AGENCY FOR HEALTHCARE RESEARCH AND QUALITY

Overview of Household Component of the Medical Expenditure Panel Survey MEPS-HC

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MEPS-HC OVERVIEW: Outline

MEPS-HC Basics

- MEPS Components
- Purpose and use
- MEPS Sample
- Commonly Used Terms
- Data Collection Process
- Questionnaires
- Recent Changes

MEPS-HC Dissemination

- Data Files
- Data Tools
- Publications

MEPS-HC Other Information

- Confidential Data Access
- Contact Information

MEPS Components

Medical Expenditure Panel Survey (MEPS)

Household Component (HC)	Medical Provider Component (MPC)	Insurance Component (IC)

MEPS Components

- ❑ **MEPS-HC: Household Component**
  - ❑ Collects healthcare use data from a sample of families and individuals across the United States
  - ❑ Annual survey since 1996

- ❑ **MEPS-MPC: Medical Provider Component**
  - ❑ Survey of medical providers linked to respondents to the HC
  - ❑ Collects data from a sample of providers who provided medical care to HC respondents
  - ❑ Data not designed to yield national estimates; used solely for editing and imputation purposes related to the Household Component data

- ❑ **MEPS-IC: Insurance Component**
  - ❑ Collects data from a sample of private- and public-sector employers on the health insurance plans they offer their employees
  - ❑ An independent survey of employers and unions NOT linked to HC

MEPS-HC: Purpose & Use

- MEPS-HC is an annual survey of about 15,000 households fielded since 1996
- The sample is representative of the civilian noninstitutionalized population of the United States
- The sample is drawn from previous year's National Health Interview Survey (NHIS) sample.
- Collects data from a sample of families and individuals across the United States
- Provides nationally representative estimates of healthcare use, expenditures, sources of payment, access to care, and health insurance coverage
- Allows estimates to be produced for individuals, families, and selected population subgroups and socioeconomic characteristics
- Is used for policy-related and behavioral research on the determinants of healthcare use, spending, and insurance coverage

MEPS-HC: Commonly Used Terms

❑ **Panel - Since 1996, every year a new panel of sample households has been selected. Each Panel participates in MEPS for two years, e.g., 1/1/2023 – 12/31/2024**

❑ **Round - There are five interview rounds to collect two years of healthcare usage data**

❑ **CAPI - Computer assisted personal interviewing**

❑ **CAVI - Computer assisted video interviewing**

❑ **Respondent – All data for a sampled household are reported by a single household respondent**

MEPS-HC: Sample Sizes

Year	Number of families	Number of persons
2021	13,238	27,332
2020	12,290	26,847
2019	11,924	27,648
2018	12,475	29,415
2017	12,756	30,716
2016	13,587	33,259
2015	13,800	33,893
2014	13,421	33,162
2013	13,936	35,068
2012	14,763	37,182
2011	13,449	33,622
2010	12,445	31,228
2009	13,875	34,920
2008	12,316	31,262
2007	11,615	29,370
2006	12,811	32,577
2005	12,810	32,320
2004	13,018	32,737
2003	12,860	32,681
2002	14,828	37,418
2001	12,852	32,122
2000	9,515	23,839
1999	9,345	23,565
1998	9,023	22,953
1997	13,087	32,636
1996	8,655	21,571

MEPS-HC: Data Collection Process

- ❑ There are five interview rounds to collect two years of healthcare usage data, and the survey builds on this information from interview to interview

- ❑ MEPS interviews are conducted in person, on phone and on video.

- ❑ MEPS has two cycles of data collection each year; the first in the Spring from January through June for odd numbered rounds and the second in the Fall, from July through December for even numbered rounds

- ❑ In the first six months of each year, data collection is in progress for three panels: the panel beginning its first year, the panel beginning its second year, and the panel completing its final interview

- ❑ With this design, MEPS produces a continuing series of annual data files on health care use and expenditures

- ❑ Each annual data file contains data from two panels, and each panel is represented in two annual files

MEPS-HC: Questionnaires

❑ **MEPS Interviews consists of many questionnaires**

❑ **Collection schedule:**

- ➢ **Once a year**
- ➢ **Every Round**
- ➢ **Every Round except last**
- ➢ **Only in the Last round**

❑ **Modes of collection:**

- ➢ **Interviewer Asked**
- ➢ **Self-Administered Questionnaires**

MEPS-HC: Questionnaires

❑ **Questionnaires asked by the Interviewer:**

- ➢ **Demographics**
- ➢ **Utilization and Expenditures**
- ➢ **Charges and Payments**
- ➢ **Employment**
- ➢ **Health Insurance**
- ➢ **Access to Care**
- ➢ **Child Health and Preventive Care**
- ➢ **Income**
- ➢ **Additional Health Questions**
- ➢ **Assets**

MEPS-HC: Questionnaires

❑ **Demographics**

➢ **Collects age, sex, race and ethnicity, Language and English proficiency, marital status, foreign-born status, student status and educational attainment, military service and honorable discharge and poverty status**

❑ **Utilization and Expenditures**

➢ **Collects use and expenditures for office- and hospital-based care, home healthcare, dental services, vision aids, and prescribed medicines.**

MEPS-HC: Questionnaires

- ❑ **Charges and Payments**
  - ➢ **Tracks total charges and sources of payment for medical events reported in earlier sections**

- ❑ **Employment**
  - ➢ **Covers questions about each person's employment or self-employment status**

- ❑ **Health Insurance**
  - ➢ **Collects information about health insurance for individuals**

MEPS-HC: Questionnaires

❑ **Health Status**

➢ **Asks questions about IADL (Instrumental Activities of Daily Living) and ADL (Activities of Daily Living) limitations, Functional and activity limitations, Hearing, vision problems and Disability status etc.**

❑ **Priority Conditions Enumeration**

➢ **Assessment of each person's perceived physical and mental health and collects information about a select group of highly prevalent conditions, called priority conditions**

MEPS-HC: Questionnaires

❑ **Access to Care (AC)**

➢ **Identifies whether each household member has a medical provider who serves as the usual source of care (USC), reasons why members without a USC do not have a USC, Questions about satisfaction with USC provide, and any problems experienced in obtaining needed healthcare**

❑ **Child Preventive Health (CS)**

➢ **Collects information on general health status, special healthcare needs, potential behavioral problems, access to healthcare, preventive care, and height and weight of any child in the family**

MEPS-HC: Questionnaires

- ❑ **Income**
  - ➢ **Collects information about income and tax returns**

- ❑ **Additional Health Questions**
  - ➢ **assess the impact of physical illness, injury, or mental/emotional health on household members' attendance at work. The section also asks about smoking and engaging in vigorous exercise**

- ❑ **Assets**
  - ➢ **ask about household members' real estate, businesses, vehicles, investments, other assets, and debts to supplement the financial data collected in the Income section**

MEPS-HC: Self-Administered Questionnaires

- ❑ **Diabetes Care Survey (DCS) – Once a year**

- ❑ **Adult Self-Administered Questionnaire (SAQ) – Every other year, R2/4**

- ❑ **The Preventive Care Self-Administered Questionnaire (PSAQ) – Every other year 2/4**

- ❑ **Social Determinants of Health Survey (SDOH) – Data in FY2021**

- ❑ **Veteran Self-Administered Questionnaire (VSAQ)- Data in 2018/2019**

- ❑ **Cancer Self-Administered Questionnaire (CSAQ) – Data in 2011/2016/2017**

MEPS-HC: 2018 Changes

- ❑ **Omitted sections** ⟶
- ❑ **Added sections**
- ❑ **Modified sections**
- ❑ **SAQs**
- ❑ **Changes to use and expenditure collection**
- ❑ **Research implications**

> ❑ **Condition Enumeration (CE)**
> ❑ **Disability Days (DD)**
> ❑ **Preventive Care (AP)**
> ❑ **Provider Directory (PD)**

MEPS-HC: 2018 Changes

- ❑ **Omitted sections**

- ❑ **Added sections** →

- ❑ **Modified sections**

- ❑ **SAQs**

- ❑ **Changes to use and expenditure collection**

- ❑ **Research implications**

> ❑ **Additional Healthcare Questions (AH)**
> ❑ **Start/Restart (ST)**
> ❑ **Event Follow-up (EF)**
> ❑ **Respondent Forms**

MEPS-HC: 2018 Changes

- ❑ **Omitted sections**

- ❑ **Added sections**

- ❑ **Modified sections** ➡

- ❑ **SAQs**

- ❑ **Changes to use and expenditure collection**

- ❑ **Research implications**

> ❑ **Health Status (HE)**
> ❑ **Priority Conditions Enumeration (PE)**
> ❑ **Access to Care (AC)**
> ❑ **Quality Supplement (QS)**
> ❑ **Child Health Supplement (CS)**
> ❑ **Health Insurance**
> ❑ **Income (IN)/Assets (AS)**
> ❑ **Calendar (CA)**
> ❑ **Provider Probes (PP)**

MEPS-HC: 2018 Changes

- ❑ **Omitted sections**

- ❑ **Added sections**

- ❑ **Modified sections**

- ❑ **SAQs** ➝ ❑**SAQ**
  ❑**Preventive Care SAQ (PSAQ)**

- ❑ **Changes to use and expenditure collection**

- ❑ **Research implications**

MEPS-HC: 2018 Changes

- ❑ **Omitted sections**

- ❑ **Added sections**

- ❑ **Modified sections**

- ❑ **SAQs**

- ❑ **Changes to use and expenditure collection** ➡️

- ❑ **Research implications**

> ❑ **Date Picker**
> ❑ **Provider Search Tool**
> ❑ **Switch Feature**
> ❑ **Off-Path Feature**
> ❑ **Event Driver (ED)**
> ❑ **Event Detail**

MEPS-HC: 2018 Changes

- ❑ **Omitted sections**

- ❑ **Added sections**

- ❑ **Modified sections**

- ❑ **SAQs**

- ❑ **Changes to use and expenditure collection**

- ❑ **Research implications** ➡️
  - ❑ Variable changes
  - ❑ Variables renamed
  - ❑ Other implications

MEPS-HC: COVID-19 Changes

- ❑ **No interruption in data collection throughout pandemic**
- ❑ **Spring 2020: Shift to telephone interview**
  - ➢ **Inclusion of telehealth: informal prompting of telemedicine events**
- ❑ **Fall 2020:**
  - ➢ **COVID added to Condition Roster (3 entries)**
  - ➢ **COVID-19 in-person mitigation protocols**
  - ➢ **Generalized CAPI instrument to accommodate 9 data collection rounds**
- ❑ **Spring 2021:**
  - ➢ **Telehealth questions added to provider probes**
  - ➢ **Inclusion of Telehealth event type**
  - ➢ **Added items related to 'Delays in care due to COVID'**

MEPS-HC: COVID-19 Changes

❑ **Fall 2021:**
  ➢ **Added COVID-19 vaccine item**
  ➢ **Gradual shift to Face-to-face interviewing**

❑ **Spring 2022:**
  ➢ **Face-to-face interviewing – as much as possible (varied geographically dependent on COVID-19 activity)**
  ➢ **Added COVID-19 vaccine booster item**
  ➢ **Roll out of Computerized Assisted Video Interview CAVI**
  ➢ **MEPS data collection is now multi-mode (in-person, CAVI and phone)**

❑ **Spring 2023:**
  ➢ **Addition of COVID-19 questions to measure LONG COVID**

MEPS-HC: COVID-19 Changes

☐ **Temporary Changes in Sample Design and Data collection**

➢ **Panel 23 and 24 - extended to nine rounds**

➢ **Translates into a respondent participating in MEPS for four years**

➢ **Panel 25 onwards – back to five rounds**

MEPS-HC Changes: Research Implications

- ❑ All design changes will impact trend analysis and longitudinal research projects
- ❑ Many variables have been eliminated, added, or modified.
- ❑ Some variable labels have been changed, even though variable names are the same. Some answer categories changed or collapsed
- ❑ The value -9 NOT ASCERTAINED was removed as an allowable value and replaced with -15 CANNOT BE COMPUTED
- ❑ Due to COVID-19, temporary changes in the sample design and data collection

- ❑ **Read the Documentation carefully before starting your analysis!**

MEPS-HC: Dissemination

https://meps.ahrq.gov/mepsweb

- ➢ **Data Files**
- ➢ **Data Tools**
- ➢ **Questionnaires**
- ➢ **Publications**
- ➢ **Workshops and events—workshops, webinars, and seminars**
- ➢ **Mailing list**

MEPS-HC: Data Files (PUFs)

❑ **Full-Year Files**
- ➤ **Contain expenditure and utilization data for the calendar year from several rounds of data collection**

❑ **Types of Files**
- ➤ **Person Level—Detailed person information**
  - o **Each record represents a person and has all the person's demographics, health, income, expenses, etc.**
- ➤ **Event Level—Detailed event information**
  - o **Each record represents an event, such as a hospital visit, and has all details on conditions, expenditures, etc., for that visit**
- ➤ **Condition Level—Detailed condition information**
  - o **Each record represents a condition; all details on that condition are on that record**
- ➤ **Job Level—Detailed job information**
  - o **Each record represents a job and all details associated with it**

MEPS-HC Data Files: Supporting Documents

- ❑ **Documentation files**
  - ➢ **Contain general information about MEPS**
  - ➢ **List and discuss file variables including variable-source crosswalk to link back to questionnaire items**
  - ➢ **Include instructions on how to link files**
- ❑ **File codebooks**
  - ➢ **Contain names and location of all variables**
  - ➢ **Provide formatted frequencies for all variables in the file**
- ❑ **Programming statements**
  - ➢ **SAS, SPSS, STATA, R (2017 onwards)**
- ❑ **Data File in following formats**
  - ➢ **ASCII, SAS transport, Stata, SAS V9 and XLXS (2018 onwards)**
- ❑ **Industry and Occupation Codes**

MEPS-HC: Data Tools

https://datatools.ahrq.gov/meps-hc

❑ **Explore trends and cross-sectional bar charts for nationally representative estimates of household medical utilization and expenditures**

❑ **Customize by demographic characteristics, health insurance coverage, accessibility and quality of care, treated medical conditions, and prescribed medicine purchases**

❑ **Customize by number of people, total expenditures, prescription medicines or dental visits, source of payment (e.g., Medicare, Medicaid, Out of Pocket)**

❑ **MEPS-HC Variable Explorer Tool : Quick and easy way to find variables and files for research purposes.**

https://datatools.ahrq.gov/meps-hc#varExp

MEPS-HC: Data Tools

MEPS-HC: Data Tools

Use, Expenditures, and Population

Trends

Cross-sectional

Mean expenditure per person by age groups, United States, 1996 to 2021
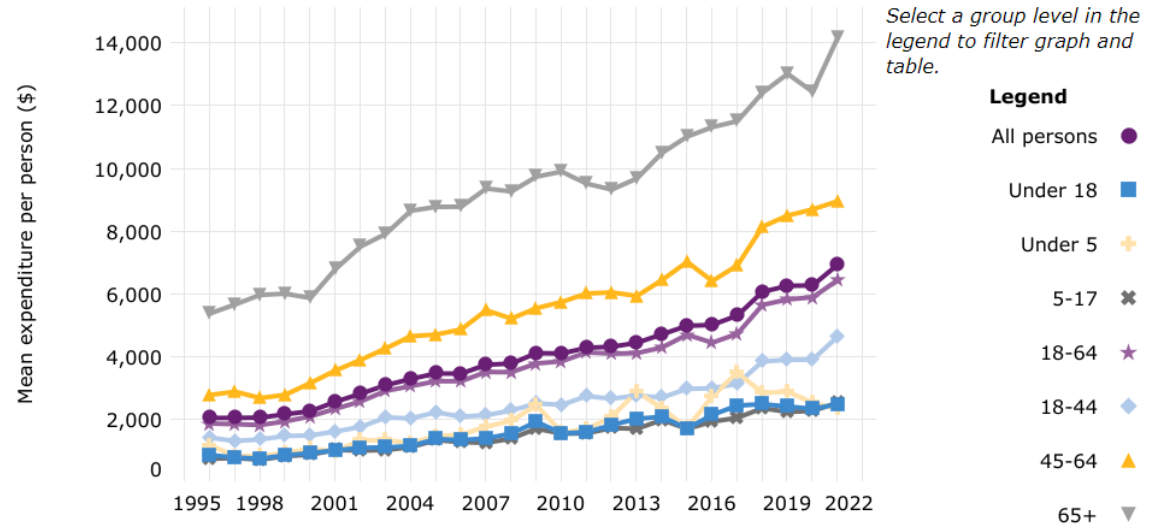
Estimates:
Mean expenditure per person...

Groups:
Age groups

Group Levels:
(All)

Start Year 1996 **End Year** 2021

☐ Show 95% CI

Select a group level in the legend to filter graph and table.

Legend
- All persons ●
- Under 18 ■
- Under 5 ✚
- 5-17 ✖
- 18-64 ★
- 18-44 ◆
- 45-64 ▲
- 65+ ▼

Year	All persons Estimate	All persons Std. Error	Under 18 Estimate	Under 18 Std. Error	Under 5 Estimate	Under 5 Std. Error	5-17 Estimate	5-17 Std. Error
2021	6,934	188.7	2,474	185.3	2,323	289.4	2,525	219.9
2020	6,266	164.4	2,331	235.7	2,525	648.8	2,263	228.8
2019	6,252	117.1	2,403	107.2	2,876	301.6	2,230	105.3
2018	6,063	128	2,479	110.5	2,835	307.7	2,349	104.9
2017	5,306	125.9	2,433	228.9	3,487	812.8	2,044	101.1
2016	5,006	117	2,138	198.3	2,725	696.9	1,921	98.5
2015	4,978	134.4	1,699	77.9	1,718	219.1	1,691	73.1

*Relative standard error is greater than 30%.
--Estimates suppressed due to inadequate precision.

Use, Expenditures, and Population

Trends

Cross-sectional ←

Mean expenditure per person by census region and age groups, United States, 2021

Estimates:
Mean expenditure per person...

Primary Groups:
Age groups

Primary Group Levels:
(All)

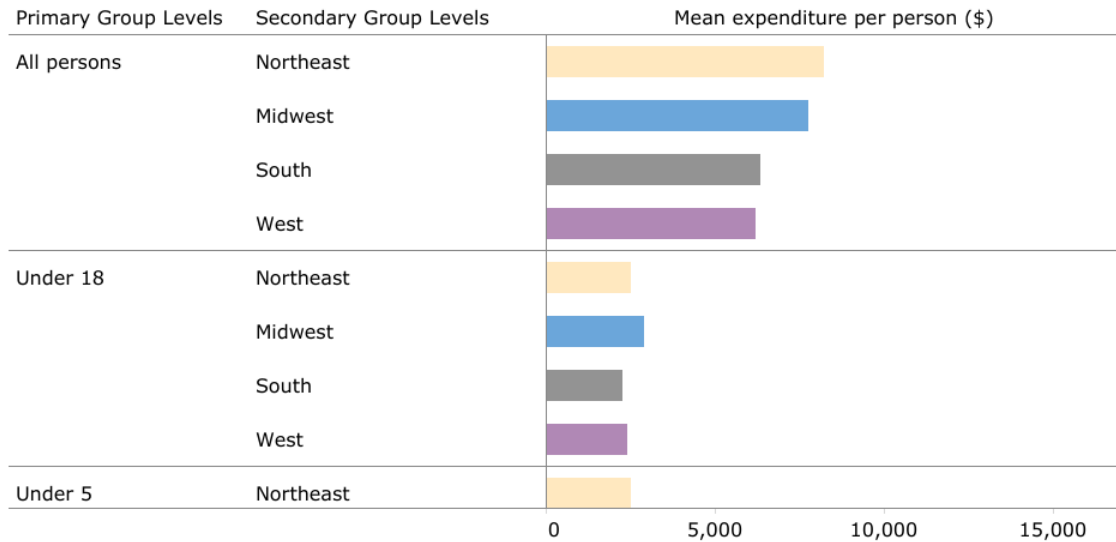Secondary Groups:
Census region

Secondary Group Levels:
(Multiple values)

Years:
2021

☐ Show 95% CI

Primary Group Levels	Secondary Group Levels	Mean expenditure per person ($)
All persons	Northeast	
	Midwest	
	South	
	West	
Under 18	Northeast	
	Midwest	
	South	
	West	
Under 5	Northeast	

0   5,000   10,000   15,000

Secondary Group Levels	All persons		Under 18		Under 5		
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	
Northeast	8,239	640.7	2,520	339.7	-- 2,532*	-- 1,072*	2,
Midwest	7,781	412	2,910	627.2	2,520	369.5	3,
South	6,339	276.1	2,256	219.6	1,993	386.4	2,
West	6,217	274.8	2,416	352.2	2,565	705	2,

*Relative standard error is greater than 30%.
--Estimates suppressed due to inadequate precision.

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MEPS-HC: Variable Explorer Tool

MEPS-HC: Variable Explorer Tool

MEPS-HC Variable Explorer Tool: Annu

Go **Reset**

Quick Search

Search Table

educ

Advanced Search

Variable

Data (All)

Selecting a variable under the years will navigate to the codebook

Variable	Data	Description			
EDRECODE	FYC	EDUCATION RECODE (EDITED)			
EDRECODE	PIT	EDUCATION RECODE (EDITED)			
EDUCYEAR	FYC	YEARS OF EDUC WHEN FIRST ENTERED MEPS			
EDUCYR	FYC	YEARS OF EDUC WHEN FIRST ENTERED MEPS	EDUCYR	EDUCYR	EDUCYR
EDUCYR	PIT	YEARS OF EDUC WHEN FIRST ENTERED MEPS			EDUCYR
EDUCYR1	FYC	COMPLETED YEARS OF EDUCATION-RD1			
EDUCYR1	PIT	COMPLETED YEARS OF EDUCATION			
EDUCYR13	PIT	YEARS OF EDUC WHEN FIRST ENTERED MEPS			
EDUCYR2	FYC	COMPLETED YEARS OF EDUCATION-RD2			
EDUCYR31	FYC	COMPLETED YEARS OF EDUCATION - R3/1			

VALUE	UNWEIGHTED	WEIGHTED
-15 CANNOT BE COMPUTED	1	10,502
-8 DK	162	1,473,360
-7 REFUSED	29	166,200
-1 INAPPLICABLE	1,951	26,662,572
0 NO SCHOOL/KINDERGARTEN ONLY	822	9,772,933
1-8 ELEMENTARY GRADES 1 - 8	3,812	42,708,127
9-11 HIGH SCHOOL GRADES 9 - 11	2,607	26,370,342
12 GRADE 12	6,644	70,865,748
13 1 YEAR COLLEGE	1,395	17,017,671
14 2 YEARS COLLEGE	2,839	35,801,515
15 3 YEARS COLLEGE	716	9,465,451
16 4 YEARS COLLEGE	4,364	54,886,202
17 5+ YEARS COLLEGE	2,994	36,048,772
TOTAL	28,336	331,249,393

MEPS Data Repository

https://github.com/HHS-AHRQ/MEPS

This repository contains instructions and example code for loading and analyzing data from the Agency for Healthcare Research and Quality's Medical Expenditure Panel Survey (MEPS) **Household Component** (HC). Quick reference guides are also provided for convenience.

- MEPS Workshops
- Survey Background
- Accessing MEPS-HC data
- Analyzing MEPS-HC data
- Additional Survey Components
- Contact MEPS

MEPS-HC: Publications

➢ **Sadeq R. Chowdhury, PhD, Steven R. Machlin, MS, Kilem L. Gwet, PhD**

Sample Designs of the Medical Expenditure Panel Survey Household Component, 1996-2006 and 2007-2016

https://meps.ahrq.gov/data_files/publications/mr33/mr33.pdf

➢ **Henry Olaisen, PhD, MBH, PMP, and Richard Manski, DDS, MBA, PhD**

Dental Utilization and Expenditures, U.S. Civilian Noninstitutionalized Population Aged 2 and Older, 2019-2021

https://meps.ahrq.gov/data_files/publications/st555/stat555.pdf

➢ **Anita Soni, PhD, MBA, and Sandra Decker, PhD**

Characteristics of Young Adults Aged 18-24 Who Had Ever Used an Electronic Nicotine Product, 2021

https://meps.ahrq.gov/data_files/publications/st554/stat554.pdf

MEPS-HC: Confidential Data

❑ **Non-Public MEPS-HC Data**

➤ **Has confidential information**

➤ **Only available from Data Centers**

❑ **Non-public MEPS-HC data can be accessed through many data centers around the country**

➤ **AHRQ Data Center (ADC)**

➤ **Federal Statistical Research Data Centers (FSRDC)**

➤ **University Data Centers**

❑ **Type of data that can be accessed:**

➤ *State and County FIPS Codes*

➤ *Fully Specified ICD-9/10 Codes*

➤ *Date of cancer diagnosis, etc.*

AHRQ Data Center (ADC): Procedures

❑ **Location**

➢ **Located in Rockville, MD at AHRQ building**

➢ **Secure room with no internet connectivity; terminal connected to secure LAN**

➢ **Users escorted while in the building**

❑ **Statistical Software**

➢ **SAS, Stata, SUDAAN, R**

❑ **Programming Support**

ADC: Procedures

- ❑ **Proposal and review—two weeks for feasibility and data availability**
- ❑ **Institutional review board (IRB) review from users' institute**
- ❑ **Sign the data use agreement**
- ❑ **Fee - $300 one-time to cover technical assistance**
- ❑ **Researcher may bring data in, but not out**
- ❑ **Given access only to data needed for approved project**
- ❑ **Analysis must be run onsite**
- ❑ **Some data available via the MEPS-AWS SecureCloud**
- ❑ **Tabular data reviewed for confidentiality before release**
- ❑ **ADC will store data files and outputs needed for future replication**
- ❑ **If using other data centers, users need to follow rules and pay fees as required by that data center in addition to ADC**

MEPS-HC: Contact Information

For MEPS questions:

mepsprojectdirector@ahrq.hhs.gov

For AHRQ Data Center questions:

CFACTDC@AHRQ.HHS.GOV

For MEPS workshop or webinar questions:

WorkshopInfo@ahrq.hhs.gov

Thank you!

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