



U.S. Department of Health and Human Services

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# **MEPS – HC: Longitudinal and Other Selected Analytic Approach Options**

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**Marc Zodet, MS**

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



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# **Longitudinal Analysis Using MEPS**



# MEPS longitudinal analysis

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Example:

Panel 18 (2013-2014)





# MEPS longitudinal analysis

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- 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

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- 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)

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- 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):

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



# 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

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## 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)

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	<b>Panel 11 (06-07)</b>	<b>Panel 12 (07-08)</b>	<b>Panel 13 (08-09)</b>	<b>Panel 14 (09-10)</b>	<b>Panel 15 (10-11)</b>	<b>Panel 16 (11-12)</b>	<b>Panel 17 (12-13)</b>	<b>Panel 18 (13-14)</b>
<b>File Number</b>	HC-114	HC-122	HC-130	HC-139	HC-148	HC-156	HC-164	HC-172
<b>Number of Persons</b>	16,533	12,440	18,287	16,221	14,541	18,512	17,293	16,714



# Extending the longitudinal period MEPS-NHIS

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- 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

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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

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

# Family-Level Estimation



# Family-level estimation

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- 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)

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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





# Family-level estimation

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 Miscellaneous Analytic Options



# Medical event as unit of analysis

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- Event files can be used to estimate average expense per event
- Some estimates available in HC Summary Tables on MEPS website

## 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).



# State-level estimation

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- 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

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- 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)

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- 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 preliminary MOS file → HC-175



# Contact Information

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**[Steven.Machlin@ahrq.hhs.gov](mailto:Steven.Machlin@ahrq.hhs.gov)**

**[Marc.Zodet@ahrq.hhs.gov](mailto:Marc.Zodet@ahrq.hhs.gov)**