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MEPS – HC: Longitudinal and Other Selected Analytic Approach Options

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Overview

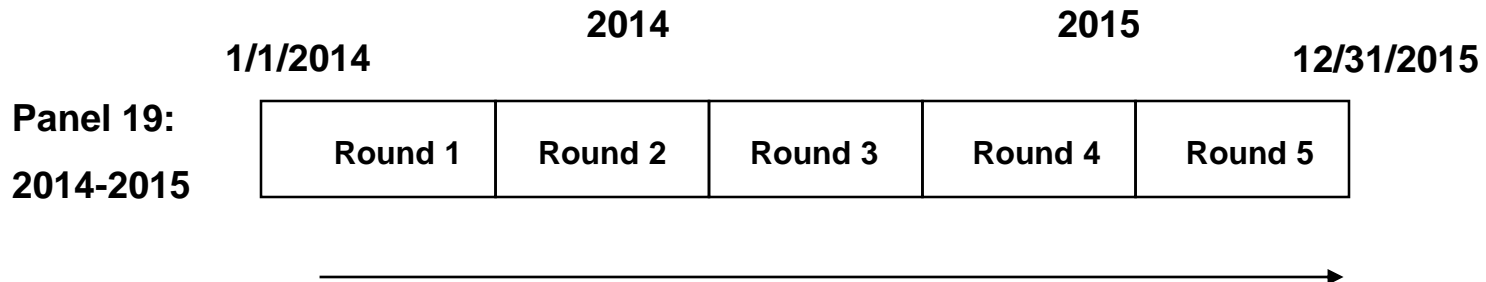
- **Longitudinal analysis of MEPS panels**
- **Family-level estimation**
- **Other miscellaneous:**
 - ▶ **Medical event as unit of analysis**
 - ▶ **State-level estimation**
 - ▶ **MEPS supplement surveys**



MEPS longitudinal analysis

Example:

Panel 19 (2014-2015)





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)
- **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 19 (2014-2015):

| LONGWT>0 | All 5 Rounds | Participated for entire period in-scope (not all 5 rounds) |
|----------|----------------|--|
| 15,898 | 14,643 (92.1%) | 1,255 (7.9%) |



Selection of cases for analysis

| Variable | Description |
|----------|--|
| YEARIND | 1=both years, 2=in 2014 only, and 3=in 2015 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 19 longitudinal file

Examples:

- Of those uninsured throughout 2014, an estimated 68.4% were also uninsured throughout 2015.
- An estimated 6.4% of the population had no insurance throughout 2014 / 2015.
- Of those with no expenses for health care in 2014, an estimated 45.7% had some expenses in 2015.



MEPS longitudinal files (Panels 12-19)

| | Panel 12 (07-08) | Panel 13 (08-09) | Panel 14 (09-10) | Panel 15 (10-11) | Panel 16 (11-12) | Panel 17 (12-13) | Panel 18 (13-14) | Panel 19 (14-15) |
|-------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| File Number | HC-122 | HC-130 | HC-139 | HC-148 | HC-156 | HC-164 | HC-172 | HC-183 |
| Number of Persons | 12,440 | 18,287 | 16,221 | 14,541 | 18,512 | 17,293 | 16,714 | 15,898 |



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

| 2013 | 2014 | 2015 |
|-------------|----------------------|----------------------|
| | MEPS Panel 18 Year 2 | |
| NHIS 2013 → | MEPS Panel 19 Year 1 | MEPS Panel 19 Year 2 |
| | NHIS 2014 → | MEPS Panel 20 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, 2015

(MEPS annual household file)

| Number of Families | MEPS Anytime during the year | MEPS Dec 31 | CPS Dec 31 |
|--------------------------------|------------------------------------|---------------------------------------|---------------|
| Unweighted | 13,800 | 13,710 | 14,522 |
| Weighted (million) | 138.0 | 136.7 | 141.8 |
| Family Weight Variable Name | FAMWT15F | FAMWT15F (subset to FMRS1231=1) | FAMWT15C |



Family-level estimation

Example: Average total health care expenses per MEPS family by family size, 2015

- 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 | \$11,341 | \$270 |
| 1 | \$7,902 | \$357 |
| 2 | \$14,960 | \$670 |
| 3 | \$12,809 | \$804 |
| 4 | \$10,604 | \$423 |
| 5+ | \$11,716 | \$640 |



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 2015,**
 - ...the mean expense per office visit to a physician was \$248 (SE=\$6).**
 - ...the mean expense per ER visit was \$1,045 (SE=\$57).**
 - ...the mean expense per inpatient stay was \$14,650 (SE=\$632).**



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 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) → SAQWTyyF
 - Diabetes Care Survey (DCS) → DIABWyyF
 - Cancer SAQ (CSAQ) → CSAQW11F
2011 full year file 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 2015.
 - Example: Usual source of care was an independent practice for about 55% of persons who visited their usual source of care provider in 2015.
- 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 → HC-175
 - 2016 full year MOS file → HC-187 (*to be released in May 2018*)