MEPS HC-102E:
2006 Emergency Room Visits

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Agency for Healthcare Research and Quality
Center for Financing, Access and Cost Trends
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Table of Contents

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 2006 Medical Expenditure Panel Survey (MEPS) Household Component (HC) and Medical Provider Component (MPC). Released as an ASCII data file (with related SAS and SPSS programming statements) and a SAS transport file, the 2006 Emergency Room Visits (EROM) public use event file provides detailed information on emergency room visits for a nationally representative sample of the civilian noninstitutionalized population of the United States. Data from the EROM event file can be used to make estimates of emergency room utilization and expenditures for calendar year 2006. The file contains 73 variables and has a logical record length of 351 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 from the 2006 portion of Round 3, and Rounds 4 and 5 for Panel 10, as well as Rounds 1, 2, and the 2006 portion of Round 3 for Panel 11 (i.e., the rounds for the MEPS panels covering calendar year 2006).

	2005			2006			2007
	Jan			Jan		Dec	Jan
Panel 10 **2005-2006**	*Round 1*	*Round 2*		**Round 3**	**Round 4**	**Round 5**	
		Panel 11 **2006-2007**		**Round 1**	**Round 2**	**Round 3**	
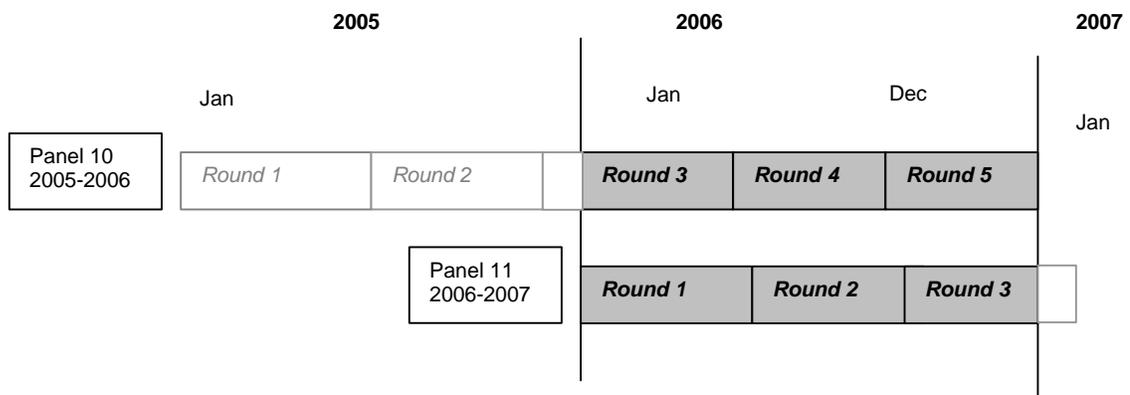
Emergency room events reported in Panel 11 Round 3 and known to have occurred after December 31, 2006 are not included on this file. In addition to expenditures, each record contains household reported medical conditions and procedures associated with the emergency room visit.

Annual counts of emergency room visits are based entirely on household reports. Information from the MEPS MPC is used to supplement expenditure and payment data reported by the household and does not affect use estimates.

Data from the Emergency Room event file can be merged with other 2006 MEPS HC data files for purposes of appending person-level data such as demographic characteristics or health insurance coverage to each emergency room record.

This file can also be used to construct summary variables of expenditures, sources of payment, and related aspects of emergency room visits. Aggregate annual person-level information on the

use of emergency rooms and other health services use is provided on the MEPS 2006 Full Year Consolidated Data File, where each record represents a MEPS sampled person.

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

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

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

For more information on MEPS HC survey design see S. Cohen, 1997; J. Cohen, 1997; and S. Cohen, 1996. For information on the MEPS MPC design, see S. Cohen, 1998. Copies of the HC and the MPC survey instruments used to collect the information on the EROM file are available in the *Survey Instrument* section of the MEPS Web site at the following address: www.meps.ahrq.gov.

2.0   Data File Information

The 2006 Emergency Room Visits public use data set consists of one event-level data file. The file contains characteristics associated with the EROM event and imputed expenditure data.

The 2006 EROM public use data set contains variables and frequency distributions for 6,442 emergency room visits reported during the 2006 portion of Round 3 and Rounds 4 and 5 for Panel 10, as well as Rounds 1, 2, and the 2006 portion of Round 3 for Panel 11 of the MEPS Household Component. This file includes emergency room visit records for all household survey respondents who resided in eligible responding households and reported at least one emergency room visit. Records where the emergency room visit was known to have occurred after December 31, 2006 are not included on this file. Of these 6,442 records, 6,199 were associated with persons having positive person-level weights (PERWT06F). The persons represented on this file had to meet either (a) or (b):

a) Be classified as a key in-scope person who responded for his or her entire period of 2006 eligibility (i.e., persons with a positive 2006 full-year person-level weight (PERWT06F > 0)), or

b) Be an eligible member of a family all of whose key in-scope members have a positive person-level weight (PERWT06F > 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 (FAMWT06F >0). Note that FAMIDYR and FAMWT06F are variables on the 2006 Population Characteristics file.

Persons with no emergency room visit events for 2006 are not included on this event-level ER file but are represented on the person-level 2006 Full Year Population Characteristics file.

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

Data from this file can be merged with the MEPS 2006 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. Emergency room visit events can also be linked to the MEPS 2006 Medical Conditions File and the MEPS 2006 Prescribed Medicines File. Please see Section 5.0 and the 2006 Appendix File, HC-102I for details on how to merge MEPS data files.

2.1 Codebook Structure

For each variable on the Emergency Room Events 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 identifiers
Unique emergency room event identifiers
Emergency room characteristic variables
ICD-9-CM condition and procedure codes
Clinical Classification Software (CCS) codes
Imputed expenditure variables
Weight and variance estimation variables

Note that the person identifier is unique within this data year. See the section on pooling annual files, 5.4, for details.

2.2   Reserved Codes

The following reserved code values are used:

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

2.4   Variable Source and Naming Conventions

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

2.4.1   General

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

1) Variables derived from CAPI or assigned in sampling are 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:
   - ER - Emergency Room 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 which 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 eight characters in length, and end in an "X" indicating edited/imputed. Please note that imputed means that a series of logical edits, as well as an imputation process to account for missing data, have been performed on the variable.

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

The first two characters indicate the type of event:

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

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

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

SF - self or family	OF - other Federal Government
MR - Medicare	SL - State/local government
MD - Medicaid	WC - Workers' Compensation
PV - private insurance	OT - other insurance
VA - Veterans	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 sixth and seventh characters indicate the year (06). The eighth character, "X", indicates whether the variable is edited/imputed.

For example, ERFSF06X is the edited/imputed amount paid by self or family for the facility portion of the expenditure associated with an emergency room visit.

2.5   File Contents

2.5.1   Survey Administration Variables

2.5.1.1   Person Identifiers (DUID, PID, DUPERSID)

The dwelling unit ID (DUID) is a five-digit random number assigned after the case was sampled for MEPS. The three-digit person number (PID) uniquely identifies each person within the dwelling unit. The eight-character variable DUPERSID uniquely identifies each person represented on the file and is the combination of the variables DUID and PID. For detailed information on dwelling units and families, please refer to the documentation for the 2006 Full Year Population Characteristics File.

2.5.1.2   Record Identifiers (EVNTIDX, ERHEVIDX, FFEEIDX)

EVNTIDX uniquely identifies each emergency room visit/event (i.e., each record on the Emergency Room visit file) and is the variable required to link emergency room events to data files containing details on conditions and/or prescribed medicines (MEPS 2006 Medical Conditions File and the MEPS 2006 Prescribed Medicines File, respectively). For details on linking, see Section 5.0 or the MEPS 2006 Appendix File, HC-102I.

ERHEVIDX is a constructed variable identifying an EROM record that has its facility expenditures represented on an associated hospital inpatient stay record. This variable is derived from provider-reported information on linked emergency room and inpatient stay events that matched to corresponding events reported by the household. The variable ERHEVIDX contains the EVNTIDX of the linked event. On the 2006 EROM file, there are 481 emergency room events linked to subsequent hospital stays. Please note that where the emergency room visit is associated with a hospital stay (and its expenditures and charges are included with the hospital stay), the physician expenditures associated with the emergency room visit remain on the Emergency Room file.

FFEEIDX is a constructed variable which uniquely identifies a flat fee group, that is, all events that were a part of a flat fee payment.

2.5.1.3 Round Indicator (EVENTRN)

EVENTRN indicates the round in which the emergency room visit was reported. Please note: Rounds 3, 4, and 5 are associated with MEPS survey data collected from Panel 10. Likewise, Round 1, 2, and 3 are associated with data collected from Panel 11.

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 10 or Panel 11 for each person on the file. Panel 10 is the panel that started in 2005, and Panel 11 is the panel that started in 2006.

2.5.2 MPC Data Indicator (MPCDATA)

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

2.5.3 Emergency Room Visit Event Variables

This file contains variables describing emergency room visits/events reported by household respondents in the Emergency Room section of the MEPS HC questionnaire. The questionnaire contains specific probes for determining details about the emergency room event. These variables have not been edited.

2.5.3.1 Visit Details (ERDATEYR-VSTRELCN)

When a person reported having had a visit to the emergency room, the date of the emergency room visit was recorded (ERDATEYR, ERDATEMM, ERDATEDD). Also reported is whether or not the person saw a medical doctor (SEEDOC). The type of care the person received (VSTCTGRY) and whether or not the visit was related to a specific condition (VSTRELCN) were also determined.

2.5.3.2 Services, Procedures, and Prescription Medicines (LABTEST-MEDPRESC)

Services received during the visit included whether or not the person received lab tests (LABTEST), a sonogram or ultrasound (SONOGRAM), x-rays (XRAYS), a mammogram (MAMMOG), an MRI or CAT scan (MRI), an electrocardiogram (EKG), an electroencephalogram (EEG), a vaccination (RCVVAC), anesthesia (ANESTH), or other diagnostic tests or exams (OTHSVCE). Whether or not a surgical procedure was performed during the visit was asked (SURGPROC). The questionnaire determined if a medicine was

prescribed for the person during the emergency room visit (MEDPRESC). See Section 5.2 for information on linking to the prescription medicine events file.

2.5.4   VA Facility (VAPLACE)

VAPLACE is a constructed variable that indicates whether the service was provided at a VA facility. This variable only has valid data for providers that were sampled into the Medical Provider Component. All other providers are classified as "No".

2.5.5   Condition and Procedure Codes (ERICD1X-ERICD3X, ERPRO1X, ERPRO2X), and Clinical Classification Codes (ERCCC1X-ERCCC3X)

Information on household reported medical conditions and procedures associated with each emergency room visit is provided on this file. There are up to three condition and CCS codes (ERICD1X-ERICD3X, ERCCC1X-ERCCC3X) and up to two procedure codes (ERPRO1X, ERPRO2X) listed for each emergency room visit. In order to obtain complete condition information associated with an event, the data user/analyst must link to the MEPS 2006 Medical Conditions File. Details on how to link the 2006 EROM event file to the MEPS 2006 Medical Conditions File are provided in Section 5.3 and the MEPS 2006 Appendix File, HC-102I. The data user/analyst should note that because of confidentiality restrictions, provider-reported condition information is not publicly available.

The medical conditions and procedures reported by the Household Component respondent were recorded by the interviewer as verbatim text, which were then coded to fully-specified 2006 ICD-9-CM codes, including medical conditions and V codes (Health Care Financing Administration, 1980) by professional coders. Although codes were verified and error rates did not exceed 2.5 percent for any coder, data users/analysts should not presume this level of precision in the data; the ability of household respondents to report condition data that can be coded accurately should not be assumed (Cox and Cohen, 1985; Cox and Iachan, 1987; Edwards, et al, 1994; and Johnson and Sanchez, 1993). For detailed information on how conditions and procedures were coded, please refer to the documentation on the MEPS 2006 Medical Conditions File. For frequencies of conditions by event type, please see the MEPS 2006 Appendix File, HC-102I.

The ICD-9-CM condition codes were aggregated into clinically meaningful categories. These categories, included on the file as ERCCC1X-ERCCC3X, were generated using Clinical Classification Software [formerly known as Clinical Classifications for Health Care Policy Research (CCHPR)], (Elixhauser, et al., 1998), which aggregates conditions and V-codes into 263 mutually exclusive categories, most of which are clinically homogeneous.

In order to preserve respondent confidentiality, nearly all of the condition codes provided on this file have been collapsed from fully-specified codes to three-digit code categories. The reported ICD-9-CM code values were mapped to the appropriate clinical classification category prior to being collapsed to the three-digit categories. Similarly, the procedure codes have been collapsed from fully-specified codes to two-digit code categories. Because of this collapsing, it is possible

for there to be duplicate ICD-9-CM condition or procedure codes linked to a single medical event when different fully-specified codes are collapsed into the same code. For more information on ICD-9-CM codes, see the HC-104 documentation.

The condition codes (and clinical classification codes) and procedure codes linked to each emergency room visit are sequenced in the order in which the conditions were reported by the household respondent, which was in order of input into the database and not in order of importance or severity. Data users/analysts who use the MEPS 2006 Medical Conditions File in conjunction with this emergency room visits file should note that the order of conditions on this file is not identical to that on the Medical Conditions file.

Analysts should use the clinical classification codes listed in the Conditions PUF document (HC-104) and the Appendix to the Event Files (HC-102I) document when analyzing MEPS conditions data. Although there is a list of clinical classification codes and labels on the Healthcare Cost and Utilization Project (HCUP) Web site, if updates to these codes and/or labels are made on the HCUP Web site after the release of the 2006 MEPS PUFs, these updates will not be reflected in the 2006 MEPS data.

2.5.6 Flat Fee Variables (FFEEIDX, FFERTYPE, FFBEF06, FFTOT07)

2.5.6.1 Definition of Flat Fee Payments

A flat fee is the fixed dollar amount a person is charged for a package of health care services provided during a defined period of time. Examples would be: obstetrician's fee covering a normal delivery, as well as pre- and post-natal care; or a surgeon's fee covering surgical procedure and post-surgical care. A flat fee group is the set of medical services (i.e., events) that are covered under the same flat fee payment. The flat fee groups represented on this file include flat fee groups where at least one of the health care events, as reported by the HC respondent, occurred during 2006. By definition, a flat fee group can span multiple years. Furthermore, a single person can have multiple flat fee groups.

2.5.6.2 Flat Fee Variable Descriptions

2.5.6.2.1 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 2006 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 FFEEIDX is not a variable on those event files.

2.5.6.2.2 Flat Fee Type (FFERTYPE)

FFERTYPE indicates whether the 2006 emergency room visit is the "stem" or "leaf" of a flat fee group. A stem (records with FFERTYPE = 1) is the initial medical service (event) which is followed by other medical events that are covered under the same flat fee payment. The leaves of the flat fee group (records with FFERTYPE = 2) are those medical events that are tied back to the initial medical event (the stem) in the flat fee group. These "leaf" records have their expenditure variables set to zero. For the emergency room visits that are not part of a flat fee payment, the FFERTYPE is set to –1, "INAPPLICABLE."

2.5.6.2.3 Counts of Flat Fee Events that Cross Years (FFBEF06, FFTOT07)

As described in Section 2.5.6.1, a flat fee payment may cover multiple events, and the multiple events could span multiple years. For situations where the emergency room event occurred in 2006 as part of a group of events, and some event occurred before or after 2006, counts of the known events are provided on the emergency room record. Variables indicating events that occurred before or after 2006 are as follows:

> FFBEF06 – total number of pre-2006 events in the same flat fee group as the 2006 emergency room visit(s). This count would not include the 2006 emergency room visit(s).

> FFTOT07 –the number of 2007 emergency room visits, expected to be in the same flat fee group as the emergency room event that occurred in 2006.

If there are no 2005 events on the file, FFBEF06 will be omitted. Likewise, if there are no 2007 events on the file, FFTOT07 will be omitted. If there are no flat fee data related to the records in this file, FFEEIDX and FFERTYPE will be omitted as well. Please note that the crosswalk in this document lists all possible flat fee variables.

2.5.6.3 Caveats of Flat Fee Groups

There are 34 emergency room visits that are identified as being part of a flat fee payment group. In general, every flat fee group should have an initial visit (stem) and at least one subsequent visit (leaf). There are some situations where this is not true. For some flat fee groups, the initial visit reported occurred in 2006, but the remaining visits that were part of this flat fee group occurred in 2007. In this case, the 2006 flat fee group represented on this file would consist of one event, the stem. The 2007 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 2005 but subsequent visits occurred during 2006. In this case, the initial visit would not be represented on the file. This 2006 flat fee group would then only consist of one or more leaf records and no stem.

2.5.7   Expenditure Data

2.5.7.1   Definition of Expenditures

Expenditures on this file refer to what is paid for health care services. More specifically, expenditures in MEPS are defined as the sum of payments for care received for each emergency room visit, including out-of-pocket payments and payments made by private insurance, Medicaid, Medicare and other sources. The definition of expenditures used in MEPS differs slightly from its predecessors: the 1987 NMES and 1977 NMCES surveys where "charges" rather than sum of payments were used to measure expenditures. This change was adopted because charges became a less appropriate proxy for medical expenditures during the 1990s due to the increasingly common practice of discounting. Although measuring expenditures as the sum of payments incorporates discounts in the MEPS expenditure estimates, the estimates do not incorporate any payment not directly tied to specific medical care visits, such as bonuses or retrospective payment adjustments 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 reference "Informing American Health Care Policy" (Monheit et al., 1999). AHRQ has developed factors to apply to the 1987 NMES expenditure data to facilitate longitudinal analysis. These factors can be assessed via the CFACT data center. For more information, see the data center section of the MEPS Web site www.meps.ahrq.gov.

Expenditure data related to emergency room visits are broken out by facility and separately billing doctor expenditures. This file contains six categories of expenditure variables per visit: basic hospital emergency room facility expenses; expenses for doctors who billed separately from the hospital for any emergency room services provided during the emergency room visit; total expenses, which is the sum of the facility and physician expenses; facility charge; physician charge, and total charges, which is the sum of the facility and physician charges. If examining trends in MEPS expenditures or performing longitudinal analysis on MEPS expenditures please refer to Section C, sub-Section 3.3 for more information.

2.5.7.2   Data Editing and Imputation Methodologies of Expenditure Variables

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

2.5.7.2.1   General Data Editing Methodology

Logical edits were used to resolve internal inconsistencies and other problems in the HC and MPC survey-reported data. The edits were designed to preserve partial payment data from households and providers, and to identify actual and potential sources of payment for each household-reported event. In general, these edits accounted for outliers, 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.

2.5.7.2.2   General Hot-Deck Imputation

A weighted sequential hot-deck procedure was used to impute 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 event type 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.

2.5.7.2.3   Emergency Room Visit Data Editing and Imputation

Facility expenditures for emergency room services were developed in a sequence of logical edits and imputations. "Household" edits were applied to sources and amounts of payment for all events reported by HC respondents. "MPC" edits were applied to provider-reported sources and amounts of payment for records matched to household-reported events. Both sets of edits were used to correct obvious errors in the reporting of expenditures. After the data from each source were edited, a decision was made as to whether household- or MPC-reported information would be used in the final editing and hot-deck imputations for missing expenditures. The general rule was that MPC data would be used where a household-reported event corresponded to an MPC-reported event (i.e., a matched event), since providers usually have more complete and accurate data on sources and amounts of payment than households.

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

emergency room events were imputed as simple events because hospital facility charges are rarely bundled with other events. (See Section 2.5.6 for more details on flat fee groups). However, some emergency room visits were treated as free events because the respondent was admitted to a hospital through its emergency room. In these cases, emergency room charges are included in the charge for an inpatient hospital stay.

Logical edits also were used to sort each event into a specific category for the imputations. Events with complete expenditures were flagged as potential donors for the 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 eight recipient categories in which all events had a common extent of missing data. Separate hot-deck imputations were performed on events in each recipient category. For hospital inpatient and emergency room events, the donor pool was restricted to events with complete expenditures from the MPC. Due to the low ratio of donors to recipients for hospital outpatient and office-based events, there were no donor pool restrictions.

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

Expenditures for some emergency room visits are not shown because the person was admitted to the hospital through the emergency room. These emergency room events are not free, but the expenditures are included in the inpatient stay expenditures. The variable ERHEVIDX can be used to differentiate between free emergency room care and situations where the emergency room charges have been included in the inpatient hospital charges.

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

2.5.7.3 Imputation Flag (IMPFLAG)

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

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

IMPFLAG = 1 complete HC data

IMPFLAG = 2 complete MPC data

IMPFLAG = 3 fully imputed

IMPFLAG = 4 partially imputed

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

2.5.7.4　　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 facility payments, while physician's expenditures may still be present. Thus, if the first visit in the flat fee group occurred prior to 2006, all of the events that occurred in 2006 will have zero payments. Conversely, if the first event in the flat fee group occurred at the end of 2006, the total expenditure for the entire flat fee group will be on that event, regardless of the number of events it covered after 2006. See Section 2.5.6 for details on the flat fee variables.

2.5.7.5　　Zero Expenditures

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

2.5.7.6　　Discount Adjustment Factor

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

2.5.7.7   Emergency Room/Hospital Inpatient Stay Expenditures

It is common for an emergency room visit to result in a hospital stay. While it is true that all of the event files can be linked by DUPERSID, there is no unique record link between hospital inpatient stays and emergency room visits. However, wherever this relationship could be identified (using the MPC start and end dates of the events as well as other information from the provider), the facility expenditure associated with the emergency room visit is included in the hospital facility expenditure. Hence, the expenditures (and charges) for some emergency room visits are included in the resulting hospitalization. In these situations, the emergency room record on this file will have its expenditure (and charge) information zeroed out to avoid double-counting while its corresponding hospital inpatient stay record on the MEPS 2006 Hospital Inpatient Stays File will have the combined expenditures. Please note that any physician expenditures associated with emergency room events remain on the Emergency Room event file. The variable ERHEVIDX identifies the emergency room visits whose facility expenditures are included in the expenditures for the following hospital inpatient stay. It should also be noted that for these cases there is only one emergency room stay associated with the hospital room stay.

2.5.7.8   Sources of Payment

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

1. Out-of-pocket by user or family,
2. Medicare,
3. Medicaid,
4. Private Insurance,
5. Veterans Administration, 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 insurance, and other miscellaneous or unknown sources.

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

11. Other Private - any type of private insurance payments reported for persons not reported to have any private health insurance coverage during the year as defined in MEPS, and

12. Other Public – Medicare/Medicaid payments reported for persons who were not reported to be enrolled in the Medicare/Medicaid program at any time during the year.

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

2.5.7.9 Imputed Emergency Room Expenditure Variables

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

2.5.7.9.1 Emergency Room Facility Expenditures (ERFSF06X-ERFOT06X, ERFXP06X, ERFTC06X)

Emergency room expenses include all expenses for treatment, services, tests, diagnostic and laboratory work, x-rays, and similar charges, as well as any physician services included in the emergency room charge.

ERFSF06X - ERFOT06X are the 12 sources of payment. The 12 sources of payment are: self/family (ERFSF06X), Medicare (ERFMR06X), Medicaid (ERFMD06X), private insurance (ERFPV06X), Veterans Administration (ERFVA06X), TRICARE/CHAMPVA (ERFTR06X), other Federal sources (ERFOF06X), State and Local (non-federal) government sources (ERFSL06X), Worker's Compensation (ERFWC06X), other private insurance (ERFOR06X), other public insurance (ERFOU06X), and other insurance (ERFOT06X). ERFXP06X is the sum of the 12 sources of payment for the Emergency Room expenditures, and ERFTC06X is the total charge. Please note that where an emergency room visit record is linked to a hospital inpatient stay record, all facility sources of payment variables, as well as ERFTC06X, have been zeroed out.

2.5.7.9.2   Emergency Room Physician Expenditures (ERDSF06X - ERDOT06X, ERDXP06X, ERDTC06X)

Separately billing doctor (SBD) expenses typically cover services provided to patients in hospital settings by providers like anesthesiologists, radiologists, and pathologists, whose charges are often not included in emergency room visit bills.

For physicians who bill separately (i.e., outside the emergency room visit bill), a separate data collection effort within the Medical Provider Component was performed to obtain this same set of expenditure information from each separately billing doctor. It should be noted that there could be several separately billing doctors associated with a medical event. For example, an emergency room visit could have a radiologist and an internist associated with it. If their services are not included in the emergency room visit bill then this is one medical event with two separately billing doctors. The imputed expenditure information associated with the separately billing doctors was summed to the event level and is provided on the file. ERDSF06X - ERDOT06X are the 12 sources of payment, ERDXP06X is the sum of the 12 sources of payments, and ERDTC06X is the physician's total charge.

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

2.5.7.9.3   Total Expenditures and Charges for Emergency Room Visits (ERXP06X, ERTC06X)

Data users/analysts interested in total expenditure should use the variable ERXP06X, which includes both the facility and physician amounts. Those interested in total charges should use the variable ERTC06X, which includes both facility and physician charges (see Section 2.5.7.1 for an explanation of the "charge" concept). However, please note that where the emergency room visit is linked to a hospital inpatient stay record, ERFTC06X has been zeroed out. Thus, ERTC06X may be equal to "0" or the doctor total charge (ERDTC06X).

2.5.8   Rounding

The expenditure variables have been rounded to the nearest penny. Person-level expenditure information released on the MEPS 2006 Person Level Use and Expenditure File were rounded to the nearest dollar. It should be noted that using the MEPS 2006 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 expenditures file for that source of payment. This difference is also an artifact of rounding only. Please see the MEPS 2006 Appendix File, HC-102I, for details on such rounding differences.

3.0 Sample Weight (PERWT06F)

3.1 Overview

There is a single full year person-level weight (PERWT06F) 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 2006. 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 PERWT06F was developed in several stages. Person-level weights for Panels 10 and 11 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 2006 composite weight was then formed by multiplying each weight from Panel 10 by the factor .47 and each weight from Panel 11 by the factor .53. 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 10 Weight

The person-level weight for MEPS Panel 10 was developed using the 2005 full year weight for an individual as a "base" weight for survey participants present in 2005. For key, in-scope respondents who joined an RU some time in 2006 after being out-of-scope in 2005, the 2005 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 2006. These control figures were derived by scaling back the population totals obtained from the March 2007 CPS to correspond to a national estimate

for the civilian noninstitutionalized population provided by the Census Bureau for December 2006. 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, 2006 is 295,668,762. Key, responding persons not in-scope on December 31, 2006 but in-scope earlier in the year retained, as their final Panel 10 weight, the weight after the nonresponse adjustment.

3.2.2   MEPS Panel 11 Weight

The person-level weight for MEPS Panel 11 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 2006 portion of Round 3 as well as raking to the same population control figures for December 2006 used for the MEPS Panel 10 weights. The same five variables employed for Panel 10 raking (census region, MSA status, race/ethnicity, sex, and age) were used for Panel 11 raking. Similarly, for Panel 11, key, responding persons not in-scope on December 31, 2006 but in-scope earlier in the year retained, as their final Panel 11 weight, the weight after the nonresponse adjustment.

Note that the MEPS Round 1 weights incorporated the following components: the original household probability of selection for the NHIS; ratio-adjustment to NHIS-based national population estimates at the household (occupied dwelling unit) level; adjustment for nonresponse at the dwelling unit level for Round 1; and poststratification to figures at the family and person level obtained from the March CPS data base of the corresponding year (i.e., 2005 for Panel 10 and 2006 for Panel 11).

3.2.3   The Final Weight for 2006

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, 2006 is 295,668,762 (PERWT06F>0 and INSC1231=1). In addition, the weights of two groups of persons who were out-of-scope on December 31, 2006 were poststratified. Specifically, the weights of those who were in-scope some time during the year, out-of-scope on December 31, and entered a nursing home during the year were poststratified to a corresponding control total obtained from the 1996 MEPS Nursing Home Component. Those who died while in-scope during 2006 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 299,267,035.

3.2.4   Coverage

The target population for MEPS in this file is the 2006 U.S. civilian noninstitutionalized population. However, the MEPS sampled households are a subsample of the NHIS households interviewed in 2004 (Panel 10) and 2005 (Panel 11). New households created after the NHIS interviews for the respective Panels and consisting exclusively of persons who entered the target population after 2004 (Panel 10) or after 2005 (Panel 11) 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

4.1   Developing Event-Level Estimates

The data in this file can be used to develop national 2006 event level estimates for the U.S. civilian noninstitutionalized population on emergency room visits as well as expenditures, and sources of payment for these visits. Estimates of total visits are the sum of the weight variable (PERWT06F) across relevant event records while estimates of other variables must be weighted

by PERWT06F to be nationally representative. The tables below contain event-level estimates for selected variables.

Selected Event Level Estimates

Emergency Room Visits

Estimate of Interest	Variable Name	Estimate (SE)	Estimate (SE) Excluding $0's*
Total number of emergency room visits (in millions)	PERWT06F	54.6 (1.67)	50.4 (1.57)
Proportion of emergency room visits with expenditures > 0*	ERXP06X	0.925 (0.0047)	--------

Emergency Room Expenditures

Estimate of Interest	Variable Name	Estimate (SE)	Estimate (SE) Excluding $0's*
Mean total payments per visit	ERXP06X	$688 ($21.4)	$744 ($22.8)
Mean out-of-pocket payment per visit	ERDSF06X +ERFSF06X	$86 ($5.1)	$93 ($5.4)
Mean proportion of total expenditures paid by private insurance per visit	(ERDPV06X +ERFPV06X) /ERXP06X	-------	0.391 (0.0106)

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

4.2   Person-Based Estimates for Emergency Room Visits

To enhance analyses of emergency room visits, analysts may link information about emergency room visits by sample persons in this file to the annual full year consolidated file (which has data for all MEPS sample persons), or conversely, link person-level information from the full year consolidated file to this event level file (see Section 5 below for more details). Both this file and the full year consolidated file may be used to derive estimates for persons with emergency room care and annual estimates of total expenditures. However, if the estimate relates to the entire population, this file cannot be used to calculate the denominator, as only those persons with at least one emergency room event are represented on this data file. Therefore, the full year

consolidated file must be used for person-level analyses that include both persons with and without emergency room care.

4.3   Variables with Missing Values

It is essential that the analyst examine all variables for the presence of negative values used to represent missing values. For continuous or discrete variables, where means or totals may be taken, it may be necessary to set negative values to values appropriate to the analytic needs. That is, the analyst should either impute a value or set the value to one that will be interpreted as missing by the 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 2.5.7.

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

Using the Taylor-series linearization method, variance estimation strata and the variance estimation PSUs within these strata must be specified. The variance strata variable is named VARSTR, while the variance PSU variable is named VARPSU. Specifying a "with replacement" design in a computer software package, such as SUDAAN, provides standard errors appropriate for assessing the variability of MEPS survey estimates. It should be noted that the number of degrees of freedom associated with estimates of variability indicated by such a package may not appropriately reflect the actual number available. For MEPS sample estimates for characteristics generally distributed throughout the country (and thus the sample PSUs), one can expect at least 100 degrees of freedom for the 2006 full year data associated with the corresponding estimates of variance.

Prior to 2002, MEPS variance strata and PSUs were developed independently from year to year, and the last two characters of the strata and PSU variable names denoted the year. However,

beginning with the 2002 Point-in-Time PUF, the variance strata and PSUs were developed to be compatible with MEPS data associated with the NHIS sample design used through 2005. Such data can be pooled and the variance strata and PSU variables provided can be used without modification for variance estimation purposes for estimates covering multiple years of data. There are 203 variance estimation strata, each stratum with either two or three variance estimation PSUs.

Note: A new NHIS sample design is being implemented beginning in 2006. As a result, the MEPS variance estimation structure will be modified for MEPS data collected in 2007 and beyond.

5.0   Merging/Linking MEPS Data Files

Data from this file can be used alone or in conjunction with other files for different analytic purposes. This section summarizes various scenarios for merging/linking MEPS event files. Each MEPS panel can also be linked back to the previous years National Health Interview Survey public use data files. For information on obtaining MEPS/NHIS link files please see www.meps.ahrq.gov/data_stats/more_info_download_data_files.jsp.

5.1   Linking to the Person-Level File

Merging characteristics of interest from person-level file (e.g., MEPS 2006 Full Year Population Characteristics File, or MEPS 2006 Person-Level Use and Expenditure File) expands the scope of potential estimates. For example, to estimate the total number of emergency room visits for persons with specific demographic characteristics (e.g., age, race, sex, and education), population characteristics from a person-level file need to be merged onto the emergency room visit file. This procedure is illustrated below. The MEPS 2006 Appendix File, HC-102I, provides additional detail on how to merge MEPS data files.

1) Create data set PERSX by sorting the MEPS 2006 Full Year Population Characteristics File by the person identifier, DUPERSID. Keep only variables to be merged onto the emergency room visit file and DUPERSID.

2) Create data set EROM by sorting the emergency room visit file by person identifier, DUPERSID.

3) Create final data set NEWEROM by merging these two files by DUPERSID, keeping only records on the emergency room visit file.

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

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

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

DATA NEWEROM;
    MERGE EROM (IN=A) PERSX(IN=B);
    BY DUPERSID;
    IF A;
RUN;
```

5.2   Linking to the Prescribed Medicines File

The RXLK file provides a link from the MEPS event files to the Prescribed Medicine Event File. When using RXLK, data users/analysts should keep in mind that one inpatient stay can link to more than one prescribed medicine record. Conversely, a prescribed medicine event may link to more than one inpatient stay visit or different types of events. When this occurs, it is up to the data user/analyst to determine how the prescribed medicine expenditures should be allocated among those medical events. For detailed linking examples, including SAS code, data users/analysts should refer to the MEPS 2006 Appendix File, HC-102I.

5.3   Linking to the Medical Conditions File

The CLNK provides a link from MEPS event files to the 2006 Medical Conditions File. When using the CLNK, data users/analysts should keep in mind that (1) conditions are self-reported, (2) there may be multiple conditions associated with an emergency room visit and (3) a condition may link to more than one emergency room visit or any other type of visit. Data users/analysts should also note that not all emergency room visits link to the medical 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-102E: 2006 EMERGENCY ROOM VISITS

Survey Administration Variables

Variable	Description	Source
DUID	Dwelling unit ID	Assigned in sampling
PID	Person number	Assigned in sampling
DUPERSID	Person ID (DUID + PID)	Assigned in sampling
EVNTIDX	Event ID	Assigned in sampling
EVENTRN	Event round number	CAPI derived
ERHEVIDX	Event ID for corresponding hospital stay	Constructed
FFEEIDX	Flat fee ID	CAPI derived
PANEL	Panel Number	Constructed
MPCDATA	MPC data flag	Constructed

Emergency Room Visit Event Variables

Variable	Description	Source
ERDATEYR	Event date – year	CAPI derived
ERDATEMM	Event date – month	CAPI derived
ERDATEDD	Event date – day	CAPI derived
SEEDOC	Did p talk to MD this visit	ER01
VSTCTGRY	Best category for care p recv on vst dt	ER02
VSTRELCN	This vst related to spec condition	ER03
LABTEST	This visit did p have lab tests	ER05
SONOGRAM	This visit did p have sonogram or ultrsd	ER05
XRAYS	This visit did p have x–rays	ER05
MAMMOG	This visit did p have a mammogram	ER05
MRI	This visit did p have an MRI/Catscan	ER05
EKG	This visit did p have an EKG or ECG	ER05
EEG	This visit did p have an EEG	ER05
RCVVAC	This visit did p receive a vaccination	ER05
ANESTH	This visit did p receive anesthesia	ER05

Variable	Description	Source
OTHSVCE	This visit did p have oth diag tests/exams	ER05
SURGPROC	Was surg proc performed on p this visit	ER06
MEDPRESC	Any medicine prescribed for p this visit	ER08
VAPLACE	VA facility flag	Constructed
ERICD1X	3-digit ICD-9-CM condition code	Edited
ERICD2X	3-digit ICD-9-CM condition code	Edited
ERICD3X	3-digit ICD-9-CM condition code	Edited
ERPRO1X	2-digit ICD-9-CM procedure code	Edited
ERPRO2X	2-digit ICD-9-CM procedure code	Edited
ERCCC1X	Modified Clinical Classification Code	Constructed/Edited
ERCCC2X	Modified Clinical Classification Code	Constructed/Edited
ERCCC3X	Modified Clinical Classification Code	Constructed/Edited

Flat Fee Variables

Variable	Description	Source
FFERTYPE	Flat fee bundle	Constructed
FFBEF06	Total # of visits in FF before 2006	FF05
FFTOT07	Total # of visits in FF after 2006	FF10

Imputed Total Expenditure Variables

Variable	Description	Source
ERXP06X	Total exp for event (ERFXP06X + ERDXP06X)	Constructed
ERTC06X	Total chg for event (ERFTC06X + ERDTC06X)	Constructed

Imputed Facility Expenditure Variables

Variable	Description	Source
ERFSF06X	Facility amt pd, family (Imputed)	CP Section (Edited)
ERFMR06X	Facility amt pd, Medicare (Imputed)	CP Section (Edited)

Variable	Description	Source
ERFMD06X	Facility amt pd, Medicaid (Imputed)	CP Section (Edited)
ERFPV06X	Facility amt pd, priv insur (Imputed)	CP Section (Edited)
ERFVA06X	Facility amt pd, Veterans (Imputed)	CP Section (Edited)
ERFTR06X	Facility amt pd, TRICARE/CHAMPVA (Imputed)	CP Section (Edited)
ERFOF06X	Facility amt pd, oth federal (Imputed)	CP Section (Edited)
ERFSL06X	Facility amt pd, state/local gov (Imputed)	CP Section (Edited)
ERFWC06X	Facility amt pd, Workers Comp (Imputed)	CP Section (Edited)
ERFOR06X	Facility amt pd, oth priv (Imputed)	Constructed
ERFOU06X	Facility amt pd, oth pub (Imputed)	Constructed
ERFOT06X	Facility amt pd, oth insur (Imputed)	CP Section (Edited)
ERFXP06X	Facility sum payments ERFSF06X – ERFOT06X	Constructed
ERFTC06X	Total facility charge (Imputed)	CP Section (Edited)

Imputed Physician Expenditure Variables

Variable	Description	Source
ERDSF06X	Doctor amount paid, family (Imputed)	Constructed
ERDMR06X	Doctor amount pd, Medicare (Imputed)	Constructed
ERDMD06X	Doctor amount paid, Medicaid (Imputed)	Constructed
ERDPV06X	Doctor amt pd, priv insur (Imputed)	Constructed
ERDVA06X	Doctor amount paid, Veterans (Imputed)	Constructed
ERDTR06X	Doctor amount pd, TRICARE/CHAMPVA (Imputed)	Constructed

Variable	Description	Source
ERDOF06X	Doctor amt paid, oth federal (Imputed)	Constructed
ERDSL06X	Doctor amt pd, state/local gov (Imputed)	Constructed
ERDWC06X	Doctor amount pd, Workers Comp (Imputed)	Constructed
ERDOR06X	Doctor amt pd, oth private (Imputed)	Constructed
ERDOU06X	Doctor amt pd, oth pub (Imputed)	Constructed
ERDOT06X	Doctor amt pd, oth insur (Imputed)	Constructed
ERDXP06X	Doctor sum payments ERDSF06X – ERDOT06X	Constructed
ERDTC06X	Total doctor charge (Imputed)	Constructed
IMPFLAG	Imputation status	Constructed

Weights

Variable	Description	Source
PERWT06F	Expenditure file person weight, 2006	Constructed
VARSTR	Variance estimation stratum, 2006	Constructed
VARPSU	Variance estimation PSU, 2006	Constructed