The Healthcare Cost and Utilization Project (HCUP)

Overview of HCUP Products and Tools

Agency for Healthcare Research and Quality
Webinar ◆ April 22, 2021
Webinar Overview

• **Introduction to HCUP**

• **HCUP Online Query Tool**
  ► HCUPnet Overview

• **Readily Available HCUP Information**
  ► HCUP Summary Trend Tables
  ► HCUP Fast Stats

• **Add Value to Your Databases with Tools & Software**
  ► HCUP Software Tools
  ► HCUP Supplemental Files
  ► AHRQ Quality Indicators

• **Publications and Publication Search**

• **How to Access HCUP Resources**
Healthcare Cost and Utilization Project (HCUP)

THE LARGEST COLLECTION OF MULTI-YEAR, ALL-PAYER, ENCOUNTER-LEVEL:

INPATIENT
EMERGENCY DEPARTMENT
AMBULATORY SURGERY

HOSPITAL-BASED ADMINISTRATIVE DATA
HCUP is a comprehensive set of **publicly available all-payer** healthcare data (including self-pay and those billed as ‘no charge’).

Includes **multi-year** inpatient and outpatient data based on **hospital billing** records.
What is the Agency for Healthcare Research and Quality (AHRQ)?

The Agency for Healthcare Research and Quality (AHRQ) is a Federal agency under the Department of Health and Human Services (HHS).
<table>
<thead>
<tr>
<th>Uniquely addresses variation in acute care</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of inpatient, emergency department (ED), and ambulatory surgery and other outpatient services</td>
<td>Expected payer of services (Medicare, Medicaid, private insurance, self-pay, or those billed as ‘no charge’)</td>
</tr>
<tr>
<td>Clinical detail</td>
<td>Cost of care</td>
</tr>
<tr>
<td>Age, race/ethnicity, and area of residence of patients</td>
<td>Care for a patient across time* (revisits/readmissions)</td>
</tr>
<tr>
<td>Geographical estimates (county, State, national)</td>
<td>Access, quality, patient safety</td>
</tr>
</tbody>
</table>

↑ ↑ ↑ Trends over time in all of the above ↑ ↑ ↑

*Availability varies by State
HCUP State-Specific Databases

Inpatient State-Specific Databases

State Inpatient Databases (SID)

Outpatient State-Specific Databases

State Ambulatory Surgery & Services Databases (SASD)

State Emergency Department Databases (SEDD)
HCUP State Databases

State Inpatient Databases (SID)

Inpatient discharge data (including those admissions that started in the ED) from participating HCUP States

State Ambulatory Surgery & Services Databases (SASD)

Ambulatory surgery data (hospital-owned and some nonhospital-owned facilities) and other outpatient services from participating HCUP States

State Emergency Department Databases (SEDD)

Emergency department data (treat-and-release) from participating HCUP States
HCUP Nationwide Databases

Inpatient Nationwide Databases

- National Inpatient Sample (NIS)
- Kids’ Inpatient Database (KID)
- Nationwide Readmissions Database (NRD)

Outpatient Nationwide Databases

- Nationwide Emergency Department Sample (NEDS)
- Nationwide Ambulatory Surgery Sample (NASS)
<table>
<thead>
<tr>
<th>Database</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Inpatient Sample (NIS)</td>
<td>Generate national and regional estimates of <strong>inpatient</strong> utilization, access, quality, etc.</td>
</tr>
<tr>
<td>Kids’ Inpatient Database (KID)</td>
<td>Generate national and regional estimates of <strong>pediatric inpatient</strong> utilization, access, quality, etc.</td>
</tr>
<tr>
<td>Nationwide Readmissions Database (NRD)</td>
<td>Generate national estimates of all-cause and condition-specific readmissions</td>
</tr>
<tr>
<td>Nationwide Emergency Department Sample (NEDS)</td>
<td>Generate national and regional estimates of <strong>emergency department</strong> utilization, access, quality, etc.</td>
</tr>
<tr>
<td>Nationwide Ambulatory Surgery Sample (NASS)</td>
<td>Generate national and regional estimates of <strong>major ambulatory surgery encounters</strong> in hospital-owned facilities</td>
</tr>
</tbody>
</table>
Webinar Overview

- Introduction to HCUP
- **HCUP Online Query Tool**
  - HCUPnet Overview
- Readily Available HCUP Information
  - HCUP Summary Trend Tables
  - HCUP Fast Stats
- Add Value to Your Databases with Tools & Software
  - HCUP Software Tools
  - HCUP Supplemental Files
  - AHRQ Quality Indicators
- Publications and Publication Search
- How to Access HCUP Resources
HCUPnet: Quick, Free Access to HCUP Statistics

- Free online query system
- Users generate tables and figures of outcomes by diagnosis and procedure classifications
- Statistics can be cross-classified by patient and hospital characteristics
- Can produce county-level statistical maps

www.hcupnet.ahrq.gov/
HCUPnet Can Answer a Variety of Questions

- What percentage of hospitalizations for children report Medicaid as expected payer, by State?
- What are the most expensive conditions treated in U.S. hospitals?
- What is the trend in hospitalizations for depression?
- Will there be a sufficient number of cases to do my analysis?
- How do my estimates and calculations compare with HCUPnet (validation)?
Examples of What HCUPnet Provides …

<table>
<thead>
<tr>
<th>Step-by-step queries from:</th>
<th>Specialized queries by:</th>
<th>Ready-to-use statistics on:</th>
</tr>
</thead>
</table>
| Hospital inpatient setting (SID, NIS, KID, NRD) | • Overall inpatient stays  
• Select conditions or procedures | • Trends in inpatient stays  
• Related conditions and procedures  
• Readmissions (NRD) |
| Emergency department (ED) setting (SID, SEDD, NEDS) | • Overall ED visits  
• Select conditions or procedures | • Trends in ED visits  
• Percent of patients admitted versus discharged from the ED (i.e., treat-and-release) |
| Community-level statistics | • County-level, regional, or U.S.-Mexico border State statistics | • Inpatient stays for stays related to mental and/or substance use disorders |
How Does HCUPnet Work?

• Step 1: What kind of statistics are you looking for?
• Step 2: Choose how you would like to analyze the data
• Step 3: Create your analysis
• Step 4: View and update your results in real time
• Step 5: View your results in detailed graphs and maps
• Step 6: Export your results for future use
How Does HCUPnet Work? Analysis Setup (Steps 1 and 2)

Choose a Setting of Care:
- Inpatient
- Emergency Department
- Ambulatory Surgery [Currently Disabled]
- Community

Choose how you would like to analyze data:
- Descriptive Statistics
- Trends
- Rank Order

Choose a year:
- 2017

Choose how you want to classify diagnoses or procedures:
- Diagnoses—Clinical Classification Software (CCS)
- Diagnoses—Clinical Classification Software Refined (CCSR)
- Diagnoses—ICD-9-CM Codes (ICD9)
- External Cause of Injury—Clinical Classification Software (CCS)
- External Cause of Injury—ICD-9-CM Codes (ICD9)
- Procedures—Clinical Classification Software (CCS)
- Procedures—Clinical Classification Software Refined (CCSR)
- Procedures—ICD-9-CM Codes (ICD9)
- Major Diagnostic Categories (MDC)
- Medicare—Severity Diagnosis Related Groups (MS-DRG)
- Diagnosis Related Groups (DRG)
- General Conditions
How Does HCUPnet Work?

Modifying Results
How Does HCUPnet Work?

Options for Result Output

HCUPnet - Emergency Department National Statistics

Results Per Table: 10

2017 National Diagnoses--Clinical Classification Software Refined (CCSR), Principal, All ED Visits
Rank order of Clinical Classification Software Refined (CCSR) Diagnoses by Number

<table>
<thead>
<tr>
<th>Rank</th>
<th>CCSR Principal diagnosis category</th>
<th>Total number of visits: N</th>
<th>Total number of visits: SE(N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SYM006 Abdominal pain and other digestive/abdomen signs and symptoms</td>
<td>6,731,238</td>
<td>208,991</td>
</tr>
<tr>
<td>2</td>
<td>RSP006 Other specified upper respiratory infections</td>
<td>5,770,920</td>
<td>233,474</td>
</tr>
<tr>
<td>3</td>
<td>CIR012 Nonspecific chest pain</td>
<td>5,465,488</td>
<td>176,258</td>
</tr>
<tr>
<td>4</td>
<td>INJ017 Superficial injury; contusion, initial encounter</td>
<td>5,360,752</td>
<td>135,803</td>
</tr>
<tr>
<td>5</td>
<td>INJ024 Sprains and strains, initial encounter</td>
<td>4,989,797</td>
<td>142,124</td>
</tr>
<tr>
<td>6</td>
<td>MUS010 Musculoskeletal pain, not low back pain</td>
<td>4,439,451</td>
<td>147,684</td>
</tr>
<tr>
<td>7</td>
<td>GEN004 Urinary tract infections</td>
<td>3,724,389</td>
<td>106,880</td>
</tr>
<tr>
<td>8</td>
<td>SKN001 Skin and subcutaneous tissue infections</td>
<td>3,335,629</td>
<td>95,073</td>
</tr>
<tr>
<td>9</td>
<td>NVS010 Headache; including migraine</td>
<td>3,149,024</td>
<td>89,159</td>
</tr>
<tr>
<td>10</td>
<td>INJ012 Open wounds to limbs, initial encounter</td>
<td>2,928,959</td>
<td>68,059</td>
</tr>
</tbody>
</table>
## HCUPnet Versus Full HCUP Databases

<table>
<thead>
<tr>
<th>Capability</th>
<th>HCUPnet Can Produce...</th>
<th>HCUP Databases Can Produce...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple statistics</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>More complicated queries</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Sample size calculations</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Trends analyses</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Multivariate analyses</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Rank order of diagnoses and procedures</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Z-test calculator for significance testing</td>
<td>✓</td>
<td>X</td>
</tr>
<tr>
<td>Validation of results obtained from the HCUP databases</td>
<td>✓</td>
<td>X</td>
</tr>
</tbody>
</table>
Individual ICD-10-CM/PCS Queries Disabled on HCUPnet

- Individual ICD-10-CM/PCS codes for utilization and outcome statistics are disabled because the results may not be indicative of the intended clinical/surgical concept.

- Instead, HCUPnet provides the ability to query clinical conditions and surgeries by Clinical Classification Software Refined (CCSR), which aggregates ICD-10-CM/PCS into clinically meaningful categories.
Resources to Obtain Individual ICD-10-CM/PCS Counts, 2016-2018

- Frequencies of ICD-10-CM/PCS codes (individually and by the CCSR categories) available for the HCUP Nationwide databases (NIS, KID, NASS, NEDS, NRD)

- Available under “Data Elements” section of the respective Database Documentation pages
  - See example below for the NIS

---

**Data Elements**

- **NIS Description of Data Elements**
  - Prior Years
- **NIS Summary Statistics**
- **Frequencies by Diagnosis and Procedure Codes, NIS 2016-2018** (Excel file, 9.8 MB)
- Prior to Data Year 2012
  - Availability of AHA Hospital Identifiers
  - Why the NIS should not be used to make State-level estimates
Webinar Overview

• Introduction to HCUP
• HCUP Online Query Tool
  ► HCUPnet Overview
• Readily Available HCUP Information
  ► HCUP Summary Trend Tables
  ► HCUP Fast Stats
• Add Value to Your Databases with Tools & Software
  ► HCUP Software Tools
  ► HCUP Supplemental Files
  ► AHRQ Quality Indicators
• Publications and Publication Search
• How to Access HCUP Resources
Readily Available HCUP Information

• Two resources that provide readily available HCUP information:
  ► **HCUP Summary Trend Tables** – Provide State-specific monthly trends in hospital utilization accessed through downloadable tables
  ► **HCUP Fast Stats** – Uses visual displays to compare national or State statistics on a range of healthcare topics

• Both resources provide timely information derived from the HCUP databases, including preliminary quarterly data files provided from a subset of HCUP Partners
  ► Trends currently available through data year 2020 for select States
HCUP Summary Trend Tables

- Downloadable tables containing State-specific monthly trends in hospital utilization provided overall as well as by three key reporting categories:
  - Inpatient stays by select priority conditions
  - Inpatient encounter type (including normal newborns, deliveries, non-elective and elective inpatient stays)
  - Inpatient service line (including maternal and neonatal conditions, mental health and substance use disorders, injuries, surgeries, other medical conditions)

www.hcup-us.ahrq.gov/reports/trendtables/summarytrendtables.jsp
HCUP Fast Stats

- HCUP Fast Stats provides easy access to the latest HCUP-based statistics for healthcare information topics.
- Uses visual statistical displays in stand-alone graphs, trend figures, or simple tables to convey complex information at a glance.

www.hcup-us.ahrq.gov/faststats/landing.jsp
Webinar Overview

- Introduction to HCUP
- HCUP Online Query Tool
  - HCUPnet Overview
- Readily Available HCUP Information
  - HCUP Summary Trend Tables
  - HCUP Fast Stats
- Add Value to Your Databases with Tools & Software
  - HCUP Software Tools
  - HCUP Supplemental Files
  - AHRQ Quality Indicators
- Publications and Publication Search
- How to Access HCUP Resources
What are HCUP Software Tools?

• Create new data elements from existing data, thereby enhancing a researcher's ability to conduct analyses

• The HCUP software tools may be applied to HCUP and other administrative databases

www.hcup-us.ahrq.gov/tools_software.jsp
## Multiple Coding Systems

Consider which coding system is appropriate for your analysis

<table>
<thead>
<tr>
<th>Diagnosis-Related</th>
<th>Procedure-Related</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICD-10-CM</td>
<td>ICD-10-PCS*</td>
</tr>
<tr>
<td>ICD-9-CM</td>
<td>HCPCS Level I (CPTs)*</td>
</tr>
<tr>
<td></td>
<td>HCPCS Level II‡</td>
</tr>
<tr>
<td></td>
<td>ICD-9-CM‡</td>
</tr>
</tbody>
</table>

*Used only for inpatient procedures
‡Used for outpatient procedures and physician services
ICD-10-CM Diagnosis-Related HCUP Software Tools

- Clinical Classifications Software Refined (CCSR) for ICD-10-CM diagnoses
- Elixhauser Comorbidity Software Refined for ICD-10-CM
- Chronic Condition Indicator (CCI) for ICD-10-CM [beta version]
Clinical Classifications Software Refined (CCSR) for ICD-10-CM Diagnoses

- 21 body systems identified by first three characters of the CCSR category
  - Examples:
    - CIR Diseases of circulatory system
    - NEO Neoplasms

- Over 530 CCSR categories with 6-character identifiers
  - Examples:
    - CIR007 Essential hypertension
    - NEO023 Bone cancer

- Includes ICD-10-CM diagnosis codes valid as of October 2015 through September 2021, including six COVID-19 codes effective January 1, 2021 (v2021.2)
### Key Differences Between CCSR for ICD-10-CM and CCS for ICD-9-CM

<table>
<thead>
<tr>
<th>Difference</th>
<th>CCS for ICD-9-CM</th>
<th>CCSR for ICD-10-CM Diagnoses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of categories</td>
<td>283 categories</td>
<td>Over 530 categories</td>
</tr>
<tr>
<td>Mutually exclusive category assignment</td>
<td>Each diagnosis code maps to one and only one CCS category</td>
<td>Some codes cross-classified to more than one CCSR diagnosis category</td>
</tr>
<tr>
<td>Category naming convention</td>
<td>Categories are numeric</td>
<td>Categories start with three-character body system abbreviation followed by three digits</td>
</tr>
<tr>
<td>Output from SAS software</td>
<td>Array of CCS data elements with the CCS category as the value</td>
<td>Flexibility to choose between file output versions</td>
</tr>
</tbody>
</table>
• Some applications, such as ranking hospitalizations by the principal or first-listed diagnosis, need mutually exclusive category assignment

• Default categorization scheme is included
  ➢ Hierarchy for selecting default category determined by clinical panel based on guidelines documented in the User Guide

• Separate default categorization schemes for inpatient and outpatient data
Elixhauser Comorbidity Software Refined for ICD-10-CM

- Assigns data elements that identify different pre-existing conditions based on secondary diagnoses (i.e., comorbidity measures)
- Subset of comorbidity measures require information that diagnosis was present on admission (POA)
- Includes ICD-10-CM diagnosis codes valid as of October 2015 through September 2021 (v2021.1)

Secondary ICD-10-CM diagnosis codes and POA indicators

Elixhauser Comorbidity Software Refined for ICD-10-CM

Comorbidity Measures (38)

Examples:
- Hypertension, complicated
- Hypertension, uncomplicated
- Obesity
- Psychoses
# Key Differences Between Elixhauser Comorbidity Software Refined for ICD-10-CM and Elixhauser Comorbidity Software for ICD-9-CM

<table>
<thead>
<tr>
<th>Difference</th>
<th>Elixhauser Comorbidity Software for ICD-9-CM</th>
<th>Elixhauser Comorbidity Software Refined for ICD-10-CM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of comorbidities</td>
<td>29 comorbidity measures</td>
<td>38 comorbidity measures</td>
</tr>
<tr>
<td>Clinical criteria used to identify comorbidities</td>
<td>Used MS-DRGs to exclude secondary diagnoses related to principal diagnosis</td>
<td>Uses POA for some measures to exclude conditions that arise during the hospital stay</td>
</tr>
<tr>
<td>Settings of care</td>
<td>Could only be used for identifying comorbidities in inpatient data</td>
<td>Can be used to identify comorbidities in both inpatient and outpatient data</td>
</tr>
<tr>
<td>Mutually exclusive assignment</td>
<td>Applicable ICD-9-CM codes assigned to one and only one comorbidity measure</td>
<td>Some applicable ICD-10-CM codes assigned to more than one comorbidity measure</td>
</tr>
</tbody>
</table>
18 of 38 of the comorbidity measures require POA indicators for assignment.

For the comorbidity measures that use POA information, the ICD-10-CM code must be associated with one of the following POA values:

- 'Y' indicating a diagnosis was POA
- 'W' indicating a provider is unable to clinically determine whether the condition was POA

If POA indicators are unavailable on your administrative dataset, the 18 comorbidities are not assigned.

* Some ICD-10-CM diagnosis codes are exempt from POA reporting. When exempt codes are included in clinical criteria for a measure that uses POA, the POA value of the code is not considered.
Elixhauser Comorbidity Software Refined for ICD-10-CM does not yet include a program to assign an index for readmissions and in-hospital mortality

- Anticipated release for later this year

The index program available for the Elixhauser Comorbidity Software for ICD-9-CM should not be used on the ICD-10-CM version of the tool
Chronic Condition Indicator (CCI) for ICD-10-CM (Beta Version)

• Currently a beta version; the fully refined version of the CCI for ICD-10-CM is expected to be released later this fall

• Identifies four types of conditions:
  ► Chronic
      • Ex: Malignant cancer, diabetes, obesity
  ► Acute
      • Ex: Pregnancy, initial encounter for an injury
  ► Both chronic and acute
      • Ex: Persistent asthma with (acute) exacerbation, acute on chronic heart failure
  ► Not applicable (code cannot be used to identify a chronic or acute condition)
      • Ex: External cause of morbidity codes, sequela injury codes
ICD-10-PCS Procedure-Related HCUP Software Tools

- Clinical Classifications Software Refined (CCSR) for ICD-10-PCS Procedures
- Procedure Classes Refined for ICD-10-PCS
- Utilization Flags for Revenue Center Codes and ICD-10-PCS [beta version]

ICD-10-PCS is designed only for the reporting of inpatient procedures
• 31 clinical domains identified by first three characters of the CCSR category
  ► Examples:
    - CAR Cardiovascular Procedures
    - NCM Nuclear Medicine

• 326 CCSR categories with 6-character identifiers
  ► Examples:
    - CAR003 Coronary artery bypass grafts (CABG)
    - NCM001 Planar nuclear medicine imaging

• Includes ICD-10-PCS procedure codes valid as of October 2015 through September 2021 (v2021.1)
## Key Differences Between CCSR for ICD-10-PCS and CCS for ICD-9-CM

- **Key similarity is mutually exclusive category assignment**
- **Key differences include:**

<table>
<thead>
<tr>
<th>Difference</th>
<th>CCS for ICD-9-CM</th>
<th>CCSR for ICD-10-PCS Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of categories</td>
<td>231 categories</td>
<td>Over 320 categories</td>
</tr>
<tr>
<td>Category naming convention</td>
<td>Categories are numeric</td>
<td>Categories start with three-character body system abbreviation followed by three digits</td>
</tr>
<tr>
<td>Output from SAS software</td>
<td>Array of CCS data elements with the CCS category as the value</td>
<td>Flexibility to choose between file output versions</td>
</tr>
</tbody>
</table>
Procedure Classes Refined for ICD-10-PCS

• Readily identifies procedures as (1) diagnostic or therapeutic and (2) whether they would be expected to be performed in an operating room

Procedure Classes

- **Minor Diagnostic**: Nonoperating room procedures that are diagnostic (e.g. B244ZZZ, Ultrasonography of Right Heart)
- **Minor Therapeutic**: Nonoperating room procedures that are therapeutic (e.g. 02HQ33Z, Insertion of Infusion Device into Right Pulmonary Artery, Percutaneous Approach)
- **Major Diagnostic**: Procedures that are considered operating room procedures that are performed for diagnostic reasons (e.g. 02BV0ZX, Excision of Superior Vena Cava, Open Approach, Diagnostic)
- **Major Therapeutic**: Procedures that are considered operating room procedures that are performed for therapeutic reasons (e.g. 0210093, Bypass Coronary Artery, One Site from Coronary Artery with Autologous Venous Tissue, Open Approach)

• Includes ICD-10-PCS procedure codes valid as of October 2015 through September 2021 (v2021.2)
Key Differences Between Procedures Classes for ICD-9-CM vs. Procedure Classes Refined for ICD-10-PCS

• Starting with the v2021.2 release of the Procedure Classes Refined for ICD-10-PCS, the identification of major surgeries aligns with the definition of an operating room procedure in the AHRQ Quality Indicator (QI) software.

• Procedure Classes for ICD-9-CM used the MS-DRG designation of an OR procedure to identify major surgeries.
Utilization Flags for Revenue Center Codes and ICD-10-PCS (Beta Version)

- Currently a beta version
- Reveals additional information about the use of healthcare services
- Primarily uses UB-04 revenue codes, augmented with ICD-10-PCS procedure codes
  - Versions available by FY for years 2017-2020

UB-04 Revenue Codes and ICD-10-PCS Procedure Codes

Utilization Flags Software for ICD-10-PCS (beta version)

Utilization Flags (30)

Examples:
- Emergency room
- Observation services
- Renal dialysis
- Intensive care unit
The newly refined ICD-10-CM/PCS HCUP software tools replace prior beta versions that were based on preliminary mappings of ICD-9-CM to ICD-10-CM/PCS codes.

- Beta versions have been archived and are no longer being updated.

We do not recommend that the beta versions continue to be used for analytic or research purposes.
Availability of ICD-10-CM/PCS HCUP Software Tools on HCUP Databases

- In data years 2016-2017, data elements derived from the ICD-10-CM/PCS HCUP software tools are not included with the HCUP databases.

- In data year 2018, the CCSR for ICD-10-CM diagnoses is available only on the HCUP Nationwide databases.

- In data year 2019, data elements derived from all refined ICD-10-CM/PCS tools will be available on the HCUP Nationwide databases.

- In data year 2020, all HCUP databases will include the refined ICD-10-CM/PCS tools.

- If tools-related data elements are not available on a HCUP database, users can download the respective tool(s) from the HCUP Tools & Software section of the HCUP-US website.

  The HCUP Software Tools tutorial is available to assist users interested in applying the HCUP software tools to the data at [wwwhcup-us.ahrq.gov/ttech assist/tutorials.jsp](http://www.hcup-us.ahrq.gov/ttech assist/tutorials.jsp)
CPT/HCPCS Procedure-Related HCUP Software Tools

• Clinical Classifications Software for Services and Procedures (CCS-Services and Procedures)
• Surgery Flags Software for Services and Procedures
• Users must agree to the License for Use of CPTs before accessing these tools

HCPCS Level I (CPTs) and Level II codes are used for the reporting of outpatient procedures and physician services
Clinical Classifications Software (CCS) for Services and Procedures

- HCPCS Level I (i.e., CPT procedure codes) and HCPCS Level II codes grouped into clinically meaningful procedure categories
- Procedure categories are identical to the CCS for ICD-9-CM, with the addition of specific categories unique to professional service codes in CPT/HCPCS (e.g., telehealth)

<table>
<thead>
<tr>
<th>CPT or HCPCS Level II Codes</th>
<th>CCS-Services and Procedures Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>60210 60212 60220 60225</td>
<td>CCS 10: Thyroidectomy, partial or complete</td>
</tr>
<tr>
<td>60240 60252 60254 60260</td>
<td></td>
</tr>
<tr>
<td>60270 60271</td>
<td></td>
</tr>
<tr>
<td>0308T 65920 66820 66825</td>
<td></td>
</tr>
<tr>
<td>66830 66840 66850 66852</td>
<td></td>
</tr>
<tr>
<td>66920 66930 66940 66982</td>
<td>CCS 15: Lens and cataract procedures</td>
</tr>
</tbody>
</table>
Surgery Flags for Services and Procedures

• Identifies a subset of CPT procedure codes as surgical procedures

• Eligible CPT codes are classified as one of three categories:
  ► **Narrow** - A narrowly defined surgery that is usually a major therapeutic procedure
    - Examples include arthroplasty, organ transplant
  ► **Broad** - A more broadly defined surgery that includes major diagnostic and invasive minor therapeutic procedures
    - Examples include biopsy of tissue (not within internal organ), episiotomy
  ► **Neither** - Neither a narrowly nor broadly defined surgery
    - Examples include injections, lithotripsy
HCUP Software Tools for ICD-9-CM

- Clinical Classifications Software (CCS) for ICD-9-CM Diagnoses and Procedures
- Chronic Condition Indicator for ICD-9-CM
- Elixhauser Comorbidity Software for ICD-9-CM
- Procedure Classes for ICD-9-CM
- Utilization Flags for ICD-9-CM
- Surgery Flags for ICD-9-CM

www.hcup-us.ahrq.gov/tools_software.jsp
<table>
<thead>
<tr>
<th>HCUP Software Tool</th>
<th>ICD-9-CM</th>
<th>ICD-10-CM/PCS (Beta)*</th>
<th>ICD-10-CM/PCS</th>
<th>CPT®/HCPCS Level II Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Classifications Software (CCS)</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Clinical Classifications Software Refined (CCSR)</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Procedure Classes</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Chronic Condition Indicator</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elixhauser Comorbidity Software</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Utilization Flags</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Surgery Flags</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

*Beta versions of the HCUP Software Tools for ICD-10-CM/PCS are not included on the HCUP databases but are available for download on the HCUP-US website.
Webinar Overview

• **Introduction to HCUP**

• **HCUP Online Query Tool**
  ▶  HCUPnet Overview

• **Readily Available HCUP Information**
  ▶  HCUP Summary Trend Tables
  ▶  HCUP Fast Stats

• **Add Value to Your Databases with Tools & Software**
  ▶  HCUP Software Tools
  ▶  HCUP Supplemental Files
  ▶  AHRQ Quality Indicators

• **Publications and Publication Search**

• **How to Access HCUP Resources**
HCUP Supplemental Files Can Only be Applied to HCUP Databases

- Cost-to-Charge Ratio (CCR) Files
- American Hospital Association (AHA) Linkage Files
- Trend Weights Files (NIS & KID)
- Hospital Market Structure (HMS) Files
- NIS Hospital Ownership File

www.hcup-us.ahrq.gov/tools_software.jsp
Cost-to-Charge Ratio (CCR) Files

- Enable conversion of charge data to cost data on the SID, NIS, KID, and NRD starting with 2001 data and SEDD beginning with 2017 data

Hospital-Level Data ➔ Apply Ratios ➔ Convert Total Charges to Costs

APICC, GAIPCC
CCSR_NIS
CCSR_NRD
APECC, GAEPCC

www.hcup-us.ahrq.gov/db/ccr/costtocharge.jsp
AHA Linkage Files

- Hospital-level files designed to supplement the data elements in the SID, SASD, and SEDD databases with information from the AHA Annual Survey Databases
  - For example, hospital characteristic information (e.g., bed size)
- Files are unique by State and year and are available for a subset of HCUP Partners that release AHA identifiers

www.hcup-us.ahrq.gov/db/state/ahalinkage/aha_linkage.jsp
NIS and KID Trend Weights Files

• Provide trend weights and data elements that are consistently defined across data years to address the NIS sample redesign in 2012 and the KID sample redesign in 2000
• Files are needed for longitudinal analyses that span these redesign time periods

www.hcup-us.ahrq.gov/db/nation/nis/trendwghts.jsp
www.hcup-us.ahrq.gov/db/nation/kid/kidtrends.jsp
Resources for the HCUP Supplemental Files

• Additional information about the HCUP supplemental files available on the Tools and Software page:
  www.hcup-us.ahrq.gov/tools_software.jsp

• All supplemental files available for free, however differ on method of download
  ➤ Some available for download directly from HCUP-US website
  ➤ Others available through the HCUP Central Distributor:
    www.hcup-us.ahrq.gov/tech_assist/centdist.jsp
Webinar Overview

• Introduction to HCUP
• HCUP Online Query Tool
  ► HCUPnet Overview
• Readily Available HCUP Information
  ► HCUP Summary Trend Tables
  ► HCUP Fast Stats
• Add Value to Your Databases with Tools & Software
  ► HCUP Software Tools
  ► HCUP Supplemental Files
  ► AHRQ Quality Indicators
• Publications and Publication Search
• How to Access HCUP Resources
AHRQ Quality Indicators

• Create measures of healthcare quality using inpatient administrative data

• Four Quality Indicator modules:
  1. Prevention Quality Indicators (PQIs)
  2. Inpatient Quality Indicators (IQIs)
  3. Patient Safety Indicators (PSIs)
  4. Pediatric Indicators (PDIs)

[Image: Quality Improvement and monitoring at your fingertips.]

Get to know the AHRQ Quality Indicators

- PQI: Prevention Quality Indicators
- IQI: Inpatient Quality Indicators
- PSI: Patient Safety Indicators
- PDI: Pediatric Quality Indicators

[Website Link: www.qualityindicators.ahrq.gov]
Webinar Overview

• Introduction to HCUP
• HCUP Online Query Tool
  ► HCUPnet Overview
• Readily Available HCUP Information
  ► HCUP Summary Trend Tables
  ► HCUP Fast Stats
• Add Value to Your Databases with Tools & Software
  ► HCUP Software Tools
  ► HCUP Supplemental Files
  ► AHRQ Quality Indicators
• Publications and Publication Search
• How to Access HCUP Resources
HCUP Publications

- Statistical Briefs
- Methods Series Reports
- HCUP Findings-at-a-Glance

www.hcup-us.ahrq.gov/reports.jsp
COVID-19-Related Hospitalizations in Nine States, by Race/Ethnicity, 2020

**STATISTICAL BRIEF #272**
March 2021
Pamela L. Overt, Ph.D.
Introduction
This Healthcare Cost and Utilization Project (HCUP) Statistical Brief presents data on COVID-19-related hospitalizations by race/ethnicity for nine states. Differences in hospitalization by race/ethnicity are examined by race/ethnicity by state, and state by state differences are compared with the same months in the prior year. The analysis includes data on hospitalizations for COVID-19-related hospitalizations in nine states for the year 2020. Differences in hospitalization by race/ethnicity are examined by race/ethnicity by state, and state by state differences are compared with the same months in the prior year. The analysis includes data on hospitalizations for COVID-19-related hospitalizations in nine states for the year 2020.

**Opioid-Related and Stimulant-Related Adult Inpatient Stays, 2012–2018**
**STATISTICAL BRIEF #271**
February 2021
Kathryn F. Ginter, Ph.D., M.P.H., and Pamela L. Overt, Ph.D.
Introduction
Substance use continues to be a primary public health concern, with substance use disorders playing a substantial burden on the healthcare system, the economy, and society. To date, the national focus has been on the more than 10 million Americans using opioids. More recently, however, concerns have shifted to the rising number of individuals abusing multiple substances, such as those who use substances to counter the negative effects of opioids. This Healthcare Cost and Utilization Project (HCUP) Statistical Brief presents data on opioid use and the associated costs from 2012 to 2018, with the focus of this brief on opioid and stimulant use in adult inpatient stays.

Cancer-Related Hospitalizations for Adults, 2017

**STATISTICAL BRIEF #278**
2021
**Highlights**
- In 2017, there were 2.3 million cancer-related adult hospitalizations.
- Nonmalignant hospital stay cost for cancer was $13,973 billion.
- The most common cancer diagnoses for adults in 2017 were prostate cancer (38.2%), lung and bronchus cancer (23.1%), and breast cancer (16.0%).
- The most common cancer site-related hospitalizations were for lung and bronchus cancer (30.3%), followed by breast cancer (26.2%), and prostate cancer (24.2%).
- The most common cancer-related hospitalizations were for lung and bronchus cancer (30.3%), followed by breast cancer (26.2%), and prostate cancer (24.2%).
- For hospital stays with a primary diagnosis of cancer, the primary diagnosis was prostate cancer. Overall, this was followed by breast cancer and lung and bronchus cancer. For hospital stays with a primary diagnosis of cancer, the primary diagnosis was prostate cancer. Overall, this was followed by breast cancer and lung and bronchus cancer.
Methodological information on the HCUP databases and software tools
HCUP Findings-At-A-Glance

- Provide focused look at different topics across a broad range of health policy issues related to hospital use and costs
- Examples of current report topics:
  - Adult, Nonmaternal Inpatient Stays Related to *Clostridioides difficile*: National Trends, 2011-2016 and 2019
  - Adult, Nonmaternal Inpatient Stays Related to Sepsis: National Trends by Expected Primary Payer, 2012-2018
  - Wildfires in California: Emergency Department Visits, 2018
  - Suicidal Ideation, Suicide Attempt, or Self-Inflicted Harm: Pediatric Emergency Department Visits, 2010-2014 and 2016
Publications Search Page on HCUP-US Website

- Simple or advanced search options:
  - Data Year
  - Database, Tool, & Product
  - Author
  - Title
  - State

Over 9,900 peer-reviewed publications using HCUP data, products, or tools
HCUP Supports High Impact Health Services, Policy, & Clinical Research
Webinar Overview

• Introduction to HCUP
• Readily Available HCUP Information
  ▶ HCUPnet Overview
  ▶ HCUP Fast Stats
• Add Value to Your Databases with HCUP Tools & Software
• Publications and Publication Search
• How to Access HCUP Resources
HCUP User Support Website

• Find detailed information on HCUP databases, tools, and products
• Access HCUPnet, HCUP Fast Stats, HCUP Summary Trend Tables, the Central Distributor, Online Tutorials, and more
• Find comprehensive list of HCUP-related publications and database reports
• Access technical assistance

Visit us at www.hcup-us.ahrq.gov
Using HCUP Technical Assistance

Technical Assistance Team

• Responds to inquiries about HCUP data, products, and tools
• Collects user feedback and suggestions for improvement

E-mail: hcup@ahrq.gov
Interactive Online HCUP Tutorials & Training Courses

- HCUP Overview Course
- Producing National HCUP Estimates
- Load and Check HCUP Data
- HCUP Tools Loading
- Calculating Standard Errors
- HCUP Sample Design
- Multi-Year Analysis
- Nationwide Readmissions Database (NRD)
- HCUP Software Tools NEW
Join the HCUP Email List

- HCUP Newsletter, published quarterly
  - User Tech Tips
  - Upcoming Events
- New Data Releases
- New Reports

https://subscriptions.ahrq.gov/accounts/USAHRQ/subscriber/new?topic_id=USAHRQ_65
Healthcare Cost and Utilization Project (HCUP)
Questions/Comments?

Time for Questions and/or Comments.

E-mail: hcup@ahrq.gov