AGENCY FOR HEALTHCARE RESEARCH AND QUALITY

MEPS – HC:
Longitudinal and Other Selected Analytic Approach Options
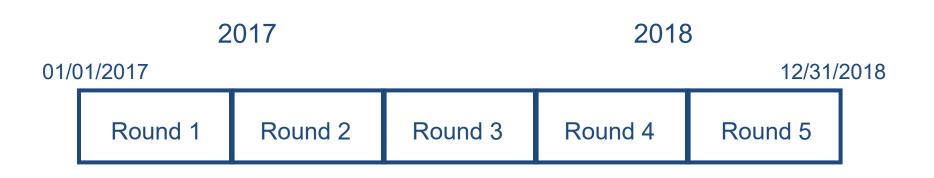
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Overview

- **Longitudinal analysis of MEPS panels**

- **Family-level estimation**

- **Other miscellaneous**

  – **Medical event as unit of analysis**

  – **State-level estimation**

  – **MEPS supplement surveys**

MEPS longitudinal analysis

Example:

Panel 22 (2017-2018)

2017   2018

01/01/2017   12/31/2018

Round 1	Round 2	Round 3	Round 4	Round 5

MEPS longitudinal analysis

- **National estimates of person-level changes over two-year period**

- **Examine characteristics associated with changes over time**

Variables that may change between years or rounds

- **Insurance coverage**
  - Monthly indicators (24 measures)
  - Annual summary (2 measures per person)

- **Health status**
  - Each round (5 measures for perceived general/mental health)
  - Rounds 1 & 3 (2 measures activities of daily living)
  - Rounds 2 & 4 (2 measures hearing, vision, & disability)

- **Having a usual source of care**
  - Rounds 2 & 4 (2 measures)

- **Use and expenditures**
  - Annual (2 measures per person)

Longitudinal weight (LONGWT)

- **Longitudinal weight is derived for persons with responses for entire period in scope, during the two years**

- **Produces national estimates for persons in two consecutive years**

- **For Panel 22 (2017-2018) . . .**

LONGWT > 0	All 5 Rounds	Participated for entire period in-scope (not all 5 rounds)
14,541	13,492 (92.8%)	1,049 (7.2%)

Selection of cases for analysis

Variable	Description
YEARIND	1=both years, 2=in 2017 only, and 3=in 2018 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)

Estimates from the Panel 22 longitudinal file

Examples:

- **Of those uninsured throughout 2017, an estimated 77.4% were also uninsured throughout 2018.**

- **An estimated 5.5% of the population had no insurance throughout 2017 / 2018.**

- **Of those with no expenses for health care in 2017, an estimated 48.7% had some expenses in 2018.**

MEPS longitudinal files (Panels 15-22)

	Panel 15 (10-11)	Panel 16 (11-12)	Panel 17 (12-13)	Panel 18 (13-14)	Panel 19 (14-15)	Panel 20 (15-16)	Panel 21 (16-17)	Panel 22 (17-18)
File Number	HC-148	HC-156	HC-164	HC-172	HC-183	HC-193	HC-202	HC-210
Number of Persons	14,541	18,512	17,293	16,714	15,898	17,017	15,617	15,541

Extending the longitudinal period: MEPS-NHIS

- **MEPS-HC is nationally representative subsample of responding households from previous year's National Health Interview Survey (NHIS)**

  - **Prior year NHIS data available for many MEPS respondents**

- **MEPS/NHIS link file**

  - **Crosswalk to merge MEPS full-year public use data to NHIS person-level public use data**

  - **Crosswalk file not public use; available in data center**

Extending the longitudinal period: MEPS-NHIS

2016	2017	2018
	MEPS Panel 21 Year 2	
NHIS 2016　➡	MEPS Panel 22 Year 1	MEPS Panel 22 Year 2
	NHIS 2017　➡	MEPS Panel 23 Year 1

Linked files, weighting, and estimation

- **Linking the two surveys expands the analytic capabilities**

- **Not all MEPS respondents link (birth, marriage, etc.)**

- **Weighting adjustment for non-linkage is recommended**

- **Informational resources**

    2012 ASA proceedings paper (Chowdhury, Machlin, and Wun)

    https://meps.ahrq.gov/mepsweb/data_stats/Pub_ProdResults_Details.jsp?pt=Conference+Proceedings&opt=3&id=1241

    2013 FCSM proceedings paper (Mirel and Machlin)

    https://s3.amazonaws.com/sitesusa/wp-content/uploads/sites/242/2014/05/H2_Mirel_2013FCSM.pdf

Family-Level Estimation

Family-level estimation

- **Create family-level file from person-level file** (see documentation)

- **Two family type options**
  - MEPS: includes unmarried couples and foster children
  - CPS: unmarried couples not family unit

- **Two time frame options**
  - December 31 (MEPS, CPS)
  - Any time during year (MEPS only)

Family sample sizes, 2018 (MEPS annual household file)

Number of families	MEPS Anytime during year	MEPS December 31	CPS December 31
Unweighted	12,475	12,385	12,978
Weighted (millions)	140.3	139.2	144.9
Family Weight Variable Name	FAMWT18F	FAMWT18F (subset to FMRS1231=1)	FAMWT18C

Family-level estimation

Example: Average total health care expenses per MEPS family by family size, 2018

- **Based on MEPS families in scope at any time during the year**

- **Average number of persons per family is about 2.3**

Family size	Estimate	SE
All	$13,735	$297
1	$9,317	$343
2	$16,354	$571
3	$15,794	$744
4	$15,718	$966
5+	$17,282	$1,098

Other Miscellaneous Analytic Options

Medical event as unit of analysis

- **Event files can be used to estimate average expense per event**

- **Some estimates available in HC Summary Tables on MEPS website**

    Example:

    In 2018,

    …the mean expense per office visit to a physician was $298 (SE=$8).

    …the mean expense per ER visit was $1,010 (SE=$34).

    …the mean expense per inpatient stay was $15,140 (SE=$647).

State-level estimation

- **Considerable interest in State-level estimates**

- **MEPS sample not designed for producing estimates for all States**

  - **Small sample sizes**

  - **Insufficient PSUs for variance estimation**

- **Public Use File (PUF) does not include State identifiers to protect confidentiality**

  - **Tables and reports available on website for larger States (selected estimates)**

  - **Access to identifiers in Data Center**

    - ➢ *Need to use state-level sample design and state identifiers*

MEPS-HC supplements

- **Special supplement variables on person-level files**

- **Consult documentation for appropriate weight**

  - **Self Administered Questionnaire (SAQ)** $\rightarrow$ **SAQWT*yy*F**

  - **Diabetes Care Survey (DCS)** $\rightarrow$ **DIABW*yy*F**

  - **Cancer SAQ (CSAQ)** $\rightarrow$ **CSAQW*yy*F**

    - *For MEPS full-year files 2011, 2016, 2017 only*

Medical Organization Survey (MOS)

- **Data on organizational / financial characteristics of office-based usual source of care providers.**

- **Nationally representative of persons who visited their usual source of care (USC) 1+ times in 2016.**
  - **For example, a USC was an independent practice for about 55% of persons who visited their usual source of care provider in 2016.**

- **MOS variables (including MOS weight) must be merged onto the full year person-level file**
  - **this is different from the other supplemental variables (e.g., SAQ)**
  - **2015 full year MOS file $\rightarrow$ HC-182**
  - **2016 full year MOS file $\rightarrow$ HC-187**

Thank you!

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