

AGENCY FOR HEALTHCARE RESEARCH AND QUALITY

AHRQ

MEPS-HC
Medical Conditions Data

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Medical Conditions Data

Priority conditions

- Person-level variables on the Full-Year Consolidated (FYC) PUF
- Set of 15 pre-determined conditions that are asked about for all eligible sample members

Current (treated) conditions

- Condition-level data on the Medical Conditions PUF
- Open-ended reporting of conditions at certain points in MEPS interview

Priority Conditions

Condition	Age Group	Reference Period	Diagnosis Variable(s)
Hypertension	18+	Lifetime	HIBPDX, BPMLDX
Coronary Heart Disease	18+	Lifetime	CHDDX
Angina	18+	Lifetime	ANGIDX
Heart Attack	18+	Lifetime	MIDX
Other heart disease	18+	Lifetime	OHRTDX
Stroke/TIA	18+	Lifetime	STRKDX
Emphysema	18+	Lifetime	EMPHDX
High Cholesterol	18+	Lifetime	CHOLDX
Cancer	18+	Lifetime	CANCERDX
Diabetes	All	Lifetime	DIABDX_M18
Arthritis	18+	Lifetime	ARTHDX
Asthma	All	Lifetime	ASTHDX
ADHD	5-17	Lifetime	ADHDADDX
Chronic Bronchitis	18+	Past 12 months	CHBRON31
Joint Pain	18+	Past 12 months	JTPAIN31_M18

Current (Treated) Conditions

Open-ended reporting of conditions at different points in the MEPS-HC interview, including:

Medical Events	**Main source of condition data (100% for 2018 onward)**
Condition Enumeration	**1996–2017 (discontinued in Panel 21 Round 5 and Panel 22 Round 3)**
Disability Days	**1996–2012 (discontinued in 2013)**

Medical Event Condition Questions

What conditions were discovered or led (PERSON) to make this visit?

- Hospital inpatient stays
- Hospital outpatient visits
- Emergency room visits
- Office-based medical provider visits
- Home health visits

What health problem is (MEDICINE) prescribed for?

- Prescribed medicines

Recording and Coding Conditions

Lookup Tool

- Implemented in 2020
- Pre-programmed, searchable list of commonly reported conditions
- Automatically assigns an ICD-10 code to entries

Verbatim Text

- Used when a reported condition is not in condition lookup tool
- Professional coders manually review text strings and assign fully specified ICD-10 codes

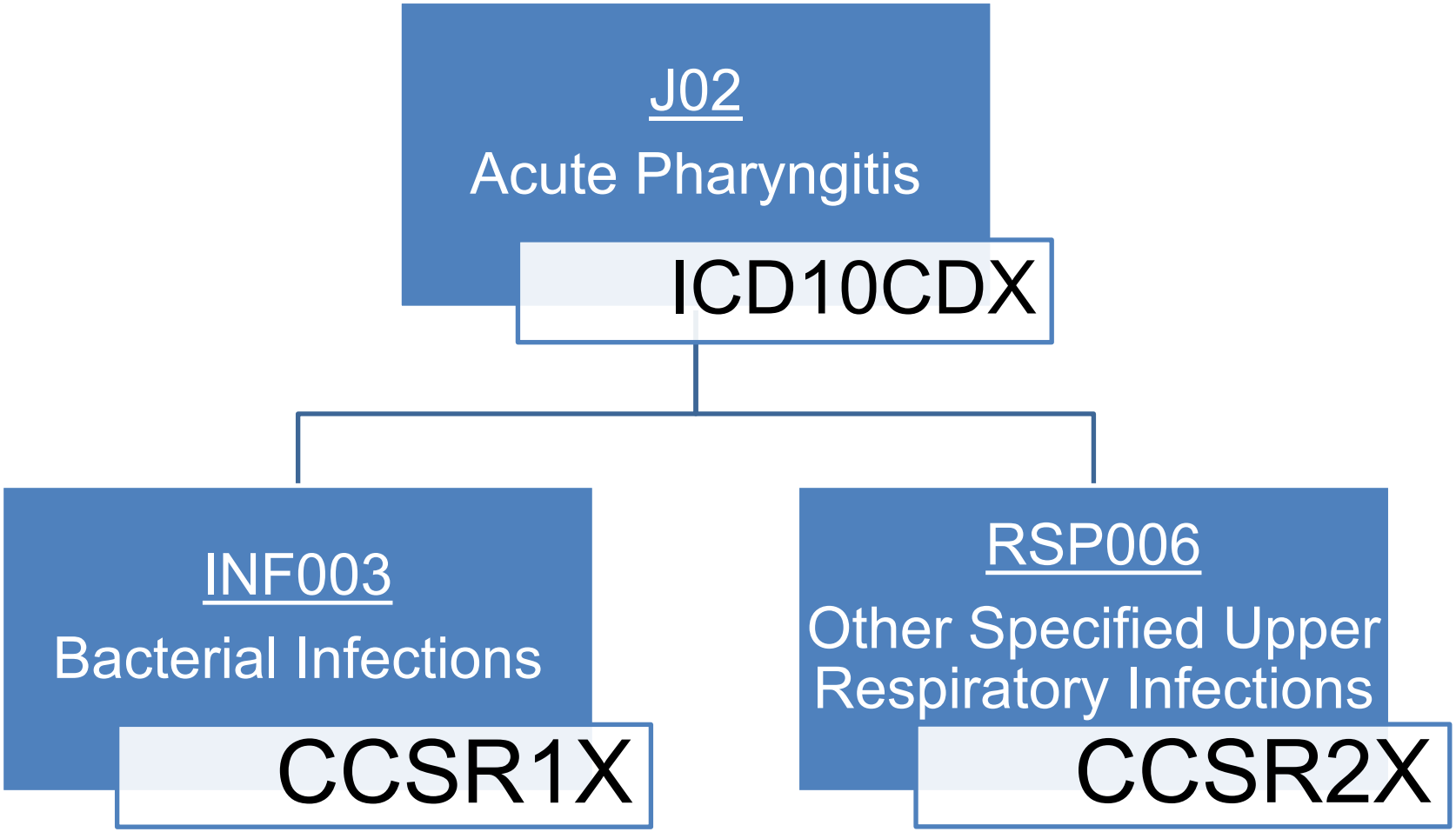
Medical Conditions PUF

- Each record is a unique combination of person and condition
- Not everyone on the FYC will have condition records
- Can be linked to:
  - Medical event files using the conditions-event link (CLNK) file
  - FYC (person-level) file using DUPERSID
- To protect respondent confidentiality:
  - ICD-10 codes are truncated to 3 digits
  - Some conditions are masked (to -15) or recoded to broader condition categories

Medical Conditions PUF

- Contents
  - CONDIDX: unique condition identifier for a person
  - DUPERSID: unique person identifier
  - ICD10CDX: 3-digit ICD-10 code (ICD-9 prior to 2016)
  - CCSR1X, CCSR2X, CCSR3X: CCSR codes (CCS code prior to 2016)
  - **NUM variables: number of CLNK records of that type (e.g., ERNUM for ER visits) a condition links to
  - CRND variables: if person reported condition in round
  - Person-level analysis weight and design variables

Example: ICD-10 and CCSRs

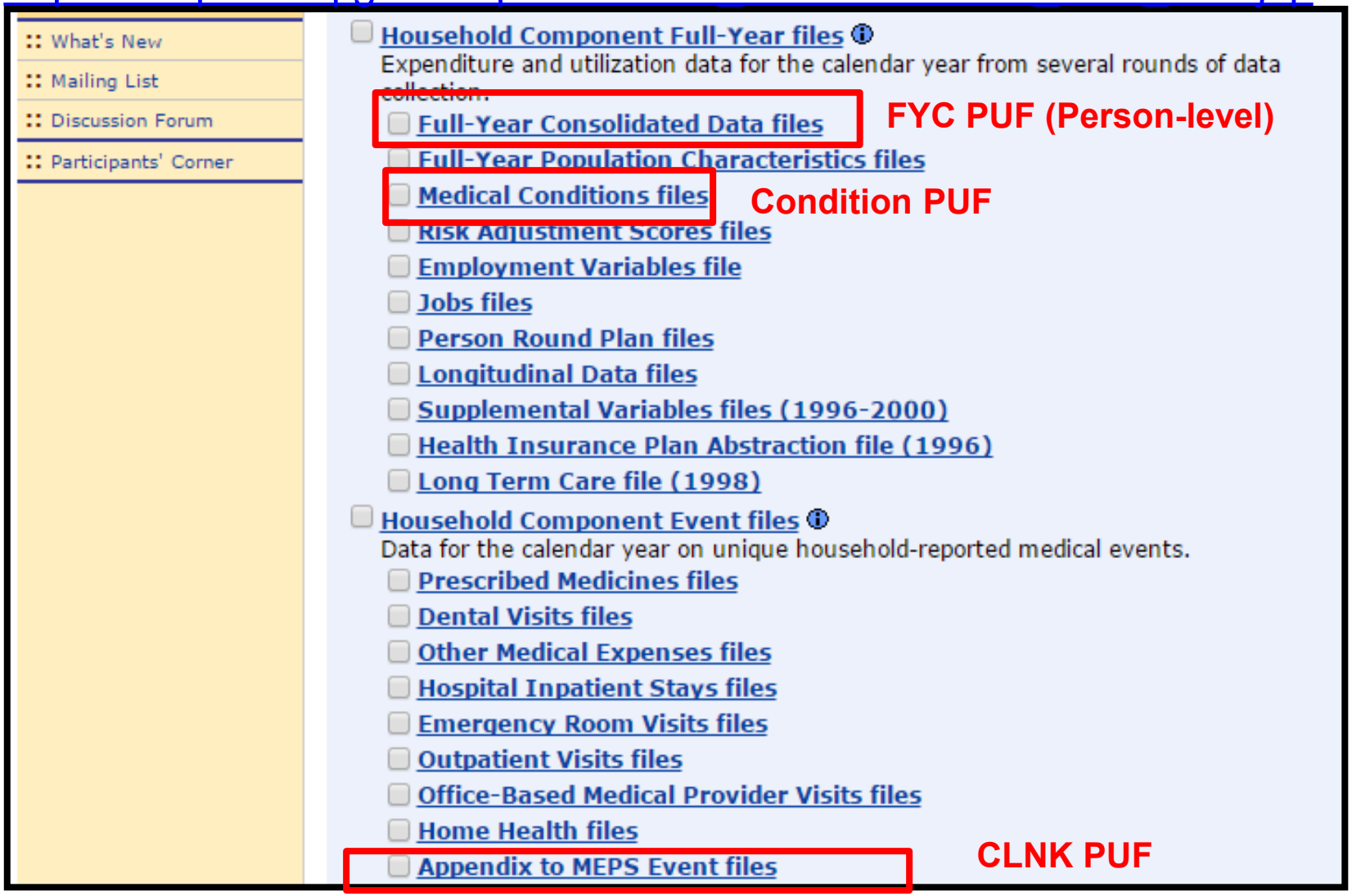


Conditions-Event Link (CLNK) File

- Crosswalk between condition IDs (CONDIDX) and event IDs (EVNTIDX) used to link medical conditions to medical events
  - For example, to obtain expenditures by payer for healthcare associated with a specific condition
- EVENTYPE on the CLNK indicates the type of medical event
- Many-to-many matching is possible
  - One condition can link to multiple events
  - One event can link to multiple conditions
  - Some events don't link to any conditions
  - Beginning in 2018 all conditions link to events

Data Files

https://meps.ahrq.gov/mepsweb/data_stats/download_data_files.jsp



Example: Linking Conditions to Events

Conditions File

Event Type and Counts

DUPERSID	CONDIDX	ICD10CDX	HHNUM	IPNUM	OPNUM	OBNUM	ERNUM	RXNUM
2510001101	2510001101001	J00	0	0	0	0	0	1
2510001101	2510001101002	M76	0	0	0	1	0	0
2510001101	2510001101003	H52	0	0	0	4	0	0

CLNK File

DUPERSID	CONDIDX	EVNTIDX	EVENTYPE
2510001101	2510001101001	2510001101001103	8
2510001101	2510001101002	2510001101200101	1
2510001101	2510001101003	2510001101200201	1
2510001101	2510001101003	2510001101200301	1
2510001101	2510001101003	2510001101200401	1
2510001101	2510001101003	2510001101200501	1

OB File

DUPERSID	EVNTIDX
2510001101	2510001101200101
2510001101	2510001101200201
2510001101	2510001101200301
2510001101	2510001101200401
2510001101	2510001101200501

Example: Linking Conditions to Events

Conditions File

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DUPERSID	CONDIDX	ICD10CDX	HHNUM	IPNUM	OPNUM	OBNUM	ERNUM	RXNUM
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2510001101	2510001101003	H52	0	0	0	4	0	0

Link File

DUPERSID	CONDIDX	EVNTIDX	EVENTYPE
2510001101	2510001101001	2510001101001103	8
2510001101	2510001101002	2510001101200101	1
2510001101	2510001101003	2510001101200201	1
2510001101	2510001101003	2510001101200301	1
2510001101	2510001101003	2510001101200401	1
2510001101	2510001101003	2510001101200501	1

OB File

DUPERSID	EVNTIDX
2510001101	2510001101200101
2510001101	2510001101200201
2510001101	2510001101200301
2510001101	2510001101200401
2510001101	2510001101200501

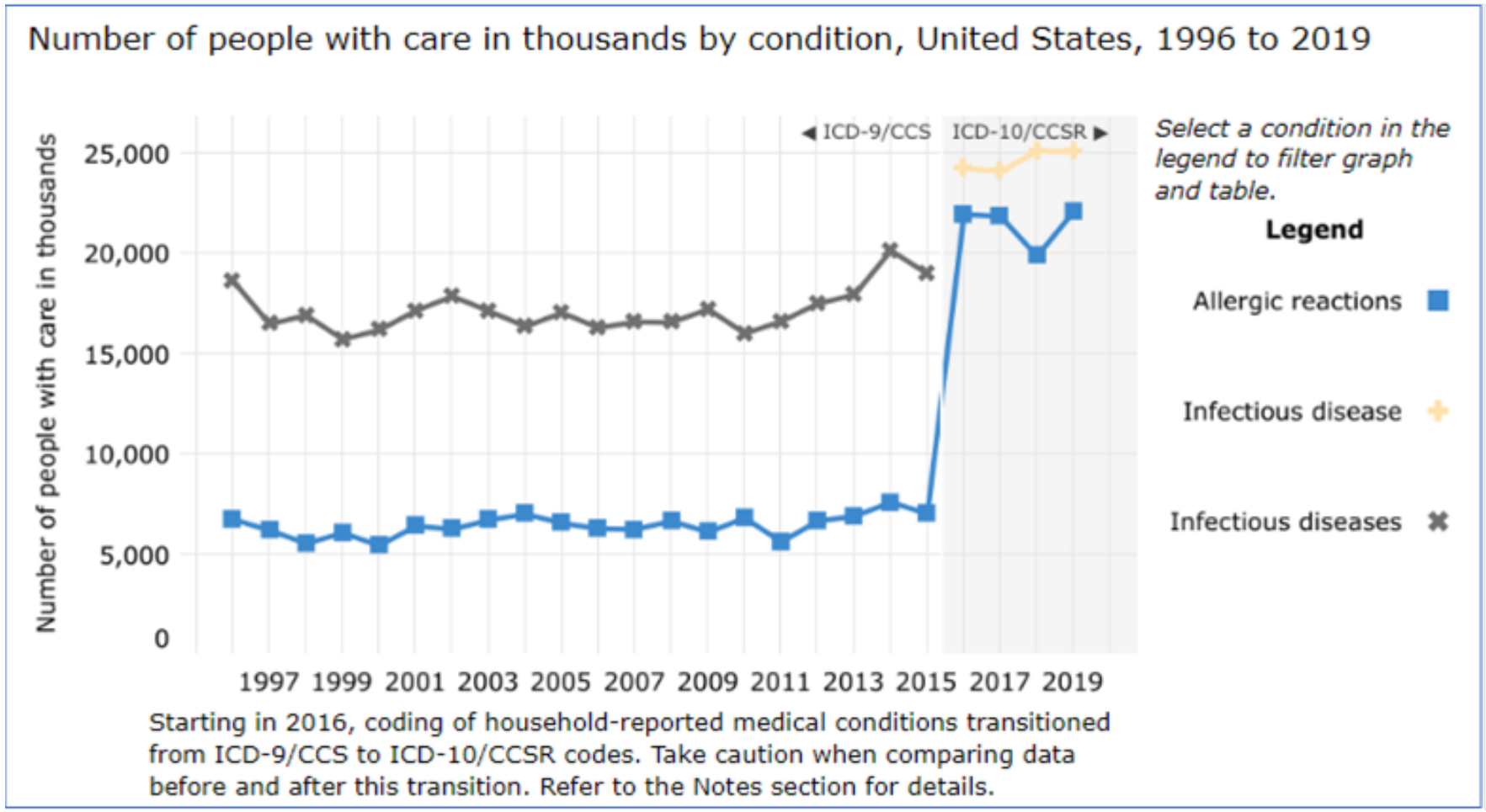
Caveats and Limitations

- MEPS can be used to produce "treated prevalence" estimates for conditions but not overall disease prevalence estimates
- Potential underreporting of conditions
  - Open-ended reporting lacks prompting of conditions
  - Recall error, especially if condition not salient
  - One respondent per household
  - Sensitive conditions underreported in surveys
  - No medical care received
- All conditions are household-reported
  - MEPS does not use information from the MPC to create new conditions records or edit household-reported conditions
- Some reported text strings cannot be easily coded
  - For example, reports of "pain" or "injury"

Practical Tips

- Exercise extreme caution when pooling or trending across the ICD-9 to ICD-10 transition
  - ICD-9/CCS and ICD-10/CCSR are fundamentally different coding schemes
  - Changes may be due to changes in the underlying coding scheme and not true changes in the population
  - ICD-10 codes can map to multiple CCSRs whereas ICD-9 codes only map to one CCS

Analyzing Trends Across the ICD-9 to ICD-10 Transition



Practical Tips

- There can be duplicate 3-digit ICD-10 codes with unique CONDIDXs for a given person
  - ► This usually happens when the fully specified ICD-10 codes are different, but collapse to the same 3-digits
  - ► Look out for these when programming, especially if merging or summing!
- **NUM variables on the Conditions files should not be used to estimate healthcare utilization
- MEPS is not useful for distinguishing between Type 1 and Type 2 diabetes.

Practical Tips

- For comparability before and after 2018, subset pre-2018 conditions files to only those conditions linked to a medical event
- Priority conditions are not included on the conditions file unless the condition is also reported as current
  - ► For 2018 onward this means the condition must be associated with a medical event
- If analyzing priority conditions, limit analyses to 2008 and later years
  - ► The priority conditions questions were significantly changed starting in 2007

COVID-19

- COVID-19 introduced significant disruptions to:
  - Face-to-face data collections like MEPS-HC
    - See previous presentation
  - The actual healthcare landscape
- Priority Conditions on the 2020 FYC PUF:
  - Asked in odd rounds except the final round of a panel
  - Not asked in Panel 23 Round 5 (what would have normally been the last round of the panel covering 2018-2019 before Panel 23 was extended)

COVID-19

- 2020 Medical Conditions PUF:
  - New ICD-10 codes have been released throughout the pandemic (and new CCSR codes as a result)
    - Some ICD-10 codes were applied to conditions reported before those ICD-10 codes became effective
    - Some relevant ICD-10 codes were released after coding took place
  - Conditions related to COVID-19 were added to the CAPI condition lookup tool in fall 2020 and spring 2021
  - MEPS condition data stem from healthcare utilization, which was significantly disrupted in 2020
  - COVID-19 testing was limited early in the pandemic
  - Healthcare for non-covid conditions was affected too!

COVID-19 ICD-10 Coding for 2020 Medical Conditions Data

Respondent Reports	MEPS ICD-10 code
COVID-19 confirmed or positive test	U07.1
COVID-19 presumed or suspected	Reason for encounter (e.g., fever, cough, exposure to covid)
COVID-19 testing (result unknown or negative)	Z20.822
COVID-19 exposure	Z20.822
Multisystem inflammatory syndrome with COVID-19 present	U07.1
Multisystem inflammatory syndrome without COVID-19 present	M35.89
Respiratory manifestation of COVID-19 (e.g., covid pneumonia)	U07.1
Pregnancy/childbirth with COVID-19	O98.5
COVID-19 vaccination	Z23

Resources

- Public use file documentation
- Understanding and Analyzing MEPS Household Component Medical Condition Data
- MEPS-HC online data tools
- MEPS GitHub (includes example code in R, SAS, and Stata)
- The Impacts of the COVID-19 Pandemic on the Medical Expenditure Panel Survey

Thank you!

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