



U.S. Department of Health and Human Services



Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

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 ♦ September 17, 2014**



AHRQ – Agency within DHHS



United States Department of
Health & Human Services





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)



H·CUP

HEALTHCARE COST AND UTILIZATION PROJECT

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

**INPATIENT
EMERGENCY DEPARTMENT
AMBULATORY SURGERY**

HOSPITAL-BASED ADMINISTRATIVE DATA



What is HCUP?



HCUP is a comprehensive set of publicly available all-payer health care data



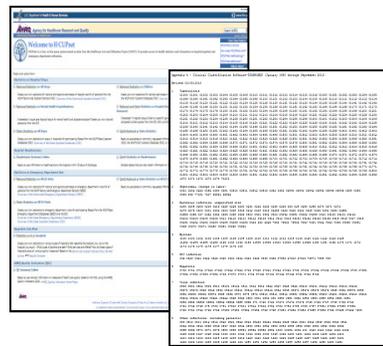
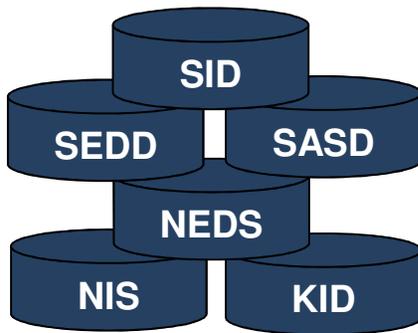
Includes multi-year inpatient and outpatient data, based on the hospital billing record

HCUP Databases

Research Tools

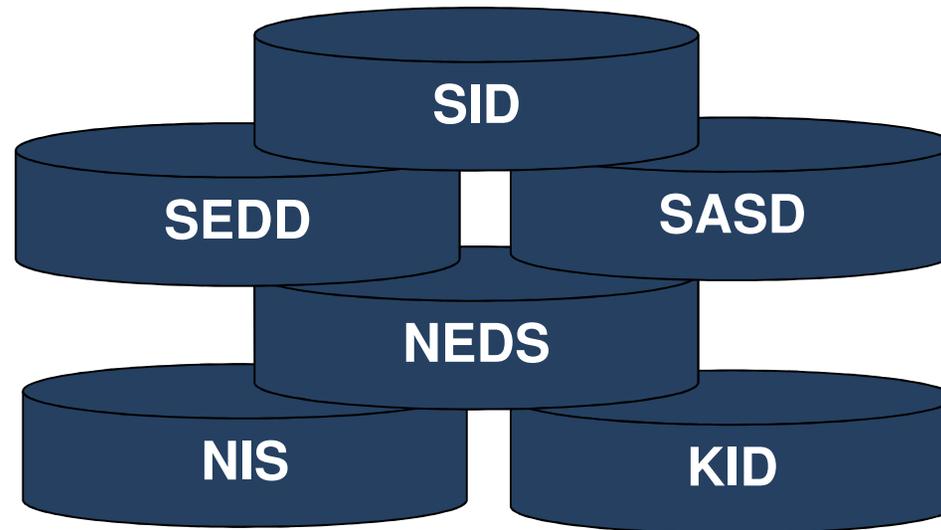
Research Publications

User Support

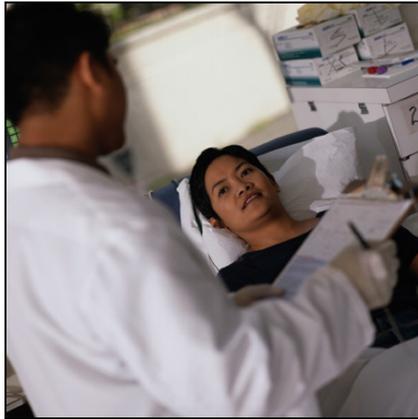




The Core of HCUP: Hospital-Based IP, ED, AS Databases



Inpatient, Emergency Department, and Ambulatory Surgery and Services Databases Based on Hospital Billing Data



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



State Inpatient Databases (SID)

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

State Ambulatory Surgery & Services Databases (SASD)

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

State Emergency Department Databases (SEDD)

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



HCUP Nationwide Databases



National (Nationwide)
Inpatient Sample



(NIS)

Inpatient discharge data for a **sample of discharges from all hospitals** in SID

Kids' Inpatient
Database
(KID)

Pediatric inpatient hospital discharge data from a **sample of pediatric discharges** in SID

Nationwide Emergency
Department Sample
(NEDS)

Emergency department data (treat and release & admitted) from a **sample of hospitals** in SID and SEDD



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Most HCUP Tools Can be Applied to Any Administrative Database



- Clinical Classifications Software
- Procedure Classes
- Chronic Condition Indicator
- Comorbidity Software
- Utilization Flags
- AHRQ Quality Indicators
 - Prevention Quality Indicators
 - Inpatient Quality Indicators
 - Patient Safety Indicators
 - Pediatric Indicators

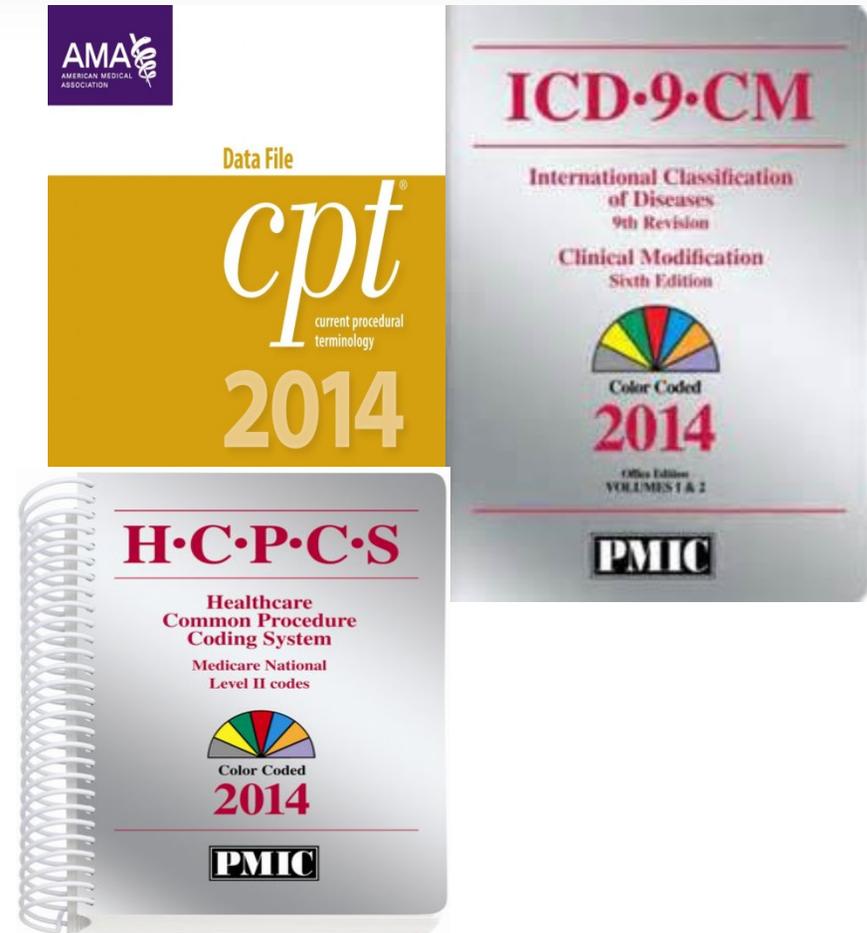




Most Tools Based On Medical Coding Classifications



- ICD-9-CM
- CPT
- HCPCS
- DRGs
- MDC
- CCS





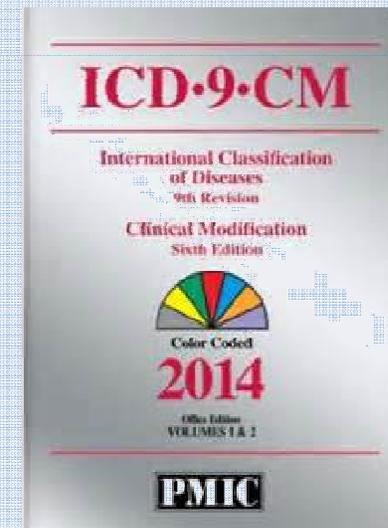
Multiple Coding Systems



- ICD-9-CM
 - CPT
 - HCPCS
- } **Individual Codes**
- DRGs
 - MDC
 - CCS
- } **Groupers**

Which coding system is appropriate for your analysis?

- **ICD-9-CM Procedure Codes**
- **ICD-9-CM Diagnosis Codes**
- **Included in both inpatient and outpatient databases**

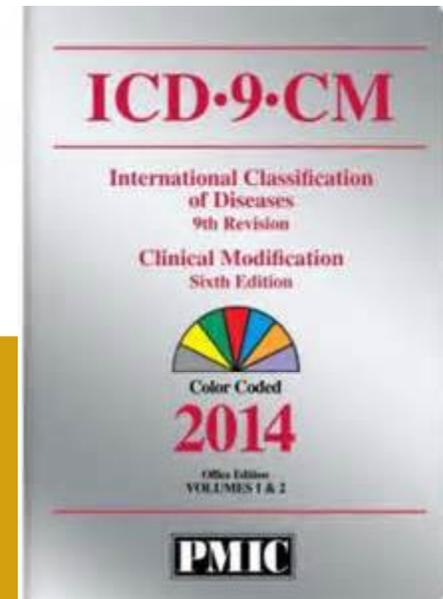
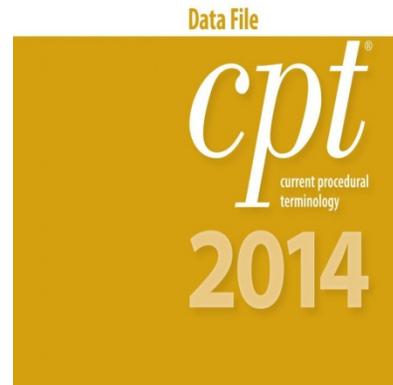




Common Procedural Coding System – CPT & HCPCS



- CPT
- HCPCS
- Local Codes
- Included in outpatient (ED and SASD) databases



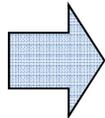


Diagnosis Related Groups (DRG)

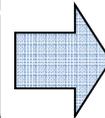
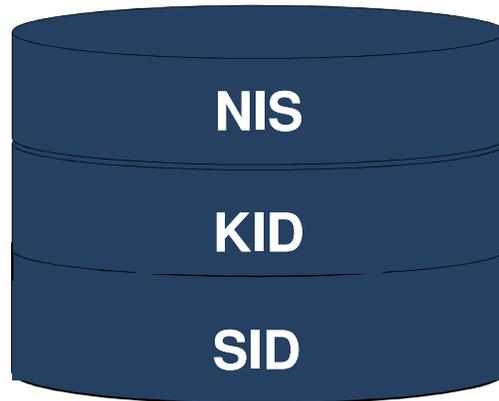


Groups ICD-9-CM Codes into Clinical/Resource Categories using principal diagnosis, secondary diagnoses, surgical procedures, age, gender, and discharge status of the patients treated

DRG Grouper Software

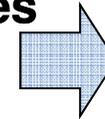


Hospital Administrative Database

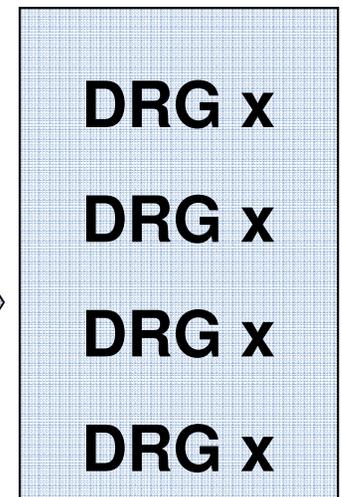


Input Variables

- ICD-9-CM Procedures
- ICD-9-CM Diagnoses
- Age
- Gender
- Discharge Status

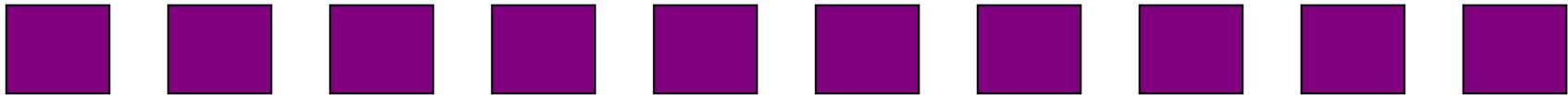


DRG Codes

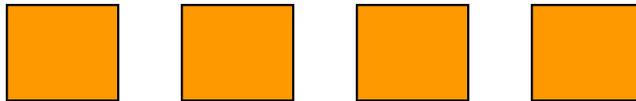




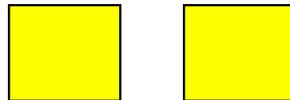
Major Diagnostic Category (MDC)



Over 15,000 ICD-9-CM Codes



Approximately 500 DRGs



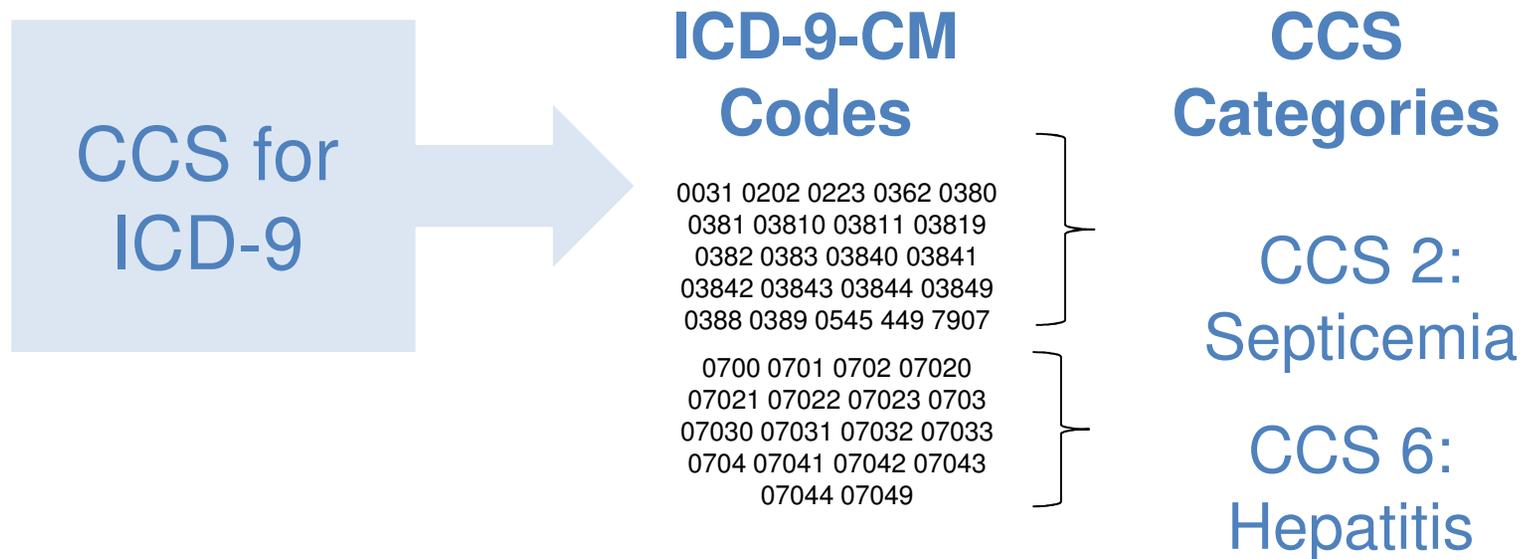
25 MDCs



Clinical Classifications Software (CCS)



- Clusters diagnosis and procedure codes into categories
 - ▶ >12,000 diagnosis codes → 289 categories
 - ▶ > 4,000 procedure codes → 231 categories
- Useful for presenting descriptive statistics, understanding patterns





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

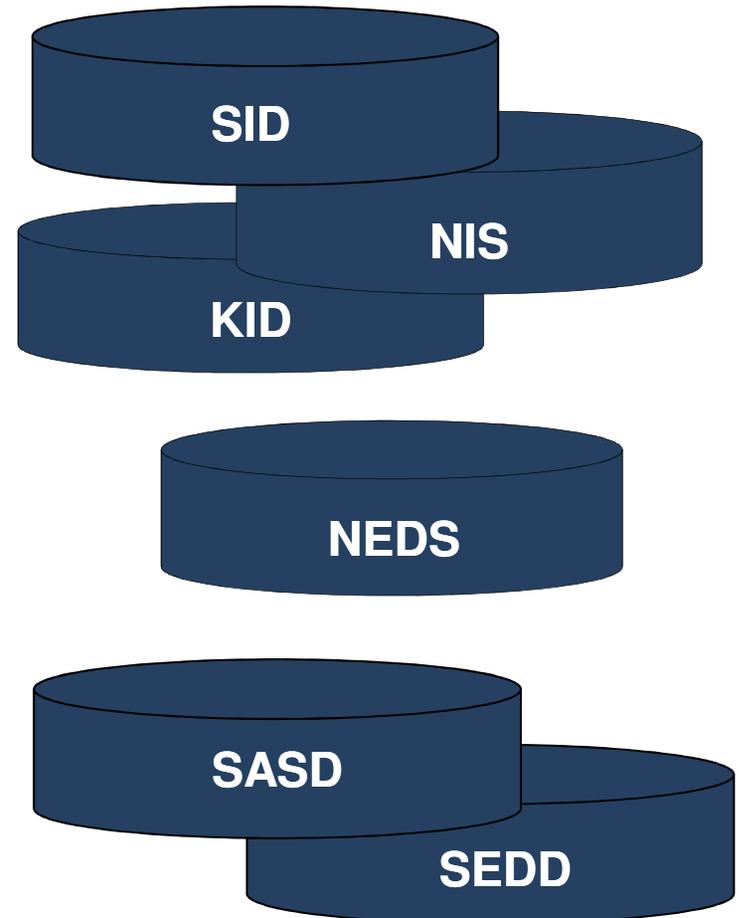
Outpatient Databases

ICD-9-CM

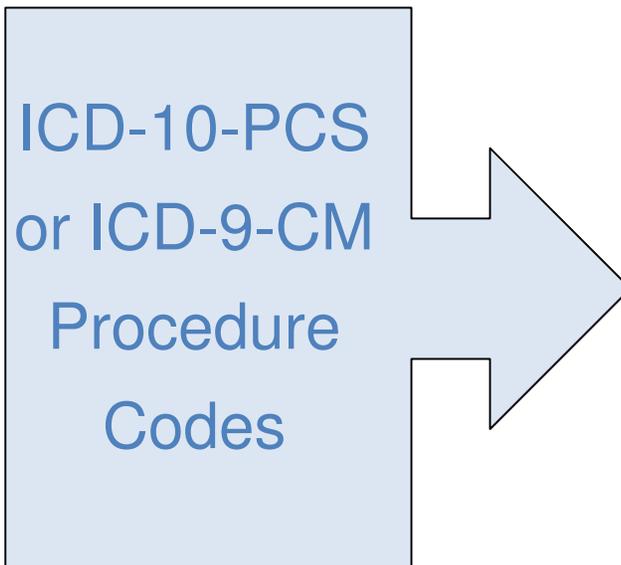
CPT

HCPCS

CCS



- Groups procedure codes into one of four categories
 - ▶ ICD-10-PCS procedure codes (Beta)
 - ▶ 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

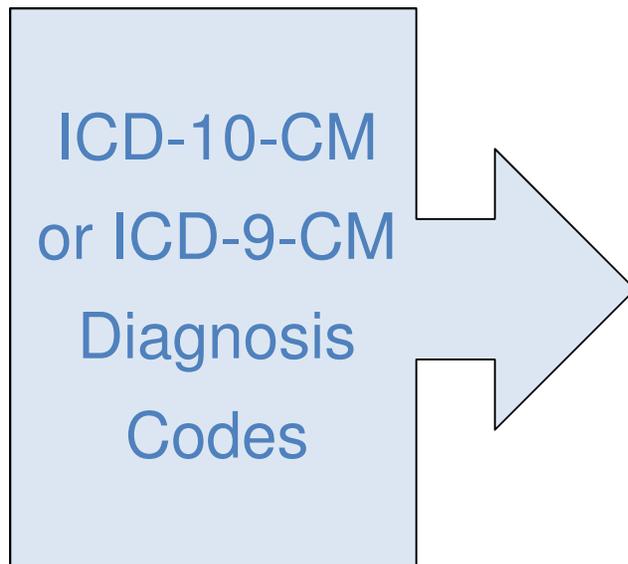
Ex: CABG



Chronic Condition Indicator (CCI)



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



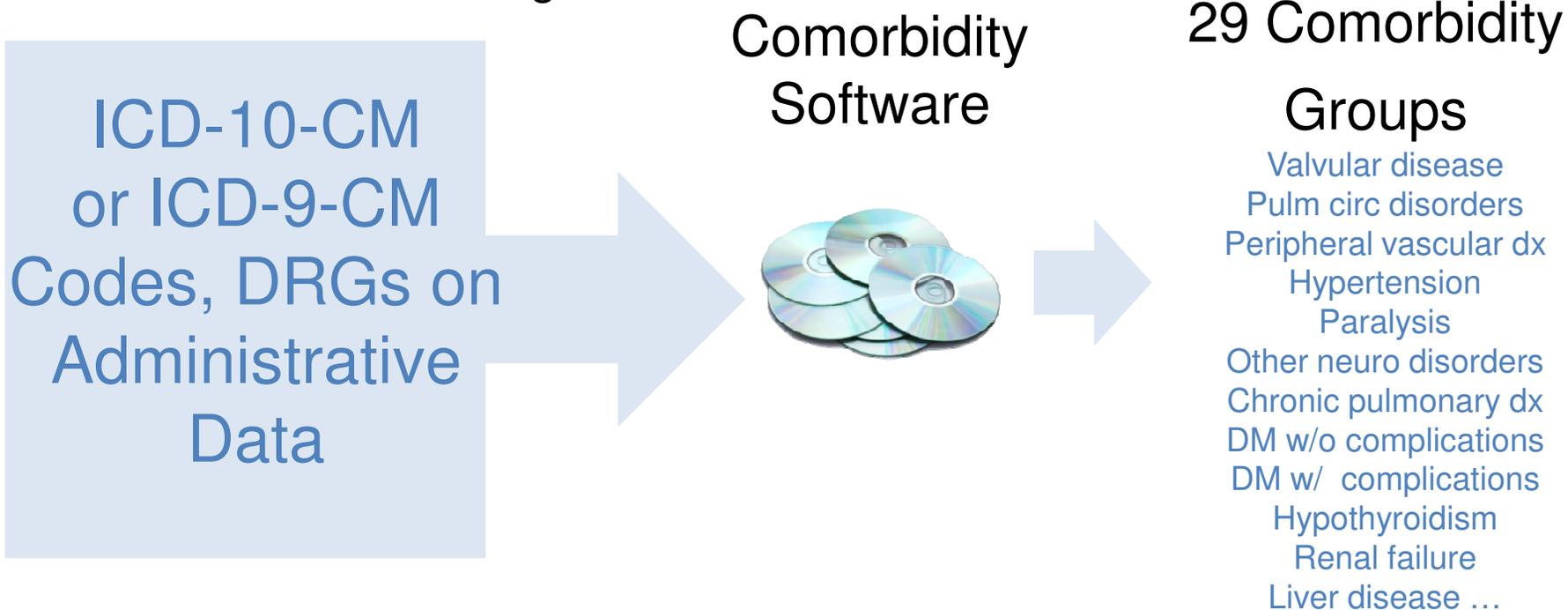
- **Chronic**
Ex: Diabetes
- **Non-Chronic**
Ex: Food Poisoning



Comorbidity Software



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



- 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



30 Utilization Flags



Utilization Flags

Accommodation

Intensive Care Unit (ICU)	Coronary Care Unit (CCU)
Newborn Level II	Newborn Level III
Newborn Level IV	

Cardiac Services

Cardiac Catheterization Lab	Cardiac Stress Test
Echocardiogram	Electrocardiogram (EKG)

Imaging and Diagnostic Tests

Computed Tomography (CT) Scan	Chest X-Ray
Electroencephalogram (EEG)	Ultrasound
Magnetic Resonance Technology (MRT)	Nuclear Medicine

Devices

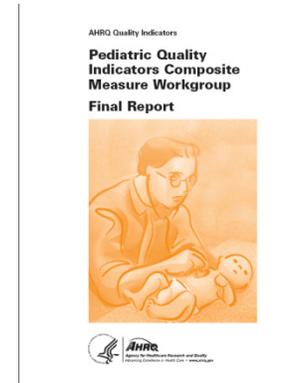
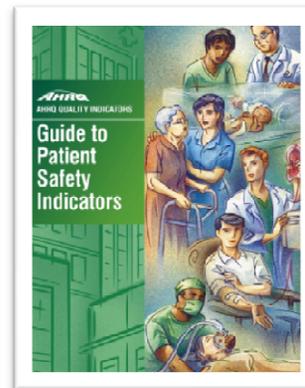
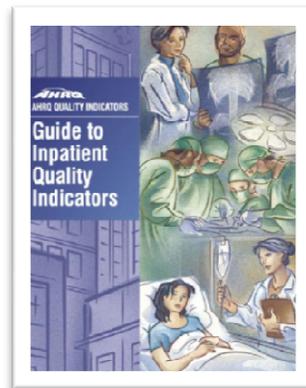
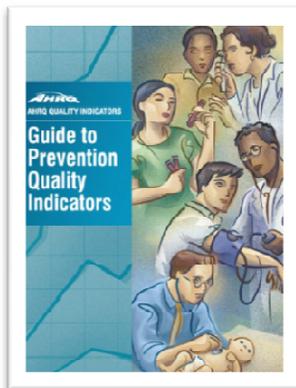
Pacemaker	Other Implants
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Therapeutic Services

Lithotripsy	Occupational Therapy
Physical Therapy	Respiratory Therapy
Therapeutic Radiology and Chemotherapy	Renal Dialysis
Speech-Language Pathology	Erythropoietin (EPO)
Mental Health and Substance Abuse	Blood

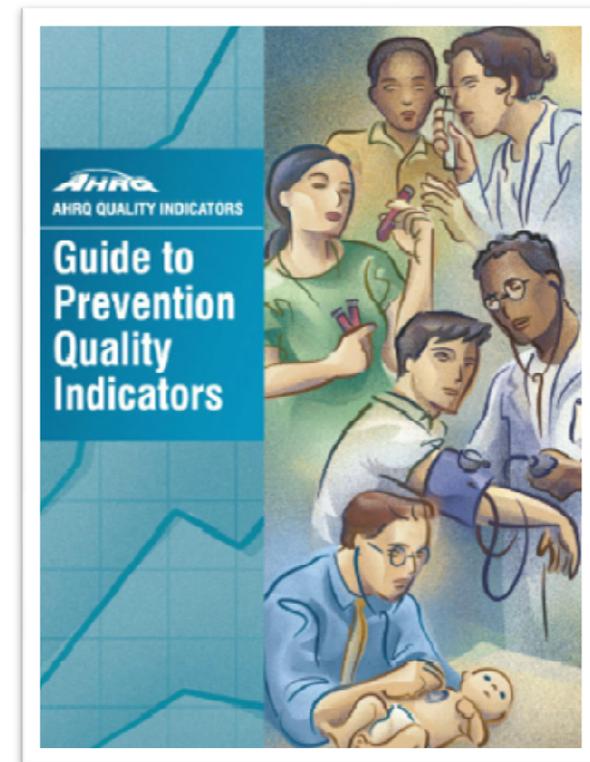
There are not ICD-9-CM codes for all services. Concern exists that some diagnostic procedures may be under-reported

- 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



Prevention Quality Indicators (PQIs)

- 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

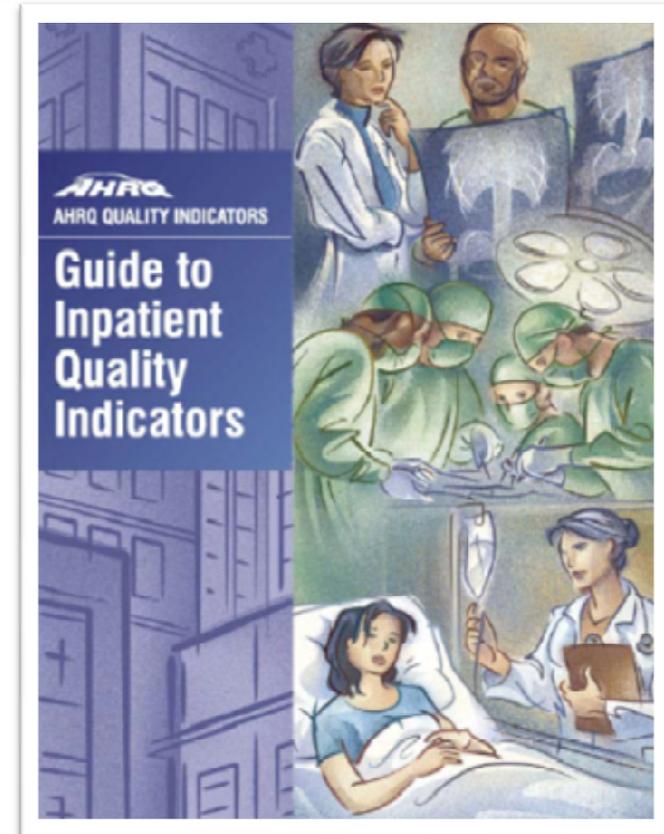




Inpatient Quality Indicators (IQI)

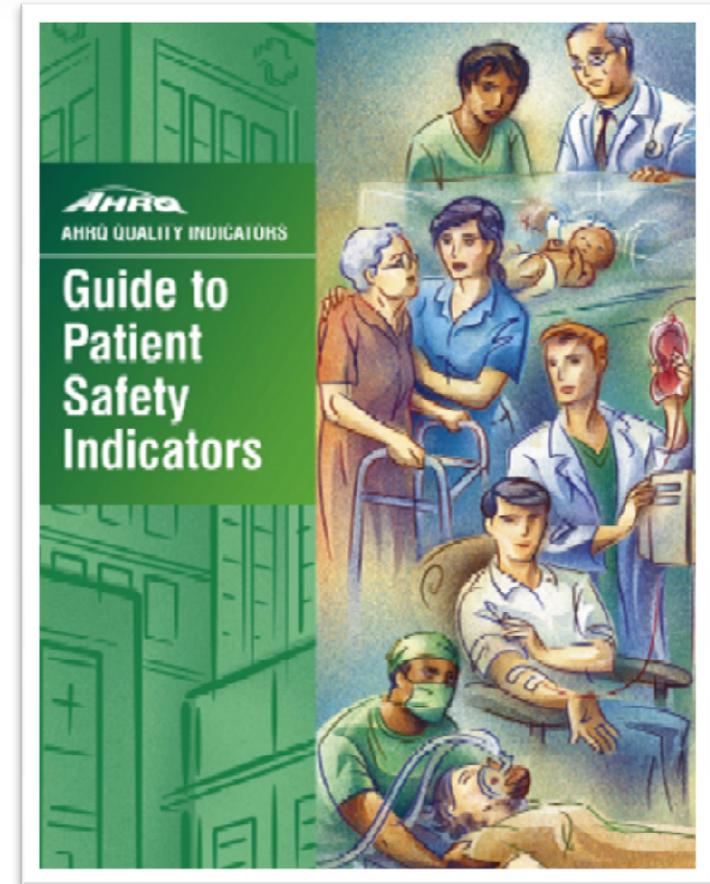


- Reflect quality of care inside hospitals:
 - ▶ Inpatient mortality for medical conditions and surgical procedures
 - ▶ Utilization of procedures
 - ▶ Volume of procedures
- Examples of IQI Measures:
 - ▶ Esophageal Resection Volume
 - ▶ Pneumonia Mortality Rate
 - ▶ Coronary Artery Bypass Graft Mortality 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

AHRQ Quality Indicators

**Pediatric Quality
Indicators Composite
Measure Workgroup
Final Report**





Pediatric Quality Indicators use indicators from the other three modules with adaptations for use among children and neonates to reflect quality of care ... >> [More Info](#)

Prevention Quality Indicators

>> [More Info](#)

Inpatient Quality Indicators

>> [More Info](#)

Patient Safety Indicators

>> [More Info](#)

Pediatric Quality Indicators

>> [More Info](#)

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.



2013 Conference Meetings

Email Sign up

Register to receive email of AHRQ announcements and the availability of new quality indicators:

[Sign Up: Quality Indicators email updates](#)

News & Announcements

- July 10, 2014 — Release of July 2014 AHRQ Quality Indicators™ SAS Version 4.5a
- November 26, 2013 — Review of Proposed Changes with ICD-10-CMPCS Conversion of Quality Indicators™ (QI)
- September 30, 2013 — Update of May 2013 AHRQ Quality Indicators™ Software for Windows and SAS Version 4.5 (with Corrected PSI #90)
- May 17, 2013 – AHRQ QI Newsletter Issue II - Release of AHRQ Quality Indicators™ Software for Windows and SAS Version 4.5
- February 8, 2013 - Federal Register



Webinar Overview



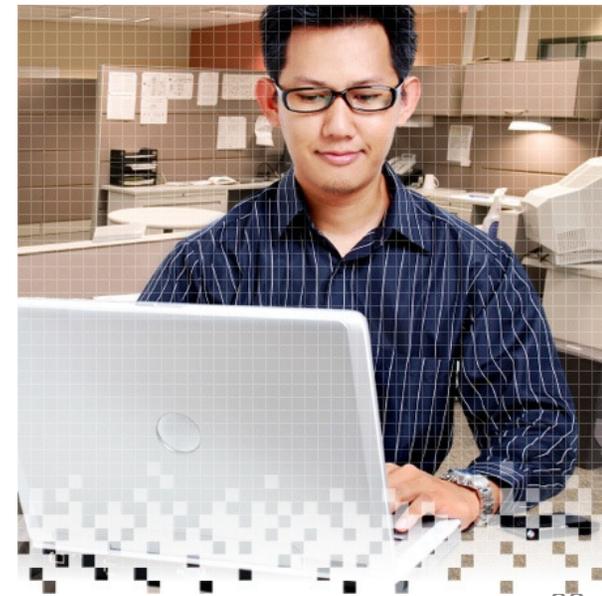
- **Brief Database Review**
- **Software Tools**
- **Supplemental Files**
- **HCUPnet Overview**
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HCUP Supplemental Files can only be applied to HCUP Databases



- **Supplemental Variables for Revisit Analyses**
- **Cost-to-Charge Ratio Files**
- **Hospital Market Structure Files**
- **Trends Files (NIS & KID)**
- **NIS Hospital Ownership File**
- **AHA Linkage Files**





Cost-to-Charge Ratio (CCR) Files



- Enable conversion of charge data to cost data on the NIS, KID, and SID

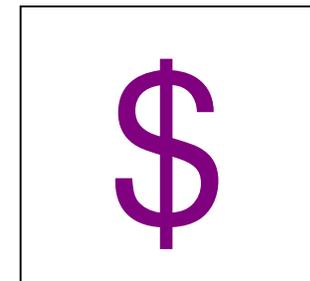


**Hospital-Level
Data**



	A	B	C
1	HOSPID	APICC	GAPICC
2	XXXX	XXXX	XXXX
3	XXXX	XXXX	XXXX
4	XXXX	XXXX	XXXX
5	XXXX	XXXX	XXXX
6	XXXX	XXXX	XXXX
7	XXXX	XXXX	XXXX

Apply Ratios



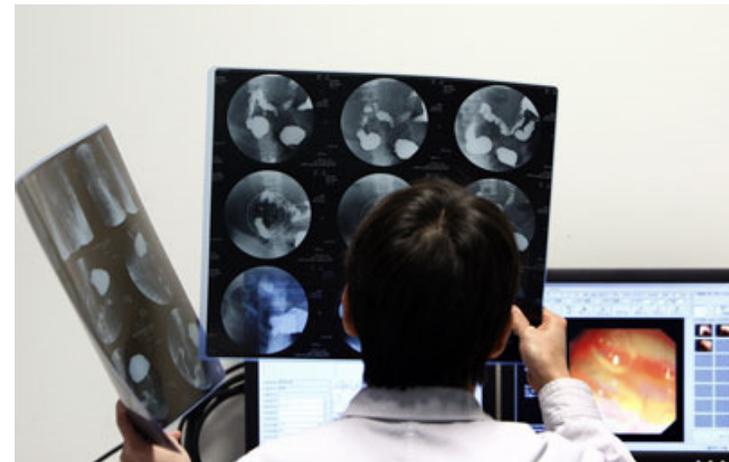
**Convert Total
Charges to Costs**



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



HCUP Supplemental Variables for Revisit Analyses



- 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



HCUP Supplemental Variables for Revisit Analyses by State



State	SID	SEDD	SASD
Arizona	2003-2007	2005-2007	
Arkansas	2004-2012		
California	2003-2011	2005-2011	2005-2011
Florida	2004-2012	2005-2012	2004-2012
Hawaii	2006-2011	2006-2010	2009-2010
Iowa	2009-2012	2010-2012	2010-2012
Maryland	2012		
Massachusetts	2010-2011	2010-2011	
Mississippi	2010-2011		
Nebraska	2003-2012	2003-2012	2003-2012



HCUP Supplemental Variables for Revisit Analyses by State



State	SID	SEDD	SASD
Nevada	2003-2007		
New Mexico	2009-2011		
New York	2003-2011	2005-2011	2003-2011
North Carolina	2003-2010	2007-2010	2003-2010
Utah	2003-2011	2003-2011	2003-2011
Vermont	2011-2012	2011-2012	2011-2012
Washington	2003-2012		



Example of Adding Readmissions/ Revisit Data to HCUP State Files



HCUP
HEALTHCARE COST AND UTILIZATION PROJECT

- Example of how to use the revisit variables
 - ▶ Examined rates of acute care utilization and rehospitalizations for patients with sickle cell disease in eight geographically dispersed states
 - ▶ 30-day and 14-day rehospitalization rates were 33.4% and 22.1%
 - ▶ Rehospitalization rate was highest for 18- to 30-year-olds (41.1% within 30 days and 28.4% within 14 days)
 - ▶ Rehospitalizations were also highest for publicly insured patients



JAMA[®]
The Journal of the American Medical Association

Acute Care Utilization and Rehospitalizations for Sickle Cell Disease. Brousseau DC, Owens PL, Mosso AL, Panepinto JA, Steiner CA. *JAMA*. 2010;303(13):1288-1294.



Additional HCUP Supplemental Files



■ Trends 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



Tools & Software

HCUP tools and software help health services researchers and decision makers to use HCUP and other similar databases. These products are developed by AHRQ through a Federal-State-Industry partnership.

[Home](#) [Databases](#) [Tools & Software](#) [Reports](#) [News & Events](#) [Technical Assistance](#) [Data Innovations](#) [Steering Committee](#) [Partners](#) [HCUP Team](#)

Favorites

HCUPnet

[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](#), [SASD](#), and [SEDD](#)) for those States that have agreed to participate.

MONAHRQ

[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.

AHRQ Quality Indicators (QIs)

[AHRQ Quality Indicators \(QIs\)](#) use hospital administrative data to highlight potential quality concerns, identify areas that need further study and investigation, and track changes over time.

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 analysis. While designed to be used with HCUP databases, they may 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 2014.)

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 2014.)

Comorbidity Software

[Comorbidity Software](#) assigns variables that identify coexisting conditions on hospital discharge records. (Codes valid through FY 2014.)

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 2014.)

Tools for ICD-10-CM/PCS

HCUP tools have been translated to ICD-10-CM/PCS in anticipation of conversion to the new coding system on October 1, 2015. We welcome comments. If you have questions or suggestions for changes, please contact hcup@ahrq.gov.

★ Clinical Classifications Software (CCS) for ICD-10-CM/PCS

[Clinical Classifications Software \(CCS\) for ICD-10-CM/PCS](#) provides a method for classifying ICD-10-CM diagnoses or ICD-10-PCS 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 Program](#) (Beta version in ZIP format).

Comorbidity Software (Beta Version)

- [Format Program: Creation of Format Library](#) (ASCII file, 1.0 MB).
- [Analysis Program: Creation of Comorbidity Variables](#) (ASCII file, 15 KB).

[Procedure Classes for ICD-10-PCS Program](#) (Beta version in ZIP format).



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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 (Beta version)





How does HCUPnet Work?



HCUP
HEALTHCARE COST AND UTILIZATION PROJECT



U.S. Department of Health & Human Services

skip navigation

www.hhs.gov



Agency for Healthcare Research and Quality

Advancing Excellence in Health Care

Search AHRQ

Go

www.ahrq.gov



HCUPnet

How does HCUPnet work? A step-by-step description of the query process.

- >> Help
- >> Medical dictionary
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How does HCUPnet work?

<< Back <<

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.

You'll be able to get statistics by ICD-9-CM codes, by CCS category (a clinical grouper that puts ICD-9-CM codes into clinically homogeneous categories), by DRG (diagnosis related groups that are used by many insurers for reimbursement purposes), or by MDC (general groups of DRGs that comprise body systems).

- ✓ 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.



Advancing Excellence in Health Care

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Welcome to H-CUPnet

HCUPnet 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

[National Statistics on All Stays](#)

Create your own statistics for national and regional estimates on hospital use for all patients from the HCUP Nationwide Inpatient Sample (NIS). [Overview of the 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 Nationwide Inpatient Sample (NIS), the HCUP Kids' Inpatient Database (KID), or the HCUP State Inpatient Databases (SID).

First Time Visitor?

- [HCUPnet overview](#)
- [How does HCUPnet work?](#)
- [HCUPnet methodology?](#)
- [HCUPnet definitions?](#)

What's New?

- 2011 readmission **Just Added!** data added. (06/19/13)
- Cost information for participating states in 2011. (06/05/2013)
- Population-based rates and queries restricted to non-neonatal and non-maternal discharges. (06/03/2013)
- 2011 nationwide hospital data now available. (05/31/2013)
- 2011 data for participating States. (11/14/2012)
- 2010 nationwide ED data -- new database just released. (10/05/2012)
- 2010 nationwide data on AHRQ Quality Indicators. (10/05/2012)



HCUPnet Capabilities



HCUPnet...	
CAN PRODUCE...	CANNOT PRODUCE...
Simple statistics	More complicated queries
Sample size calculations	Multivariate analyses
Trends information	Statistics involving certain variables
Rank ordering of diagnoses and procedures	Statistics that may violate confidentiality (patient-, provider-, hospital-level data)
Significance testing	



Webinar Overview



- **Brief Database Review**
- **Software Tools**
- **Supplemental Files**
- **HCUPnet Overview**
- **Publications and Publication Search**
- **How to Access HCUP Resources**



HCUP Publications



- **Statistical Briefs**
- **Annual Reports**
- **Methods Reports**

HCUP Methods Series
Population Denominator Data for use with the HCUP Databases

STATISTICAL BRIEF #157

June 2013

Overview of Children in the Emergency Department, 2010

Lauren M. Wier, M.P.H., Hao Yu, Ph.D., Pamela L. Owens, Ph.D., and Raynard Washington, Ph.D., M.P.H.

Introduction

There has been considerable growth in the number of emergency department (ED) visits in the United States over the past two decades, with nearly a quarter of these visits by children.¹ Many have expressed concerns about the capability of adult-focused EDs to meet the needs of children, as these EDs may have limited pediatric-focused staff and equipment.² Given concerns that the problems faced by children in the current ED system are distinct from those of adults, some national experts have called for improving ED care specifically for children.³ Understanding the reasons why children visit EDs may provide insight into additional needs in the community. This information also may assist in improving ED resources for treating pediatric patients.

This Statistical Brief presents nationally representative data from the Healthcare Cost and Utilization Project (HCUP) on ED visits for children younger than 18 years (excluding births) in 2010. Information is presented by demographic characteristics and expected payer for pediatric treat-and-release ED visits and for those that result in admission to the hospital. All differences between estimates noted in the text are statistically significant at the .0001 or better probability level.

Highlights

- In 2010, there were over 25.5 million emergency department (ED) visits for children younger than 18 years; the vast majority (96 percent) of those visits resulted in children being treated and released.
- Boys accounted for a slightly larger proportion of pediatric ED visits, regardless of whether the visits resulted in the child being treated and released or being hospitalized.
- The proportion of ED visits was inversely related to wealth: ED visits for children from the poorest communities accounted for about twice as many visits as children from the wealthiest communities.
- Medicaid was the largest primary expected payer for ED visits for the youngest pediatric age groups.
- Injuries and poisoning and respiratory disorders were the most common reasons for ED



Statistical Brief Topics



HCUP
HEALTHCARE COST AND UTILIZATION PROJECT



STATISTICAL BRIEF #175

July 2014

Trends and Projections in Inpatient Hospital Costs and Utilization, 2003–2013

Audrey J. Weiss, Ph.D., Marguerite L. Barrett, M.S., and Claudia A. Steiner, M.D., M.P.H.

Introduction

Nearly one-third of all health care spending in the United States is attributed to inpatient hospital services.¹ Between 1997 and 2011, aggregate inflation-adjusted hospital costs grew by 3.6 percent annually.² Average inpatient hospital costs vary substantially by condition. For example, in 2011 the average hospital cost for a newborn infant was well below the average cost across all hospital stays, while the average cost for acute myocardial infarction was well above the average cost for all conditions.³

Timely information on trends in the costs and types of hospitalizations provide analysts and policymakers with baseline information that can be used to help evaluate the impact of health care improvement efforts. A novel initiative from the Agency for Healthcare Research and Quality (AHRQ) Healthcare Cost and Utilization Project (HCUP) is used in this Statistical Brief to produce timely, current inpatient statistics on the cost and utilization of hospitalizations according to general types of conditions (e.g., medical, surgical).⁴

In this HCUP Statistical Brief, we use historical HCUP inpatient data from 2003 through 2011 along with early 2012 data from nine HCUP States to develop national projections of 2012 and 2013 hospital costs and other inpatient statistics for all hospitalizations (any reason). We examine five distinct hospital service lines that together encompass all types of inpatient discharges: medical, surgical, injury, mental health, and maternal and neonatal. Differences greater than 10 percent between annual weighted

¹ Gonzalez JM. National health care expenses in the U.S. civilian noninstitutionalized population, 2011. MEPS Statistical Brief #425. November 2013. Agency for Healthcare Research and Quality, Rockville, MD. http://meps.ahrq.gov/data_files/publications/s425/stat425.pdf. Accessed March 28, 2014.

² Plummer A, Wier LM, Steiner C. Costs for hospital stays in the United States, 2011. HCUP Statistical Brief #168. December 2013. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb168-Hospital-Costs-United-States-2011.pdf>. Accessed January 28, 2014.

³ Plummer A, Wier LM, Steiner C. Costs for hospital stays in the United States, 2011. HCUP Statistical Brief #168. December 2013. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb168-Hospital-Costs-United-States-2011.pdf>. Accessed January 28, 2014.

⁴ Plummer A, Wier LM, Steiner C. Costs for hospital stays in the United States, 2011. HCUP Statistical Brief #168. December 2013. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb168-Hospital-Costs-United-States-2011.pdf>. Accessed January 28, 2014.



STATISTICAL BRIEF #177

August 2014

Hospital Inpatient Utilization Related to Opioid Overuse Among Adults, 1993–2012

Pamela L Owens, Ph.D., Marguerite L. Barrett, M.S., Audrey J. Weiss, Ph.D., Raynard E. Washington, Ph.D., and Richard Kronick, Ph.D.

Introduction

Opioids, or pain medications, are commonly used to manage pain associated with injury, illness, or following surgery. Opioids include both prescription pain medications, such as morphine, codeine, fentanyl, oxycodone, and hydrocodone, as well as illegal drugs such as heroin.¹ A variety of negative side effects can occur from opioid use, including vomiting, severe allergic reactions, and overdose.² In 2010, opioids, predominantly prescription medications, were estimated to be nonmedically used by more than 12 million people,³ resulted in 425,000 emergency department visits,⁴ and were related to approximately 17,000 deaths.^{5,6}

Opioid overdose can occur for a variety of reasons, including accidental and deliberate misuse of a prescription (e.g., taking more doses than prescribed), taking medication prescribed for someone else, and combining opioids with other substances such as alcohol.⁷ The U.S. Department of Health and Human Services has recognized opioid misuse and abuse as a significant public health issue.^{8,9}

In this HCUP Statistical Brief, we use historical HCUP inpatient data from 1993 through 2012 to examine trends in hospital inpatient utilization related to opioid overuse among adults. We examine five distinct hospital service lines that together encompass all types of inpatient discharges: medical, surgical, injury, mental health, and maternal and neonatal. Differences greater than 10 percent between annual weighted

¹ Substance Abuse and Mental Health Services Administration (SAMHSA). SAMHSA Opioid Overdose Prevention Toolkit. HHS Publication No. (SMA) 13-4742. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2013.

² Ibid.

³ SAMHSA. Results from the 2010 National Survey on Drug Use and Health: volume 1: summary of national findings. Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies; 2011. http://oas.samhsa.gov/2k10/NSDUH2k10Results.htm#2_16. Accessed July 11, 2014.

⁴ SAMHSA. The DAWN Report: Highlights of the 2011 Drug Abuse Warning Network (DAWN) Findings on Drug-Related Emergency Department Visits. February 22, 2013. Rockville, MD: Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. <http://www.samhsa.gov/data/2k13/DAWN1271r127-DAWN-highlights.pdf>. Accessed July 15, 2014.

⁵ SAMHSA. Results from the 2010 National Survey on Drug Use and Health: volume 1: summary of national findings. Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies; 2011. http://oas.samhsa.gov/2k10/NSDUH2k10Results.htm#2_16. Accessed July 11, 2014.

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STATISTICAL BRIEF #176

July 2014

Trends and Projections in U.S. Hospital Costs by Patient Age, 2003–2013

Weiss, Ph.D., Marguerite L. Barrett, M.S., and Roxanne M. Ph.D.

Introduction

Hospital costs continue to increase rapidly, with aggregate adjusted costs growing by 3.6 percent annually between 2003 and 2011.¹ Hospital costs vary substantially by medical condition and by the age of the patient.² For example, in 2011, patients aged 45 and 64 accounted for almost two-thirds of aggregate hospital costs and had the highest mean cost per stay.³

Information on trends in costs for various types of hospitalizations provides health care payers and policymakers with information that can be used to help evaluate the health care improvement efforts. A novel initiative from the Agency for Healthcare Research and Quality (AHRQ) Healthcare Cost and Utilization Project (HCUP) is used in this Statistical Brief to produce timely, current inpatient statistics on the cost and utilization of hospital care by patient age for specific conditions (e.g., medical, surgical).⁴

In this HCUP Statistical Brief, we use historical HCUP inpatient data from 2003 through 2011 along with early 2012 data from nine HCUP States to develop national quarterly projections of 2012 and 2013 hospital costs, average hospital costs, and total hospital discharges. Data are presented for maternal patients, patients, and patients in three nonmaternal and non-pregnancy groups: 0–17 years, 18–64 years, and 65 years and older. We examine five distinct hospital service lines that together encompass all types of inpatient discharges: medical, surgical, injury, and mental health. Differences greater than 10 percent between annual weighted estimates are noted in the text. Because this Statistical Brief are based on all discharges from

¹ Plummer A, Wier LM, Steiner C. Costs for hospital stays in the United States, 2011. HCUP Statistical Brief #168. December 2013. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb168-Hospital-Costs-United-States-2011.pdf>. Accessed January 28, 2014.

² Plummer A, Wier LM, Steiner C. Costs for hospital stays in the United States, 2011. HCUP Statistical Brief #168. December 2013. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb168-Hospital-Costs-United-States-2011.pdf>. Accessed January 28, 2014.

³ Plummer A, Wier LM, Steiner C. Costs for hospital stays in the United States, 2011. HCUP Statistical Brief #168. December 2013. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb168-Hospital-Costs-United-States-2011.pdf>. Accessed January 28, 2014.

⁴ Plummer A, Wier LM, Steiner C. Costs for hospital stays in the United States, 2011. HCUP Statistical Brief #168. December 2013. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb168-Hospital-Costs-United-States-2011.pdf>. Accessed January 28, 2014.



STATISTICAL BRIEF #177

August 2014

Hospital Inpatient Utilization Related to Opioid Overuse Among Adults, 1993–2012

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⁶ SAMHSA. Results from the 2010 National Survey on Drug Use and Health: volume 1: summary of national findings. Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies; 2011. http://oas.samhsa.gov/2k10/NSDUH2k10Results.htm#2_16. Accessed July 11, 2014.

⁷ SAMHSA. Results from the 2010 National Survey on Drug Use and Health: volume 1: summary of national findings. Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies; 2011. http://oas.samhsa.gov/2k10/NSDUH2k10Results.htm#2_16. Accessed July 11, 2014.

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July 2014

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² Plummer A, Wier LM, Steiner C. Costs for hospital stays in the United States, 2011. HCUP Statistical Brief #168. December 2013. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb168-Hospital-Costs-United-States-2011.pdf>. Accessed January 28, 2014.

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HCUP Methods Reports



Methodological information on the HCUP databases and software tools

HCUP Methods Series
The HCUP Method Series features a broad array of methodological information on the HCUP databases and software tools. These reports are developed by AHRQ through a Federal-State-Industry partnership.

Home	Databases	Tools & Software	Reports	News & Events	Technical Assistance	Data Innovations
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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 by year in chronological order. A list of Method Series is also available by [topic](#).

Report Number	Title
2014	
Report #2014-01	HCUP External Cause of Injury (E Code) Evaluation Report (Updated with 2011 HCUP Data) (PDF file, 297 KB)
Report #2014-02	Population Denominator Data for Use with the HCUP Databases (Updated with 2013 Population Data) (PDF file, 538 KB) Appendix A Population Data Tables (in ZIP format for downloading)
2013	
Report #2013-01	Population Denominator Data for use with HCUP Databases (Updated with 2012 Population data) (PDF file, 338 KB) Appendix A Population Data Tables (in ZIP format for downloading)
Report #2013-02	HCUP External Cause of Injury (E Code) Evaluation Report (Updated with 2010 HCUP Data) (PDF file, 227 KB)
2012	
Report #2012-01	Population Denominator Data for use with HCUP Databases (Updated with 2010 Population data) (PDF file, 436 KB) Appendix A Population Data Tables (in ZIP format for downloading)
Report #2012-02	Methods Applying AHRQ Quality Indicators to Healthcare Cost and Utilization Project (HCUP) Data for the Tenth (2012) National Healthcare Quality Report (NHQR) and National Healthcare Disparities Report (PDF file, 134 KB; HTML)
Report #2012-03	Methods Applying AHRQ Quality Indicators to Healthcare Cost and Utilization Project (HCUP) Data for the Eleventh (2013) National Healthcare Quality Report (NHQR) and National Healthcare Disparities Report (NHDR) (PDF file, 458 KB; HTML)
Report #2012-04	Overview of Key Readmission Measures and Methods (PDF file, 348 KB)



Reports

HCUP reports include new findings, publications, research notes based on HCUP data, and technical reports about HCUP issues. These products are developed by AHRQ through a Federal-State-Industry partnership.

[Home](#)[Databases](#)[Tools & Software](#)[Reports](#)[News & Events](#)[Technical Assistance](#)[Data Innovations](#)[Steering Committee](#)[Partners](#)[HCUP Team](#)

Favorites

HCUP Statistical Briefs

Statistical Briefs are simple, descriptive reports on a variety of specific health-care related issues. A full list is available by [topic](#) and [chronological order](#). The most recent briefs are:

- [Hospital Inpatient Utilization Related to Opioid Overuse Among Adults, 1993-2012](#)
- [Trends and Projections in U.S. Hospital Costs by Patient Age, 2003-2013](#)

HCUP Infographics

Infographics provide a visual representation of Statistical Brief data. A [full list](#) is available. The most recent infographic is:

- [Adverse Drug Events Occurring in U.S. Hospitals, 2011](#) (PDF file, 1.3 MB)

HCUP Projections

Projection reports use longitudinal HCUP data to project national and regional estimates on health care priorities. A [full list](#) is available. The most recent reports are:

- [Acute Myocardial Infarction \(AMI\) and Acute Stroke 2003 to 2014](#) (PDF file, 3.2 MB)
- Statistical Brief #176: Trends and Projections in U.S. Hospital Costs by Patient Age, 2003-2013 ([PDF file](#), 201 KB; [HTML](#)).

Information About Using HCUP Data

HCUP Methods Series

Methods Series reports, organized by [topic](#) and [chronological order](#), feature a broad array of methodological information on the HCUP databases and software tools. The most recent reports are:

- [Population Denominator Data for Use with the HCUP Databases \(Updated with 2013 Population Data\)](#) (PDF file, 538 KB)
[Appendix A Population Data Tables](#) (in ZIP format for downloading)
- [HCUP External Cause of Injury \(E Code\) Evaluation Report \(Updated with 2011 HCUP Data\)](#) (PDF file, 297 KB)

HCUP Nationwide Database Reports

These reports are specific to the design and content of the HCUP nationwide databases.

- [National \(Nationwide\) Inpatient Sample \(NIS\)](#)
- [Kids' Inpatient Database \(KID\)](#)
- [Nationwide Emergency Department Sample \(NEDS\)](#)

HCUP State Database Reports

These reports are specific to the design and content of the HCUP state databases.

- [State Inpatient Databases \(SID\)](#)
- [State Ambulatory Surgery and Services Databases \(SASD\)](#)
- [State Emergency Department Databases \(SEDD\)](#)

Publications and Additional Topics

Topical Reports

Topical reports provide information about various priority populations.

- Approaches to using [race-ethnicity data for reducing disparities](#)
- Utilization and spending for [mental and substance use disorders](#)

HCUP Publications

These links provide access to lists of publications, resources, and descriptions of research activities that are based on HCUP data, software products, and tools.

- [Search for HCUP publications](#)
- [Research Spotlights](#) on recent peer-reviewed journal articles
- [Review comprehensive list of AHRQ publications](#)

HCUP Archive

This archive features a broad array of information based on HCUP databases and other related reports.

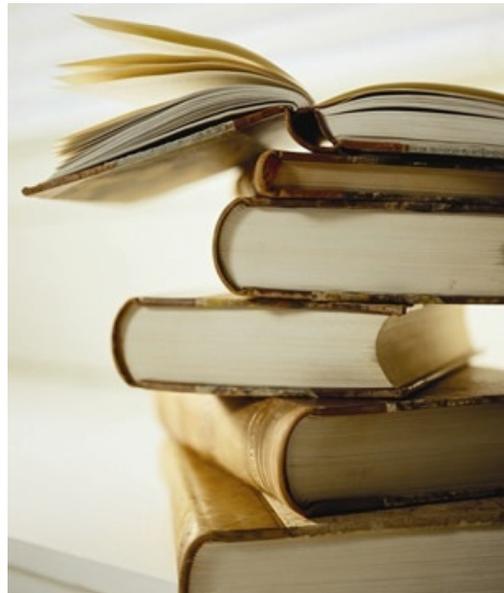
- [The Value of Hospital Discharge Data](#) (PDF file, 664 KB) (Posted May 2005)
- [HCUP Facts and Figures](#) (2005-2009)
- [HCUP Highlights](#) (2001-2003)
- [HCUP Fact Books](#) (1997-2004)
- [HCUP National Statistics Archive](#) (1992-1996)



New: Publications Search Page on HCUP-US



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





HCUP Supports High Impact Health Services, Policy & Clinical Research



HCUP
HEALTH CARE UTILIZATION PROJECT

HSR

American Journal of
PUBLIC HEALTH



The NEW ENGLAND
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RURAL HEALTH THE JOURNAL OF

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Morbidity and Mortality Weekly Report

National Healthcare Disparities Report

www.qualitytools.ahrq.gov/disparitiesreport





Using HCUP Tools in Research



- **Research Spotlights**

- <http://www.hcup-us.ahrq.gov/reports/spotlights.jsp>



Lloyd JC, Wiener JS, Gargollo PC, Inman BA, Ross SS, Routh JC.

Contemporary epidemiological trends in complex congenital genitourinary anomalies. J Urol 2013;190(4 Suppl):1590-5.



Webinar Overview



- **Brief Database Review**
- **Software Tools**
- **Supplemental Files**
- **HCUPnet Overview**
- **Publications and Publication Search**
- **How to Access HCUP Resources**



HCUP User Support Web Site



- 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

The screenshot shows the homepage of the HCUP User Support website. The header includes the HCUP logo and the text "Healthcare Cost and Utilization Project (HCUP)". Below the header is a navigation menu with links for Home, Databases, Tools & Software, Reports, News & Events, and Technical Assistance. The main content area is titled "Welcome to the HCUP User Support (HCUP-US) Web site!" and provides a brief overview of the site's purpose. It also features sections for "What is HCUP?", "HCUP Products", and "HCUP Services". A "What's New" sidebar on the right highlights recent updates, including AHRQ Hands-On Workshops, new HCUP Webinar Series, and supplemental files for NIS Hospital Ownership.

<http://www.hcup-us.ahrq.gov>



HCUP Technical Assistance



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 On-line HCUP Overview Course Available



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

The HCUP Overview Course
Overview of HCUP Data

Powerful data. Meaningful answers.

HCUP

menu resources help exit

Inpatient

State Inpatient Databases (SID)

Kids' Inpatient Database (KID)

Nationwide Emergency Department Sample (NEDS)

State Ambulatory Surgery Databases (SASD)

State Emergency Department Databases (SEDD)

Outpatient

The State Inpatient Databases (SID) are a set of state-level hospital databases capturing inpatient care in participating states. Researchers and policymakers can use the SID to study many state-level issues surrounding health care utilization, access, charges and costs, quality, and outcomes.

Roll over each of the six databases for a brief description.

Map

Next ▶

◀ Back

The HCUP Overview Course
Introduction

Powerful data. Meaningful answers.

HCUP

menu resources help exit

Do admission rates for preventable hospitalizations vary across the U.S.?

Can HCUP help address my research interests?

What percentage of hospitalizations for children are uninsured in my state?

Will there be enough cases for my analysis?

What are the latest trends in admissions for depression?

What tools are available to help me in my research?

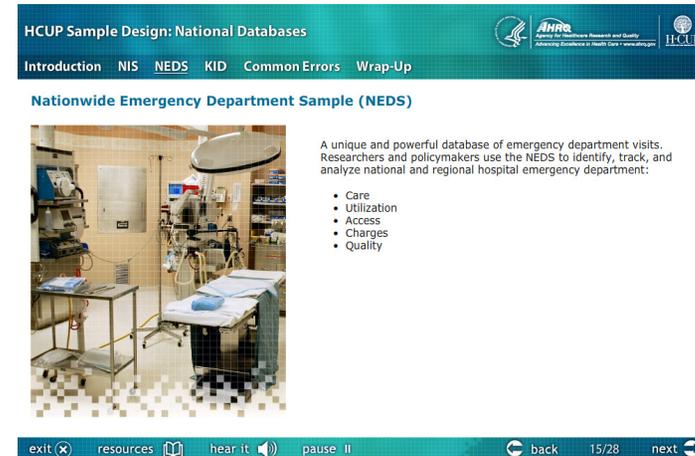
Map

Next ▶

◀ Back

<http://www.hcup-us.ahrq.gov/overviewcourse.jsp>

- 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

Load and Check HCUP Data

Introduction Load Check Wrap-Up



Healthcare Cost and Utilization Project

Load and Check

exit resources hear it play back 1/16 next

Load and Check HCUP Data

Introduction Load Check Wrap-Up

Running Check Programs

My NIS Data Means and Frequencies:

AGE (Age)	Frequency	Percent of Total
0		
1		

LOS (Length of Stay)

LOS	Frequency	Percent of Total
0 days		
1 day		

Payr (Expected Primary Payer)

Payr	Frequency	Percent of Total
1: Medicare		
2: Medicaid		

HCUP-US Summary Statistics Means and Frequencies:

AGE (Age)	Frequency	Percent of Total
0		
1		

LOS (Length of Stay)

LOS	Frequency	Percent of Total
0 days		
1 day		

Payr (Expected Primary Payer)

Payr	Frequency	Percent of Total
1: Medicare		
2: Medicaid		

Create tables of means and of frequency distributions from the data on your computer.

Compare those statistics to the summary statistics available on HCUP-US.

exit resources hear it pause back 13/16 next

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

HCUP National Estimates

Introduction NIS NEDS KID Wrap-Up

Healthcare Cost and Utilization Project
National Estimates

exit resources hear it play back 1/39 next

HCUP National Estimates

Introduction NIS NEDS KID Wrap-Up

Key Points
Weighting is a key concept when working with the HCUP national databases.
Click each option to learn more. **What to do** **What NOT to do**

What to do

- The NIS, NEDS, and KID are sample databases. To produce national or regional estimates from these databases, you must be sure to properly weight the data. It is important that you select the proper weight based on the database, the year of data, and the type of analysis you are conducting.

exit resources hear it pause back 38/39 next

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

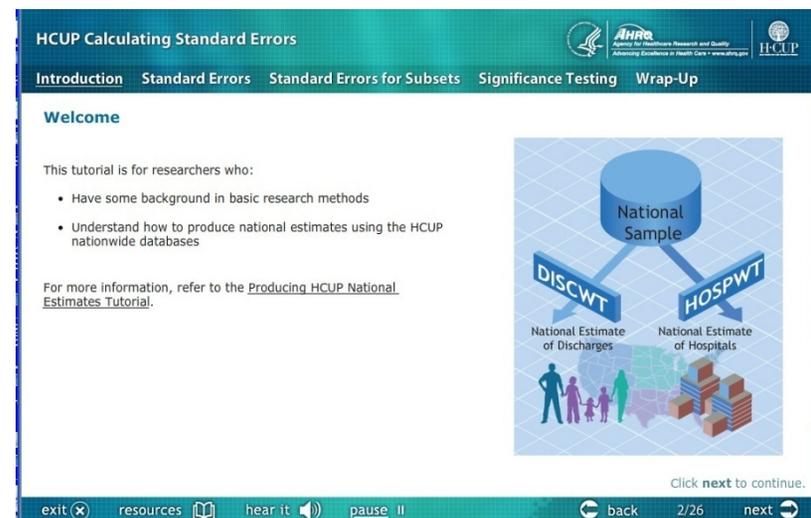


HCUP Calculating Standard Errors

Introduction Standard Errors Standard Errors for Subsets Significance Testing Wrap-Up

Healthcare Cost and Utilization Project
Calculating Standard Errors

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HCUP Calculating Standard Errors

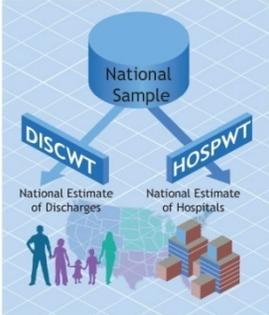
Introduction Standard Errors Standard Errors for Subsets Significance Testing Wrap-Up

Welcome

This tutorial is for researchers who:

- Have some background in basic research methods
- Understand how to produce national estimates using the HCUP nationwide databases

For more information, refer to the [Producing HCUP National Estimates Tutorial](#).



Click next to continue.

exit resources hear it pause II back 2/26 next

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

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

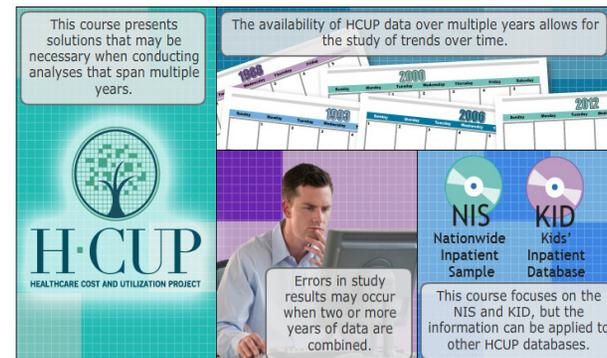


Healthcare Cost and Utilization Project

Trend Analysis



Introduction



This course presents solutions that may be necessary when conducting analyses that span multiple years.

The availability of HCUP data over multiple years allows for the study of trends over time.

Errors in study results may occur when two or more years of data are combined.

This course focuses on the NIS and KID, but the information can be applied to other HCUP databases.

NIS
Nationwide Inpatient Sample

KID
Kids' Inpatient Database

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



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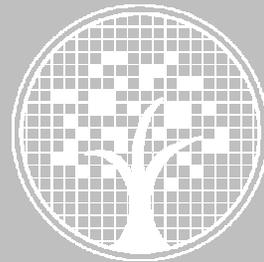
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- HCUP Newsletter, published quarterly
 - ▶ User Tech Tips
 - ▶ Upcoming Events
- New Data Releases
- New Reports

<http://www.ahrq.gov/data/hcup/hcuplist.htm>

Healthcare Cost and Utilization Project (HCUP)



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HEALTHCARE COST AND UTILIZATION PROJECT





Questions/Comments?



**Time for Questions
and/or Comments.**

