERSX by sorting the 2000 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 the 2000 Other Medical Expenses File to the 2000 Prescribed Medicines File**

Due to survey design issues, there are limitations/caveats that data users/analysts must keep in mind when linking the different files. These limitations/caveats are listed below. For detailed linking examples, including SAS code, data users/analysts should refer to the MEPS 2000 Appendix File, HC-051I.

### **5.2.1 Limitations/Caveats of RXLK (the Prescribed Medicine Link File)**

The RXLK file provides a link from the MEPS event files to the prescribed medicine records on the 2000 Prescribed Medicine Event File. When using RXLK, data users/analysts should keep in mind that one other medical record can link to more than one prescribed medicine record. Conversely, a prescribed medicine event may link to more than one other medical record. When this occurs, it is up to the data user/analyst to determine how the prescribed medicine expenditures should be allocated among those other medical expenses.

## REFERENCES

Cohen, S.B. (1997). Sample Design of the 1996 Medical Expenditure Panel Survey Household Component. Rockville (MD): Agency for Health Care Policy and Research; 1997. *MEPS Methodology Report, No. 2*. AHCPR Pub. No. 97-0027.

Cohen, J.W. (1997). Design and Methods of the Medical Expenditure Panel Survey Household Component. Rockville (MD): Agency for Health Care Policy and Research; 1997. *MEPS Methodology Report, No. 1*. AHCPR Pub. No. 97-0026.

Cohen, S.B. (1996). The Redesign of the Medical Expenditure Panel Survey: A Component of the DHHS Survey Integration Plan. *Proceedings of the COPAFS Seminar on Statistical Methodology in the Public Service*.

Monheit, A.C., Wilson, R., and Arnett, III, R.H. (Editors) (1999). Informing American Health Care Policy. Jossey-Bass Inc., San Francisco.

Shah, B.V., Barnwell, B.G., Bieler, G.S., Boyle, K.E., Folsom, R.E., Lavange, L., Wheelless, S.C., and Williams, R. (1996). *Technical Manual: Statistical Methods and Algorithms Used in SUDAAN Release 7.0*, Research Triangle Park, NC: Research Triangle Institute.

## **D. VARIABLE-SOURCE CROSSWALK**

## VARIABLE-SOURCE CROSSWALK

### FOR MEPS HC-051C: 2000 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
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
FFBEF00	Total # of visits in FF before 2000	FF05

### Imputed Expenditure Variables

<b>Variable</b>	<b>Description</b>	<b>Source</b>
OMSF00X	Amount paid, self/family (Imputed)	CP Section (Edited)
OMMR00X	Amount paid, Medicare (Imputed)	CP Section (Edited)
OMMD00X	Amount paid, Medicaid (Imputed)	CP Section (Edited)
OMPV00X	Amount paid, private insurance (Imputed)	CP Section (Edited)
OMVA00X	Amount paid, Veterans Administration (Imputed)	CP Section (Edited)
OMTR00X	Amount paid, TRICARE (Imputed)	CP Section (Edited)
OMOF00X	Amount paid, other federal (Imputed)	CP Section (Edited)
OMSL00X	Amount paid, state & local government (Imputed)	CP Section (Edited)
OMWC00X	Amount paid, workers' compensation (Imputed)	CP Section (Edited)
OMOR00X	Amount paid, other private insurance (Imputed)	Constructed
OMOU00X	Amount paid, other public insurance (Imputed)	Constructed
OMOT00X	Amount paid, other insurance (Imputed)	CP Section (Edited)
OMXP00X	Sum of payments OMSF00X–OMOT00X (Imputed)	Constructed
OMTC00X	Household reported total charge (Imputed)	CP Section (Edited)
IMPFLAG	Imputation status	Constructed

### Weights

<b>Variable</b>	<b>Description</b>	<b>Source</b>
PERWT00F	Final person level weight, 2000	Constructed
VARSTR00	Variance estimation stratum, 2000	Constructed
VARPSU00	Variance estimation PSU, 2000	Constructed