
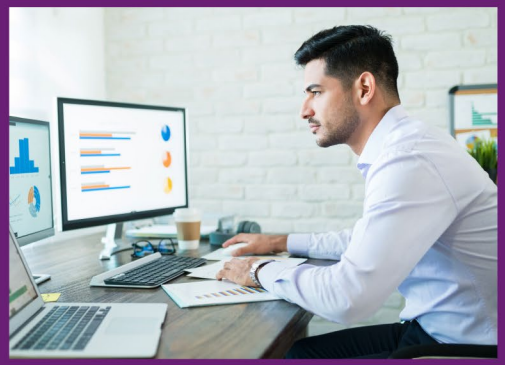


AGENCY FOR HEALTHCARE RESEARCH AND QUALITY

35TH AHRQ ANNIVERSARY
Today's Research, Tomorrow's Healthcare

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

COVID Additions to Priority Conditions

- **Questions about COVID-19 and Long COVID were added to Priority Conditions in spring 2023 and will be available starting with 2022 PUFs**

- **Questions asked of all sample members include:**
  - **Ever had COVID-19**
  - **Had symptoms lasting 3 months or longer that they didn't have prior to having COVID-19 (Long COVID)**
  - **Whether sample member has symptoms now**
  - **How much symptoms reduce ability to carry out day-to-day activities**
  - **Whether sample member last had COVID-19 in the past 12 months**
  - **Month and year of last infection for those last infected in the past 12 months**

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% starting in 2018)
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 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**
  - ► **MEPS sample members with multiple conditions will have multiple condition records**

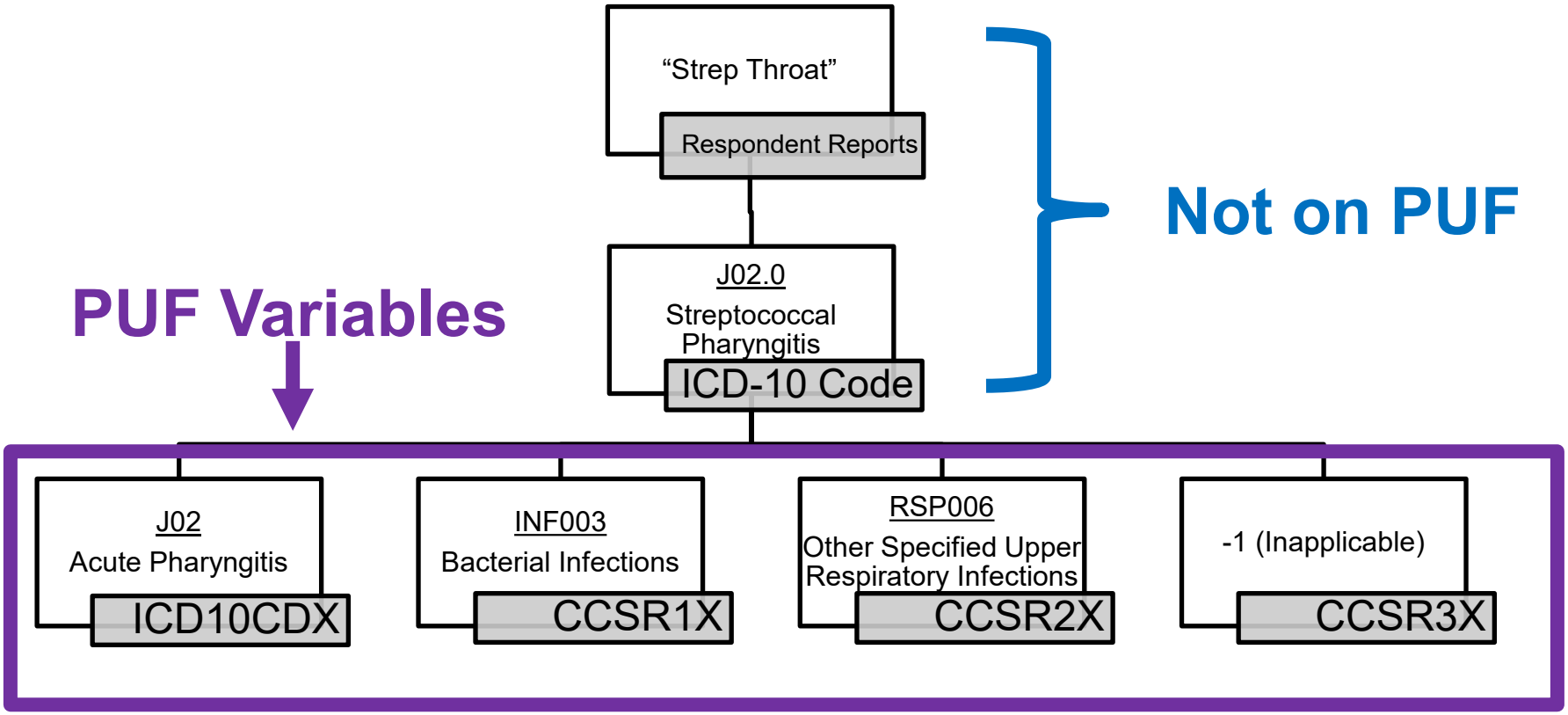
- **The Medical Conditions PUF can be linked to:**
  - ► **Medical event files using the conditions-event link (CLNK) file**
  - ► **FYC (person-level) file using DUPERSID**

- **To protect respondent confidentiality:**
  - ► **ICD-10 codes are truncated to the first 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)
  - **COND variables: whether the condition links to any of that event type (e.g., ERCOND for ER visits)
  - CRND variables: if person reported condition in round
  - Person-level analysis weight and design variables

Example: ICD-10 and CCSRs

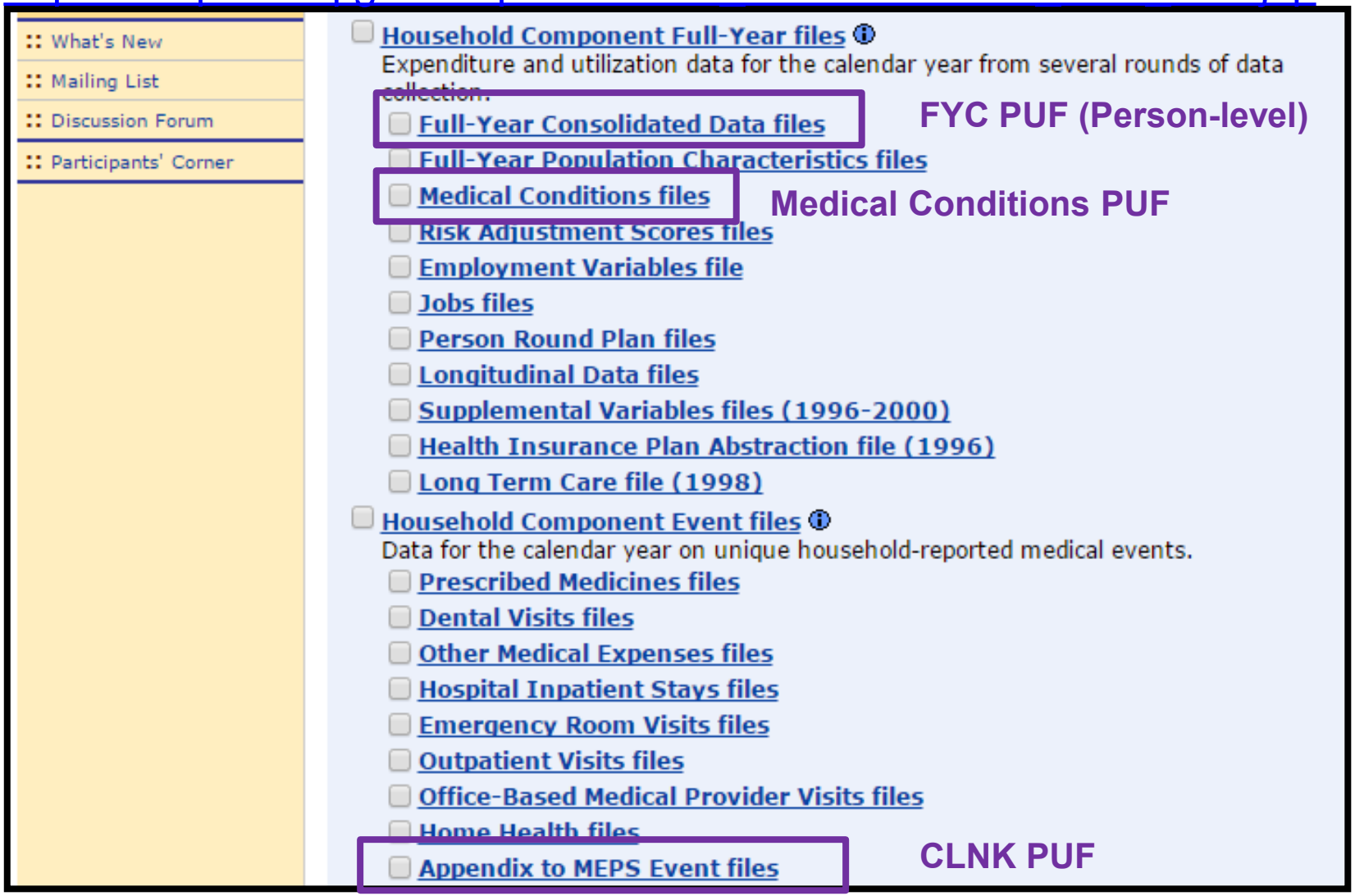


Conditions-Event Link (CLNK) File

- Crosswalk between condition IDs (CONDIDX) and event IDs (EVNTIDX) used to link medical conditions to medical events (and vice versa)
  - 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

DUPERSID	CONDIDX	ICD10CDX	HHCOND	IPCOND	OPCOND	OBCOND	ERCOND	RXCOND
2510001101	2510001101001	J00	2	2	2	2	2	1
2510001101	2510001101002	M76	2	2	2	1	2	2
2510001101	2510001101003	H52	2	2	2	1	2	2

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

DUPERSID	CONDIDX	ICD10CDX	HHCOND	IPCOND	OPCOND	OBCOND	ERCOND	RXCOND
2510001101	2510001101001	J00	2	2	2	2	2	1
2510001101	2510001101002	M76	2	2	2	1	2	2
2510001101	2510001101003	H52	2	2	2	1	2	2

CLNK File

DUPERSID	CONDIDX	EVNTIDX	EVENT YPE
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 condition records or to edit household-reported conditions

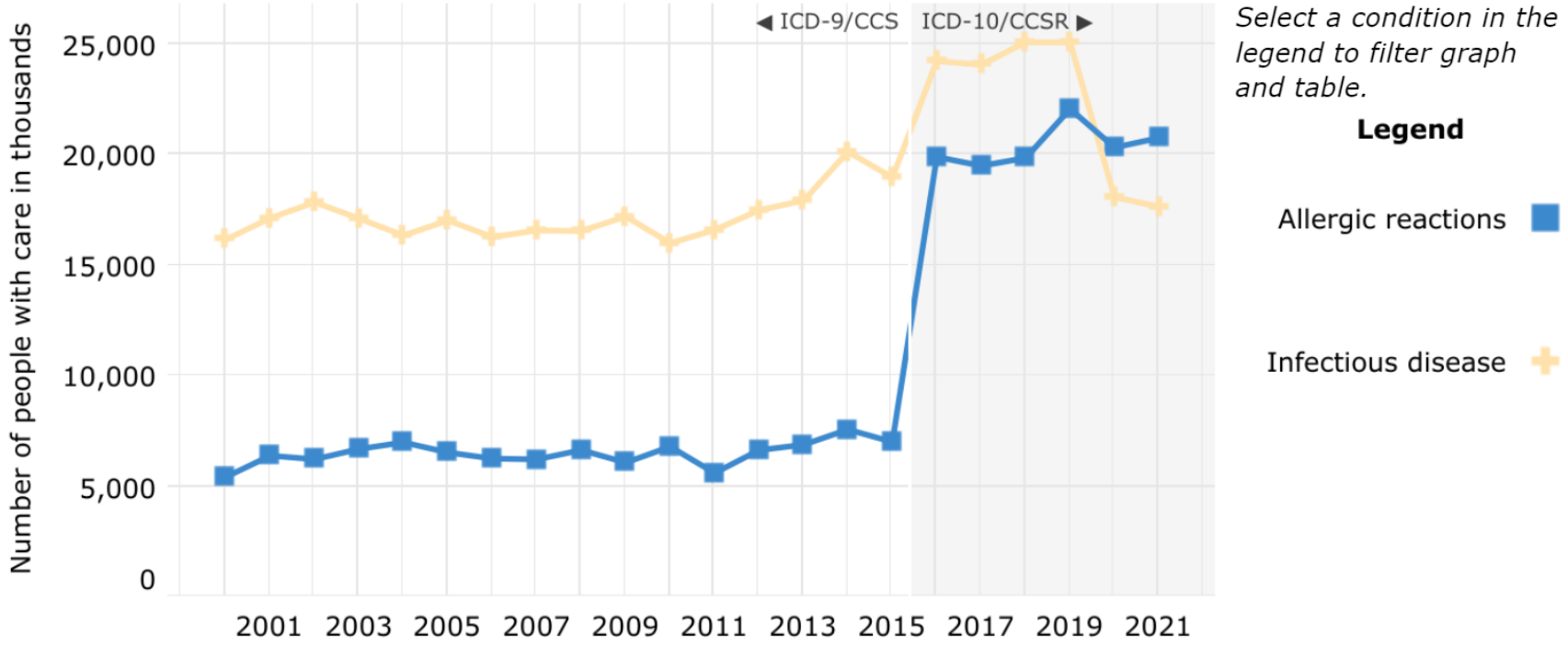
- Some reported text strings cannot be easily coded
  - ► For example, reports of "pain" or "injury"

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

Number of people with care in thousands by condition, United States, 2000 to 2021



Practical Tips

- **There can be 'duplicate' condition records 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 and map to the same CCSR pattern**
  - ► **Look out for these when programming, especially if merging or summing!**

PUF Variables

Respondent Reported	Full ICD10	ICD10 CDX	CCSR1X	CCSR2X	CCSR3X	CONDIDX
"High cholesterol"	E78.5	E78	END010	-1	-1	2510001101**004**
"High triglycerides"	E78.1	E78	END010	-1	-1	2510001101**005**

Practical Tips

- **COND variables (e.g., ERCOND) on conditions files began in 2021
  - ► **NUM variables through 2020, but do NOT use these variables to estimate utilization for a condition
- MEPS is not useful for distinguishing between Type 1 and Type 2 diabetes
- The MEPS medical conditions PUFs are not useful for studying rare conditions
  - ► Access the restricted data and pool multiple years

Practical Tips

- For comparability before and after 2018, subset pre-2018 medical conditions files to only those conditions linked to a medical event

- Priority conditions are not included on the medical conditions file unless the condition is also reported as current
  - ► For 2018 onward this means the condition must be associated with a medical event in the data year

- If analyzing priority conditions, limit analyses to 2008 and later years
  - ► The priority conditions questions were significantly changed starting in 2007

Example

Medical Conditions

Trends

Cross-sectional

Estimates:
Total expenditures (in ..

Body System:
All

Group by:
Event type

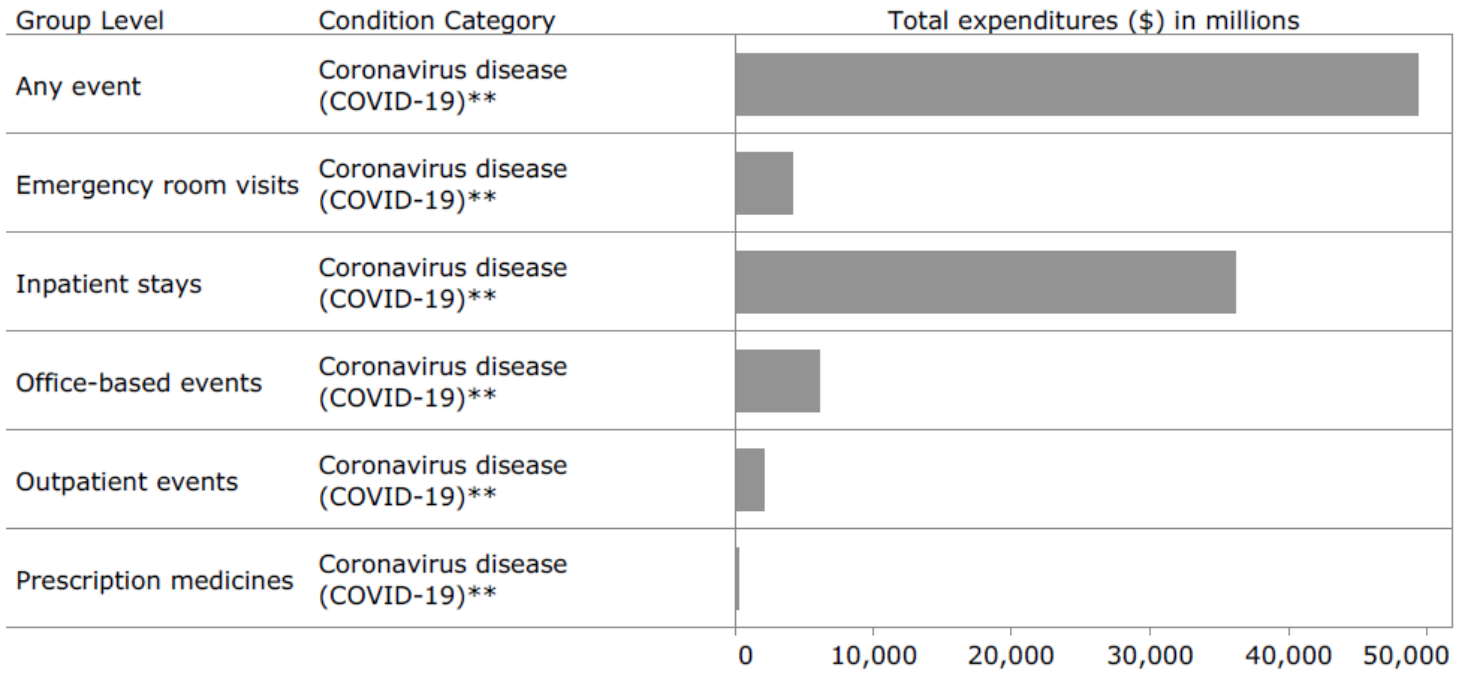
Group Levels:
All

Years:
2021

☐ **Show SE/95% CI**

Search by medical condition:

Total expenditures ($) in millions by condition and event type, United States, 2021



Resources

- Public use file documentation
- 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
- Analyzing Medical Conditions in MEPS: User Guide and Detailed Reference

Thank you!

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