MEPS HC-252
Panel 27 Longitudinal Data Public Use File

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Agency for Healthcare Research and Quality
Center for Financing, Access, and Cost Trends
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A. Data Use Agreement

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

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

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

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

No one will attempt to link this data set with individually identifiable records from any datasets 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 socioeconomic characteristics, employment, access to care, and satisfaction with healthcare. Estimates can be produced for individuals, families, and selected population subgroups. The panel design of the survey includes 5 rounds of interviews covering 2 full calendar years. Information about each household member is collected through computer-assisted personal interviewing (CAPI) technology, 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. Historically, each annual MEPS HC sample consists of up to 15,000 households. Data can be analyzed at the person, the family, or the 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 (NCHS). The NHIS sampling frame provides a nationally representative sample of the U.S. civilian noninstitutionalized population. In 2006, the NCHS implemented a new sample design for the NHIS, to include households with Asian persons in addition to households with Black and Hispanic persons in the oversampling of minority populations. In 2016, NCHS introduced another sample design that discontinued the oversampling of these minority groups.

2.0 Medical Provider Component

When the household CAPI interview is completed, and permission is obtained from the sample members to contact their medical provider(s), a sample of these providers is contacted by telephone to obtain information that household respondents cannot accurately provide. This part of the MEPS is called the Medical Provider Component (MPC), and it collects information on dates of visits, diagnosis and procedure codes, and charges and payments. The Pharmacy Component (PC), a subcomponent of the MPC, does not collect data on charges or on diagnosis and procedure codes, but it does collect detailed information on drugs, including the National Drug Code (NDC) and medicine name, as well as 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. The MEPS HC data are collected under contract with Westat, Inc. and the MEPS MPC data are collected under contract with Research Triangle Institute. Datasets and summary statistics are edited and published in accordance with the confidentiality provisions of the Public Health Service Act and the Privacy Act. The NCHS provides consultation and technical assistance.

As soon as the MEPS data are collected and edited, they are released to the public in stages of microdata files and tables via the MEPS website and datatools.ahrq.gov.

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).

C. Technical and Programming Information

1.0 General Information

This documentation describes the Panel 27 Longitudinal Public Use File (PUF) from the MEPS HC. It was released as an ASCII file (with related SAS, Stata, SPSS, and R programming statements and data user information) and as a SAS dataset, a SAS transport dataset, a Stata dataset, and an Excel file. The Panel 27 Longitudinal PUF provides information collected from a nationally representative sample of the U.S. civilian noninstitutionalized population for the two-year period 2022-2023. The file contains 2,648 variables and has a logical record length of 7,499 with an additional 2-byte carriage return/line feed at the end of each record.

This file consists of MEPS survey data obtained in Rounds 1-5 of MEPS Panel 27 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 2022 and 2023 Full-Year Consolidated PUFs (HC-243 and HC-251, respectively).

The following documentation offers a brief overview of the contents and structure of the files and programming information. A codebook of all the variables included in the Panel 27 Longitudinal PUF is provided in a separate file (H252CB.PDF). A database of all MEPS products released to date and a variable locator indicating the major MEPS data items on public use files that have been released to date can be found on the MEPS website.

2.0 Data File Information

The Panel 27 Longitudinal PUF contains records for 8,292 persons in Panel 27 who were respondents for the period they were in-scope for the survey (i.e., a member of the civilian noninstitutionalized population) during the two-year period. Only persons with positive person-level weights (PERWT22F or PERWT23F) are included in the longitudinal PUF data. Data are available for all five rounds for 94.21% of the cases (7,812). The remaining 5.79% (480 persons) do not have data for one or more rounds but were in-scope for all rounds they participated in the survey. These persons are those who were born, died, were in the military or an institution, or left the country during the two-year period. In contrast, persons in the panel who participated in the survey for only part of the period they were in scope are not included in this file. To compensate for this attrition, adjustments were made in the construction of the panel weight variable included in this file (LONGWT). The codebook provides both weighted and unweighted frequencies for each variable on the data file. The LONGWT variable should be used to produce national estimates for the two-year period.

2.1 Variables

2.1.1 Variables from Annual Full-Year Consolidated Files

Most variables on this file were obtained from the MEPS 2022 and 2023 Full-Year Consolidated PUFs (HC-243 and HC-251, respectively). However, names for time dependent variables from these files are modified in order to: 1) eliminate duplicate variable names for data reflecting different time periods during the panel, and 2) standardize variable names to facilitate pooling of multiple MEPS panels for analysis.[1] Generally, annual variables with a suffix of "22" and "23" are renamed with a suffix of "Y1" and "Y2", respectively. Variables with a suffix of "31", "42", and "53" are renamed with a suffix denoting the round the data was collected (i.e., "1" , "2" or "3" for variables originating from Rounds 1-3 on the 2022 full-year file and "3", "4", or "5" for variables originating from Rounds 3-5 on the 2023 full-year file).[2] In the Panel 27 Longitudinal PUF, the variable GENDRP42 from the 2022 full-year file was renamed PROVSEX2. It is necessary to use this crosswalk in conjunction with documentation for the 2022 and 2023 Full-Year Consolidated PUFs to obtain a full description of variables on this file. Table 1 below provides the crosswalk summarizing the scheme used for renaming variables from the annual files.

Table 1. Crosswalk of Variable Names between the Full-Year Consolidated PUFs and the Longitudinal PUF

Type of Variable	Full-Year Consolidated PUF Variable Name Suffix	Longitudinal PUF Variable Name Suffix	Specific cases or examples
Constant (i.e., not round or year specific)	No suffixes	No suffixes	All variables: BORNUSA=BORNUSA DOBMM=DOBMM DOBYY=DOBYY DATAYEAR=DATAYEAR DUID=DUID PID=PID DUPERSID=DUPERSID EDUCYR=EDUCYR HIDEG=HIDEG HISPANX=HISPANX HISPNCAT=HISPNCAT HWELLSPK=HWELLSPK INTVLANG=INTVLANG OTHLGSPK=OTHLGSPK PANEL=PANEL

[1] A variable named PANEL is also included to facilitate pooling across panels. This variable is simply the panel number and is therefore constant across all records within a longitudinal file. The ten-character variable DUPERSID uniquely identifies each person represented on the file and is the combination of the variables DUID (PANEL + Dwelling Unit ID) and PID (Person Number).

[2] While Round 3 values were obtained for most observations from the 2023 Full Year Consolidated PUF, they were obtained from the 2022 Full Year Consolidated PUF for sample persons where YEARIND=2 (i.e., in 2022 only).

Type of Variable	Full-Year Consolidated PUF Variable Name Suffix	Longitudinal PUF Variable Name Suffix	Specific cases or examples
			PID=PID RACEAX=RACEAX RACEBX=RACEBX RACEWX=RACEWX RACEV1X=RACEV1X RACEV2X=RACEV2X RACETHX=RACETHX SEX=SEX VARPSU=VARPSU VARSTR=VARSTR WHTLGSPK=WHTLGSPK YRSINUS=YRSINUS
Annual, family related variables	YR	Y1 or YR1 Y2 or YR2	All variables: FAMIDYR=FAMIDYR1 (2022 file) FAMRFPYR=FAMRFPY1 (2022 file) FAMSZEYR=FAMSZYR1 (2022 file) FAMIDYR=FAMIDYR2 (2023 file) FAMRFPYR=FAMRFPY2 (2023 file) FAMSZEYR=FAMSZYR2 (2023 file)
Annual, CPS family identifiers	No suffix	Y1 Y2	All variables: CPSFAMID= CPSFAMY1 (2022 file) CPSFAMID= CPSFAMY2 (2023 file)
Annual, health insurance eligibility units	No suffix	Y1 Y2	All variables: HIEUIDX=HIEUIDY1 (2022 file) HIEUIDX=HIEUIDY2 (2023 file)
Annual, in-scope variables	No suffixes	YR1 YR2	All variables: INSCOPE=INSCPYR1 (2022 file) INSCOPE=INSCPYR2 (2023 file)
12/31 status variables	1231 in 2022 file 1231 in 2023 file	Y1 Y2	All variables: FAMS1231=FAMSY1 (2022 file) FCRP1231=FCRPY1 (2022 file) FCSZ1231= FCSZY1 (2022 file) FMRS1231= FMRSY1 (2022 file) INSC1231=INSCY1 (2022 file) FAMS1231=FAMSY2 (2023 file) FCRP1231=FCRPY2 (2023 file) FCSZ1231= FCSZY2 (2023 file) FMRS1231= FMRSY2 (2023 file) INSC1231=INSCY2 (2023 file)
Annual	22, 22X, 22F, or 22C	Y1, Y1X, Y1F, or Y1C	Examples: TOTEXP22=TOTEXPY1 AGE22X=AGEY1X

Type of Variable	Full-Year Consolidated PUF Variable Name Suffix	Longitudinal PUF Variable Name Suffix	Specific cases or examples
	23, 23X, 23F, or 23C	Y2, Y2X, Y2F, or Y2C	TOTEXP23=TOTEXPY2 AGE23X=AGEY2X
Variables for health insurance prior to January 1, 2022 (data collected in Round 1 only)	No suffixes	No suffixes	All variables: PREVCOVR=PREVCOVR MORECOVR=MORECOVR
Annual	No suffixes[3]	Y1 Y2	Examples: KEYNESS=KEYNESY1 (2022 file) SAQELIG=SAQELIY1 (2022 file) EVRWRK=EVRWRKY1 (2022 file) EVRETIRE=EVRETIY1 (2022 file) AGELAST=AGELSTY1 (2022 file) DIABDX_M18=DIABDXY1_M18 (2022 file) KEYNESS=KEYNESY2 (2023 file) SAQELIG=SAQELIY2 (2023 file) EVRWRK=EVRWRKY2 (2023 file) EVRETIRE=EVRETIY2 (2023 file) AGELAST=AGELSTY2 (2023 file) DIABDX_M18=DIABDXY2_M18 (2023 file)
Monthly	2-character month + 22 2-character month + 23	2-character month + Y1 2-character month + Y2	Examples: PRIJA22=PRIJAY1 (2022 file) PRIJA23=PRIJAY2 (2023 file)
Round Specific	31, 31X, or 31H in 2022 file 42, 42X, or 42H in 2022 file 53, 53X, or 53H in 2022 file 31_M*yy* in 2022 file 42_M*yy* in 2022 file 53_M*yy* in 2022 file 31, 31X, or 31H in 2023 file 42, 42X, or 42H in 2023 file	1, 1X, or 1H for 2022 2, 2X, or 2H for 2022 3, 3X, or 3H for 2022 1_M*yy* for 2022 2_M*yy* for 2022 3_M*yy* for 2022 3, 3X, 3H for 2023 4, 4X, 4H for 2023	Examples: RTHLTH31=RTHLTH1 (2022 file) RTHLTH42=RTHLTH2 (2022 file) RTHLTH53=RTHLTH3 (2022 file if YEARIND=2) JTPAIN31_M18=JTPAIN1_M18 PROVTY42_M18=PROVTY2_M18 JTPAIN53_M18=JTPAIN3_M18 RTHLTH31= RTHLTH3 (2023 file if YEARIND=1 or 3) RTHLTH42=RTHLTH4 (2023 file)

[3] To maintain a previously-implemented 8-character naming convention, some variable names had the last character or two dropped in the renaming process. A few variables have names longer than 8 characters because they were modified and tagged with an '_M*yy'* suffix, where *yy* indicates the year of modification. These variables were altered in the same fashion they would have been without the _M*yy* suffix, and the _M*yy* suffix was retained.

Type of Variable	Full-Year Consolidated PUF Variable Name Suffix	Longitudinal PUF Variable Name Suffix	Specific cases or examples
	53, 53X, or 53H in 2023 file 31_M*yy* or 31_*yy* in 2023 file 42_M*yy* or 42_*yy* in 2023 file 53_M*yy* or 53_*yy* in 2023 file	5, 5X, 5H for 2023 3_M*yy* or 3_*yy* for 2023 4_M*yy* or 4_*yy* for 2023 5_M*yy* or 5_*yy* for 2023	RTHLTH53=RTHLTH5 (2023 file) JTPAIN31_M18=JTPAIN3_M18 INDCAT31_17=INDCAT3_17 PROVTY42_M18=PROVTY4_M18 INDCAT42_17=INDCAT4_17 DENTIN53_M23=DENTIN5_M23 INDCAT53_17=INDCAT5_17
Diabetes preventive care	2153, 2253, and 2353 in 2022 file Not released in 2023 file	Y0R3 for 2021 Y1R3 for 2022 Y2R3 for 2023	Examples: DSEB2153=DSEBY0R3 (2022 file) DSEY2153=DSEYY0R3 (2022 file) DSEY2253=DSEYY1R3 (2022 file) DSEY2353=DSEYY2R3 (2022 file)
Job Change	3142 or 4253	12 for 2022 23 for 2022 34 for 2023 45 for 2023	All cases: CHGJ3142=CHGJ12 (2022 file) CHGJ4253=CHGJ23 (2022 file) YCHJ3142=YCHJ12 (2022 file) YCHJ4253=YCHJ23 (2022 file) CHGJ3142=CHGJ34 (2023 file) CHGJ4253=CHGJ45 (2023 file) YCHJ3142=YCHJ34 (2023 file) YCHJ4253=YCHJ45 (2023 file)
Cancer/ Cancer in remission[4]	No suffixes[5]	Y1 for 2022 Y2 for 2023	Examples: CALUNG=CALUNGY1 (2022 file) CALUNG=CALUNGY2 (2023 file)
Age of Diagnosis	No suffixes[5]	Y1 for 2022 Y2 for 2023	Examples: CHDAGED=CHDAGY1 (2022 file) CHOLAGED=CHOLAGY1 (2022 file) CHDAGED=CHDAGY2 (2023 file) CHOLAGED=CHOLAGY2 (2023 file)

[4] Starting in 2010, variables were added to indicate whether each reported cancer was in remission.

[5] To maintain a previously implemented 8-character naming convention, some variable names had the last character or two dropped in the renaming process.

2.1.2 Constructed Variables for Selection of Group

The following eight variables were constructed and included on the file to facilitate the selection of appropriate cases for various analyses. Table 2 below contains descriptive statistics for these variables.

YEARIND	1=both years, 2=in 2022 only, and 3=in 2023 only
ALL5RDS	In scope and data collected in all 5 rounds (0=no, 1=yes)
DIED	Died during the two-year survey period (0=no, 1=yes)
INST	Institutionalized for some time during the two-year survey period (0=no, 1=yes)
MILITARY	Active duty military for some time during the two-year survey period (0=no, 1=yes)
ENTRSRVY	Entered survey after beginning of panel (mainly births; also includes persons who had no initial chance of selection who moved into a MEPS sample household) (0=no, 1=yes)
LEFTUS	Moved out of the country after beginning of panel (0=no, 1=yes)
OTHER	Not identified in any of the above analytic groups (0=no, 1=yes)

Table 2. Frequencies and Percentage for Constructed Variables

Variable	Number of Records	Percentage of Records (N=8,292)
YEARIND=1 (i.e., person in both years)	8,109	97.79
ALL5RDS=1 (yes)	7,812	94.21
DIED=1 (yes)	149	1.80
INST=1 (yes)	31	0.37
MILITARY=1 (yes)	20	0.24
ENTRSRVY=1 (yes)	241	2.91
LEFTUS=1 (yes)	24	0.29
OTHER=1 (yes)	24	0.29

Following are examples of situations where these variables would be useful in selecting records for analysis:

- Analysts interested in working only with persons who were in-scope and had data for all five rounds of the panel should subset to cases where ALL5RDS=1.
- If a researcher wanted to include persons who were in-scope and had data for all five rounds of the panel as well as those in the survey at the beginning of the panel who subsequently died, then they would include cases where ALL5RDS=1 or (ENTRSRVY=0 and DIED=1).
- If a researcher wanted to include persons who were in-scope and had data for all five rounds of the panel as well as those who died in the second year of the panel, then they would include cases where ALL5RDS=1 or (DIED=1 and YEARIND=1).

2.1.3 Estimation Variables

Longitudinal Estimations for Panel 27

The Panel 27 Longitudinal PUF contains a weight variable (LONGWT) and variance estimation variables (VARSTR, VARPSU) that should be applied when producing national estimates for longitudinal analyses. For example, LONGWT applied to the 7,812 cases where ALL5RDS=1 produces a weighted population estimate of 316.7 million. This represents an estimate of the number of persons in the civilian noninstitutionalized population for the entire two-year period from 2022-2023. To obtain estimates of variability (such as the standard error of sample estimates or corresponding confidence intervals) for estimates based on MEPS survey data, one needs to take into account the complex sample design of MEPS by specifying the estimation variables including stratum of sample selection (VARSTR), primary sampling unit (VARPSU) and longitudinal weight (LONGWT).

The Panel 27 Longitudinal PUF also contains a longitudinal SAQ weight variable (LSAQWT). This weight variable should be used to perform longitudinal analyses involving any variables from the self-administered questionnaire (SAQ) which was administered to persons age 18 and older in both rounds 2 and 4 of the survey. The variable SAQRDS24 can be used to identify which persons have SAQ data for both versus only one of the two rounds. Table 3 below provides the estimated population size (i.e., the sum of LSAQWT values) for cases with only one round of SAQ data (i.e., SAQRDS24=0) and for cases with both rounds of SAQ data (i.e., SAQRDS24=1). The estimated population size for analyses based on the 3,347 cases with SAQ data for both rounds (i.e., SAQRDS24=1) is 189.5 million.

Table 3. Number of Respondents and Estimated Population Size for SAQ Analyses

Value of SAQRDS24	Description	Number of Respondents (Unweighted)	Estimated Population Size (Weighted by LSAQWT)
0	Persons with one round of SAQ data	4,945	69,693,839
1	Persons with both rounds of SAQ data	3,347	189,537,124
Total	All SAQ respondents	8,292	259,230,963

Pooled Estimations

When analyzing subpopulations and/or low-prevalence events, it may be necessary to pool together data from multiple MEPS-HC panels to accumulate a large enough sample size for producing reliable estimates. To ensure accurate variance estimation in such pooled analyses, a consistent and appropriate variance structure must be applied.

MEPS longitudinal weight files for Panels 1–6 were released using panel-specific variance structures. Beginning with Panel 7, however, longitudinal files adopted a common variance structure. This common structure was subsequently revised starting with Panel 24.

To ensure correct variance estimation when pooling longitudinal files, the guidance below should be followed:

1. **Pooling within Panels 7–23 or within Panels 24 and beyond:**
   Simply use the variance strata and PSU variables (**VARSTR**, **VARPSU**)[6] provided on the longitudinal files.

2. **Pooling that involves either:**
   a) Any panel from Panels 1–6, or
   b) Any earlier panel in combination with Panels 24 and beyond:
   Use the variance structure from the pooled linkage public use file **HC-036**, which contains the appropriate consistent variance structure for such combinations.

The **HC-036** file is updated annually to include the correct variance structures through the most recent year. Additional information, including a summary chart outlining the appropriate variance structures for various pooling scenarios, can be found in the public use documentation for **HC-036** (see Page C-1 for the chart).

[6] Note that variable names for strata and PSU are VARSTR and VARPSU, respectively, in longitudinal files for Panel 9 and beyond. These variables were named differently in the longitudinal files for Panel 7 (VARSTRP7, VARPSUP7) and Panel 8 (VARSTRP8, VARPSUP8) and need to be standardized when pooling with subsequent panels.