MEPS HC 254I:
Appendix to MEPS 2024 Event Files
HC 254A – HC 254H

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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 microdata 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. § 299a-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 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 previously referenced federal statute, it is understood that

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

2. If the identity of any person or establishment should be discovered inadvertently, then (a) no use will be made of this knowledge, (b) Director — Office of Management Services 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.

3. No one will attempt to link this dataset 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 previously 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 (18 U.S.C. § 1001), and is punishable by a fine of up to $10,000 or up to 5 years in prison.

AHRQ requests that users cite AHRQ and the Medical Expenditure Panel Survey as the data source in any publications or research based on these data.

B. Background

1.0 Household Component

The Medical Expenditure Panel Survey (MEPS) provides nationally representative estimates of healthcare use, expenditures, payment sources, 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 care. Estimates can be produced for individuals, families, and selected population subgroups. The survey's panel design includes five rounds of interviews spanning 2 full calendar years. The interviews use computer-assisted personal interviewing (CAPI) technology or computer-assisted video interviewing (CAVI) technology to collect information about each household member, which the survey builds on from interview to interview. A single household reports all data for a sampled household.

The MEPS HC was initiated in 1996. Each year a new panel of sampled 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, family, or event level. Data must be weighted to produce national estimates.

The set of households selected for each MEPS HC panel is a subsample of households participating in the previous year's National Health Interview Survey (NHIS) conducted by the NCHS. The NHIS sampling frame provides a nationally representative sample of the U.S. civilian noninstitutionalized population. In 2006, NCHS implemented a new NHIS sample design that included households with Asian persons in addition to households with Black and Hispanic persons in minority group oversampling. In 2016, NCHS introduced another sample design that discontinued the oversampling of these minority groups.

2.0 Medical Provider Component

When the household CAPI instrument is completed and permission is obtained from the sampled 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 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, 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 payment amounts. The MPC is not designed to yield national estimates; it is primarily used as an imputation source to supplement or 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, and the MEPS MPC data are collected under contract with RTI International. Datasets and summary statistics are edited and published in accordance with the confidentiality provisions of the Public Health Service Act and the Privacy Act. 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 AHRQ Data Tools site.

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, AHRQ, 5600 Fishers Lane, Rockville, MD 20857.

C. Technical and Programming Information

1.0 General Information

This documentation describes the MEPS Public Use Release HC 254I, which is the Appendix to MEPS releases HC 254A through HC 254H. This release contains the condition-event link public use file (hereafter referred to as the CLNK PUF), provided as an ASCII data file (with related SAS, SPSS, R, and Stata programming statements and data user information), SAS dataset, SAS transport file, Stata dataset, and Excel file.

This documentation offers a brief overview of the content and structure of the CLNK PUF and codebook. It contains the following sections:

- Data File Information (Section C.2.0)
- Merging/Linking MEPS Data Files (Section C.3.0)

For more information on MEPS HC sample design, see Chowdhury et al. (2019). For information on the MEPS MPC design, see RTI (2025). A copy of the survey instrument used to collect the information on this CLNK PUF, is available on the MEPS website.

2.0 Data File Information

This CLNK PUF contains variables for linkage of the MEPS 2024 event-level data files. The H254IF1 or CLNK PUF, is used for linking HC 255: 2024 MEPS Medical Conditions PUF (hereafter referred to as the Conditions PUF) with the MEPS event PUFs, HC 254A and HC 254D through HC 254H. The CLNK PUF contains 6 variables and has a logical record length of 71 with an additional 2-byte carriage return/line feed at the end of each record.

2.1 Codebook Format

The codebook describes an ASCII dataset (although the data are also being provided in a SAS dataset, SAS transport file, Stata dataset, and Excel file) and provides programming identifiers for each variable (see Table 1).

Table 1

Programming Identifiers for Each Variable on the CLNK PUF

Identifier	Description
Name	Variable name
Description	Variable descriptor

Identifier	Description
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

2.2 Variable Source and Naming Conventions

In general, variable names reflect the variable's content. All variables contained in this PUF were derived from the CAPI.

2.3 Contents of Condition-Event Link File (CLNK)

The CLNK PUF contains the variables needed to link each record on the Conditions PUF with one or more records on the MEPS 2024 event files. Section C.3.0 contains additional information for completing this linkage.

The 10-character variable DUPERSID uniquely identifies each person represented on this PUF. The variable DUPERSID is the combination of the variables DUID and PID. Identifiers begin with the two-digit panel number. There may be more than one record on the CLNK PUF for a specific DUPERSID value.

CONDIDX is the 13-digit ID that uniquely identifies each condition for a person and corresponds to a unique record on the Conditions PUF. The variable CONDIDX is the combination of the variables DUPERSID and CONDN (see the documentation for the Conditions PUF for a description of CONDN). The two-digit panel number is added in the beginning of CONDIDX. There may be more than one record on the CLNK PUF for a specific CONDIDX value.

EVNTIDX is the 16-digit number that uniquely identifies each event for a person and corresponds to a unique record on one of the MEPS 2024 event files, HC 254B through HC 254H. (EVNTIDX is not included on the 2024 Prescribed Medicines event PUF, HC 254A; rather, in this PUF the variable for linking with EVNTIDX on the CLNK PUF is LINKIDX.) There may be more than one record on the CLNK PUF for a specific EVNTIDX value. The two-digit panel number is added to the beginning of EVNTIDX, and a two-digit event type number is added to the end. The event type number indicates the type of event record and has been rolled up into the following values:

01 = MVIS — office-based medical provider visit event on MEPS release HC 254G or

OPAT — outpatient department visit event on MEPS release HC 254F or

EROM — emergency room visit event on MEPS release HC 254E or

STAZ — inpatient hospital stay event on MEPS release HC 254D or

HVIS — home health visit event on MEPS release HC 254H

03 = PMED — prescribed medicine event on MEPS release HC 254A

CLNKIDX is the 29-digit number that uniquely identifies each record on the CLNK PUF and is the combination of CONDIDX + EVNTIDX. There is just one record on this PUF for each value of CLNKIDX, i.e., each unique combination of CONDIDX + EVNTIDX.

The variable EVENTYPE indicates the type of event record, and has the following values:

1 = MVIS — office-based medical provider visit event contained on MEPS release HC 254G

2 = OPAT — outpatient department visit event contained on MEPS release HC 254F

3 = EROM — emergency room visit event contained on MEPS release HC 254E

4 = STAZ — inpatient hospital stay event contained on MEPS release HC 254D

7 = HVIS — home health visit event contained on MEPS release HC 254H

8 = PMED — prescribed medicines event contained on MEPS release HC 254A

PANEL is a constructed variable used to specify the panel number and indicates either Panel 28 or Panel 29 for each record on the file. Panel 28 started in 2023, and Panel 29 started in 2024. The panel number is included as the first two digits of the DUID and DUPERSID.

2.4 ICD-10-CM, CCSR1X, CCSR2X, CCSR3X, and CCSR4X

ICD-10-CM diagnosis codes and Clinical Classification Software Refined (CCSR) codes are both used to group medical conditions into clinically meaningful categories. For the purposes of MEPS, one ICD-10-CM diagnosis code may map to up to four CCSR categories (CCSR1X, CCSR2X, CCSR3X, and CCSR4X) using the v2025.1 release of the CCSR for ICD-10-CM diagnoses. For more information on CCSR, visit the user guide for CCSR.

3.0 Merging/Linking MEPS Data Files

This PUF is intended to be used in conjunction with the Conditions PUF, the Prescribed Medicines event PUF (HC 254A), and event files HC 254D through HC 254H.

3.1 Limitations/Caveats of the CLNK PUF

When using the CLNK PUF, analysts should keep in mind that (1) conditions are self-reported, (2) there may be multiple conditions associated with an event, and (3) there may be multiple events associated with a condition. Analysts should also note that not all events link to the Conditions PUF.

3.2 National Health Interview Survey

Data from this PUF can be used alone or in conjunction with other PUFs for different analytic purposes. Each MEPS panel can also be linked back to the previous years' NHIS PUFs. This is because the set of households selected for MEPS is a subsample of NHIS participants. For information on obtaining MEPS/NHIS link files please see the MEPS website.

3.3 Using MEPS Data for Trend Analysis

For analysts using the MEPS data for trend analysis, there are uncertainties associated with 2020, 2021, and 2022 data quality, as discussed in Section C.3.0: Survey Sample Information of HC 256: 2024 Full-Year Consolidated PUF document (hereafter referred to as the Consolidated PUF). Evaluations of important MEPS estimates suggest that the estimates are of reasonable quality. Nevertheless, analysts are advised to exercise caution when interpreting these estimates, particularly for trend analyses, because the pandemic substantially affected healthcare access and related factors (e.g., health insurance coverage, employment status).

MEPS began in 1996, and the utility of the survey for analyzing healthcare trends expands with each additional year of data; however, when examining trends over time using MEPS, the duration being analyzed should be considered. In particular, large shifts in survey estimates over short periods (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 the MEPS methodology.

With respect to methodological considerations, changes in data collection methods, such as interviewer training, were introduced in 2013 to obtain more complete information about healthcare utilization from MEPS respondents; the changes were fully implemented in 2014. This effort likely improved data quality and reduced underreporting starting in the second half of 2013 and continuing throughout the 2014 full-year files. The changes have also affected analyses involving utilization trends across years. Changes in the NHIS sample design in 2016 and 2018 could also affect trend analyses. The new NHIS sample design is based on more up-to-date information related to the distribution of housing units across the United States. As a result, it can be expected to better cover the full civilian noninstitutionalized population, the target population for MEPS, and many of its subpopulations. Improved coverage of the target population helps to reduce the potential for bias in both NHIS and MEPS estimates.

Another change with the potential to affect trend analyses involves major modifications to the MEPS instrument design and data collection process, particularly in the events sections of the

instrument. These were introduced in spring 2018 and thus affected data beginning with Round 1 of Panel 23, Round 3 of Panel 22, and Round 5 of Panel 21. Because the full-year 2017 MEPS files were established from data collected in Rounds 1–3 of Panel 22 and Rounds 3–5 of Panel 21, they reflect two instrument designs. To mitigate the effect of such differences within the same full-year file, the Panel 22 Round 3 data and the Panel 21 Round 5 data were transformed to be as consistent as possible with data collected under the previous design. The changes to the instrument were designed to make data collection more efficient and easier to administer. In addition, data on some items, such as those related to healthcare events, were expected to be more complete, with the potential of identifying more events. Increases in service use reported since the implementation of these changes are consistent with these expectations. Note: Analysts should be aware of the possible impacts of these changes on data, especially trend analyses, that include the year 2018 because of the design transition.

Process changes, such as data editing and imputation, may also affect trend analyses. For example, analysts should refer to the Section C.2.5.11: Utilization, Expenditures, and Source of Payment Variables in the Consolidated PUF. For more details, refer to the documentation for the prescription drug file (HC 254A), when analyzing prescription drug spending over time.

As always, before conducting trend analyses, analysts should review relevant documentation sections for descriptions of changes that might affect interpretation over time.

To smooth or stabilize trend analyses based on the MEPS data, analysts may also wish to consider statistical approaches such as comparing pooled time periods (e.g., 1996–1997 vs. 2011–2012), working with moving averages, or using modeling techniques with several consecutive years of data.

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, conducting numerous statistical significance tests of trends will increase the likelihood of concluding that a change has occurred when one has not.

3.4 Longitudinal Analysis

Panel-specific longitudinal files can be downloaded from 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 panels and can be used to analyze changes over a 2-year period. Variables on 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 Consolidated PUFs from the years covered by that panel.

For more details or to download the data files, please see Longitudinal Weight files at the AHRQ website.

References

Chowdhury, S. R., Machlin, S. R., & Gwet, K. L. (2019, January). Sample designs of the Medical Expenditure Panel Survey Household Component, 1996–2006 and 2007–2016. (Methodology Report #33). Agency for Healthcare Research and Quality.

RTI International (2026). *Medical Expenditure Panel Survey Medical Provider Component (MEPS-MPC) Methodology report 2024 data collection.* Agency for Healthcare Research and Quality.