MEPS HC-199
2017 Medical Conditions

August 2019

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

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Table of Contents

Table of Contents (continued)

A. Data Use Agreement

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

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

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

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

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

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

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

B. Background

1.0 Household Component

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

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

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

2.0 Medical Provider Component

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

3.0   Survey Management and Data Collection

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

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

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

<h1 style="text-align:center">C. Technical and Programming Information</h1>

1.0   General Information

This documentation describes the data contained in MEPS Public Use Release HC-199, which is one in a series of public use data files to be released from the 2017 Medical Expenditure Panel Survey Household Component (MEPS HC). Released in ASCII (with related SAS, SPSS, and Stata programming statements and data user information) and SAS formats, this public use file provides information on household-reported medical conditions collected on a nationally representative sample of the civilian noninstitutionalized population of the United States for calendar year 2017 MEPS HC. The file contains 25 variables and has a logical record length of 81 with an additional 2-byte carriage return/line feed at the end of each record.

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

- Data File Information
- Survey Sample Information
- Merging/Linking MEPS Data Files
- Appendices
  - Variable-Source Crosswalk
  - Detailed ICD-10-CM Condition Code Frequencies
  - List of Conditions Asked in Priority Conditions Enumeration Section

A codebook of all the variables included in the 2017 Medical Conditions File is provided in an accompanying file.

For more information on the MEPS sample design, see Chowdhury et al (2019). A copy of the survey instrument used to collect the information on this file is available on the MEPS website.

2.0   Data File Information

This file contains 112,630 records. Each record represents one *current* medical condition reported for a household survey member who resides in an eligible responding household and who has a positive person or family weight. A condition is defined as *current* if it is linked to an event or a condition the person reported as experiencing during 2017 (i.e., a condition selected in the Condition Enumeration (CE) section). Starting with Panel 21 Round 5 and Panel 22 Round 3, the CE section is no longer asked. Conditions in the Priority Condition Enumeration (PE) section are asked in the context of "has person ever been told by a doctor or other health care professional that they have (condition)?" except joint pain and chronic bronchitis, which ask only about the last 12 months. Persons with a response of Yes (1) to a priority condition question for whom the condition is not *current* as defined above will not have a record for that condition in this file.

Records meeting one of the following criteria are included on the file:

In Panel 22:

- Round 1 and Round 2 records that are linked to a 2017 event or a condition the person is currently experiencing (i.e., a condition selected in the CE section);
- Round 3 conditions that were linked to a 2017 event.

In Panel 21:

- Round 1 and Round 2 condition records that are linked to a 2017 event or a condition the person is currently experiencing in 2017 (i.e., a condition selected in the CE section);
- Round 3 and Round 4 records that are linked to a 2017 event or a condition the person is currently experiencing (i.e., a condition selected in the CE section);
- Round 5 condition records linked to a 2017 event.

For most variables on the file, the codebook provides both weighted and unweighted frequencies. The exceptions to this are weight variables and variance estimation variables. Only unweighted frequencies of these variables are included in the accompanying codebook file. See the Weights Variables list in Appendix 1, Variable-Source Crosswalk.

Person-level data (e.g., demographic or health insurance characteristics) from the 2017 MEPS full-year consolidated file (HC-201) can be merged to the records in this file using DUPERSID (see Section 4.0 for details). Since each record represents a single condition reported by a household respondent, some household members may have multiple medical conditions and thus will be represented by multiple records on this file. Other household members may have had no reported medical conditions and thus will have no records on this file. Still other household members may have had a reported medical condition that did not meet the criteria above and thus will have no records on this file. Data from this file also can be merged to 2017 MEPS Event Files (HC-197A, and HC-197D through HC-197H) by using the link files provided in HC-197I. (See HC-197I documentation for details.)

2.1 Codebook Structure

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

Unique person identifiers
Unique condition identifiers
Medical condition variables
Utilization variables
Weight and variance estimation variables

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

2.2　　　　Reserved Codes

The following reserved code values are used:

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

2.3　　　　Codebook Format

This codebook describes an ASCII data set and provides the following programming identifiers for each variable:

Identifier	Description
Name	Variable name (maximum of 8 characters)
Description	Variable descriptor (maximum 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 Naming

In general, variable names reflect the content of the variable, with an 8-character limitation. Edited variables end in an "X" and are so noted in the variable label. (CONDIDX, which is an encrypted identifier variable, also ends in an "X".)

Variables contained in this delivery were derived either from the questionnaire itself or from the CAPI. The source of each variable is identified in Appendix 1, Variable-Source Crosswalk. Sources for each variable are indicated in one of three ways: (1) variables derived from CAPI or assigned in sampling are so indicated; (2) variables collected at one or more specific questions have those numbers and questionnaire sections indicated in the "SOURCE" column; and (3) variables constructed from multiple questions using complex algorithms are labeled "Constructed" in the "SOURCE" column.

2.5　　　　File Contents

2.5.1　　　　Identifier Variables (DUID-CONDRN)

The definitions of Dwelling Units (DUs) in the MEPS HC are generally consistent with the definitions employed for the National Health Interview Survey (NHIS). The dwelling unit ID

(DUID) is a 5-digit random number assigned after the case was sampled for MEPS. The person number (PID) uniquely identifies each person within the dwelling unit.

The variable DUPERSID uniquely identifies each person represented on the file and is the combination of the variables DUID and PID.

CONDN is the condition number and uniquely identifies each condition reported for an individual. The range on this file for CONDN is 11-581 and the range of total records for any one person on the file is 1-54.

The variable CONDIDX uniquely identifies each condition (i.e., each record on the file) and is the combination of DUPERSID and CONDN. CONDIDX is always a length of 12 with DUPERSID (8) and CONDN (4) combined. For CONDIDX, the condition number is padded with leading zeroes to ensure consistent length.

PANEL is a constructed variable used to specify the panel number for the interview in which the condition was reported. PANEL will indicate either Panel 21 or Panel 22.

CONDRN indicates the round in which the condition was first *reported*. For a small number of cases, conditions that actually began in an earlier round were not reported by respondents until subsequent rounds of data collection. During file construction, editing was performed for these cases in order to reconcile the round in which a condition began and the round in which the condition was first reported.

2.5.2 Medical Condition Variables (AGEDIAG-ICD10CDX)

This file contains variables describing medical conditions reported by respondents in several sections of the MEPS questionnaire, including the Condition Enumeration section, and all questionnaire sections collecting information about health provider visits and/or prescription medications (see Variable-Source Crosswalk in Appendix 1 for details).

2.5.2.1 Priority Conditions and Injuries

Certain conditions were *a priori* designated as "priority conditions" due to their prevalence, expense, or relevance to policy. Some of these are long-term, life-threatening conditions, such as cancer, diabetes, emphysema, high cholesterol, hypertension, ischemic heart disease, and stroke. Others are chronic manageable conditions, including arthritis and asthma. The only mental health condition on the priority conditions list is attention deficit hyperactivity disorder/attention deficit disorder.

When a condition was first mentioned, respondents were asked whether it was due to an accident or injury (INJURY=1). Only non-priority conditions (i.e., conditions reported in a section other than PE) are eligible to be injuries. The interviewer is prevented from selecting priority conditions as injuries.

2.5.2.2 Age Priority Condition Began

The age of diagnosis (AGEDIAG) was collected for all priority conditions, except joint pain. For confidentiality reasons, AGEDIAG is set to Inapplicable (-1) for cancer conditions.

To ensure confidentiality, age of diagnosis was top-coded to 85. This corresponds with the age top-coding in person-level PUFs.

2.5.2.3 Follow-up Questions for Injuries and Priority Conditions

When a respondent reported that a condition resulted from an accident or injury (INJURY=1), respondents were asked during the round in which the injury was first reported whether the accident/injury occurred at work (ACCDNWRK). This question was not asked about persons aged 15 and younger; the condition had ACCDNWRK coded to inapplicable (-1) for those persons.

2.5.2.4 Sources for Conditions on the MEPS Conditions File

The records on this file correspond with medical condition records collected by CAPI and stored on a person's MEPS conditions roster. Conditions can be added to the MEPS conditions roster in several ways. A condition can be reported in the Priority Condition Enumeration (PE) section in which persons are asked if they have been diagnosed with specific conditions. The condition can be identified as the reason reported by the household respondent for a particular medical event (hospital stay, outpatient visit, emergency room visit, home health episode, prescribed medication purchase, or medical provider visit). Some condition information is collected in the Medical Provider Component of MEPS. However, since it is not available for everyone in the sample, it is not used to supplement, replace, or verify household-reported condition data.

Finally, prior to Panel 21 Round 5 and Panel 22 Round 3, the condition may be reported by the household-level respondent as a condition "bothering" the person during the reference period (see question CE03). Conditions reported in the PE section that are not current are not included on this file.

2.5.2.5 Treatment of Data from Rounds Not Occurring in 2017

Prior to the 2008 file, priority conditions reported during Rounds 1 and 2 of the second year panel were included on the file even if the conditions were not related to an event or reported as a serious condition occurring in the second year of the panel. Beginning in 2008, priority conditions are included on the file only if they are current conditions. A current condition is defined as a condition linked to an event or a condition the person is currently experiencing (i.e., a condition selected in the Condition Enumeration (CE) section). However, starting in Panel 21 Round 5 and Panel 22 Round 3, a current condition is defined only as a condition linked to a 2017 event. Conditions from Rounds 1 and 2 that are not included in the 2017 file may be available in the 2016 Medical Conditions File if the person had a positive person or family weight in 2016. For 2017, 66 conditions from Panel 21 Rounds 1 and 2 are included on the 2017 Medical Conditions File for persons who did not appear on the previous year's file.

Note: Priority conditions are generally chronic conditions. Even though a person may not have reported an event in 2017 due to the condition, or reported generally experiencing the condition in 2017, analysts should consider that the person is probably still experiencing the condition. If a Panel 21 person reported a priority condition in Round 1 or 2 and did not have an event for the condition in Round 3, 4, or 5, the condition will not be included on the 2017 Medical Conditions File.

2.5.2.6   Rounds in Which Conditions Were Reported/Selected (CRND1 – CRND5)

A set of constructed variables indicates the round in which the condition was first reported (CONDRN), and the subsequent round(s) in which the condition was selected (CRND1 – CRND5). The condition may be reported or selected when the person reports an event that occurred due to the condition, or the condition was reported in the CE section but is not linked to any events. For example, consider a condition for which CRND1 = 0, CRND2 = 1, and CRND3 = 1. For non-priority conditions, this sequence of indicators on a condition record implies that the condition was not present during Round 1 (CRND1 = 0), was first mentioned during Round 2 (CRND2 = 1, CONDRN = 2), and was selected again during Round 3 (CRND3 = 1). For priority conditions, this sequence of indicators implies that the condition was reported in the PE section in Round 1 (CONDRN = 1) but was not connected with an event in that round (CRND1 = 0), and the condition was not selected in the CE section as a current condition until Rounds 2 and 3 (CRND2 = 1, CRND3 = 1). Because priority conditions are asked in the context of "has person ever been told by a doctor or other health care professional that they have (condition)?" except joint pain and chronic bronchitis, which ask only about the last 12 months, a priority condition might not be selected in the round in which it was first reported.

2.5.2.7   Diagnosis and Condition Codes

The medical conditions and procedures reported by the Household Component respondent were recorded by the interviewer as verbatim text. Beginning FY16, ICD-9-CM codes (ICD9CODX) are no longer used and medical conditions now are coded to ICD-10-CM codes (ICD10CDX). Also beginning in FY16, condition names are no longer coded to procedure codes, and ICD9PROX has been dropped from the file.

Professional coders followed specific guidelines in coding missing values to the ICD-10-CM diagnosis condition variable. ICD10CDX was coded -9 (Not Ascertained) where the verbatim text fell into one of three categories: (1) the text indicated that the condition was unknown (e.g., DK); (2) the text indicated the condition could not be diagnosed by a doctor (e.g., doctor doesn't know); or (3) the specified condition was not codeable. If the text indicated a procedure and the condition associated with the procedure could be discerned from the text, the condition itself is coded. For example, "cataract surgery" is coded as the condition "other cataract" (ICD10CDX is set to code "H26"). If the condition could not be discerned (e.g. "outpatient surgery"), ICD10CDX is set to -9.

Through FY15, the text strings were coded by professional coders to fully-specified ICD-9-CM codes, including medical condition and V codes (see Health Care Financing Administration, 1980). Condition names were coded to ICD-9-CM diagnosis codes (ICD9CODX), and to ICD-9-CM procedure codes (ICD9PROX) when applicable (the condition name indicated a

procedure/surgery). Through FY15, ICD9CODX also was coded -9 if the specified condition was not codeable and a procedure could not be discerned from the text; if the verbatim text strictly denoted a procedure and not a condition, ICD9CODX was coded -1.

In order to preserve confidentiality, all of the conditions provided on this file have been coded to 3-digit diagnosis code categories rather than the fully-specified ICD-10-CM code. For example, the ICD10CDX value of J02 "Acute pharyngitis" includes the fully-specified subclassifications J020 and J029; the value F31 "Bipolar disorder" includes the fully-specified subclassifications F3110 through F319. Table 1 in Appendix 2 provides unweighted and weighted frequencies for all ICD-10-CM condition code values reported on the file. Approximately 2 percent of the ICD-10-CM codes on this file were edited further by collapsing two or more 3-digit codes into one 3-digit code. This includes clinically rare conditions that were recoded to broader codes by clinicians. A condition is determined to be clinically rare if it appears on the National Institutes of Health's list of rare diseases.

For confidentiality purposes, approximately 5% of ICD-10-CM codes were recoded to -9 (Not Ascertained) for conditions where the frequency was less than 20 for the total unweighted population in the file or less than 200,000 for the weighted population. Additional factors used to determine recoding include age and gender.

In a small number of cases, diagnosis and condition codes were recoded to -9 (Not Ascertained) if they denoted a pregnancy for a person younger than 16 or older than 44. Less than one-tenth of 1 percent of records were recoded in this manner on the 2017 Medical Conditions File. The person's age was determined by linking the 2017 Medical Conditions File to the 2016 and 2017 Person-Level Use PUFs. If the person's age is under 16 or over 44 in the round in which the condition was reported, the appropriate condition code was recoded to -9 (Not Ascertained).

Users should note that because of the design of the survey, most deliveries (i.e., births) are coded as pregnancies. For more accurate estimates for deliveries, analysts should use RSNINHOS "Reason Entered Hospital" found on the Hospital Inpatient Stays Public Use File (HC-197D).

Each year, a few conditions on the final file may fall below the confidentiality threshold. This is due to the multistage file development process. The confidentiality recoding is performed on the preliminary version of the Conditions file each year. This preliminary version is used in the development of other event PUFs and, in turn, these event PUFs are used in the development of the final conditions file. During this process, some records from the preliminary file are dropped because only records that are relevant to the current data year are reflected in the final Conditions PUF.

Conditions file data can be merged with the 2017 MEPS Event Files. Because the conditions have been coded to 3-digit diagnosis code categories rather than the fully-specified ICD-10-CM code, it is possible for there to be duplicate ICD-10-CM condition codes linked to a single medical event when different fully-specified conditions are coded to the same 3-digit code. For information on merging data on this file with the 2017 MEPS Event Files (HC-197A, and HC-197D through HC-197H) refer to the link files provided in HC-197I, and see HC-197I documentation for details.

Conditions were reported in sections of the HC questionnaire (see Variable-Source Crosswalk in Appendix 1). Labels for all values of ICD10CDX, as shown in Table 1 of Appendix 2, are provided in the SAS programming statements included in this release (see the H199SU.TXT file).

2.5.2.8   Clinical Classification Codes

The 2016 Medical Conditions public use file (PUF) was the first time ICD10 codes were provided on MEPS public use files. As a consequence of the adoption of the new condition classification system, the ICD-10 mapping to CCS codes is still under review and a final mapping is not available at the time of this file release. Users can visit the Healthcare Cost and Utilization Project (HCUP) website for more information.

2.5.3   Utilization Variables (OBNUM – RXNUM)

The variables OBNUM, OPNUM, HHNUM, IPNUM, ERNUM, and RXNUM indicate the total number of 2017 events that can be linked to each condition record on the current file, i.e., office-based, outpatient, home health, inpatient hospital stays, emergency room visits, and prescribed medicines, respectively.

These counts of events were derived from Expenditure Event Public Use Files (HC-197G, HC-197F, HC-197H, HC-197D, HC-197E, and HC-197A). Events associated with conditions include all utilization that occurred between January 1, 2017 and December 31, 2017.

Because persons can be seen for more than one condition per visit, these frequencies will not match the person or event-level utilization counts. For example, if a person had one inpatient hospital stay and was treated for a fractured hip, a fractured shoulder, and a concussion, each of these conditions has a unique record in this file and IPNUM=1 for each record. By summing IPNUM for these records, the total inpatient hospital stays would be three when actually there was only one inpatient hospital stay for that person and three conditions were treated. These variables are useful for determining the number of inpatient hospital stays for head injuries, hip fractures, etc.

3.0   Survey Sample Information

3.1   Overview

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

3.2 Details on Person Weight Construction

The person-level weight PERWT17F was developed in several stages. First, person-level weights for Panel 21 and Panel 22 were created separately. The weighting process for each panel included adjustments for nonresponse over time and calibration to independent population totals. The calibration was initially accomplished separately for each panel by raking the corresponding sample weights to Current Population Survey (CPS) population estimates based on six variables. The six variables used in the establishment of the initial person-level control figures were: educational attainment of the reference person (no degree, high school/GED no college, some college, bachelor's or a higher degree); census region (Northeast, Midwest, South, West); MSA status (MSA, non-MSA); race/ethnicity (Hispanic; Black, non-Hispanic; Asian, non-Hispanic; and other); sex; and age. A 2017 composite weight was then formed by multiplying each weight from Panel 21 by the factor .500 and each weight from Panel 22 by the factor .500. Using such factors to form composite weights serves to limit the variance of estimates obtained from pooling the two samples. The resulting composite weight was raked to the same set of CPS-based control totals. Then, when the poverty status information (derived from the MEPS income variables) became available, another raking was undertaken, using dimensions reflecting poverty status in addition to the previously mentioned six variables. Control totals were established using poverty status (five categories: below poverty, from 100 to 125 percent of poverty, from 125 to 200 percent of poverty, from 200 to 400 percent of poverty, at least 400 percent of poverty) as well as the other five variables previously used in the weight calibration. Thus, the raking for the final weight reflected poverty status as well as the other five variables previously used in the weight calibration.

3.2.1 MEPS Panel 21 Weight Development Process

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

Note that the 2016 full-year weight that was used as the base weight for Panel 21 was derived using the MEPS Round 1 weight and adjusting it further for nonresponse over the remaining data collection rounds in 2016 and raking to the December 2016 population control figures.

3.2.2   MEPS Panel 22 Weight Development Process

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

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

3.2.3   The Final Weight for 2017

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

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

3.2.4   Coverage

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

residence in another country, and persons leaving institutions. The set of uncovered persons constitutes only a small segment of the MEPS target population.

3.3 Using MEPS Data for Trend Analysis

MEPS began in 1996, and the utility of the survey for analyzing health care trends expands with each additional year of data; however, there are a variety of methodological and statistical considerations when examining trends over time using MEPS. Examining changes over longer periods of time can provide a more complete picture of underlying trends. 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 survey methodology.

In 2013 MEPS survey operations introduced an effort to obtain more complete information about health care utilization from MEPS respondents with full implementation in 2014. This effort resulted in improved data quality and a reduction in underreporting in the second half of 2013 and throughout 2014. Respondents tended to report more visits, especially non-physician visits, by sample members and the new approach appeared particularly effective among those subgroups with relatively large numbers of visits, such as the elderly, Medicare beneficiaries, and people with multiple chronic conditions, disabilities, or poor health. Reported spending on visits also tended to increase, especially for such subgroups.

Changes to the MEPS survey instrument should also be considered when analyzing trends. Thus, the note on the title page of this document is repeated here:

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

As always, it is recommended that data users review relevant sections of the documentation for descriptions of these types of changes before undertaking trend analyses.

Analysts may also wish to consider using statistical techniques to smooth or stabilize analyses of trends using MEPS data such as comparing pooled time periods (e.g. 1996-97 versus 2011-12), 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, statistical significance tests should be conducted to assess the likelihood that observed trends are not attributable to sampling variation. In addition, researchers should be aware of the impact of multiple comparisons on Type I error. Without making appropriate allowance for multiple comparisons, undertaking numerous statistical significance tests of trends increases the likelihood of concluding that a change has taken place when one has not.

4.0   Merging/Linking MEPS Data Files

Data from the current file can be used alone or in conjunction with other files. Merging characteristics of interest from person-level files expands the scope of potential estimates. See HC-197I for instructions on merging the Conditions File to the Medical Event Files. Person-level characteristics can be merged to this Conditions File using the following procedure:

1.   Sort the person-level file by person identifier, DUPERSID. Keep only DUPERSID and the variables to be merged onto the Conditions File.

2.   Sort the Conditions File by person identifier, DUPERSID.

3.   Merge both files by DUPERSID, and output all records in the Conditions File.

4.   If PERS contains the person-level variables, and COND is the Conditions File, the following code can be used to add person-level variables to the person's conditions in the Condition-level file.

```
PROC SORT DATA=PERS(KEEP=DUPERSID AGE SEX EDUCYR HIDEG)
OUT=PERSX; BY DUPERSID;
RUN;

PROC SORT DATA=COND; BY DUPERSID;
RUN;

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

4.1   National Health Interview Survey (NHIS)

Data from this file can be used alone or in conjunction with other files for different analytic purposes. Each MEPS panel can also be linked back to the previous years' National Health Interview Survey public use data files. For information on MEPS/NHIS link files please see the AHRQ website.

4.2   Longitudinal Analysis

Panel-specific longitudinal files are available for downloading in the data section of the MEPS website. For each panel, the longitudinal file comprises MEPS survey data obtained in Rounds 1 through 5 of the panel and can be used to analyze changes over a two-year period. Variables in the file pertaining to survey administration, demographics, employment, health status, disability days, quality of care, patient satisfaction, health insurance, and medical care use and expenditures were obtained from the MEPS full-year Consolidated files from the two years covered by that panel.

For more details or to download the data files, please see Longitudinal Data Files at the [AHRQ website](#).

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Appendix 1
Variable-Source Crosswalk

Appendix 1 – Variable-Source Crosswalk

FOR MEPS HC-199: 2017 MEDICAL CONDITIONS

UNIQUE IDENTIFIER VARIABLES

VARIABLE	LABEL	SOURCE[1]
DUID	Dwelling Unit ID	Assigned In Sampling
PID	Person Number	Assigned In Sampling
DUPERSID	Person ID (DUID + PID)	Assigned In Sampling
CONDN	Condition Number	CAPI Derived
CONDIDX	Condition ID	CAPI Derived
PANEL	Panel Number	Constructed
CONDRN	Condition Round Number	CAPI Derived

MEDICAL CONDITION VARIABLES

VARIABLE	LABEL	SOURCE[1]
AGEDIAG	Age When Diagnosed	PE section
CRND1	Has Condition Information In Round 1	Constructed
CRND2	Has Condition Information In Round 2	Constructed
CRND3	Has Condition Information In Round 3	Constructed
CRND4	Has Condition Information In Round 4	Constructed
CRND5	Has Condition Information In Round 5	Constructed
INJURY	Was Condition Due To Accident/Injury	CN01A
ACCDNWRK	Did Accident Occur At Work	CN07
ICD10CDX	ICD-10-CM Code For Condition - Edited	CE05, HS04, ER04, OP09, MV09, HH05, PM09 (Edited)

UTILIZATION VARIABLES

VARIABLE	LABEL	SOURCE[1]
HHNUM	# Home Health Events Assoc. w/ Condition	Constructed
IPNUM	# Inpatient Events Assoc. w/ Condition	Constructed
OPNUM	# Outpatient Events Assoc. w/ Condition	Constructed
OBNUM	# Office-Based Events Assoc. w/ Condition	Constructed
ERNUM	# ER Events Assoc. w/ Condition	Constructed
RXNUM	# Prescribed Medicines Assoc. w/ Cond.	Constructed

[1] See the Household Component section under Survey Questionnaires on the MEPS home page for information on the MEPS HC questionnaire sections shown in the Source column (e.g., CN, PE).

WEIGHTS AND VARIANCE ESTIMATION VARIABLES

VARIABLE	LABEL	SOURCE[1]
PERWT17F	Expenditure File Person Weight, 2017	Constructed
VARSTR	Variance Estimation Stratum, 2017	Constructed
VARPSU	Variance Estimation PSU, 2017	Constructed

[1] See the Household Component section under Survey Questionnaires on the MEPS home page for information on the MEPS HC questionnaire sections shown in the Source column (e.g., CN, PE).

**Appendix 2
Condition Code Frequencies**

```
                                    TABLE 1
                UNWEIGHTED AND WEIGHTED COUNT OF RECORDS FOR EACH VALUE OF ICD10CDX


    ICD10CDX                                                          WEIGHTED
    VALUE       LABEL                               UNWEIGHTED       BY perwt17f


     -9         NOT ASCERTAINED                          6,777      74,046,357
     A04        OTHER BACTERIAL INTESTINAL INFECTION        37         369,549
     A08        VIRAL AND OTHER SPECIFIED INTEST INF       519       5,740,821
     A09        INFECT GASTROENTERIT AND COLITIS, UN        53         459,691
     A41        OTHER SEPSIS                                26         239,155
     A49        BACTERIAL INFECTION OF UNSPECIFIED S       229       2,867,411
     B00        HERPESVIRAL [HERPES SIMPLEX] INFECTI       144       1,832,996
     B02        ZOSTER [HERPES ZOSTER]                     114       1,211,221
     B07        VIRAL WARTS                                138       1,887,501
     B08        OTH VIR INFEC SKIN AND MUC MEMB LES,        56         815,646
     B19        UNSPECIFIED VIRAL HEPATITIS                 61         536,666
     B34        VIRAL INFECTION OF UNSPECIFIED SITE        283       3,039,759
     B35        DERMATOPHYTOSIS                            180       2,001,838
     B36        OTHER SUPERFICIAL MYCOSES                   21         270,021
     B37        CANDIDIASIS                                231       2,708,277
     B49        UNSPECIFIED MYCOSIS                          37         401,327
     C18        MALIGNANT NEOPLASM OF COLON                 70         764,976
     C34        MALIGNANT NEOPLASM OF BRONCHUS AND L        69         709,262
     C44        OTHER AND UNSPEC MALIGNANT NEOPLASM        437       6,079,625
     C50        MALIGNANT NEOPLASM OF BREAST               207       2,318,839
     C53        MALIGNANT NEOPLASM OF CERVIX UTERI          27         399,747
     C55        MAL NEO OF UTERUS, PART UNSPECIFIED         22         206,492
     C61        MALIGNANT NEOPLASM OF PROSTATE             167       1,753,181
     C64        MAL NEO KIDNEY, EXCEPT RENAL PELVIS         36         394,548
     C76        MAL NEO OTHER AND ILL-DEFINED SITES         40         452,203
     C80        MALIGN NEO W/O SPECIFICATION OF SITE        35         400,543
     C85        OTHER SPEC AND UNSPEC NON-HODGK LYMP        42         481,113
     C95        LEUKEMIA OF UNSPECIFIED CELL TYPE           28         286,175
     D04        CARCINOMA IN SITU OF SKIN                   55         660,156
     D17        BENIGN LIPOMATOUS NEOPLASM                  28         247,718
     D21        OTH BEN NEO CONNECT AND OTHER SOFT T        44         434,527
     D22        MELANOCYTIC NEVI                           143       1,824,966
     D36        BENIGN NEOPLASM OTHER AND UNSPEC SIT        21         236,581
     D48        NEO UNCERT BEHAV OTH AND UNSPECI SIT        23         324,868
     D49        NEOPLASMS OF UNSPECIFIED BEHAVIOR          392       4,732,605
     D64        OTHER ANEMIAS                              295       2,878,819
     D72        OTHER DISORDERS OF WHITE BLOOD CELLS        24         215,228
     E03        OTHER HYPOTHYROIDISM                       653       8,304,036
     E04        OTHER NONTOXIC GOITER                       52         695,134
     E05        THYROTOXICOSIS [HYPERTHYROIDISM]           128       1,274,587
     E06        THYROIDITIS                                 42         550,423
     E07        OTHER DISORDERS OF THYROID               1,042      11,114,516
     E11        TYPE 2 DIABETES MELLITUS                 2,916      27,580,093
     E16        OTH DISORD PANCREATIC INTERNAL SECRE        20         209,467
     E28        OVARIAN DYSFUNCTION                         56         798,531
     E34        OTHER ENDOCRINE DISORDERS                  117       1,493,032
     E53        DEFICIENCY OF OTHER B GROUP VITAMINS        65         805,048
     E56        OTHER VITAMIN DEFICIENCIES                  51         470,222
     E58        DIETARY CALCIUM DEFICIENCY                  31         203,382
     E61        DEFICIENCY OF OTHER NUTRIENT ELEMENT        75         747,138
     E63        OTHER NUTRITIONAL DEFICIENCIES             365       3,402,253
     E66        OVERWEIGHT AND OBESITY                     165       1,657,808
     E78        DISORD LIPOPROTEIN METAB AND OTH LIP     4,861      51,389,999
     E83        DISORDERS OF MINERAL METABOLISM             45         567,837
     E86        VOLUME DEPLETION                           117       1,593,743
     E87        OTH DISORD FLUID, ELECTROL ACID-BASE       288       2,857,434
     E88        OTHER AND UNSPEC METABOLIC DISORDERS        22         243,590
     F03        UNSPECIFIED DEMENTIA                       128       1,338,063
     F06        OTH MENT DISORD DUE TO KNOWN PHYSIO         85         989,979
     F11        OPIOID RELATED DISORDERS                    20         230,959
     F17        NICOTINE DEPENDENCE                         24         284,338
     F31        BIPOLAR DISORDER                           306       3,031,800
```

```
                                  TABLE 1
             UNWEIGHTED AND WEIGHTED COUNT OF RECORDS FOR EACH VALUE OF ICD10CDX


   ICD10CDX                                                          WEIGHTED
   VALUE      LABEL                               UNWEIGHTED       BY perwt17f


    F32      MAJ DEPRESSIVE DISORDER, SINGLE EPIS      2,444        25,886,837
    F34      PERSISTENT MOOD [AFFECTIVE] DISORDER         46           417,058
    F39      UNSPECIFIED MOOD [AFFECTIVE] DISORDE         84         1,133,254
    F40      PHOBIC ANXIETY DISORDERS                     44           476,782
    F41      OTHER ANXIETY DISORDERS                   2,684        30,318,274
    F42      OBSESSIVE-COMPULSIVE DISORDER                47           436,902
    F43      REACTION SEVER STRESS, AND ADJUST DI        808         8,750,618
    F48      OTHER NONPSYCHOTIC MENTAL DISORDERS          20           192,604
    F51      SLEEP DIS NOT DUE TO SUB OR KNOW PHY         24           218,557
    F60      SPECIFIC PERSONALITY DISORDERS               94           750,842
    F80      SPEC DEVELOP DISORD SPEECH AND LANGU         63           625,184
    F84      PERVASIVE DEVELOPMENTAL DISORDERS           118         1,251,282
    F90      ATTENTION-DEFICIT HYPERACTIVITY DISO        812         9,074,020
    F91      CONDUCT DISORDERS                            81           755,527
    F99      MENTAL DISORDER, NOT OTHERWISE SPECI         85           801,666
    G20      PARKINSON'S DISEASE                          48           618,844
    G25      OTHER EXTRAPYRAMIDAL AND MOVEMENT DI        186         2,115,595
    G30      ALZHEIMER'S DISEASE                          58           662,519
    G40      EPILEPSY AND RECURRENT SEIZURES             118         1,110,556
    G43      MIGRAINE                                    689         7,717,820
    G44      OTHER HEADACHE SYNDROMES                     23           273,633
    G45      TRANSNT CEREB ISCHEM ATTACK AND REL         397         3,646,694
    G51      FACIAL NERVE DISORDERS                       30           315,693
    G56      MONONEUROPATHIES OF UPPER LIMB              187         1,896,531
    G57      MONONEUROPATHIES OF LOWER LIMB              139         1,687,995
    G58      OTHER MONONEUROPATHIES                       79           867,845
    G62      OTHER AND UNSPECIFIED POLYNEUROPATHI        289         3,360,065
    G89      PAIN, NOT ELSEWHERE CLASSIFIED              542         5,710,863
    G93      OTHER DISORDERS OF BRAIN                     34           309,378
    G98      OTHER DISORDERS OF NERVOUS SYSTEM NE      1,738        19,126,853
    H00      HORDEOLUM AND CHALAZION                      52           606,319
    H02      OTHER DISORDERS OF EYELID                    56           732,971
    H04      DISORDERS OF LACRIMAL SYSTEM                269         2,917,521
    H10      CONJUNCTIVITIS                              225         2,644,879
    H18      OTHER DISORDERS OF CORNEA                    26           318,733
    H33      RETINAL DETACHMENTS AND BREAKS               60           875,103
    H35      OTHER RETINAL DISORDERS                     233         2,962,876
    H40      GLAUCOMA                                    514         5,231,434
    H43      DISORDERS OF VITREOUS BODY                   42           527,395
    H44      DISORDERS OF GLOBE                          176         1,990,390
    H52      DISORDERS REFRACTION AND ACCOMMODATI        758         8,927,524
    H53      VISUAL DISTURBANCES                         285         3,487,652
    H54      BLINDNESS AND LOW VISION                    156         1,738,200
    H57      OTHER DISORDERS OF EYE AND ADNEXA           290         2,738,166
    H60      OTITIS EXTERNA                               32           414,226
    H61      OTHER DISORDERS OF EXTERNAL EAR             133         1,536,711
    H65      NONSUPPURATIVE OTITIS MEDIA                  50           663,142
    H66      SUPPURATIVE AND UNSPECIFIED OTITIS M        922        10,443,332
    H81      DISORDERS OF VESTIBULAR FUNCTION             29           332,288
    H91      OTHER AND UNSPECIFIED HEARING LOSS          357         4,115,680
    H92      OTALGIA AND EFFUSION OF EAR                 135         1,405,504
    H93      OTHER DISORDERS OF EAR, NEC                 109         1,110,366
    I10      ESSENTIAL (PRIMARY) HYPERTENSION          6,546        66,636,166
    I20      ANGINA PECTORIS                             211         2,322,209
    I21      ST ELEVATION AND NON-ST ELEVATION MI        524         5,450,838
    I25      CHRONIC ISCHEMIC HEART DISEASE              946         9,755,864
    I34      NONRHEUMATIC MITRAL VALVE DISORDERS          59           770,976
    I35      NONRHEUMATIC AORTIC VALVE DISORDERS          21           241,114
    I38      ENDOCARDITIS, VALVE UNSPECIFIED              83           962,054
    I42      CARDIOMYOPATHY                               22           228,858
    I47      PAROXYSMAL TACHYCARDIA                       22           367,365
    I48      ATRIAL FIBRILLATION AND FLUTTER             287         3,448,457
```

```
                                 TABLE 1
            UNWEIGHTED AND WEIGHTED COUNT OF RECORDS FOR EACH VALUE OF ICD10CDX


   ICD10CDX                                                            WEIGHTED
   VALUE      LABEL                                  UNWEIGHTED       BY perwt17f


   I49     OTHER CARDIAC ARRHYTHMIAS                     246          2,758,257
   I50     HEART FAILURE                                 191          1,902,033
   I63     CEREBRAL INFARCTION                            79            843,931
   I70     ATHEROSCLEROSIS                                20            263,139
   I71     AORTIC ANEURYSM AND DISSECTION                 40            461,533
   I72     OTHER ANEURYSM                                 24            243,714
   I73     OTHER PERIPHERAL VASCULAR DISEASES             64            626,592
   I74     ARTERIAL EMBOLISM AND THROMBOSIS              210          2,073,324
   I77     OTH DISORDERS OF ARTERIES AND ARTERI           78            855,539
   I83     VARICOSE VEINS OF LOWER EXTREMITIES            79          1,062,821
   I87     OTHER DISORDERS OF VEINS                       29            283,906
   I89     OTH NONINF DISOR LYMPH VESSEL LYMPH            20            245,728
   I99     OTH AND UNSPEC DISORD CIRCULATORY SY           57            464,891
   J00     ACUTE NASOPHARYNGITIS [COMMON COLD]         2,863         30,489,657
   J02     ACUTE PHARYNGITIS                             973         10,826,714
   J03     ACUTE TONSILLITIS                              38            393,666
   J04     ACUTE LARYNGITIS AND TRACHEITIS                30            383,393
   J05     ACUTE OBSTR LARYNG [CROUP] EPIGLOTTI           45            480,570
   J06     ACUTE UP RESP INFEC MULT AND UNSPEC           305          4,008,350
   J09     INFLU DUE TO CERTAIN IDENT INFLU VIR           25            418,549
   J11     INFLU DUE TO UNIDENTIFIED INFLU VIR         1,911         20,000,577
   J12     VIRAL PNEUMONIA, NEC                           35            498,688
   J18     PNEUMONIA, UNSPECIFIED ORGANISM               450          4,942,708
   J20     ACUTE BRONCHITIS                               61            691,246
   J30     VASOMOTOR AND ALLERGIC RHINITIS               431          5,260,895
   J32     CHRONIC SINUSITIS                           1,010         13,296,018
   J34     OTHER AND UNSPEC DIS NOSE, NASAL SIN          370          4,070,808
   J35     CHRONIC DISEASES OF TONSILS AND ADEN           69            660,998
   J38     DISEASES OF VOCAL CORDS AND LARYNX,            26            374,947
   J39     OTHER DISEASE OF UPPER RESPIRATORY T          124          1,344,092
   J40     BRONCHITIS, NOT SPEC AS ACUTE OR CHR          653          7,776,090
   J42     UNSPECIFIED CHRONIC BRONCHITIS                358          3,592,040
   J43     EMPHYSEMA                                     270          3,022,944
   J44     OTH CHRONIC OBSTRUCTIVE PULMON DISEA          321          3,451,699
   J45     ASTHMA                                      2,100         21,542,379
   J81     PULMONARY EDEMA                                25            269,078
   J98     OTHER RESPIRATORY DISORDERS                   282          3,262,921
   K00     DISORDERS TOOTH DEVELOPMENT AND ERUP           22            229,218
   K01     EMBEDDED AND IMPACTED TEETH                    91          1,352,221
   K02     DENTAL CARIES                                  72            747,066
   K03     OTHER DISEASES OF HARD TISSUES OF TE           22            334,364
   K04     DISEASES OF PULP AND PERIAPICAL TISS          239          2,508,585
   K05     GINGIVITIS AND PERIODONTAL DISEASES            91            869,420
   K06     OTH DIS GING AND EDENTULOUS ALVEO RI           30            393,883
   K08     OTH DISORD TEETH AND SUPPORT STRUCTU          637          7,187,598
   K11     DISEASES OF SALIVARY GLANDS                    25            295,836
   K13     OTHER DISEASES OF LIP AND ORAL MUCOS           49            464,531
   K14     DISEASES OF TONGUE                             22            240,565
   K21     GASTRO-ESOPHAGEAL REFLUX DISEASE            1,782         18,948,020
   K22     OTHER DISEASES OF ESOPHAGUS                    64            841,403
   K25     GASTRIC ULCER                                  34            318,002
   K29     GASTRITIS AND DUODENITIS                      161          1,125,847
   K30     FUNCTIONAL DYSPEPSIA                          208          2,103,283
   K31     OTHER DISEASES OF STOMACH AND DUODEN          320          3,153,763
   K44     DIAPHRAGMATIC HERNIA                           66            633,453
   K46     UNSPECIFIED ABDOMINAL HERNIA                  185          1,924,406
   K50     CROHN'S DISEASE [REGIONAL ENTERITIS]           47            578,912
   K52     OTH/UNSPEC NONINFECT GASTROENT, COLI           78            799,941
   K56     PARALYT ILEUS INTEST OBST W/O HERNIA           50            530,809
   K57     DIVERTICULAR DISEASE OF INTESTINE             132          1,422,664
   K58     IRRITABLE BOWEL SYNDROME                      155          1,787,903
   K59     OTHER FUNCTIONAL INTESTINAL DISORDER          402          3,690,710
```

```
                                      TABLE 1
                 UNWEIGHTED AND WEIGHTED COUNT OF RECORDS FOR EACH VALUE OF ICD10CDX


     ICD10CDX                                                              WEIGHTED
     VALUE       LABEL                                    UNWEIGHTED      BY perwt17f


      K62      OTHER DISEASES OF ANUS AND RECTUM               22           206,194
      K63      OTHER DISEASES OF INTESTINE                    115         1,237,328
      K64      HEMORRHOIDS PERIANAL VENOUS THROMBOS           106         1,179,922
      K74      FIBROSIS AND CIRRHOSIS OF LIVER                 34           387,965
      K76      OTHER DISEASES OF LIVER                        108         1,048,542
      K80      CHOLELITHIASIS                                  65           669,141
      K82      OTHER DISEASES OF GALLBLADDER                  120         1,130,716
      K85      ACUTE PANCREATITIS                              24           293,480
      K86      OTHER DISEASES OF PANCREAS                      21           210,919
      K90      INTESTINAL MALABSORPTION                        29           407,279
      K92      OTHER DISEASES OF DIGESTIVE SYSTEM             134         1,558,362
      L02      CUTAN ABSCESS, FURUNCLE AND CARBUNCL           107         1,075,287
      L03      CELLULITIS AND ACUTE LYMPHANGITIS               97         1,231,479
      L08      OTH LOCAL INFEC SKIN AND SUBCUTAN TI           207         2,254,982
      L21      SEBORRHEIC DERMATITIS                           37           452,508
      L23      ALLERGIC CONTACT DERMATITIS                    147         1,735,827
      L25      UNSPECIFIED CONTACT DERMATITIS                  27           371,473
      L27      DERMATITIS DUE TO SUBST TAKEN INTERN            23           224,562
      L29      PRURITUS                                        91           888,078
      L30      OTHER AND UNSPECIFIED DERMATITIS               291         2,845,219
      L40      PSORIASIS                                      136         1,669,017
      L50      URTICARIA                                       64           737,067
      L57      SKIN CHANGE CHRON EXPOS NONIONIZ RAD            30           403,575
      L60      NAIL DISORDERS                                 205         2,021,029
      L65      OTHER NONSCARRING HAIR LOSS                     51           569,953
      L70      ACNE                                           284         3,635,359
      L71      ROSACEA                                         76         1,040,739
      L72      FOLLIC CYSTS SKIN AND SUBCUTANEOUS T           105         1,068,002
      L81      OTHER DISORDERS OF PIGMENTATION                 49           515,426
      L84      CORNS AND CALLOSITIES                           72           794,159
      L90      ATROPHIC DISORDERS OF SKIN                      25           332,774
      L91      HYPERTROPHIC DISORDERS OF SKIN                  66           808,047
      L98      OTH DISORD SKIN SUBCUTANEOUS TISS, N           408         5,030,777
      M06      OTHER RHEUMATOID ARTHRITIS                     641         6,176,496
      M10      GOUT                                           342         3,557,132
      M16      OSTEOARTHRITIS OF HIP                           28           409,807
      M17      OSTEOARTHRITIS OF KNEE                         100         1,194,912
      M19      OTHER AND UNSPECIFIED OSTEOARTHRITIS         2,762        29,446,057
      M20      ACQUIRED DEFORMITIES OF FINGERS AND             29           318,035
      M21      OTHER ACQUIRED DEFORMITIES OF LIMBS             95         1,125,357
      M23      INTERNAL DERANGEMENT OF KNEE                    37           518,122
      M25      OTHER JOINT DISORDER, NEC                    4,117        44,823,033
      M26      DENTOFACIAL ANOMALIES [INCLUDING MAL            48           643,527
      M32      SYSTEMIC LUPUS ERYTHEMATOSUS (SLE)              71           653,636
      M41      SCOLIOSIS                                      100         1,164,179
      M43      OTHER DEFORMING DORSOPATHIES                   111         1,388,272
      M46      OTHER INFLAMMATORY SPONDYLOPATHIES              48           570,865
      M47      SPONDYLOSIS                                     23           241,333
      M48      OTHER SPONDYLOPATHIES                           85           986,983
      M50      CERVICAL DISC DISORDERS                         46           522,162
      M51      THOR, THORACO, LUMBOS INTERV DISC DI           446         4,962,835
      M53      OTHER AND UNSPEC DORSOPATHIES, NEC             359         4,229,494
      M54      DORSALGIA                                    2,261        24,782,379
      M62      OTHER DISORDERS OF MUSCLE                      394         4,206,487
      M65      SYNOVITIS AND TENOSYNOVITIS                     64           748,436
      M67      OTHER DISORDERS OF SYNOVIUM AND TEND            44           556,134
      M70      SOFT TISS DISOR REL TO USE/OVERUS/PR            42           450,874
      M71      OTHER BURSOPATHIES                              65           766,745
      M72      FIBROBLASTIC DISORDERS                         165         2,003,270
      M75      SHOULDER LESIONS                               191         2,574,297
      M76      ENTHESOPATHIES, LOWER LIMB, EXCLUDI             56           740,648
      M77      OTHER ENTHESOPATHIES                           243         2,784,731
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                                  TABLE 1
                UNWEIGHTED AND WEIGHTED COUNT OF RECORDS FOR EACH VALUE OF ICD10CDX


    ICD10CDX                                                              WEIGHTED
    VALUE        LABEL                                    UNWEIGHTED      BY perwt17f


     M79     OTH AND UNSPEC SOFT TISSUE DISORDER,           1,455       14,628,665
     M81     OSTEOPOROSIS W/O CURR PATHOL FRACTUR             207        2,257,917
     M85     OTH DISORD OF BONE DENSITY AND STRUC              90        1,086,958
     M89     OTHER DISORDERS OF BONE                          80          791,855
     M99     BIOMECHANICAL LESIONS, NEC                       25          293,122
     N15     OTHER RENAL TUBULO-INTERSTITIAL DISE             71          616,340
     N18     CHRONIC KIDNEY DISEASE (CKD)                     78          747,588
     N19     UNSPECIFIED KIDNEY FAILURE                       59          588,123
     N20     CALCULUS OF KIDNEY AND URETER                   224        2,543,809
     N23     UNSPECIFIED RENAL COLIC                          24          213,066
     N28     OTHER DISORDER OF KIDNEY AND URETER,            293        2,888,105
     N30     CYSTITIS                                        158        1,799,546
     N32     OTHER DISORDERS OF BLADDER                      198        2,076,499
     N39     OTHER DISORDERS OF URINARY SYSTEM               808        8,969,496
     N40     ENLARGED PROSTATE                               245        2,993,381
     N42     OTHER AND UNSPECI DISORDERS OF PROST            245        2,837,022
     N50     OTH AND UNSPEC DISORDER MALE GEN ORG             25          257,702
     N52     MALE ERECTILE DYSFUNCTION                        38          431,525
     N60     BENIGN MAMMARY DYSPLASIA                         48          502,234
     N61     INFLAMMATORY DISORDERS OF BREAST                 21          230,178
     N63     UNSPECIFIED LUMP IN BREAST                       83        1,057,599
     N64     OTHER DISORDERS OF BREAST                        47          508,109
     N76     OTHER INFLAMMATION OF VAGINA AND VUL             40          500,993
     N80     ENDOMETRIOSIS                                    41          474,602
     N81     FEMALE GENITAL PROLAPSE                          43          536,241
     N83     NONINFLAM DISOR OVA, FALLO TUB BROAD            109        1,323,309
     N85     OTH NONINFLAM DISOR UTERUS, EXCEP CE             52          663,413
     N89     OTHER NONINFLAM DISORDERS OF VAGINA              45          598,204
     N92     EXCESS, FREQUENT, IRREGULAR MENSTRUA            137        1,754,550
     N93     OTH ABNRM UTERINE AND VAGINAL BLEEDI             47          466,697
     N94     PAIN OTH COND ASSOC WITH FEM ORG MEN            105        1,222,315
     N95     MENOPAUSAL AND OTH PERIMENOPAUSAL DI            173        2,248,954
     O03     SPONTANEOUS ABORTION                             55          552,164
     O80     ENCOUNT FULL-TERM UNCOMPLICATED DELI             80          794,546
     P07     DISOR OF NB SHRT GESTN, LOW BRTH WGT             25          312,538
     R00     ABNORMALITIES OF HEART BEAT                     243        2,718,460
     R01     CARDIAC MURMURS AND OTHER CARDIAC SO            196        2,230,301
     R03     ABNORMAL BLOOD-PRESS READ, W/O DIAGN             76          824,465
     R04     HEMORRHAGE FROM RESPIRATORY PASSAGES             80          776,947
     R05     COUGH                                           751        7,778,363
     R06     ABNORMALITIES OF BREATHING                      391        4,375,025
     R07     PAIN IN THROAT AND CHEST                        359        3,526,694
     R09     OTH SYMP AND SIGNS INVOLV CIRC RESP             191        2,126,463
     R10     ABDOMINAL AND PELVIC PAIN                       564        5,293,447
     R11     NAUSEA AND VOMITING                             471        4,748,658
     R12     HEARTBURN                                       239        2,471,758
     R13     APHAGIA AND DYSPHAGIA                            47          553,191
     R14     FLATULENCE AND RELATED CONDITIONS                42          500,493
     R17     UNSPECIFIED JAUNDICE                             35          418,420
     R19     OTH SYMP AND SIGNS DIGEST SYST AND A            228        2,311,024
     R20     DISTURBANCES OF SKIN SENSATION                  197        2,111,562
     R21     RASH AND OTHER NONSPECIFIC SKIN ERUP            502        5,611,182
     R22     LOC SWELL, MASS AND LUMP SKIN SUBCU             164        1,832,118
     R25     ABNORMAL INVOLUNTARY MOVEMENTS                  164        1,560,783
     R26     ABNORMALITIES OF GAIT AND MOBILITY              121        1,337,981
     R29     OTH SYM SIGNS INVOLV NERV MUSCULOSK              84          810,776
     R31     HEMATURIA                                        59          835,603
     R32     UNSPECIFIED URINARY INCONTINENCE                167        1,799,094
     R33     RETENTION OF URINE                               31          325,955
     R35     POLYURIA                                         39          467,410
     R39     OTH UNSP SYMP SIGNS INVOLV GENITOUR              49          528,643
     R41     OTH SYMP SIGNS INVOLV COG FUNC AND A            196        1,943,958
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                                    TABLE 1
              UNWEIGHTED AND WEIGHTED COUNT OF RECORDS FOR EACH VALUE OF ICD10CDX


     ICD10CDX                                                            WEIGHTED
     VALUE      LABEL                                    UNWEIGHTED    BY perwt17f


      R42      DIZZINESS AND GIDDINESS                      400        4,056,863
      R45      SYMPT AND SIGNS INVOLV EMOTIONAL STA         127        1,140,053
      R47      SPEECH DISTURBANCES, NEC                      52          514,309
      R50      FEVER OF OTHER AND UNKNOWN ORIGIN            430        3,932,942
      R51      HEADACHE                                     552        5,149,951
      R52      PAIN, UNSPECIFIED                            758        7,082,823
      R53      MALAISE AND FATIGUE                          242        2,646,678
      R54      AGE-RELATED PHYSICAL DEBILITY                 61          542,784
      R55      SYNCOPE AND COLLAPSE                         102        1,228,768
      R56      CONVULSIONS, NOT ELSEWHERE CLASSIFIE         237        2,168,528
      R58      HEMORRHAGE, NOT ELSEWHERE CLASSIFIED          57          712,488
      R59      ENLARGED LYMPH NODES                          48          581,419
      R60      EDEMA, NOT ELSEWHERE CLASSIFIED              419        4,093,387
      R62      LACK EXPECT NORM PHYS DEVEL CHILD AD          27          328,607
      R63      SYMP AND SIGN CONCERN FOOD FLUID INT         178        1,842,426
      R68      OTHER GENERAL SYMPTOMS AND SIGNS              44          405,445
      R69      ILLNESS, UNSPECIFIED                          95        1,170,166
      R73      ELEVATED BLOOD GLUCOSE LEVEL                 238        2,565,595
      R79      OTH ABNORMAL FINDINGS OF BLOOD CHEMI         173        1,716,402
      R87      ABNORM FIND SPECIMEN FEMALE GENITAL           33          403,193
      R91      ABNORM FIND DIAGNOSTIC IMAGING OF LU          49          572,260
      R92      ABNORM INCONCLUS FIND DIAGN IMAG BRE          19          251,609
      R94      ABNORMAL RESULTS OF FUNCTION STUDIES          32          376,532
      R97      ABNORMAL TUMOR MARKERS                        24          292,947
      S00      SUPERFICIAL INJURY OF HEAD                    49          617,821
      S01      OPEN WOUND OF HEAD                            63          792,069
      S02      FRACTURE OF SKULL AND FACIAL BONES            99        1,183,399
      S05      INJURY OF EYE AND ORBIT                       80          988,540
      S09      OTHER AND UNSPECIFIED INJURIES OF HE         163        1,532,100
      S13      DISLOCAT SPRAIN JOINT LIGAMENT NECK           54          593,621
      S19      OTH SPEC AND UNSPEC INJURIES OF NECK          23          273,718
      S20      SUPERFICIAL INJURY OF THORAX                  43          537,212
      S22      FRACTURE RIB(S), STERNUM THORACIC SP          89        1,125,731
      S32      FRACTURE OF LUMBAR SPINE AND PELVIS           55          644,470
      S39      OTH UNS INJUR ABD/LOW BACK/PEL/EXT G         281        3,206,723
      S40      SUPERFIC INJURY SHOULDER AND UPPER A          27          326,470
      S42      FRACTURE OF SHOULDER AND UPPER ARM           114        1,197,100
      S43      DISLOC SPRAIN JOINT LIG SHOULDER GIR          84        1,030,747
      S46      INJ MUSCL/FASCIA/TENDN SHOULDER/UPPR          95        1,101,690
      S49      OTH AND UNSPEC INJ SHOULDER AND UPR          106        1,086,472
      S59      OTH AND UNSPEC INJUR ELBOW AND FOREA          23          273,155
      S60      SUPERFIC INJURY WRIST, HAND AND FING          35          508,854
      S61      OPEN WOUND OF WRIST, HAND AND FINGER         173        2,181,291
      S62      FRACTURE AT WRIST AND HAND LEVEL            201        2,148,876
      S63      DISLOCN/SPRAIN JOINTS/LIGAMTS WRIST/         100          957,023
      S67      CRUSHING INJURY WRIST, HAND AND FING          24          278,821
      S69      OTH/UNSPEC INJ WRIST, HAND, FINGER(S         143        1,606,750
      S72      FRACTURE OF FEMUR                             34          332,938
      S76      MUSCL/FASCIA/TENDN INJ HIP AND THIGH          50          714,125
      S79      OTH AND UNSPEC INJURIES OF HIP AND T          26          208,092
      S80      SUPERFICIAL INJURY OF KNEE AND LOWER          70          684,313
      S81      OPEN WOUND OF KNEE AND LOWER LEG              57          587,604
      S82      FRACTURE OF LOWER LEG, INCLUDING ANK         146        1,588,899
      S83      DISLOCAT SPRAIN JOINTS LIGAMENTS KNE         218        2,850,785
      S86      INJ OF MUSCLE, FASCIA, TENDON LOWER           61          744,122
      S89      OTH AND UNSPEC INJURIES OF LOWER LEG         182        2,038,842
      S90      SUPERFICIAL INJURY ANKLE, FOOT AND T          38          462,161
      S91      OPEN WOUND OF ANKLE, FOOT AND TOES            48          517,649
      S92      FRACTURE OF FOOT AND TOE, EXCEPT ANK         164        1,671,219
      S93      DISLOC SPRAIN JOINT LIG ANKLE, FOOT          289        3,386,446
      S99      OTH AND UNSPEC INJUR OF ANKLE AND FO         127        1,493,648
      T07      UNSPECIFIED MULTIPLE INJURIES                 68          754,503
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                                   TABLE 1
            UNWEIGHTED AND WEIGHTED COUNT OF RECORDS FOR EACH VALUE OF ICD10CDX


  ICD10CDX                                                              WEIGHTED
  VALUE      LABEL                                    UNWEIGHTED      BY perwt17f

   T14    INJURY OF UNSPECIFIED BODY REGION                 712        8,132,282
   T15    FOREIGN BODY ON EXTERNAL EYE                       26          312,382
   T23    BURN AND CORROSION OF WRIST AND HAND               28          269,340
   T30    BURN AND CORROSION, BODY REGION UNSP               20          313,830
   T62    TOX EFF OTH NOXIOUS SUBS EATEN AS FO               52          499,352
   T63    TOX CONTACT W/ VENOMOUS ANIMALS/PLAN               63          727,268
   T78    ADVERSE EFFECTS, NEC                            2,048       21,824,971
   T81    COMPLICATIONS OF PROCEDURES, NEC                   39          419,339
   T88    OTH COMPLICNS OF SURG AND MED CARE,                80          994,875
   Z00    GEN EXAM W/O COMP, SUSPEC OR REPORT               641        6,623,991
   Z01    SPEC EXAM W/O COMPLAINT/SUSP/REP DIA              535        6,429,873
   Z02    ENCOUNTER FOR ADMINISTRATIVE EXAMINA               48          578,964
   Z04    EXAM AND OBSERVATION FOR OTHER REASO              175        1,888,531
   Z09    F/U EXAM AFT TREAT COND OTH THAN MAL              157        1,589,174
   Z11    SCREENING INFECTIOUS PARASITIC DISEA               29          363,508
   Z12    SCREENING FOR MALIGNANT NEOPLASMS                 362        4,475,730
   Z13    SCREENING FOR OTH DISEASES AND DISOR              729        7,603,804
   Z21    ASYMPTOMATIC HIV INFECTION STATUS                  58          490,563
   Z23    ENCOUNTER FOR IMMUNIZATION                        182        2,164,767
   Z29    ENCOUNTER FOR OTH PROPHYLACTIC MEASU              121        1,366,314
   Z30    ENCOUNTER FOR CONTRACEPTIVE MANAGEME              479        6,702,933
   Z31    ENCOUNTER FOR PROCREATIVE MANAGEMENT               42          542,403
   Z34    ENCOUNTER FOR SUPERVISION OF NORMAL               538        5,144,896
   Z38    LIVE INFANTS PLACE BIRTH TYPE OF DEL              116        1,406,069
   Z39    MATERNAL POSTPARTUM CARE AND EXAMINA               33          303,176
   Z41    PROCED PURP OTH THAN REMEDY HEALTH S               36          392,495
   Z45    ADJUST AND MANAGE IMPLANTED DEVICE                 35          372,677
   Z46    FITTING AND ADJUSTMENT OF OTHER DEVI               62          753,156
   Z47    ORTHOPEDIC AFTERCARE                               23          287,172
   Z48    OTHER POSTPROCEDURAL AFTERCARE                    102        1,109,793
   Z51    ENCOUNTER FOR OTHER AFTERCARE                     154        1,720,987
   Z56    PROBS REL TO EMPLOYMENT AND UNEMPLOY               24          380,826
   Z63    OTH PROB PRIM SUPP GRP, INCLUD FAM C               69          827,421
   Z71    OTH COUNSELING AND MEDICAL ADVICE, N              234        2,418,386
   Z73    PROBS REL TO LIFE MANAGEMENT DIFFICU               30          400,284
   Z74    PROBS REL TO CARE PROVIDER DEPENDENC               28          277,524
   Z76    PERSON ENCOUNT HEALTH SERVIC OTH CIR              605        6,555,268
   Z79    LONG TERM (CURRENT) DRUG THERAPY                  344        3,986,826
   Z89    ACQUIRED ABSENCE OF LIMB                           28          266,055
   Z90    ACQUIRED ABSENCE OF ORGANS, NEC                    66          740,564
   Z91    PERSONAL RISK FACTORS, NEC                         77        1,001,762
   Z95    PRESENCE CARD AND VASC IMPLANTS GRAF              139        1,682,272
   Z96    PRESENCE OF OTHER FUNCTIONAL IMPLANT              201        2,513,895
   Z97    PRESENCE OF OTHER DEVICES                          30          384,249
   Z98    OTHER POSTPROCEDURAL STATES                        28          285,015
   Z99    DEPEND ENABLING MACHINE AND DEVICE,                32          240,386
          TOTAL                                         112,630    1,222,042,345
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Appendix 3
List of Conditions Asked
in Priority Conditions Enumeration Section

LIST OF CONDITIONS ASKED IN
PRIORITY CONDITIONS ENUMERATION SECTION

Angina/Angina Pectoris
Arthritis
Asthma
Attention Deficit Hyperactivity Disorder (ADHD)/Attention Deficit Disorder (ADD)
Cancer/Malignancy
Chronic Bronchitis
Coronary Heart Disease
Diabetes/Sugar Diabetes
Emphysema
Heart Attack/Myocardial Infarction (MI)
High Cholesterol
Hypertension/High Blood Pressure
Joint Pain
Other Heart Disease (not coronary heart disease, angina, or heart attack)
Stroke/Transient Ischemic Attack (TIA)/Mini-stroke