

MEPS – HC Longitudinal and Other Analyses

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- Longitudinal analysis of MEPS panels
- Family-level estimation
- Other estimation possibilities
- State-level estimation



Longitudinal Analysis Using MEPS



AHR MEPS longitudinal analysis

Example:

Panel 18 (2013-2014)





AHR 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)

AHR 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 18 (2013-2014):

		Participated for entire
		period in-scope
LONGWT>0	All 5 Rounds	(not all 5 rounds)
16,714	15,467 (92.5%)	1,247 (7.5%)

#HRQ

AHR Selection of cases for analysis

Variable	Description
YEARIND	1=both years, 2=in 2013 only, and 3=in 2014 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 18 longitudinal file

Examples:

- Of those uninsured throughout 2013, an estimated 65.9% were also uninsured throughout 2014.
- An estimated 8.4% of the population had no insurance throughout 2013 / 2014.
- Of those with no expenses for health care in 2013, an estimated 44.8% had some expenses in 2014.



MEPS longitudinal files (Panels 11-18)

	Panel 11 (06-07)	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)
File Number	HC-114	HC-122	HC-130	HC-139	HC-148	HC-156	HC-164	HC-172
Number of Persons	16,533	12,440	18,287	16,221	14,541	18,512	17,293	16,714



Extending the longitudinal period MEPS-NHIS

- MEPS-HC is a nationally representative subsample of responding households from previous year's National Health Interview Survey (NHIS) which is conducted by National Center for Health Statistics
 - Selected from ~200 of the ~400 NHIS Primary Sampling Units
- Each MEPS/NHIS link file contains a crosswalk to merge MEPS full-year public use data files to NHIS person-level public use data files
- NHIS contains data collected for MEPS respondents in the year prior to their initial year of MEPS participation



Extending the longitudinal period MEPS-NHIS

2012	2013	2014	
	MEPS Panel 17 Year 2		
NHIS 2012	MEPS Panel 18 Year 1	MEPS Panel 18 Year 2	
	NHIS 2013 -	MEPS Panel 19 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

AHR 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, 2014 (MEPS annual household file)

Number of Families	MEPS Anytime during the year	MEPS Dec 31	CPS Dec 31
Unweighted	13,421	13,330	14,133
Weighted (million)	136.4	135.1	140.3
Family Weight Variable Name	FAMWT14F	FAMWT14F (subset to FMRS1231=1)	FAMWT14C



Example: Average total health care expenses per MEPS family by family size, 2014

- 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	\$10,629	\$284
1	\$7,375	\$420
2	\$13,123	\$421
3	\$11,821	\$778
4	\$12,651	\$1,075
5+	\$12,743	\$923



Other Estimation Possibilities

. ♣ AHR®

AHRE Medical event as unit of analysis

 Event files can be used to estimate average expense per event

Example:

- In 2014,
 - ...the mean expense per office visit to a physician was \$222 (SE=\$4).
 - ...the mean expense per ER visit was \$997 (SE=\$38).
 - ...the mean expense per inpatient stay was \$13,450 (SE=\$575).

AHRIC Special 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)
 2011 full year file only
 - Medical Organizations Survey (MOS) → MOSWTyyF
 beginning with data year 2015

Note: the above weights will appear in the full year population characteristics file with a "P" suffix (e.g., SAQWT15P)

AHRA Special supplements: MOS

- MOS supplement variables (including MOS weight) must be merged onto the full year person-level file using DUPERSID
 - this is different from the other supplemental variables (e.g., SAQ)
 - 2015 full year MOS file → HC-175

 Nationally representative of persons with a usual source of care (USC) that they visited at least once during the year.

Example:

 A slight majority of persons with a usual source of care provider and who visited them during 2015 had usual source of care that was an independent practice (54.7%).

AHR Inflating expenditures

- Analyses involving multiple years
 - Typically adjust expenditures to most current MEPS data year
- CFACT guidelines on appropriate indices
 - Varies by...
 - 1) purpose of the analysis
 - 2) type of expenditure
- Resource page

http://www.meps.ahrq.gov/mepsweb/about_meps/Price_Index.shtml

Crosswalk of price indices and MEPS analyses

	Recommended Index				
Objective of analysis	GDP or PCE	СРІ	PHCE or PCE-Health Total	PHCE Component	
Trends in expenditures	x				
Trends in out-of-pocket expenditures only		x			
Pooling total expenditures			X		
Pooling expenditures by type of service (e.g., prescription meds)				Х	
Trends with income measures		x			



State-Level Estimation

AHR MEPS state-level data

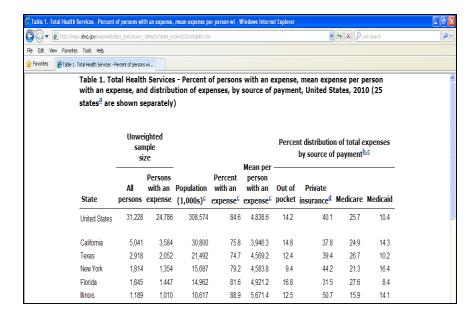
- Considerable interest in State-level estimates
- MEPS sample not designed for producing estimates for all States
 - Small sample sizes
 - Insufficient PSUs for variance estimation
- Public Use File does not include State identifiers to protect confidentiality
 - Tables and reports available on website for larger States (selected estimates)
 - Access to identifiers in Data Center
 Need to use state-level sample design and state identifiers

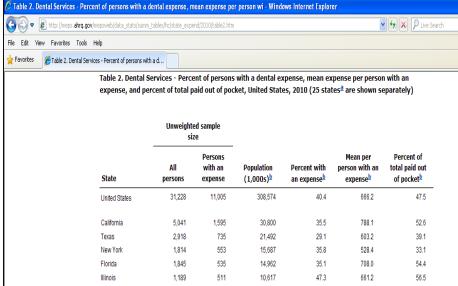


AHR State summary data tables

25 states in 2010

- Table 1 (total expenses) has 6 estimates by state
- Tables 2-4 (dental, office-based, Rx drug) have only 3 estimates



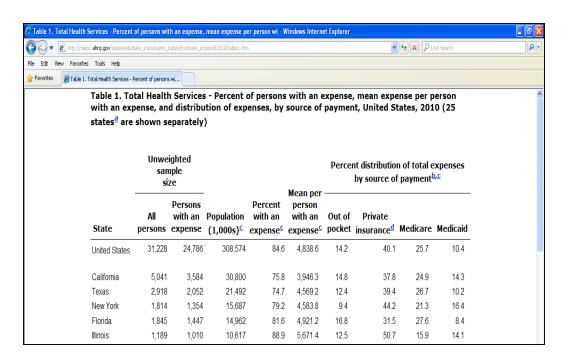




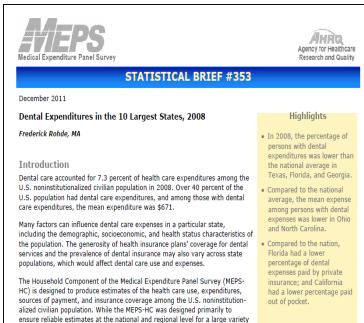
AHRA Published state estimates

Two on-line MEPS publications have state-level estimates

Summary data tables



Statistical briefs



Accounting for clustering

http://meps.ahrq.gov/mepsweb/survey_comp/hc_clustering_faq.pdf

Using statistical software packages to produce estimates from MEPS

http://meps.ahrq.gov/survey_comp/hc_samplecodes_se.pdf



Thank you