The Healthcare Cost and Utilization Project (HCUP)

Tools and Products to Support Health Services Research and Policy Analysis

Agency for Healthcare Research and Quality
Webinar ♦ April 22, 2015
AHRQ – Agency within DHHS

United States Department of Health & Human Services

ATSDR
SAMHSA
HRSA
AHRQ
ADA
FDA
CMS
CDC
ACF

H·CUP
HEALTHCARE COST AND UTILIZATION PROJECT
Webinar Overview

• Brief Database Review
• Software Tools
• Supplemental Files
• HCUPnet Overview
• 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 health care data.

Includes multi-year inpatient and outpatient data, based on the hospital billing record.
The Core of HCUP: Hospital-Based IP, ED, AS Databases

Inpatient, Emergency Department, and Ambulatory Surgery and Services Databases Based on Hospital Billing Data
HCUP Has Six Types of Databases

- State Inpatient Databases (SID)
- State Emergency Department Databases (SEDD)
- State Ambulatory Surgery and Services Databases (SASD)
- National (Nationwide) Inpatient Sample (NIS)
- Nationwide Emergency Department Sample (NEDS)
- Kids’ Inpatient Database (KID)
## HCUP State Databases

<table>
<thead>
<tr>
<th>Database Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Inpatient Databases (SID)</td>
<td>All inpatient hospital discharge data (including those admissions that started in the ED) from participating HCUP States</td>
</tr>
<tr>
<td>State Ambulatory Surgery &amp; Services Databases (SASD)</td>
<td>Ambulatory surgery data (ambulatory surgery and other services from hospital-owned and sometimes nonhospital-owned facilities) from participating HCUP States</td>
</tr>
<tr>
<td>State Emergency Department Databases (SEDD)</td>
<td>Emergency department data (treat and release) from participating HCUP States</td>
</tr>
<tr>
<td>Database Description</td>
<td>Data Content</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>National (Nationwide) Inpatient Sample (NIS)</td>
<td>Inpatient discharge data for a sample of discharges from all hospitals in SID</td>
</tr>
<tr>
<td>Kids’ Inpatient Database (KID)</td>
<td>Pediatric inpatient hospital discharge data from a sample of pediatric discharges in SID</td>
</tr>
<tr>
<td>Nationwide Emergency Department Sample (NEDS)</td>
<td>Emergency department data (treat and release &amp; admitted) from a sample of hospitals in SID and SEDD</td>
</tr>
</tbody>
</table>
Webinar Overview

• Brief Database Review
• **Software Tools**
• Supplemental Files
• HCUPnet Overview
• Publications and Publication Search
• How to Access HCUP Resources
Most HCUP Tools Can be Applied to Any Administrative Database

- Clinical Classifications Software
- Procedure Classes
- Chronic Condition Indicator
- Comorbidity Software
- Utilization Flags
- Surgery Flags
- AHRQ Quality Indicators
  - Prevention Quality Indicators
  - Inpatient Quality Indicators
  - Patient Safety Indicators
  - Pediatric Indicators
Most Tools Based On Medical Coding Classifications

- ICD-9-CM
- ICD-10-CM/PCS
- CPT
- HCPCS
- DRGs
- MDC
- CCS
Multiple Coding Systems

- ICD-9-CM
- ICD-10-CM/PCS
- CPT
- HCPCS

Individual Codes

- DRGs
- MDC
- CCS

Groupers

Which coding system is appropriate for your analysis?
ICD-9-CM

- ICD-9-CM Procedure Codes
- ICD-9-CM Diagnosis Codes
- Included in both inpatient and outpatient databases
• ICD-10-CM - Diagnosis coding under this system uses 3–7 alpha and numeric digits and full code titles

• ICD-10-PCS - Procedure coding system uses 7 alpha or numeric digits
• CPT
• HCPCS
• Local Codes
• Included in outpatient (ED and SASD) databases
Diagnosis Related Groups (DRG)

Groups ICD-9-CM Codes into Clinical/Resource Categories using principal diagnosis, secondary diagnoses, surgical procedures, age, gender, and discharge status of the patients treated.
Major Diagnostic Category (MDC)

- Over 15,000 ICD-9-CM Codes
- Approximately 500 DRGs
- 25 MDCs
Clinical Classifications Software (CCS)

- Clusters diagnosis and procedure codes into categories
  - >14,000 diagnosis codes → 285 categories
  - >4,000 procedure codes → 231 categories
- Useful for presenting descriptive statistics, understanding patterns

<table>
<thead>
<tr>
<th>ICD-9-CM Codes</th>
<th>CCS Categories</th>
</tr>
</thead>
</table>
| 0031 0202 0223 0362 0380 0381 03810 03811 03819 0382 0383 03840 03841 03842 03843 03844 03849 0388 0389 0545 449 7907 0700 0701 0702 07020 07021 07022 07023 0703 07030 07031 07032 07033 0704 07041 07042 07043 07044 07049 | CCS 2: Septicemia  
CCS 6: Hepatitis |
Clinical Classifications Software (CCS)

- ICD-9-CM diagnoses and procedures
  - Single-level
  - Multi-level
- ICD-10-CM diagnoses and ICD-10-PCS procedures
  - Single-level
- ICD-10 for mortality
- Services and Procedures
  - Common Procedural Terminology (AMA)
What Codes Are Used in HCUP Data Files?

**DETAILED CODES**
- ICD-9-CM
  - Diagnosis Codes
  - Procedure Codes
- CPT
- HCPCS

**GROUPED CODES**
- DRG
- MDC
- CCS

**Inpatient Databases**
- ICD-9-CM
- DRG
- MDC
- CCS

**Outpatient Databases**
- ICD-9-CM
- CPT
- HCPCS
- CCS
Procedure Classes

- Groups procedure codes into one of four categories
  - ICD-10-PCS
  - ICD-9-CM procedure codes
- Major procedures defined as OR procedures (DRGs)

1. **Minor Diagnostic**
   - Ex: Electrocardiogram

2. **Minor Therapeutic**
   - Ex: Pacemaker

3. **Major Diagnostic**
   - Ex: Pericardial Biopsy

4. **Major Therapeutic**
   - Ex: CABG
Chronic Condition Indicator (CCI)

- Groups diagnosis codes into Chronic or Non-Chronic Categories
  - ICD-10-CM diagnosis codes
  - ICD-9-CM diagnosis codes

- **Chronic**
  - Ex: Diabetes

- **Non-Chronic**
  - Ex: Food Poisoning
Comorbidity Software

- Creates and appends indicator flags to each record for 29 major comorbidities
  - ICD-10-CM diagnosis codes
  - ICD-9-CM diagnosis codes

ICD-10-CM or ICD-9-CM Codes, DRGs on Administrative Data

Comorbidity Software

29 Comorbidity Groups

- Valvular disease
- Pulm circ disorders
- Peripheral vascular dx
- Hypertension
- Paralysis
- Other neuro disorders
- Chronic pulmonary dx
- DM w/o complications
- DM w/ complications
- Hypothyroidism
- Renal failure
- Liver disease …
Utilization Flags

- Reveals additional information about the use of health care services
- Primarily uses UB-04 revenue codes, augmented with ICD-9-CM procedure codes

Utilization Flag Software

- UB-04 codes
- + ICD-9-CM codes
- • Emergency Room
- • Observation Services/ CT Scan
- • Intensive Care Unit
There are not ICD-9-CM codes for all services. Concern exists that some diagnostic procedures may be under-reported.
Surgery Flags

- Identifies surgical procedures and encounters in ICD-9-CM or CPT-based inpatient and ambulatory surgery data

1. Minor Diagnostic  
   Surgery Flag Value = NEITHER

2. Minor Therapeutic

3. Major Diagnostic  
   Surgery Flag Value = BROAD

4. Major Therapeutic  
   Surgery Flag Value = NARROW
AHRQ Quality Indicators

• Creates measures of health care quality using inpatient administrative data

► 4 Quality Indicators

1. Prevention Quality Indicators
2. Inpatient Quality Indicators
3. Patient Safety Indicators
4. Pediatric Indicators
• Identify hospital admissions that are potentially preventable through high-quality outpatient care.

• Examples of PQI Measures:
  - Diabetes Short-term Complication Admission Rate
  - Diabetes Long-term Complication Admission Rate
  - Pediatric Asthma Admission Rate
  - Pediatric Gastroenteritis Admission Rate
  - Hypertension Admission Rate
Inpatient Quality Indicators (IQI)

• Reflect quality of care inside hospitals:
  ► Inpatient mortality for medical conditions and surgical procedures
  ► Utilization of procedures
  ► Volume of procedures

• Examples of IQI Measures:
  ► Esophageal Resection Volume
  ► Pneumonia Mortality Rate
  ► Coronary Artery Bypass Graft Mortality Rate
  ► Cesarean Section Delivery Rate
Patient Safety Indicators (PSI)

• Identify potentially avoidable complications and iatrogenic events.

• Examples of PSI Measures:
  ► Complications of Anesthesia
  ► Death in Low-Mortality DRGs
  ► Decubitus Ulcer
  ► Failure to Rescue
  ► Foreign Body Left During Procedure
  ► Iatrogenic Pneumothorax
Pediatric Quality Indicators (PDI)

• Identify potentially avoidable hospitalizations among children.

• Examples of PDI Measures:
  - Accidental Puncture or Laceration
  - Decubitus Ulcer
  - Neonatal mortality
  - Pediatric Heart Surgery Mortality
  - Postoperative Hemorrhage or Hematoma
Introduction
The Agency for Healthcare Research and Quality (AHRQ) has developed an array of health care decision making and research tools that can be used by program managers, researchers, and others at the Federal, State and local levels. The Quality Indicators (QIs) are measures of health care quality that make use of readily available hospital inpatient administrative data. The current AHRQ QI™ modules expand HCUP QIs. The QIs can be used to highlight potential quality concerns, identify areas that need further study and investigation, and track changes over time.

The current AHRQ QI modules represent various aspects of quality: Prevention Quality Indicators, Inpatient Quality Indicators, Patient Safety Indicators, and Pediatric Quality Indicators.

The AHRQ QIs are used in free software distributed by AHRQ. The software can be used to help hospitals identify quality of care events that might need further study. The software programs can be applied to any hospital inpatient administrative data. These data are readily available and relatively inexpensive to use.
**Webinar Overview**

- Brief Database Review
- Software Tools
- Supplemental Files
- HCUPnet Overview
- Publications and Publication Search
- How to Access HCUP Resources
HCUP Supplemental Files can only be applied to HCUP Databases

- Supplemental Variables for Revisit Analyses
- Cost-to-Charge Ratio Files
- Hospital Market Structure Files
- Trend Weights Files (NIS & KID)
- NIS Hospital Ownership File
- AHA Linkage Files
Enable conversion of charge data to cost data on the NIS, KID, and SID

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>HOSPID</td>
<td>APICC</td>
</tr>
<tr>
<td>2</td>
<td>xxxx</td>
<td>xxxx</td>
</tr>
<tr>
<td>3</td>
<td>xxxx</td>
<td>xxxx</td>
</tr>
<tr>
<td>4</td>
<td>xxxx</td>
<td>xxxx</td>
</tr>
<tr>
<td>5</td>
<td>xxxx</td>
<td>xxxx</td>
</tr>
<tr>
<td>6</td>
<td>xxxx</td>
<td>xxxx</td>
</tr>
<tr>
<td>7</td>
<td>xxxx</td>
<td>xxxx</td>
</tr>
</tbody>
</table>

Convert Total Charges to Costs
Hospital Market Structure (HMS) Files

- Contain various measures of hospital market competition
- Allow users to broadly characterize the intensity of competition that hospitals face
  - Using various definitions of market area
HCUP Supplemental Variables for Revisit Analyses

- Allows linkage across settings and time
  - Hospital readmissions
  - ED visits following hospital discharge
  - Inpatient hospitalizations following ambulatory surgery visits
- Adheres to strict privacy guidelines
There are two HCUP supplemental variables:

1. Synthetic person-level identifiers
   - Verified against the patient’s date of birth and gender
   - Examined for completeness (VisitLink)

2. Timing variable determines the number of days between events for an individual (DaysToEvent)
   - Without the use of actual dates

HCUP revisit variables can be used only with the SID, SASD, and SEDD (not nationwide databases) for States with encrypted patient identifiers

National revisit statistics are available on HCUPnet
<table>
<thead>
<tr>
<th>State</th>
<th>SID</th>
<th>SEDD</th>
<th>SASD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas</td>
<td>2004-2012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iowa</td>
<td>2009-2013</td>
<td>2010-2013</td>
<td>2010-2013</td>
</tr>
<tr>
<td>Maryland</td>
<td>2012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Massachusetts</td>
<td>2010-2012</td>
<td>2010-2012</td>
<td></td>
</tr>
<tr>
<td>Mississippi</td>
<td>2010-2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nebraska</td>
<td>2003-2013</td>
<td>2003-2013</td>
<td>2003-2013</td>
</tr>
</tbody>
</table>
## HCUP Supplemental Variables for Revisit Analyses by State

<table>
<thead>
<tr>
<th>State</th>
<th>SID</th>
<th>SEDD</th>
<th>SASD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nevada</td>
<td>2003-2007</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Mexico</td>
<td>2009-2012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Washington</td>
<td>2003-2012</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Example of how to use the revisit variables

- Determined if discharge home with home health care is independent predictor of increased readmission after pancreatectomy
- 21 percent of patients were readmitted within 30 days of discharge
- Mean time from readmission to discharge was 10.1 days and mean LOS for the readmission was 7.1 days
- Three of the most common primary diagnoses for readmission were surgery-specific complications (48 percent), followed by failure to thrive (14 percent), and septicemia (6 percent)

Trend Weights Files (NIS & KID)
- Discharge-level files that provide trend weights and data elements that are consistently defined across data years

NIS Hospital Ownership File
- Hospital-level files facilitate analysis of the NIS by hospital ownership categories

AHA Linkage Files
- Enable researchers to link hospital identifiers in some State databases to the AHA Annual Survey Databases

http://www.hcup-us.ahrq.gov/tools_software.jsp
HCUPnet is an interactive tool for identifying, tracking, analyzing, and comparing statistics on hospital and emergency care. HCUPnet provides statistics from the HCUP nationwide databases (NIS, KID, and NEDS) and the State-level databases (SID, SAPS, and SEDD) for those States that have agreed to participate.

MONAHRQ is a software product that enables organizations - such as state and local data organizations, Chartered Value Exchanges, hospital systems, and health plans - to input their own hospital administrative data and generate a data-driven Web site.

HCUP Tools & Software

The HCUP Tools and Software are analytic methods that, when applied to HCUP databases, systematically create new data elements from existing data, thereby enhancing a researcher's ability to conduct analyses. While designed to be used with HCUP databases, they can also be applied to other administrative databases as well.

Tools for ICD-9-CM

Clinical Classifications Software (CCS) for ICD-9-CM
Clinical Classifications Software (CCS) provides a method for classifying ICD-9-CM diagnoses or procedures into clinically meaningful categories, which can be used for aggregate statistical reporting of a variety of types. (Updated for codes valid through FY 2015.)

Chronic Condition Indicator
The Chronic Condition Indicator (CCI) provides users an easy way to categorize ICD-9-CM diagnosis codes into one of two categories: chronic or not chronic. The tool can also assign ICD-9-CM diagnosis codes into 1 of 18 body system categories. (Codes valid through FY 2015.)

Comorbidity Software
Comorbidity Software assigns variables that identify coexisting conditions on hospital discharge records. (Codes valid through FY 2015.)

Procedure Classes
Procedure Classes facilitate research on hospital services using administrative data by identifying whether a procedure is (a) diagnostic or therapeutic, and (b) minor or major in terms of invasiveness and/or resource use. (Updated for codes valid through FY 2015.)

CPT Based Tools

Surgery Flags
Surgery Flags identify surgical procedures and encounters in ICD-9-CM or CPT-based inpatient and ambulatory surgery data. Two types of surgical categories are identified: NARROW surgery is based on a narrow, targeted, and restrictive definition and includes invasive surgical procedures. BROAD surgery includes procedures that fall under the NARROW category but adds less invasive therapeutic and diagnostic procedures that may be often performed in surgical settings. Users must agree to a license to use the Surgery Flags before

Tools for ICD-10-CM/PCS

Clinical Classifications Software (CCS) for ICD-10-CM/PCS
Clinical Classifications Software (CCS) provides a method for classifying ICD-10-CM diagnoses and procedures into clinically meaningful categories, which can be used for aggregate statistical reporting of a variety of types. (Updated for codes valid through FY 2014.)

Chronic Condition Indicator for ICD-10-CM
Chronic Condition Indicator for ICD-10-CM provides users an easy way to categorize ICD-10-CM diagnosis codes into one of two categories: chronic or not chronic. The tool can also assign ICD-10-CM diagnosis codes into 1 of 18 body system categories. (Codes valid through FY 2014.)

Comorbidity Software for ICD-10-CM
Comorbidity Software assigns variables that identify coexisting conditions on hospital discharge records. (Codes valid through FY 2014.)

Procedure Classes for ICD-10-PCS
Procedure Classes facilitate research on hospital services using administrative data by identifying whether a procedure is (a) diagnostic or therapeutic, and (b) minor or major in terms of invasiveness and/or resource use. (Codes valid through FY 2014.)
Webinar Overview

• Brief Database Review
• Software Tools
• Supplemental Files
• HCUPnet Overview
• Publications and Publication Search
• How to Access HCUP Resources
HCUPnet: Quick, free access to HCUP Data

• Free, interactive online query system
• Users generate tables of outcomes by diagnoses and procedures
• Data can be cross-classified by patient and hospital characteristics

http://hcup.ahrq.gov/hcupnet
HCUPnet Can Answer a Variety of Questions

• What percentage of hospitalizations for children are uninsured, by State?
• What are the most expensive conditions treated in U.S. hospitals?
• What is the trend in admissions for depression?
• Will there be a sufficient number of cases to do my analysis?
• How do my estimates and calculations compare with HCUPnet (validation)?
HCUPnet provides …

- Step-by-step queries on:
  - Hospital inpatient (NIS and KID)
  - ED visits (NEDS)
  - National and regional statistics

- Specialized queries:
  - Mental health related stays
  - Stays by expected payer
  - Hospital-level statistics

- Ready-to-use:
  - National benchmarks for healthcare quality indicators based on the AHRQ Quality Indicators
  - “Quick national or State statistics”
  - Readmissions
  - Community-level Statistics
How does HCUPnet Work?

HCUPnet is based on aggregate statistics tables to speed up data transfer and protect individual records, so not all possible queries can be addressed. If a query is not possible, HCUPnet will not allow you to choose certain parameters. If there is a query you’d like to see that HCUPnet does not support, please contact us at hcup@ahrq.hhs.gov.

With HCUPnet, you build your query step-by-step. Here are the basic steps:

**Step 1: Select the focus of your query.**
- Click National Statistics if you want information on the entire U.S.
- Click For Children Only if you want to focus on children.
- Click State Statistics to see what State data are available.
- Check out Quick National and State Statistics to see if the information you want is available here in ready-to-go, fully sortable tables.
- Click AHRQ Quality Indicators to get information on the quality of the health care system in the U.S.

**Step 2: Select the type of query you want.**
- By Diagnosis or Procedure gives you detailed statistics for particular diagnoses or procedures.
- If you’re interested in statistics about all patients in general, click All Stays.
- Click Trends if you want to see tables and graphs with trends over time.
- Click Rank Order if you’d like to rank diagnoses or procedures by such factors as number of discharges, charges, or mortality rate.
How does HCUPnet Work?

Step 3: Select the Outcomes and Measures. HCUPnet provides a wide range of measures:

- Number of discharges
- Length of stay
- Total charges
- Total costs
- Aggregate charges
- Percent died in the hospital
- Discharge status
- Percent admitted through the emergency department
- Percent admitted from another hospital
- Percent admitted from a long term care facility

Step 4: Select patient and hospital characteristics. With HCUPnet you can Compare Patients by:

- Age
- Gender
- Primary payer
- Median income of the patient's ZIP code

And you can Compare Hospital Types by:

- Region of the country
- Teaching status
- Location
- Bedsize
- Ownership/control

Step 5: Results. You then get your results in a format that can be printed or downloaded or you can instantly rerun the same query on another database within HCUPnet.

A navigation bar above the query pages lets you know where you are in the HCUPnet system. You can use the navigation bar to go back to previous pages.
Welcome to H·CUPnet

H·CUPnet is a free, on-line query system based on data from the Healthcare Cost and Utilization Project (HCUP). It provides access to health statistics and information on hospital inpatient and emergency department utilization.

http://hcupnet.ahrq.gov

Begin your query here -

Statistics on Hospital Stays

Statistics on Hospital Stays

- National Statistics on All Stays
  
  Create your own statistics for national and regional estimates on hospital use for all patients from the HCUP National (Nationwide) Inpatient Sample (NIS). Overview of the National (Nationwide) Inpatient Sample (NIS)

- National Statistics on Mental Health Hospitalizations
  
  Interested in acute care hospital stays for mental health and substance abuse? Create your own national statistics from the NIS.

- State Statistics on All Stays
  
  Create your own statistics on stays in hospitals for participating States from the HCUP State Inpatient Databases (SID). Overview of the State Inpatient Databases (SID)

- National Statistics on Children
  
  Create your own statistics for national estimates on use of hospitals by children (age 0–17 years) from the HCUP Kids’ Inpatient Database (KID). Overview of the Kids’ Inpatient Database (KID)

- National and State Statistics on Hospital Stays by Payer - Medicare, Medicaid, Private, Uninsured
  
  Interested in hospital stays billed to a specific payer? Create your own statistics for a payer, alone or compared to other payers from the NIS, KID, and SID.

- Quick National or State Statistics
  
  Ready-to-use tables on commonly requested information from the HCUP National (Nationwide) Inpatient Sample (NIS), the HCUP Kids’ Inpatient Database (KID), or the HCUP State Inpatient Databases (SID).
### HCUPnet...  
<table>
<thead>
<tr>
<th>CAN PRODUCE...</th>
<th>CANNOT PRODUCE...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple statistics</td>
<td>More complicated queries</td>
</tr>
<tr>
<td>Sample size calculations</td>
<td>Multivariate analyses</td>
</tr>
<tr>
<td>Trends information</td>
<td>Statistics involving certain variables</td>
</tr>
<tr>
<td>Rank ordering of diagnoses and procedures</td>
<td>Statistics that may violate confidentiality (patient-, provider-, hospital-level data)</td>
</tr>
<tr>
<td>Significance testing</td>
<td></td>
</tr>
</tbody>
</table>
Webinar Overview

• Brief Database Review
• Software Tools
• Supplemental Files
• HCUPnet Overview
• Publications and Publication Search
• How to Access HCUP Resources
• Statistical Briefs
• Methods Reports
Methodological information on the HCUP databases and software tools

HCUP Methods Series

The HCUP Methods Series features a broad array of methodological information on the HCUP databases and software tools. Reports in the series are listed below by category. Reports are also listed by year in chronological order.

Methodology
- Calculating Costs
- Estimating Trends (NHS and KID)
- Expected Fayer
- Population Denominator Data for Use with HCUP Databases
- Readmission and Readjust Analysis
- Statistical Methods

HCUP Methods for NHQR and NHDR
- NHQR
- NHDR

Comparison Reports
- NHS
- KID

Evaluations of Data
- Emergency Department Data
- State Ambulatory Surgery and Services Databases
- Other (Patient Safety Variation, E Codes, Observation Stays)

Enhancing Administrative Data
- Clinical Information
- Diagnosis Present on Admission Indicators
- Synthetic Person Numbers (for linking across settings and over time)

HCUP Tool Development
- Clinical Classifications Software
- Comorbidity Software
- Utilization Flags

Calculating Costs
- Report #2008-04: Calculate Cost Adjustment Factors by APR-DRG and CCS Using Selected States with Detailed Charge (PDF file, 122 KB)
- Report #2008-03: The Cost of Ambulatory Surgery Visits, 2008 (PDF file, 187 KB)
- Report #2007-05: The Cost of "Treat and Release" To Hospital Emergency Departments, 2003 (PDF file, 166 KB)

Comparison Reports - Kids' Inpatient Database (KID)
- Report #2001-01: Comparative Analysis of the HCUP Kids' Inpatient Database (KID), 1997 (PDF file, 645 KB)

Comparison Reports - National (Nationwide) Inpatient Sample (NIS)
Simple or advanced search options

- Data Year
- Database, Tool, & Product
- Author
- Title
- State
Using HCUP Tools in Research

• Research Spotlights
  - http://www.hcup-us.ahrq.gov/reports/spotlights.jsp

Aliu O, Auger KA, Sun GH, Burke JF, Cooke CR, Chung KC, Hayward RA.

The effect of pre-Affordable Care Act (ACA) Medicaid eligibility expansion in New York State on access to specialty surgical care. Med Care. 2014 Sep;52(9):790-5.
Webinar Overview

• Brief Database Review
• Software Tools
• Supplemental Files
• HCUPnet Overview
• Publications and Publication Search
• How to Access HCUP Resources
- Find detailed information on HCUP databases, tools, and products
- Access HCUPnet
- Find comprehensive list of HCUP-related publications, database reports, and fact books
- Access technical assistance

http://www.hcup-us.ahrq.gov
Active Technical Assistance

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

E-mail: hcup@ahrq.gov
Interactive Online HCUP Overview Course Available

- Provides information about HCUP data, software tools, and products
- Length 90 min

http://www.hcup-us.ahrq.gov/overviewcourse.jsp
HCUP Sample Design

- Tutorial explains the sampling strategy of the three nationwide databases – the NIS, KID, and NEDS
- Length 30 min

http://www.hcup-us.ahrq.gov/tech_assist/tutorials.jsp
Load and Check HCUP Data

- Provides instructions on how to unzip HCUP data, save it on your computer, and load data into a statistical software package
- Length 20 min

http://www.hcup-us.ahrq.gov/tech_assist/tutorials.jsp
Producing National HCUP Estimates

• Explains how to produce national estimates from the three nationwide databases (NIS, NEDS, KID)
• Length 45 min

Tutorial will be updated to reflect changes in the 2012 NIS redesign

http://www.hcup-us.ahrq.gov/tech_assist/tutorials.jsp
Calculating Standard Errors

- Explains how to accurately determine the precision of the estimates produced from the HCUP nationwide databases
- Length 30 min

http://www.hcup-us.ahrq.gov/tech_assist/tutorials.jsp
Multi-Year Analysis

- Describe problems that may arise when using multiple years of HCUP data and provides solutions for addressing these issues
- Length 30 min

http://www.hcup-us.ahrq.gov/tech_assist/tutorials.jsp
Join the HCUP Email List

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

Time for Questions and/or Comments.