



AGENCY FOR HEALTHCARE RESEARCH AND QUALITY



# The Healthcare Cost and Utilization Project (HCUP)

## HCUP Database Overview

Agency for Healthcare Research and Quality (AHRQ)

# Introduction to HCUP



What Is HCUP?

# The HCUP Partnership



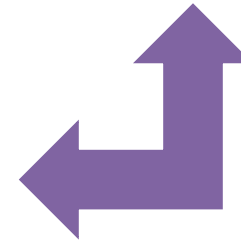
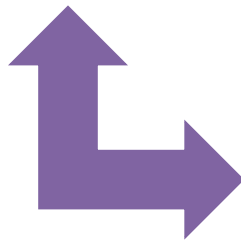
State



Federal



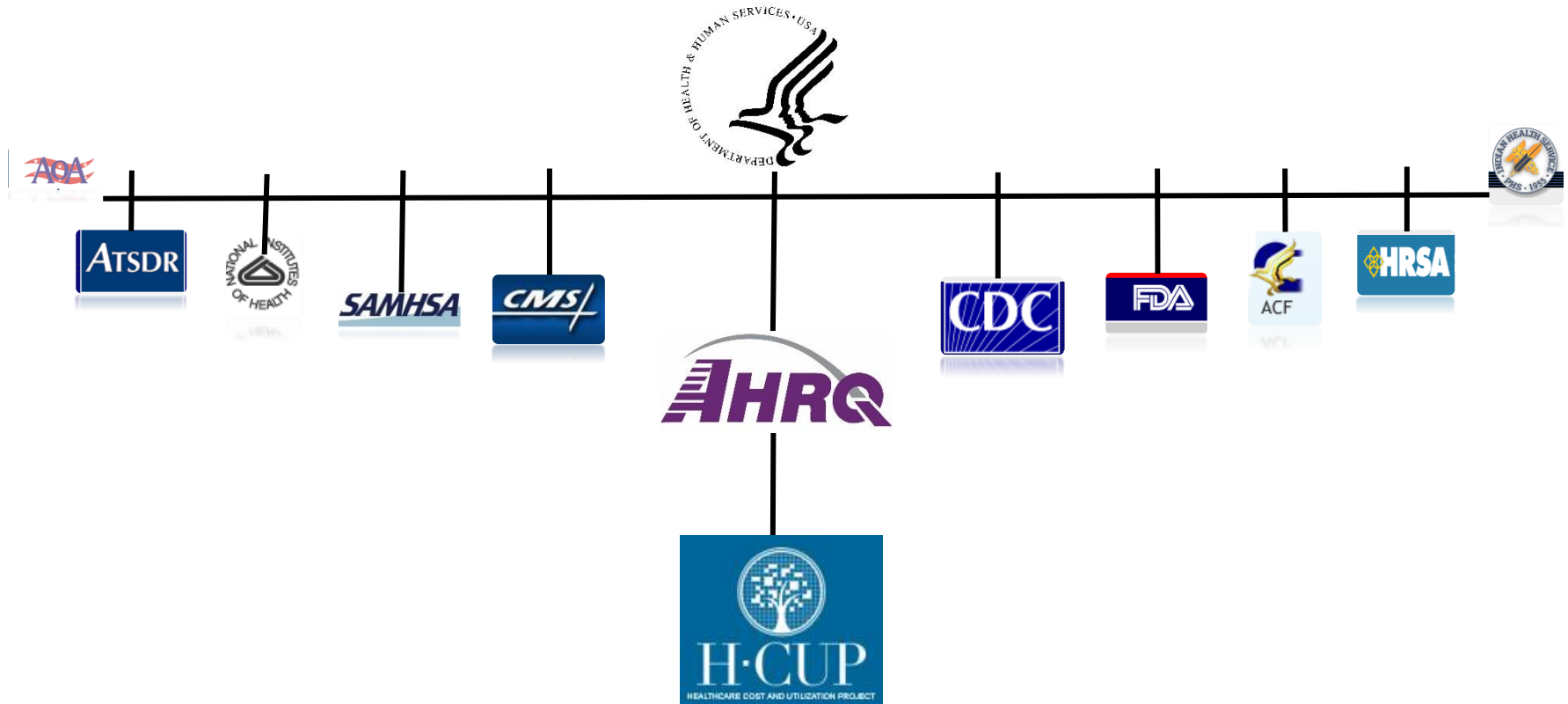
Industry



# Sponsored by the Agency for Healthcare Research and Quality



The Agency for Healthcare Research and Quality (AHRQ) is a Federal agency under the Department of Health and Human Services.



# Available HCUP Resources



## Federal-State-Private Partnership

HCUP is a comprehensive set of **publicly available all-payer** healthcare data (including self-pay and those billed as “no charge”)



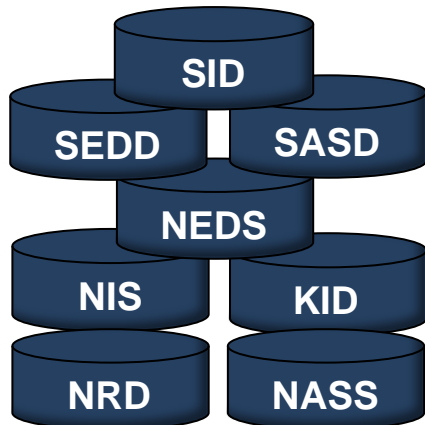
Includes **multiyear** inpatient and outpatient data based on **hospital billing** records

HCUP Databases

Online Tools

Analytics

User Support



# Research Using HCUP Data



<b>Costs of care</b>	<p>In 2018, there were 27,833,500 nonmaternal, nonneonatal hospital stays in the United States. The 20 most frequent principal diagnoses accounted for 47.6 percent of these stays (13,236,300 stays) and 46.7 percent of aggregate costs for these stays (\$188.3 billion).</p> <p><i>2017 NIS, Stat Brief #277</i></p>
<b>Readmissions</b>	<p>In 2018, initial admissions for septicemia accounted for the largest number of readmissions overall (8.3 percent) and by expected payer.</p> <p><i>2018 NRD, Stat Brief #278</i></p>
<b>Geographic variation</b>	<p>During the 2016–2017 &amp; 2017–2018 flu seasons, States with the highest rates of influenza-like illness-related ED visits (3,843-5,820 per 100,000 population) were concentrated in the Midwest and in the South, whereas the lowest rates (1,933-2,458 per 100,000 population) were generally in northern States.</p> <p><i>2016-2018 SID and SEDD, Stat Brief #269</i></p>
<b>Trends over time</b>	<p>In every year from 2008 to 2017, the rate of ED visits related to suicidal ideation or suicide attempt was highest among older adolescents, young adults, and those aged 25–44 years and lowest among children aged 5–9 years and older adults.</p> <p><i>2008, 2010, 2012, 2014, 2016, 2017 NEDS, Stat Brief #263</i></p>
<b>COVID-19-related analyses</b>	<p>Non-Hispanic Black, Hispanic, and other non-Hispanic patients combined accounted for a larger share of COVID-19-related hospitalizations in April, May, June, and July 2020 than non-Hispanic White patients (55.0–58.2 vs. 38.8–42.4 percent, respectively).</p> <p><i>2019 SID and 2020 quarterly data from selected States, Stat Brief #276</i></p>

# Research Using HCUP Data, Cont'd.



<p><b>Natural disasters</b></p>	<p>According to an analysis of seven U.S. hurricanes, the rate of injury-related ED visits resulting in hospital admission increased the most during the week of the hurricane for people of all ages living in the direct path: 22.6 percent increase for children aged 0–17 years, 13.2 percent increase for adults aged 18–64 years, and 53.2 percent increase for adults aged 65 years and older.</p> <p><i>2005–2016 SID and SEDD from selected States, Stat Brief #267</i></p>
<p><b>Access to care</b></p>	<p>In 2018, nearly one-third of stays (8.2 million hospitalizations) involving type 1 diabetes (32.0 percent) or type 2 diabetes (32.9 percent) were among individuals from the lowest income communities (quartile 1), compared with 28.0 percent of stays without a diabetes diagnosis. Conversely, 20.2 percent of stays for patients without diabetes were among individuals from the highest income communities (quartile 4), compared with 16.0 and 15.8 percent of stays involving type 1 or type 2 diabetes, respectively.</p> <p><i>2018 NIS, Stat Brief #279</i></p>
<p><b>Quality of care</b></p>	<p>In 2017, 3.5 million potentially preventable adult inpatient stays accounted for \$33.7 billion in aggregate hospital costs. These stays represented 12.9 percent of all nonobstetric stays and 8.9 percent of costs for all nonobstetric stays.</p> <p><i>2017 SID, Stat Brief #259</i></p>
<p><b>Opioid-related analyses</b></p>	<p>Among all inpatient stays involving an opioid diagnosis, the percentage with a concurrent stimulant diagnosis was 13.7 percent in 2012 (91,000 of 663,500) and 20.5 percent in 2018 (192,800 of 941,700). The percentage of all stimulant-related stays with a concurrent opioid diagnosis was 21.9 percent in 2012 (91,000 of 415,100) and 24.5 percent in 2018 (192,800 of 788,200).</p> <p><i>2012-2014 and 2016-2018 SID and NIS, Stat Brief #271</i></p>

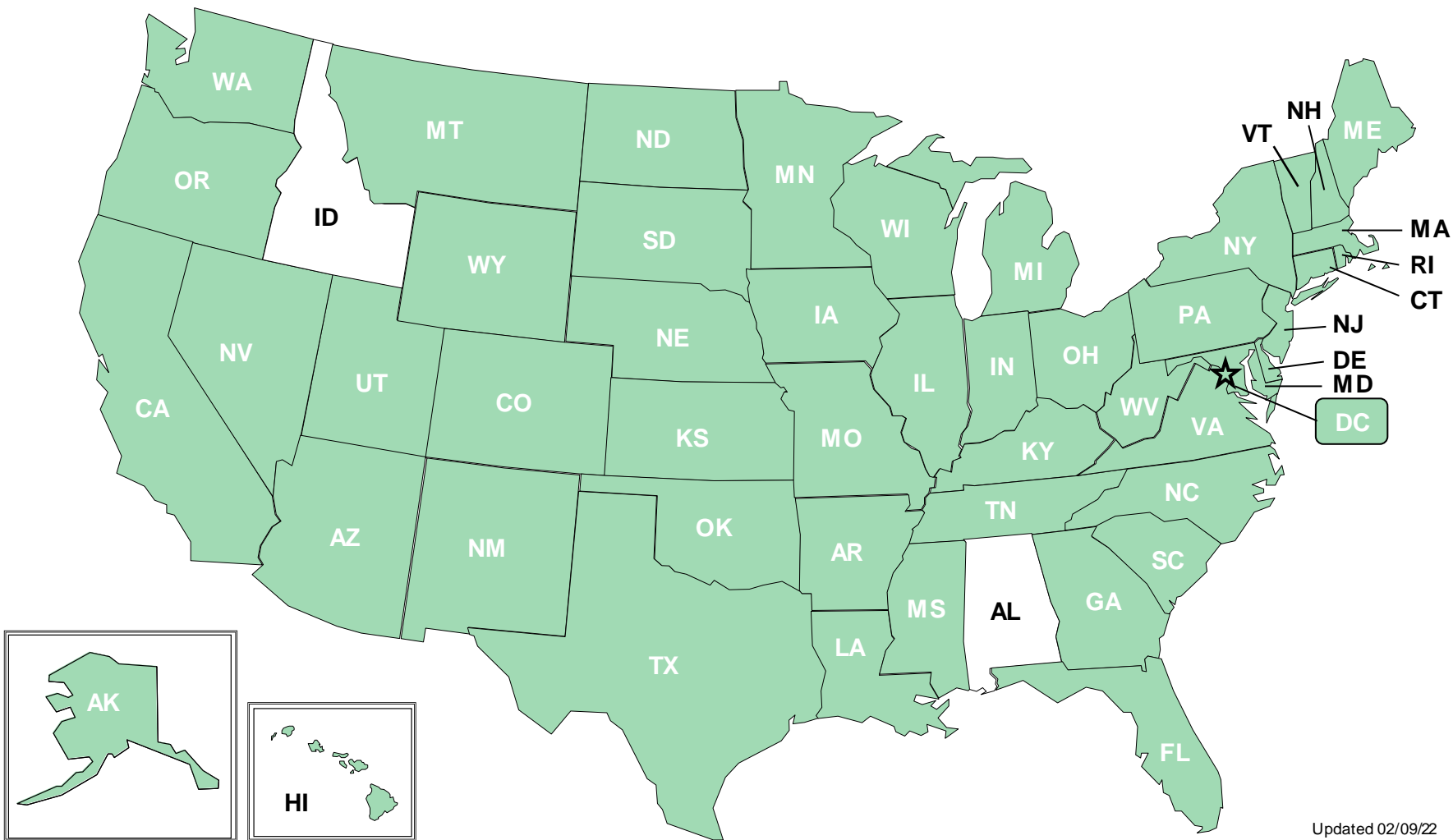
# HCUP Data Partners



**Alaska** Department of Health  
**Alaska** Hospital and Healthcare Association  
**Arizona** Department of Health Services  
**Arkansas** Department of Health  
**California** Department of Health Care Access and Information (HCAI)  
**Colorado** Hospital Association  
**Connecticut** Hospital Association  
**Delaware** Division of Public Health  
**District of Columbia** Hospital Association  
**Florida** Agency for Health Care Administration  
**Georgia** Hospital Association  
**Hawaii** Lailima Data Alliance  
**Hawaii** University of Hawai'i at Hilo  
**Illinois** Department of Public Health  
**Indiana** Hospital Association  
**Iowa** Hospital Association  
**Kansas** Hospital Association  
**Kentucky** Cabinet for Health and Family Services  
**Louisiana** Department of Health  
**Maine** Health Data Organization  
**Maryland** Health Services Cost Review Commission  
**Massachusetts** Center for Health Information and Analysis  
**Michigan** Health & Hospital Association  
**Minnesota** Hospital Association (provides data for Minnesota and North Dakota)  
**Mississippi** State Department of Health  
**Missouri** Hospital Industry Data Institute  
**Montana** Hospital Association  
**Nebraska** Hospital Association  
**Nevada** Department of Health and Human Services  
**New Hampshire** Department of Health & Human Services  
**New Jersey** Department of Health  
**New Mexico** Department of Health  
**New York** State Department of Health  
**North Carolina** Department of Health and Human Services  
**North Dakota** (data provided by the Minnesota Hospital Association)  
**Ohio** Hospital Association  
**Oklahoma** State Department of Health  
**Oregon** Healthy Authority  
**Oregon** Association of Hospitals and Health Systems  
**Pennsylvania** Health Care Cost Containment Council  
**Rhode Island** Department of Health  
**South Carolina** Revenue and Fiscal Affairs Office  
**South Dakota** Association of Healthcare Organizations  
**Tennessee** Hospital Association  
**Texas** Department of State Health Services  
**Utah** Department of Health  
**Vermont** Association of Hospitals and Health Systems  
**Virginia** Health Information  
**Washington** State Department of Health  
**West Virginia** Department of Health and Human Resources  
**Wisconsin** Department of Health Services  
**Wyoming** Hospital Association

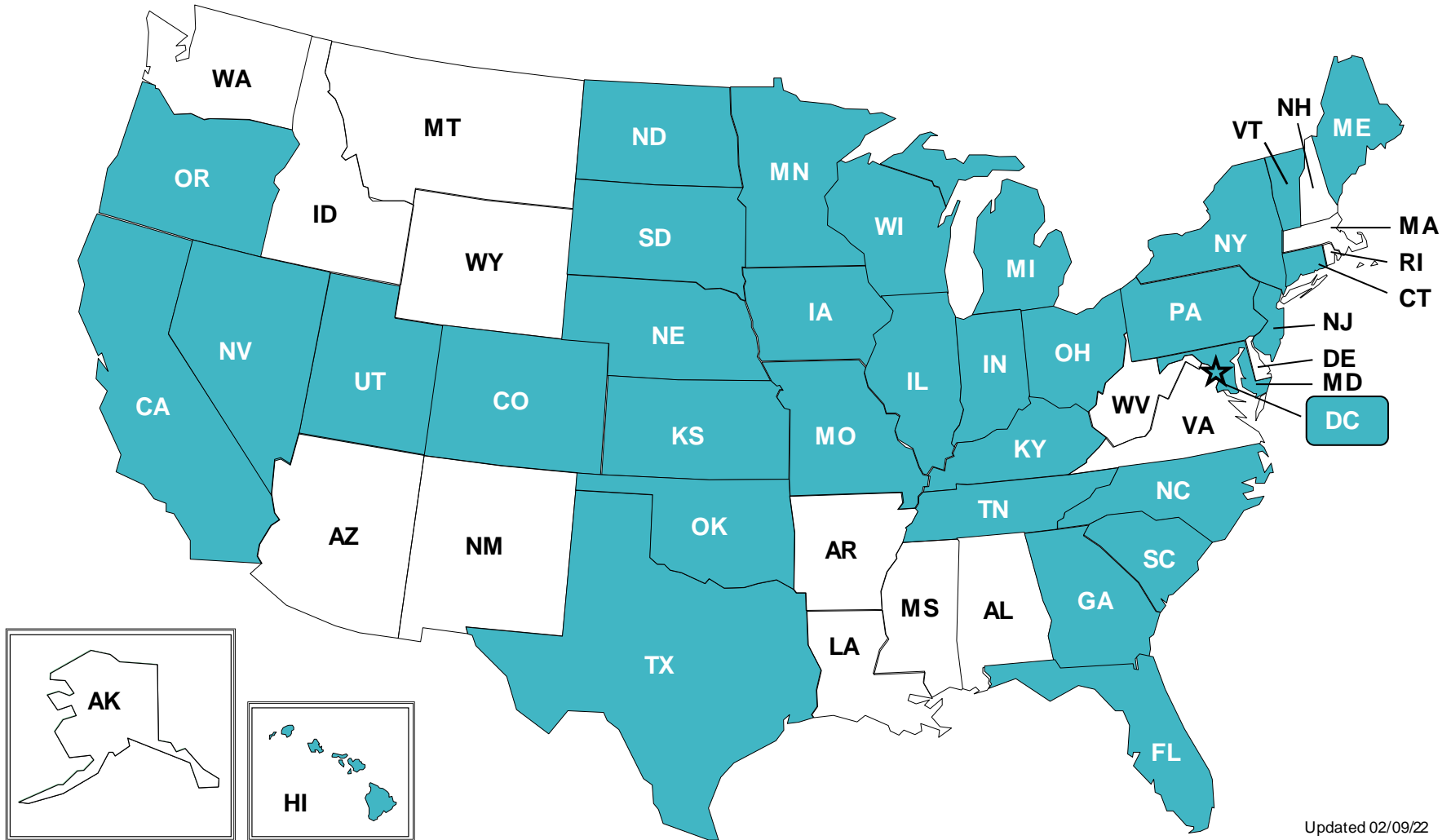


# HCUP Partners Providing Inpatient Data



<b>Partners Providing:</b>	Inpatient Data	Non-participating
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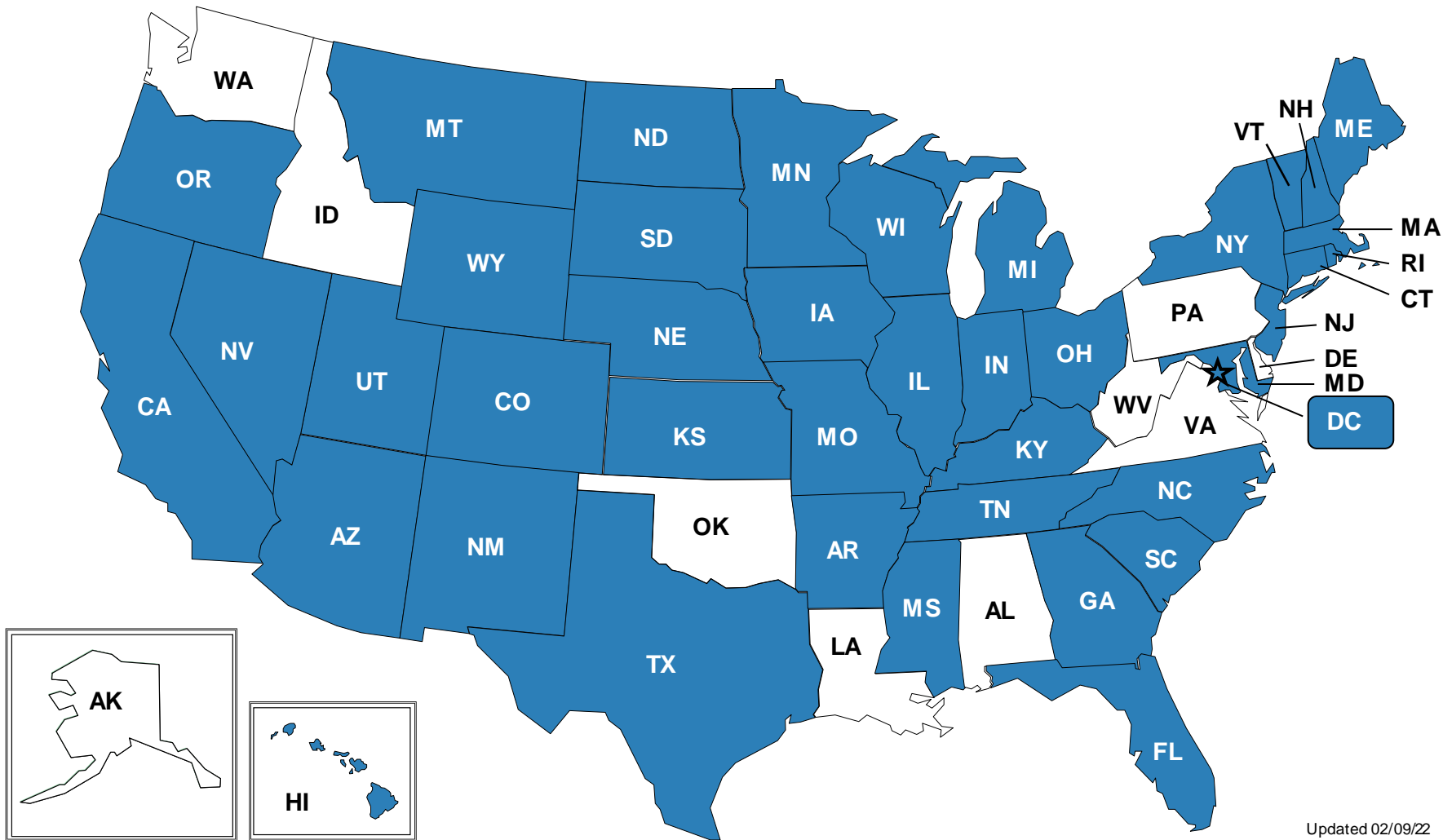
# HCUP Partners Providing Ambulatory Surgery and Services Data



Updated 02/09/22

<b>Partners Providing:</b>	Ambulatory Surgery and Services Data	Non-participating
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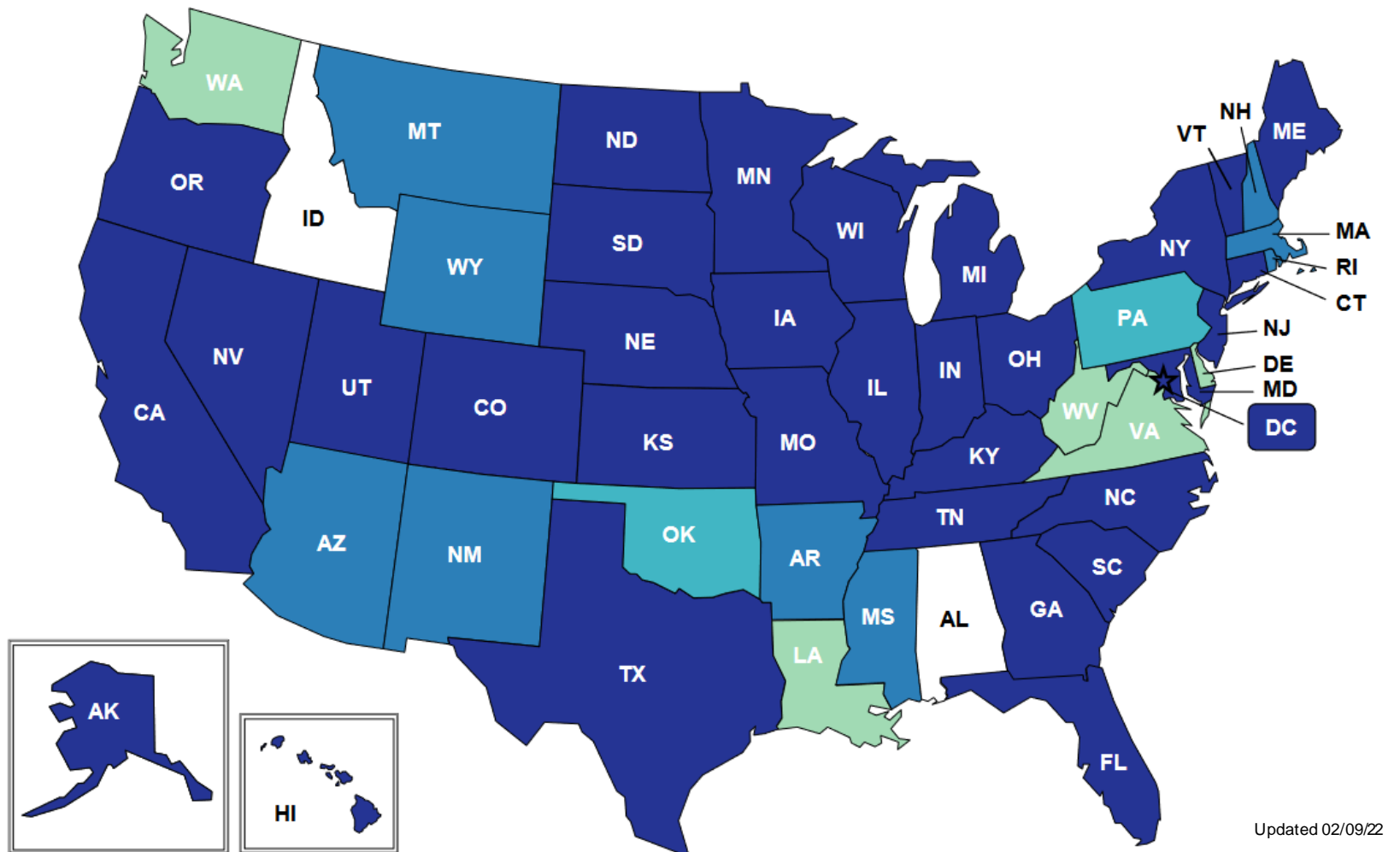
# HCUP Partners Providing Emergency Department Data



Updated 02/09/22

<b>Partners Providing:</b>	Emergency Department Data	Non-participating
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# HCUP Participation by Data Type



Partners Providing:	Inpatient Data	Inpatient and Ambulatory Surgery & Services Data	Inpatient and Emergency Department Data	Inpatient, Ambulatory Surgery & Services, and Emergency Department Data	Non-participating

# Introduction to HCUP

What Is the  
Foundation of  
HCUP Data?

# The Foundation of HCUP Data Is Hospital Billing Data



UB-04  
CMS 1500

Demographic  
Data

Diagnoses  
Procedures  
Charges

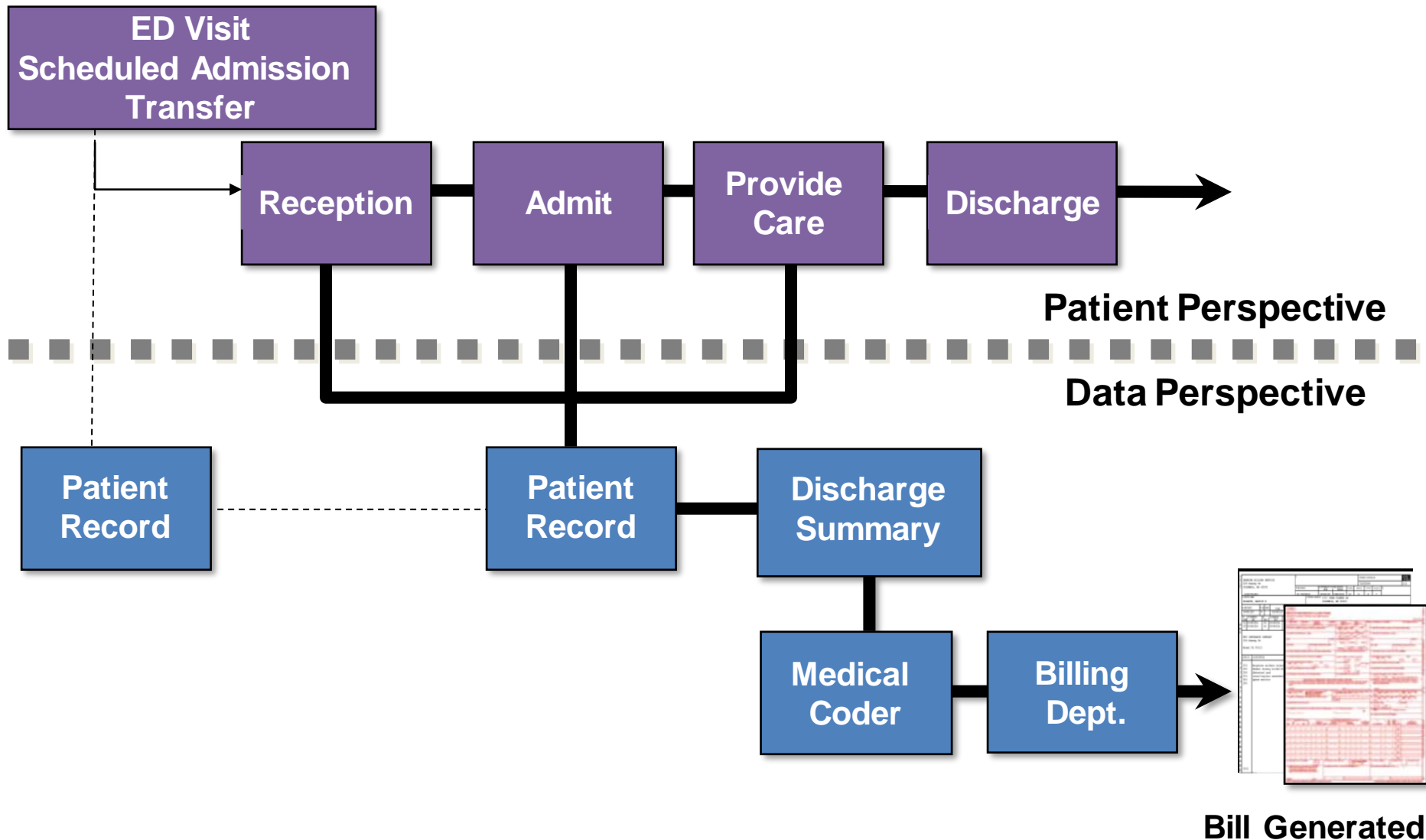
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HEALTH INSURANCE CLAIM FORM  
APPROVED BY NATIONAL UNIFORM CLAIM COMMITTEE 08/05

1 MEDICARE MEDICAID TRICARE CHAMPVA GROUP HEALTH PLAN  
2 PATIENT'S NAME (Last Name, First Name, Middle Initial)  
3 PATIENT'S BIRTH DATE  
4 PATIENT'S ADDRESS (Incl. Street)  
5 CITY STATE ZIP CODE TELEPHONE (Include Area Code)  
6 PATIENT RELATIONSHIP TO INSURED  
7 PATIENT STATUS  
8 OTHER INSURED'S NAME (Last Name, First Name, Middle Initial)  
9 EMPLOYMENT (Current or Former)  
10 PATIENT'S CONDITION  
11 NAME OF REFERRING PROVIDER OR OTHER SOURCE  
12 PATIENT'S OR AUTHORIZED PERSON'S SIGNATURE  
13 DATE OF CURRENT ILLNESS (First symptoms) OR RELIQUARY (Amputation or Pregnancy/LMP)  
14 DATE OF CURRENT ILLNESS (First symptoms) OR RELIQUARY (Amputation or Pregnancy/LMP)  
15 PATIENT HAS HAD SAME OR GIVE FIRST DATE MM/DD/YY  
16 NAME OF REFERRING PROVIDER OR OTHER SOURCE  
17 NPI  
18 ICD-9-CM CODE  
19 ICD-9-CM CODE  
20 ICD-9-CM CODE  
21 ICD-9-CM CODE  
22 ICD-9-CM CODE  
23 ICD-9-CM CODE  
24 ICD-9-CM CODE  
25 FEDERAL TAX ID NUMBER  
26 PATIENT'S ACCOUNT NUMBER  
27 FACILITY ASSIGNMENT  
28 TOTAL CHARGE  
29 AMOUNT PAID  
30 BALANCE DUE  
31 SIGNATURE OF PHYSICIAN OR SUPPLIER INCLUDING DESIGNS OR CREDENTIALS  
32 PROVIDER FACILITY LOCATION INFORMATION  
33 BILLING PROVIDER NPI & TIN  
34 PROVIDER NAME  
35 PROVIDER ADDRESS  
36 DATE  
37 DATE  
38 DATE  
39 DATE  
40 DATE  
41 DATE  
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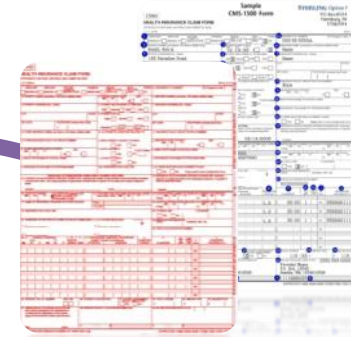
NIBC  
UNIVERSITY MICROFILMS  
L0671957

# From Patient Hospital Visit to Administrative Record



# The Making of HCUP Data

Patient enters hospital



Billing record created



AHRQ standardizes data to create uniform HCUP databases

States store data in varying formats

744	98	749	2	79	257	5	290
745	25	814	4	84	541	4	549
746	66	195	1	78	469	3	522
747	43	720	3	46	211	4	970
748	81	533	6	98	83	8	40
749	51	418	4	69	496	1	813
750	16	574	2	77	373	1	995
751	2	328	4	44	638	2	958
752	63	521	4	38	237	8	721
753	38	887	4	44	446	2	73
754	50	418	0	59	286	4	799
755	22	806	3	46	573	2	994
756	94	740	6	33	247	2	218
757	36	857	8	8	289	3	159
758	41	186	1	94	418	1	813
759	17	796	8	92	799	5	612
760	14	735	3	29	594	6	503
761	5	283	4	76	175	8	997
762	48	100	3	94	484	8	296
763	23	918	6	35	594	9	327
764	11	251	4	37	125	6	192
765	30	978	1	9	363	6	39



Hospital sends billing data and any additional data elements to data organizations



# The HCUP Data Process



- State data are mapped to a standardized HCUP format, which allows for consistent data elements and values for comparison across States
- Quality checks are performed
- Additional data elements are available:
  - ▶ Value-added variables (supplemental variables for revisit analyses, injury indicators, indicators for observation and ED services)
  - ▶ Hospital characteristics (teaching status, ownership/control, bed size)
  - ▶ Diagnosis-related groups and severity measures
    - 3M™ All Patient Refined Diagnosis Related Groups (APR-DRGs)

# Introduction to HCUP

What Types of Hospitals  
Are Included in the  
HCUP Databases?

# HCUP Data Come Mostly From Community Hospitals



## American Hospital Association Definition:

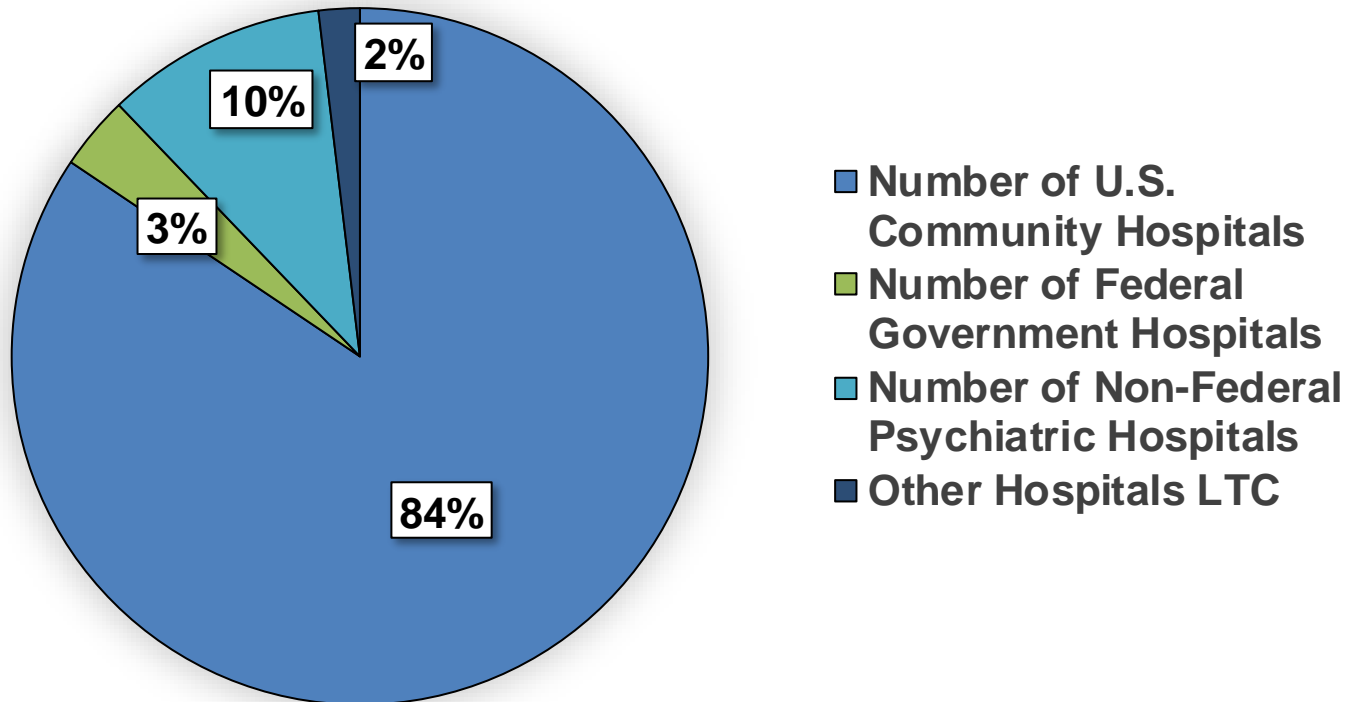
Non-Federal, short-term general, and other special hospitals, excluding hospitals not accessible by the general public (e.g., prison hospitals or college infirmaries)

Included*	Excluded
Multispecialty general hospitals	Non-Federal long-term care hospitals
OB-GYN	Psychiatric
Ear, nose, and throat	Alcoholism/chemical dependency
Orthopedic	Long-term care rehabilitation
Pediatric	Department of Defense/Department of Veterans Affairs/Indian Health Service
Public	College infirmaries
Academic medical centers	Prison hospitals

\*Sometimes this also includes short-term rehabilitation and long-term acute care hospitals. Availability varies across HCUP States.

# Hospitals in the United States

- 84 percent of U.S. hospitals are community hospitals
- 15 percent are noncommunity hospitals (Federal [DoD/VA/IHS], non-Federal psychiatric, non-Federal LTC, etc.)



# Community Hospitals Provide a Range of Services



- HCUP generally does not receive data from noncommunity hospitals, such as psychiatric facilities
- However, if patients are treated for a mental health condition in a community hospital, their information is included

Mental, Behavioral, and Neurodevelopmental Disorders, Top Five Principal Diagnoses	Total Number of Discharges
1. Depressive disorders	509,655
2. Schizophrenia spectrum and other psychotic disorders	391,150
3. Alcohol-related disorders	334,410
4. Bipolar and related disorders	257,130
5. Suicidal ideation/attempt/intentional self-harm	115,230

Source: Weighted national estimates from the 2019 National Inpatient Sample (NIS), Clinical Classifications Software Refined (CCSR) default for principal diagnosis assignment, v2021.2.

# Overview of the HCUP Databases



What Types of  
HCUP Databases  
Are Available?

# HCUP Includes Inpatient and Outpatient Databases



- Different hospital settings
  - ▶ Inpatient databases
    - Discharge abstracts for patients admitted for an inpatient stay
  - ▶ Outpatient databases
    - Ambulatory surgery encounters
    - ED visits for which patients are treated and released from the ED
- Varying geographic levels
  - ▶ State
  - ▶ Nationwide
- HCUP databases do not include physician office visits, pharmacy, and laboratory/radiology information

[www.hcup-us.ahrq.gov/databases.jsp](http://www.hcup-us.ahrq.gov/databases.jsp)

# 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 and Services Databases (SASD)



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

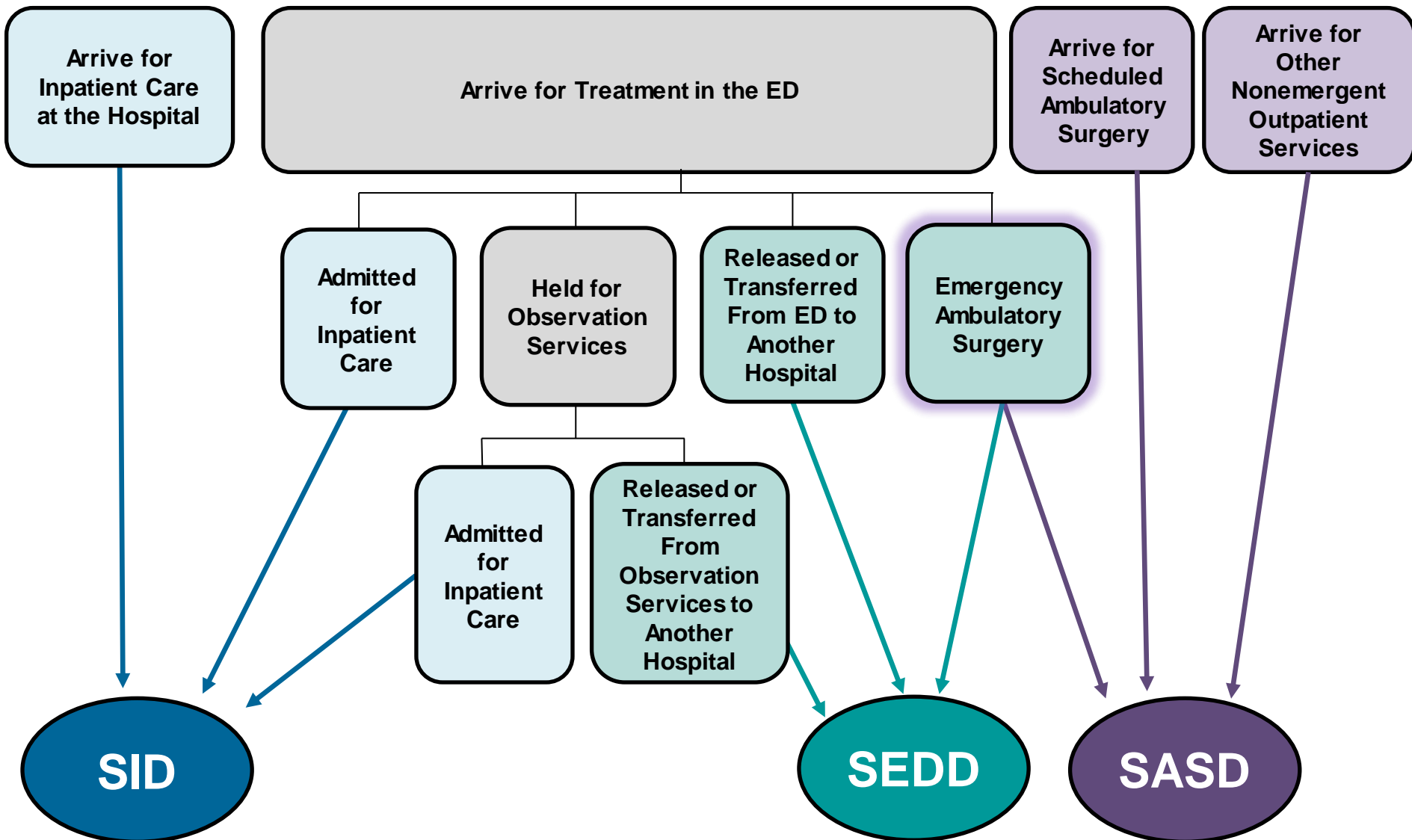
## State Emergency Department Databases (SEDD)



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



# There Are Different Pathways of Care Reflected in HCUP State Databases



# HCUP Nationwide Databases



## National Inpatient Sample (NIS)



Generate national and regional estimates of **inpatient** utilization, access, quality, patient safety, etc.

## Kids' Inpatient Database (KID)



Generate national and regional estimates of **pediatric inpatient** utilization, access, quality, etc.

## Nationwide Ambulatory Surgery Sample (NASS)



Generate national and regional estimates of **major ambulatory surgery encounters** in hospital-owned facilities

## Nationwide Emergency Department Sample (NEDS)



Generate national and regional estimates of **emergency department** utilization, access, quality, etc.

## Nationwide Readmissions Database (NRD)



Generate national estimates of all-cause and condition-specific **readmissions**

# All Nationwide Databases Are Derived From HCUP State Databases



State Inpatient Databases (SID)

**NIS:** Sample inpatient discharges of all ages from all SID and community hospitals\*

**KID:** Sample inpatient discharges aged  $\leq 20$  years from all SID and community hospitals\*

**NRD:** All inpatient discharges for all ages and community hospitals\* from SID with verified patient linkage numbers, with some exclusions

State Emergency Department Databases (SEDD)

**NEDS:** Sample of hospital-owned EDs\* from all SEDD and includes all ED admissions from the SID for the sampled EDs

State Ambulatory Surgery and Services Databases (SASD)

**NASS:** All major ambulatory surgery encounters for all ages and hospital-owned facilities\* from the SASD, with some exclusions

\*NIS, NRD, and NASS exclude community hospitals that are rehabilitation or long-term, acute care facilities; KID and NEDS exclude community hospitals that are rehabilitation facilities.

# NIS Sample Design

## Starting HCUP Database



The NIS is drawn from the SID, covering more than 97 percent of the U.S. population.

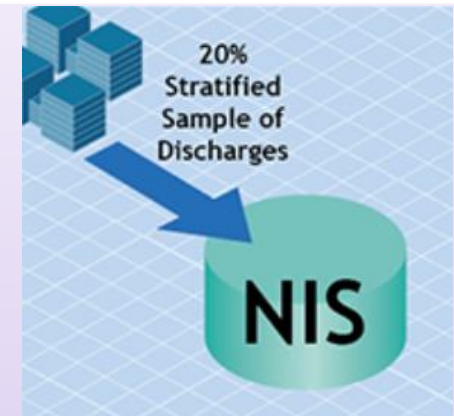
## Sampling Strata



- Ownership/control
- Bed size
- Teaching status
- Urban/rural location
- U.S. census division

\*State **not** included

## Sample Design



The NIS approximates a 20 percent **stratified sample of discharges** from all hospitals in the SID.

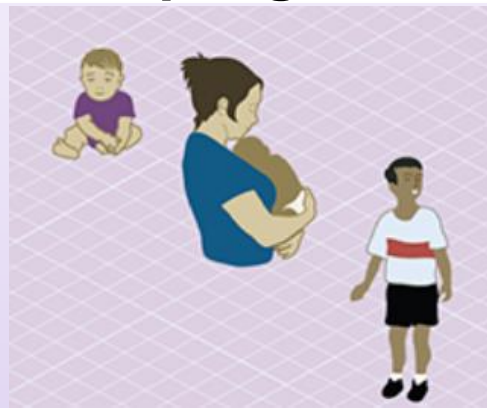
# KID Sample Design

## Starting HCUP Database



The KID is drawn from **pediatric discharges** in the SID.

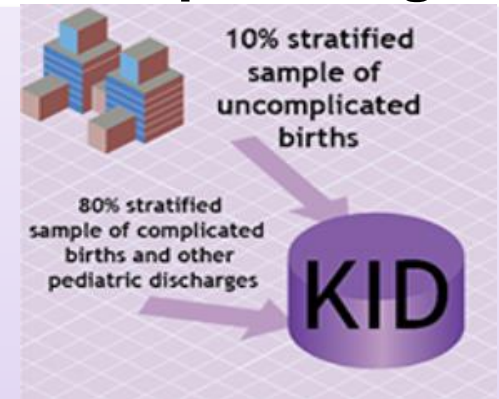
## Sampling Strata



- Uncomplicated births
- Complicated births
- Pediatric nonbirths

\*State **not** included

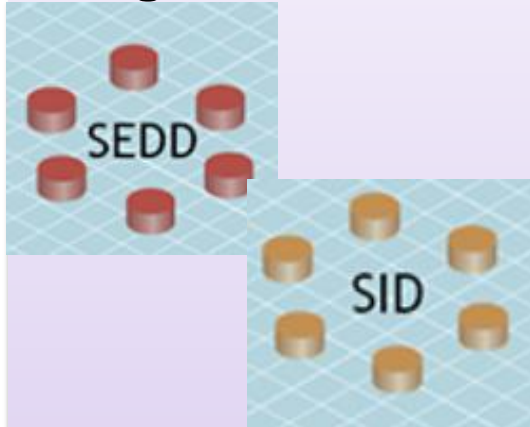
## Sample Design



The KID is a systematic random sample design, 10 percent **uncomplicated births** and 80 percent **complicated births and other pediatric discharges**.

# NEDS Sample Design

## Starting HCUP Database



The NEDS is drawn from **SEDD** (ED treat-and-release visits) and **SID** (ED visits resulting in a hospital stay).

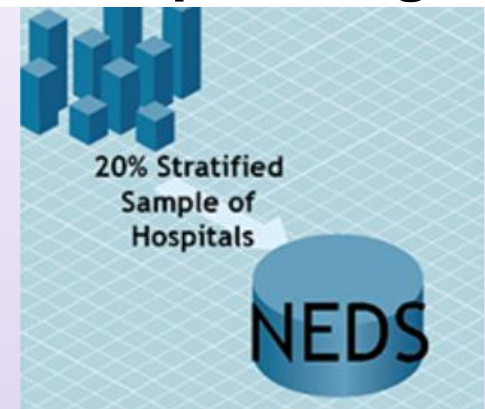
## Sampling Strata



- U.S. region
- Urban/rural location
- Teaching status
- Ownership/control
- Trauma center

\*State **not** included

## Sample Design



The NEDS is a 20 percent **stratified sample of hospital-owned EDs** from the SID and SEDD. Roughly 85 percent of ED visits are treat and release, and 15 percent result in a hospital stay.

# NRD Sample Design

## Starting HCUP Database



The NRD is drawn from SID that have **verified patient linkage numbers**.

## Sampling Strata



- U.S. region
  - Urban/rural location
  - Teaching status
  - Size
  - Ownership/control
  - Patient age and sex
- \*State **not** included

## Sample Design



The NRD is a **100 percent sample of discharges from the SID**, after certain discharge and hospital exclusions.

# NASS Sample Design

## Starting HCUP Database



The NASS is drawn from SASD encounters with **selected major ambulatory surgeries**.

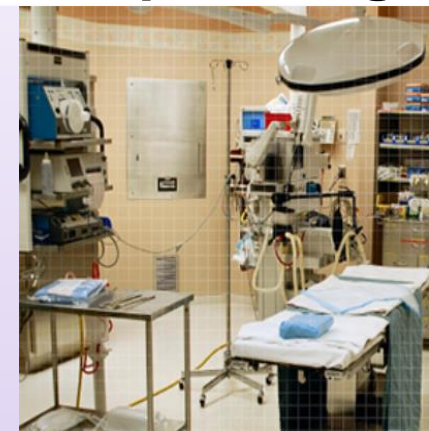
## Sampling Strata



- U.S. region
- Bed size
- Urban/rural location
- Teaching status
- Ownership/control

\*State **not** included

## Sample Design



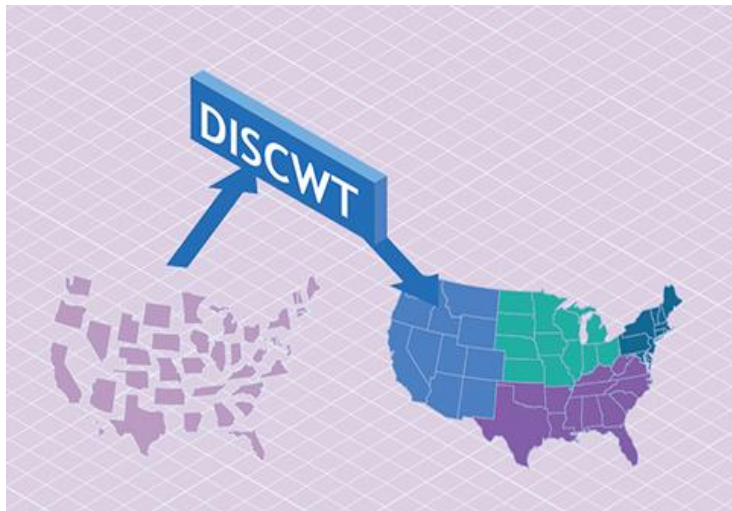
The NASS is a 100 percent sample of **major ambulatory surgery encounters** from hospital-owned facilities in the SASD, after certain exclusions.



# Weighting the HCUP Nationwide Databases to Produce National Estimates

The NIS, KID, NASS, NEDS, and NRD\* must be weighted to produce national and regional **discharge/encounter estimates.**

The NEDS must be weighted to produce national and regional **hospital estimates.**



\* The NRD is not designed to support regional analyses.

# Comparison of the HCUP Inpatient Databases



## HCUP Inpatient Databases

HCUP database	SID (2019)	NIS (2019)	KID (2019)	NRD (2019)
States	48 States + DC	48 States + DC	48 States + DC	30 States
Hospitals	4,470	4,568	3,998	2,507
Inpatient discharges	34 million	7 million	3 million	18 million
Derived from	--	SID	SID	SID
Uses	Examine State and local market-area statistics on healthcare utilization, access, quality, patient safety, etc. Readmission analyses possible in some States.	Generate national and regional estimates of healthcare utilization, access, quality, patient safety, etc.	Generate national and regional <u>pediatric</u> estimates of healthcare statistics.	Generate national estimates of all-cause and condition-specific readmissions.

# Comparison of the HCUP Outpatient Databases



	Emergency Department Data		Ambulatory Surgery and Services Data	
HCUP database	SEDD (2019)	NEDS (2019)	SASD (2019)	NASS (2019)
States	40 States + DC	40 States + DC	34 States + DC	34 States + DC
Hospitals	3,590	989	3,447	2,958
Outpatient records	103 million ED visits	33 million ED visits	19 million ambulatory surgeries	12 million major ambulatory surgeries
Derived from	–	SID and SEDD	–	SASD
Uses	Examine ED visits at hospital-affiliated EDs that do not result in an admission for a given State.	Generate national and regional estimates for hospital-owned ED visits.	Study encounter-level data for ambulatory surgeries and other outpatient services from hospital-owned facilities.	Generate national and regional estimates of major ambulatory surgery encounters performed in hospital-owned facilities.

# What Types of Care Are and Are Not Captured by HCUP?

Type of Care Captured	Which HCUP Database(s)
Inpatient care	State Inpatient Databases (SID) National (Nationwide) Inpatient Sample (NIS) Kids' Inpatient Database (KID) Nationwide Readmissions Database (NRD)
Emergency department	State Emergency Department Databases (SEDD) Nationwide Emergency Department Sample (NEDS)
Ambulatory surgery and services	State Ambulatory Surgery and Services Databases (SASD) Nationwide Ambulatory Surgery Sample (NASS)
Other nonemergent outpatient services	State Ambulatory Surgery and Services Databases (SASD)

Type of Care Not Captured
Physician office visits
Pharmacy
Labs/radiology



# Benefits and Limitations of HCUP Databases



## Benefits

Large number of records

Uniformity in coding

Regular, routine collection

Ease of access

All payers, including self-pay, or those billed as “no charge”

Available at local, State, regional, and national level

Supplemental variables available to facilitate research

## Limitations

Lack reimbursed claims information

Limited clinical detail

Do not include all hospital types (e.g., VA and DoD)

Do not show complete episode of care

State databases lack hospital characteristic information

Cannot link nationwide databases to external sources

Differences in coding across hospitals

# Overview of the HCUP Databases



What Data Elements  
Are Available in the  
HCUP Databases?

# Data Elements Common to the HCUP Databases

- Patient demographics
  - ▶ Age, sex, urban/rural location
- Clinical information
  - ▶ Diagnoses and procedures
- Discharge information
  - ▶ Expected payment source, discharge status
- Resources
  - ▶ Length of stay, total charges
- Hospital characteristics
  - ▶ Only on HCUP Nationwide databases



# Some Data Elements Vary by State

- Race/ethnicity
- Patient county
- Patient ZIP Code
- Birthweight
- Revenue center codes and units
- Additional and/or more detailed expected payer information
- Detailed charges
- Synthetic patient linkage numbers
- Synthetic physician identifiers
- Physician specialty
- Hospital identifier (unencrypted)





# Example: Payer Detail Varies by State

PAY1_X		PAY1 (Standardized)	
Value	Description	Value	Description
010	Medicare	1	Medicare
011	Medicare (HMO)		
012	Medicare (Managed care - Other)		
013	Medicare (fee for service)		
020	Medi-Cal	2	Medicaid
021	Medi-Cal (HMO)		
022	Medi-Cal (Managed care - Other)		
023	Medi-Cal (fee for service)		
030	Private Coverage	3	Private insurance
031	Private Coverage (HMO)		
032	Private Coverage (Managed care - Other)		
033	Private Coverage (fee for service)		
08n, where n=0-3	Self-pay	4	Self-pay
--		5	No charge

# Overview of HCUP Databases

Interested in  
Purchasing an  
HCUP Database?

# HCUP Databases Available Through HCUP Central Distributor



- ▶ The HCUP Central Distributor provides one-stop shopping for purchasing State and nationwide databases
- ▶ Cost and availability of databases vary across years
- ▶ Some Partner organizations may place additional restrictions on the sale of their State data

**HCUP Central Distributor  
website:**

[www.hcup-  
us.ahrq.gov/tech\\_assist/centdist.jsp](http://www.hcup-us.ahrq.gov/tech_assist/centdist.jsp)

# Steps to Purchase HCUP Databases Online



- Step 1:** Take the Data Use Agreement (DUA) online training: [www.hcup-us.ahrq.gov/tech\\_assist/dua.jsp](http://www.hcup-us.ahrq.gov/tech_assist/dua.jsp)
- Step 2:** Log in or register for an account: [www.hcup-us.ahrq.gov/tech\\_assist/centdist.jsp](http://www.hcup-us.ahrq.gov/tech_assist/centdist.jsp)
- Step 3:** Create your profile under “My Account.”
- Step 4:** Submit online order and complete further instructions listed on the “Thank You” page.
- Step 5:** Download nationwide databases online or receive delivery of State databases through the mail.

For assistance, contact the HCUP Central Distributor:

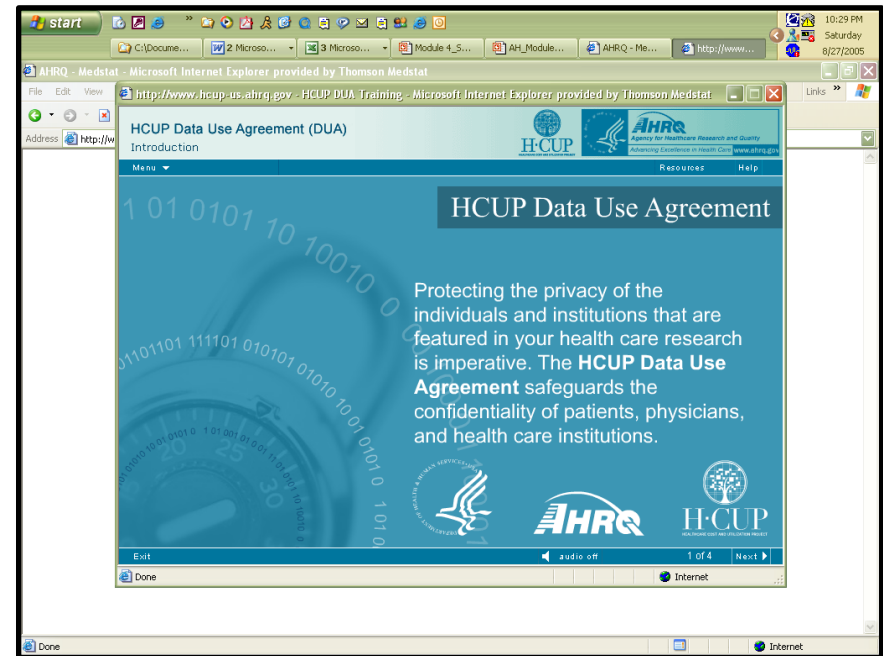
- ▶ Phone: 866-290-HCUP (4287) (toll free)
- ▶ Email: [hcup@ahrq.gov](mailto:hcup@ahrq.gov)

# Additional Requirement: Electronic DUA Course



## Purpose of the course:

- ▶ Emphasize the importance of **data protection**
- ▶ Reduce the risk of **inadvertent violations**
- ▶ Describe your **individual responsibility** when using HCUP data



**Takes 15 minutes to complete**

[www.hcup-us.ahrq.gov/tech\\_assist/dua.jsp](http://www.hcup-us.ahrq.gov/tech_assist/dua.jsp)

# Pricing Information Per Data Year

## Nationwide databases (NIS, KID, NASS, NEDS, NRD)

- ▶ **NIS:** \$750 beginning 2017, student price \$150
- ▶ **KID:** \$500 beginning 2016, student price \$100
- ▶ **NASS:** \$1,000 beginning 2016, student price \$200
- ▶ **NEDS:** \$1,000 beginning 2016, student price \$200
- ▶ **NRD:** \$1,000 beginning 2015, student price \$200

## State databases (SID, SASD, SEDD)

- ▶ Varies by State, database, year, and type of applicant
- ▶ \$50–\$3,200



**Funds for State  
data sales  
returned to HCUP  
Partners**

# Partners Releasing Databases Through HCUP Central Distributor








- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Delaware
- District of Columbia
- Florida
- Georgia
- Hawaii
- Iowa
- Kansas
- Kentucky
- Maine
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Mississippi
- Nebraska
- Nevada
- New Jersey
- New Mexico
- New York
- North Carolina
- Oregon
- Rhode Island
- South Carolina
- South Dakota
- Utah
- Vermont
- Washington
- West Virginia
- Wisconsin

## **Remember:**

**Not all States participate in all years and for all databases.**

# Software Requirements for Working With the Full HCUP Files

Software Package	Load Programs	Format Programs	Example Statistical Coding	HCUP Tools Programs
	X	X	X	X
	X		X	X
	X			X
			X	
			X	

**MS Excel and Access are NOT GOOD options!**



# Overview of HCUP Resources



What Types of  
Online Resources  
Does HCUP Have  
Available?

# Types of HCUP Resources



- Analytic reports
  - ▶ Descriptive brief reports on select topics
  - ▶ Methodological reports to facilitate use of the HCUP databases
- Search option for publications based on HCUP databases
- Precalculated statistics
  - ▶ Online query tool HCUPnet
  - ▶ Topic-specific tables and figures
  - ▶ Database-specific information
- Data visualizations
  - ▶ Interactive visual displays of select HCUP data

# Analytic Reports

What Types of  
Analytic Reports  
Does HCUP Offer?

# Statistical Briefs Are Descriptive Reports on Specific Healthcare Topics



## COVID-19-Related Hospitalizations in Nine States, by Race/Ethnicity, 2020

STATISTICAL BRIEF #272  
March 2021

Pamela L. Owens, Ph.D.

### Introduction

This Healthcare Cost and Utilization Project (HCUP) Statistical Brief presents statistics on COVID-19-related hospital stays using 2019 State Inpatient Databases (SID) and 2020 quarterly inpatient data from nine States. Differences in hospitalizations by race/ethnicity in April, May, and June 2020 are compared with the same months in the prior year. Variation in utilization, average length of stay, and in-hospital mortality are illustrated. Because of the large sample size of the HCUP data, small differences can be statistically significant but not meaningful. Thus, only differences greater than or equal to 10 percent are discussed in the text.

This analysis is limited to patients treated in community, nonrehabilitation hospitals in nine States (Arizona, Georgia, Iowa, Maryland, Michigan, Minnesota, New Jersey, Ohio, and Wisconsin) for which HCUP data were available for April–June 2019 and April–June 2020. These States account for 21.1 percent of the resident U.S. population in 2019.<sup>1,2</sup> All information contained in this Statistical Brief can be found in the HCUP Summary Trend Tables.<sup>3</sup> The Summary Trend Tables, accessed as downloadable tables, provide State-specific monthly trends in hospital utilization for the most recent HCUP data available. These tables will be updated as more quarterly data become available.

### Highlights

- Across the nine States, reference, non-Hispanic, and Hispanic patients accounted for a larger share of COVID-19-related hospitalizations than non-Hispanic White patients in April, May, and June 2020.
- In April 2020, the average length of COVID-19-related hospitalizations across States varied by the race/ethnicity of the patient to 7.4 days). In June 2020, average length of COVID hospitalizations was the same for all race/ethnicity groups.
- Nearly 18 percent of patients with COVID-19 across all nine States died in the hospital in April 2020 and almost 1 percent died in June 2020.
- In-hospital mortality rates declined between April and June 2020 for all patients regardless of their race/ethnicity.
- In-hospital mortality rates by patient race/ethnicity in the State in which the patient was hospitalized.



## Diabetes-Related Inpatient Stays, 2018

STATISTICAL BRIEF #279  
July 2021

Kathryn R. Finger, Ph.D., M.P.H., and Lawrence D. Reid, Ph.D., M.P.H.

### Introduction

In 2018, 34.2 million individuals in the United States had ever been diagnosed with diabetes, constituting 10.9 percent of the U.S. population overall.<sup>1</sup> This does not include another 7.3 million individuals aged 18 years or older estimated to have undiagnosed diabetes (as determined by measured fasting plasma glucose or A1C levels).<sup>1</sup>

The most common form of diabetes is type 2 diabetes, which is characterized by the body's improper use of insulin.<sup>2</sup> Type 2 diabetes is most often diagnosed in adulthood and is associated with nonoptimal weight, poor diet, and lack of exercise.<sup>2</sup> Type 1 diabetes is characterized by the body's inability to produce insulin and is more often diagnosed in childhood than type 2 diabetes.<sup>2</sup> Both types of diabetes, if untreated, result in elevated levels of blood glucose that can lead to serious complications over time, such as cardiovascular disease, kidney damage, stroke, blindness, and limb amputation.<sup>1</sup> Diabetes and the sequelae of the disease are associated with approximately 8 million hospitalizations annually.<sup>1</sup>

This Healthcare Cost and Utilization Project (HCUP) Statistical Brief presents statistics on nonmaternal<sup>3</sup> inpatient stays involving type 1 or type 2 diabetes among patients aged 1 year or older using weighted estimates from the 2018 National Inpatient Sample (NIS). Patient and hospital characteristics, as well as average length of stay, cost per stay, and in-hospital mortality, are examined by type of diabetes and compared with stays without a diabetes diagnosis. Additionally, reasons for hospitalization and comorbidities among stays involving type 1 or type 2 diabetes are presented. Because of the large sample size of the NIS data, small differences can be statistically significant. Thus, only differences greater than or equal to 10 percent are discussed in the text.

### Highlights

- In 2018, there were more than 8 million hospital stays involving type 1 or type 2 diabetes. Type 2 diabetes accounted for 60 percent of these stays.
- Whereas the largest portion of stays involving type 1 diabetes was for patients aged 18–34 years (33 percent), the largest portion of stays involving type 2 diabetes was for patients aged 65–84 years (50 percent).
- Of stays involving type 1 or type 2 diabetes, 20 and 19 percent, respectively, were for Black patients (vs. 14 percent of stays for patients without diabetes).
- For adults aged 18–64 years, the in-hospital mortality rate was twice as high for stays for type 2 as those for type 1 diabetes (40.9 vs. 20.4 per 10,000 stays).
- The leading principal diagnosis for stays involving type 1 diabetes was diabetes—accounting for half of all stays with any diagnosis of type 1 diabetes, followed by septicemia and acute/unspecified renal failure. The leading principal diagnosis for stays involving type 2 diabetes was septicemia—accounting for 10 percent of all stays with any diagnosis of type 2 diabetes.

<sup>3</sup> It can be challenging to distinguish between pre-existing diabetes (chronic disease) and gestational diabetes (which resolves postpartum) in certain datasets and this is especially true when the condition is first detected during pregnancy itself. Since diabetes during pregnancy is a unique condition with predictable metabolic changes, including inherent insulin resistance, it may be appropriate to analyze this subpopulation separately. Thus, this statistical brief excludes maternal stays, including those with pre-existing diabetes (type 1 or type 2) or with gestational diabetes, both of which have unique concerns for the mother and infant that are different from diabetes occurring among nonmaternal stays.



## Overview of Clinical Conditions With Frequent and Costly Hospital Readmissions by Payer, 2018

STATISTICAL BRIEF #278

Weise, Ph.D., and H. Joanna Jiang, Ph.D.

### Introduction

Hospital readmissions are a leading healthcare concern, both in terms of the quality of care provided to patients and for the healthcare costs associated with them. Some readmissions, such as those for cancer and heart failure, are expected and planned, but many are not. Hospitals, health systems, and payers have implemented a variety of strategies, such as care coordination and patient education, to reduce preventable readmissions. National statistics about the clinical conditions with the highest number and rate of readmissions and the highest inpatient costs can help identify areas of focus for initiatives to reduce preventable readmissions.

This Healthcare Cost and Utilization Project (HCUP) Statistical Brief presents statistics on hospital inpatient conditions with high numbers and rates of readmissions among adults (aged 18 years and older) by expected payer using the 2018 Nationwide Inpatient Sample Database (NIS). A readmission was defined as a subsequent hospital admission for any cause within 30 days of the initial admission (index admission) between January and December 2018. Three readmission metrics are presented: (1) conditions with the highest number of readmissions, (2) conditions with the highest inpatient rate, and (3) conditions with the highest average inpatient cost. The expected payer and condition (principal diagnosis) are based on the index admission. Index admissions and cancer-related therapies are included in overall inpatient statistics but are not reported in condition-specific statistics.

### Highlights

- In 2018, there were 3.8 million 30-day all-cause adult hospital readmissions, with a 14 percent readmission rate and an average readmission cost of \$15,200.
- Index (initial) admissions for septicemia accounted for the largest number of readmissions overall (6.3 percent) and by expected payer. Septicemia also had among the highest average readmission costs for Medicaid and self-pay/no charge stays, accounting for approximately 10 and 9 percent, respectively, of aggregate readmission costs.
- Index admissions for sickle cell trait/anemia had the highest readmission rate overall (30.1 percent) as well as among Medicare and Medicaid stays (37.2 and 30.4 percent, respectively).
- Heart failure was among the top five conditions at index admission with the highest number and highest rate of readmissions for Medicaid and self-pay/no charge stays.
- Overall, the highest average readmission cost was for index admissions for complication of transplanted organs or tissue (\$27,000), which also had the highest average readmission cost for privately insured stays (\$31,200) and the second highest average readmission cost for Medicare stays (\$24,200).

# Findings-At-A-Glance Are Focused Reports on Select Topics



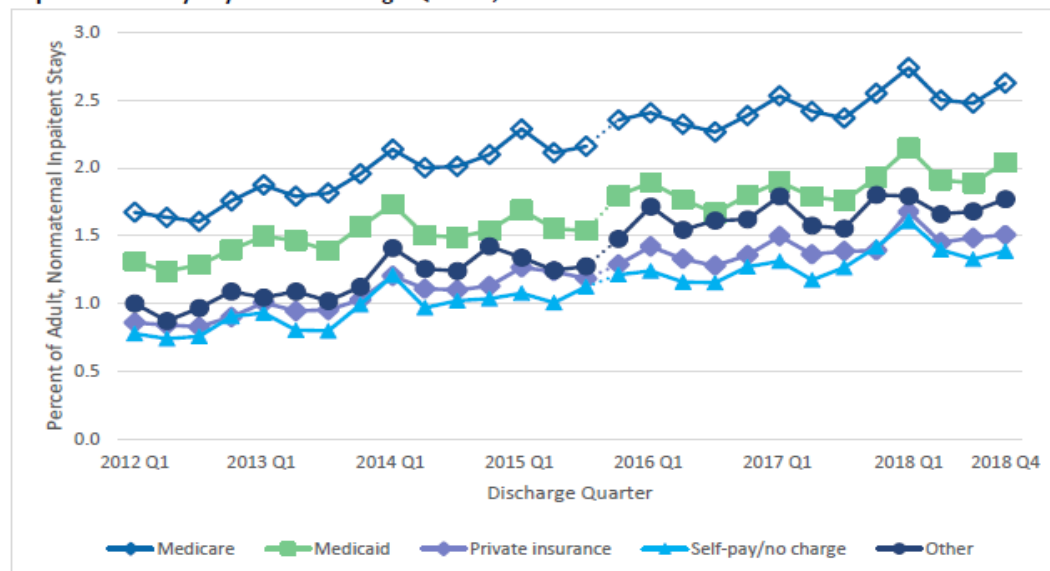
**Table 1. Number of Adult, Nonmaternal Inpatient Stays with Any Diagnosis of *Clostridioides difficile*, 2011-2016 and 2019**

Year	Rate of Any Diagnosis of <i>C. Diff</i> per 1,000 Adult, Nonmaternal discharges	95% confidence interval
2011	13.0	(12.7, 13.3)
2012	13.6	(13.3, 13.9)
2013	13.8	(13.6, 14.1)
2014	14.0	
2015 Q1-Q3	14.2	
2016	13.6	
2019	10.2	

Note: Additional analyses of national estimates overall (not for *C. diff*) declined each year.

Source: Agency for Healthcare Research and Quality (AHRQ), Inpatient Databases (SID) nationally weighted analysis file, 2011 Q1–2015 Q3 and ICD-10-CM Diagnoses from 2016 and 2019

**Figure 2b: Percent of Adult, Nonmaternal Inpatient Stays with a Diagnosis of Septic Shock, By Expected Primary Payer and Discharge Quarter, 2012-2018**



Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), National Inpatient Sample (NIS), ICD-9-CM Diagnoses from 2012 Q1-2015 Q3 and ICD-10-CM Diagnoses from 2015 Q4-2018 Q4

# Methods Series Reports Provide Technical Guidance on Using HCUP Data



## HCUP Methods Series

Calculating National Inpatient Sample (NIS) Variances for Data Years 2012 and Later

Report # 2015-09

## HCUP Methods Series

Methodological Issues when Studying Readmissions and Revisits using Hospital Administrative Data

Report # 2011-01

Population Denominator Data Sources and Data for Use with HCUP Databases (Updated with 2019 Population Data)

Report #2020-02

Conducting County-Level Analyses With HCUP Data: Approaches and Methodological Considerations.

Report #2019-04

[www.hcup-us.ahrq.gov/reports/methods/methods.jsp](http://www.hcup-us.ahrq.gov/reports/methods/methods.jsp)

# Search Option for Publications That Use HCUP Databases



What Is the  
HCUP Publications  
Search?

# Search for Publications Using HCUP Databases



An official website of the Department of Health & Human Services



Search All AHRQ Websites | Careers



## HEALTHCARE COST & UTILIZATION PROJECT User Support

DO YOUR OWN ANALYSIS

EXPLORE EXPERT RESEARCH

DATABASE  
INFORMATION

RESEARCH TOOLS

REQUEST DATA

REPORTS &  
PUBLICATIONS

DATA  
VISUALIZATIONS

DATA QUERY  
TOOLS

Approximately  
11,080 peer-reviewed  
publications using  
HCUP data, products,  
or tools

## PUBLICATIONS SEARCH

### HCUP Publications Search

There are two options available to search for articles based on HCUP data or products.

**Simple Search:** Use the simple search feature available on this page. Select the publication category that you would like to search: Peer-Reviewed Journals, government publications. Enter the keyword(s) you would like to search in the text field. Select the search button. The simple search will search for the

**Advanced Search:** Use the [Advanced Search](#) feature to perform a more refined search. Access the Advanced Search feature by selecting one of the links including author, title, periodical, publication, abstract, state, HCUP data year, HCUP database, and HCUP tools and products.

To obtain a list of all articles based on HCUP data or products, select "All Publications" for the publication category and enter a single asterisk (\*) as the

### Simple Search

Search  For  [Advanced Search](#)

### PUBLICATIONS ADVANCED SEARCH

Advanced Search

Search

Limit Search By:

Fill in any or all of the fields below.  
 All of these (AND)  Any of these (OR)

Author  (Example)

Title  (Example)

Periodical  (Example)

Publication Year  (Example)

Abstract  (Example)

State

HCUP Data Year

HCUP Database

HCUP Tools and Products (Choose one or multiple tools and products)

- AHA Linkage Files
- Chronic Condition Indicator (CCI)
- Clinical Classifications Software (CCS) or Clinical Classifications Software Refined (CCSR)
- Cost-to-Charge Ratio Files (CCR)
- Elixhauser Comorbidity Software

[www.hcup-us.ahrq.gov/reports/pubsearch/pubsearch.jsp](http://www.hcup-us.ahrq.gov/reports/pubsearch/pubsearch.jsp)



# Precalculated Statistics

What Precalculated  
Statistics Are  
Available?

# HCUPnet Provides 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
- Users can produce county-level statistical maps

A screenshot of the HCUPnet website interface. The page has a blue header with the AHRQ logo and navigation links. Below the header, there is a search bar and a main heading 'Healthcare Cost and Utilization Project (HCUPnet)'. The page content includes a sidebar with a 'What's New' section and a main area with an 'Explore the HCUPnet Data Tools' section. At the bottom, there are four cards for 'Inpatient Setting', 'Emergency Department Setting', 'Readmissions', and 'Community Inpatient Statistics', each with a brief description of the data provided.

<https://datatools.ahrq.gov/hcupnet>

# HCUPnet Can Answer a Variety of Questions



- What percentage of hospitalizations are billed to Medicaid as the expected primary payer?
- What are the most expensive conditions treated in U.S. hospitals?
- What is the trend in the number of hospitalizations related to depression?
- How do my estimates using an HCUP database compare with HCUPnet (validation)?



# 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, and nonelective and elective inpatient stays)
  - ▶ Inpatient service line (including maternal and neonatal conditions, mental health and substance use disorders, injuries, surgeries, other medical conditions)

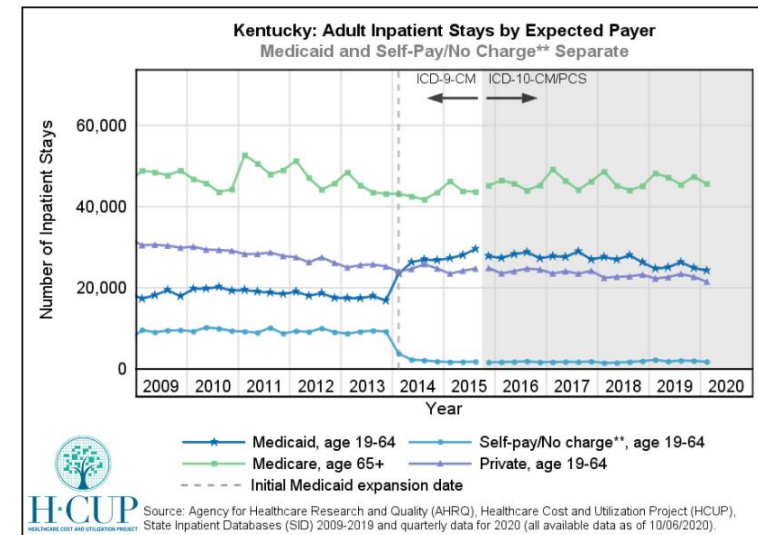
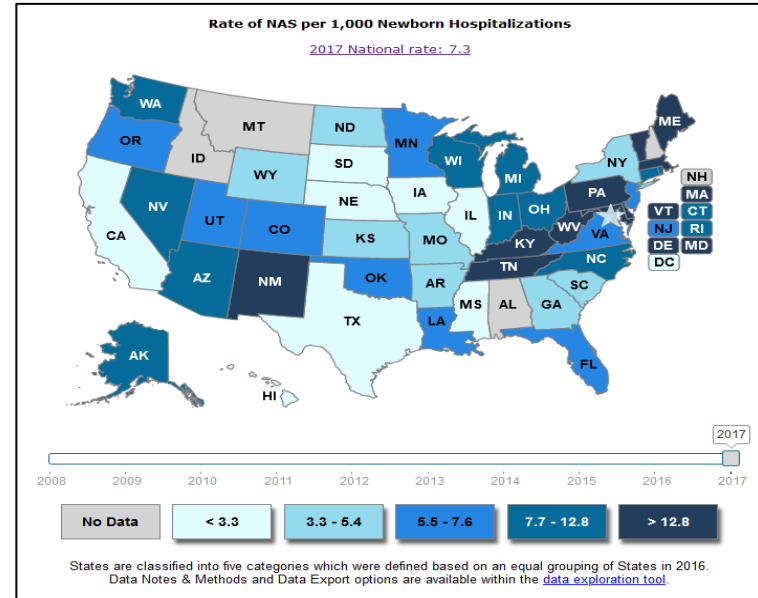
[www.hcup-us.ahrq.gov/reports/trendtables/summarytrendtables.jsp](http://www.hcup-us.ahrq.gov/reports/trendtables/summarytrendtables.jsp)

# HCUP Fast Stats



- Uses visual displays to compare national or State statistics on a range of healthcare topics
  - ▶ Neonatal Abstinence Syndrome
  - ▶ Opioid-Related Hospital Use
  - ▶ Hurricane Impact on Hospital Use
  - ▶ National Trends for Utilization Statistics and Costs
  - ▶ State Trends by Payer

[www.hcup-us.ahrq.gov/faststats/landing.jsp](http://www.hcup-us.ahrq.gov/faststats/landing.jsp)



\*\*Self-pay/No charge: Includes self-pay, no charge, charity, and no expected payment. Note: Not all inpatient stays are included (see Data Notes & Methods).

# HCUP Summary Statistics



- Available for all HCUP databases by year
- Provide descriptive statistics for most data elements
- Use before purchase of HCUP database
  - ▶ Allow users to preview the type of information available in the respective HCUP database
- Use after purchase of HCUP database
  - ▶ Allow users to validate results
- Found under database-specific documentation pages of HCUP-US website

[www.hcup-us.ahrq.gov/databases.jsp](http://www.hcup-us.ahrq.gov/databases.jsp)

# Diagnosis and Procedure Frequency Tables



- Frequencies of International Classification of Diseases, Tenth Revision, Clinical Modification/Procedure Coding System (ICD-10-CM/PCS) codes (individually and grouped by clinical category)
- Available for the HCUP nationwide databases (NIS, KID, NASS, NEDS, NRD)
  - ▶ Under “**Data Elements**” section of the respective Database Documentation pages

## 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](#)

[www.hcup-us.ahrq.gov/databases.jsp](http://www.hcup-us.ahrq.gov/databases.jsp)

# HCUP's Precalculated Statistics Meeting Varying Analytic Needs



Consideration	Analytic Need	HCUP Resource(s)
Type of information	Diagnosis- or procedure-specific information	HCUPnet HCUP Fast Stats HCUP Summary Trend Tables HCUP Diagnosis and Procedure Frequency Tables
	Other healthcare topics (e.g., hurricane-related ED visits)	HCUP Fast Stats
	Database-specific information	HCUP Summary Statistics
Display	Graphics (e.g., charts, maps)	HCUPnet HCUP Fast Stats
	Downloadable tables	HCUPnet HCUP Fast Stats HCUP Summary Trend Tables HCUP Diagnosis and Procedure Frequency Tables
Quality control	Validate analytic output based on HCUP database(s)	HCUPnet HCUP Summary Statistics HCUP Diagnosis and Procedure Frequency Tables
Flexibility	Predetermined stratifiers (e.g., patient characteristics)	HCUPnet HCUP Fast Stats HCUP Summary Trend Tables
	Multiple query options	HCUPnet HCUP Fast Stats



# HCUP Data Visualizations

What HCUP Data  
Visualizations Are  
Available?

# HCUP Visualization of Inpatient Trends in COVID-19 and Other Conditions

New!



Interactive visual display of State-specific monthly trends in inpatient stays related to COVID-19 and other conditions

Select COVID-19 and Other Conditions for Comparison

One or More States for Comparison

Select One or More Patient/Stay Characteristics for Comparison

Outcome: Number of Hospital Discharges

Select Outcome: In-Hospital Mortality Rate

Select Outcome: Average Length of Hospital Stay

Select COVID-19 or Another Condition

Select One or More States

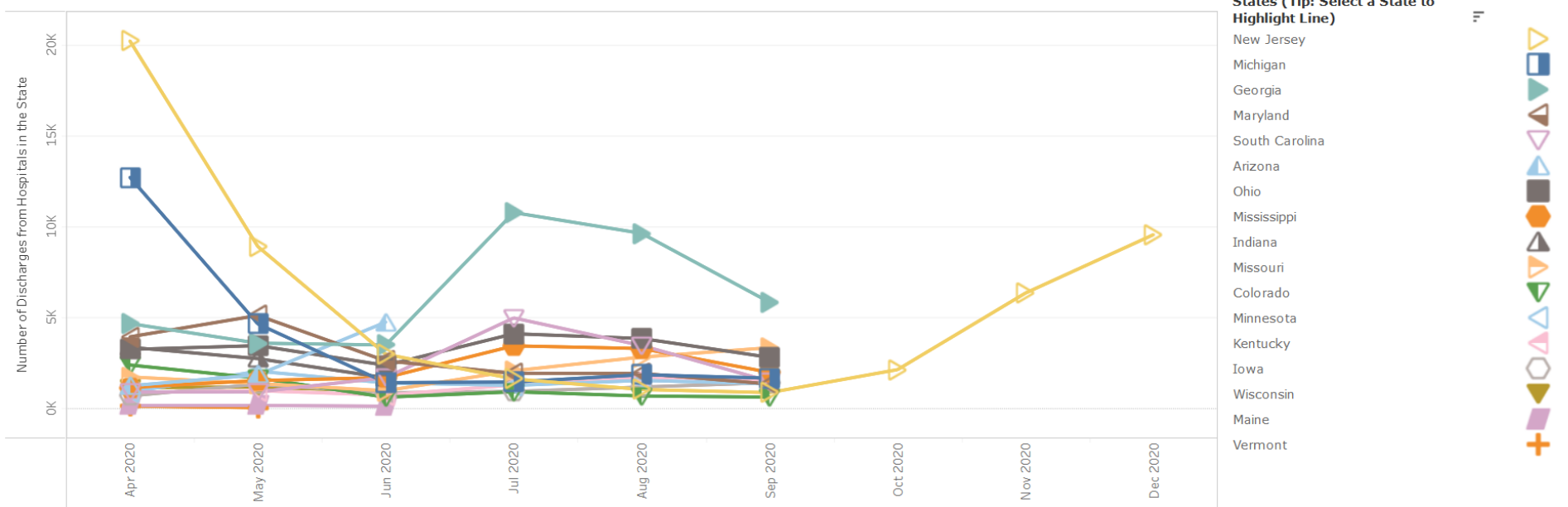
Select One Patient/Stay Characteristic

COVID-19 (beginning in April 2020)

(Multiple values)

Overall

Number of Discharges, COVID-19-Related Inpatient Stays, All Patients in 17 States, Starting in April 2020



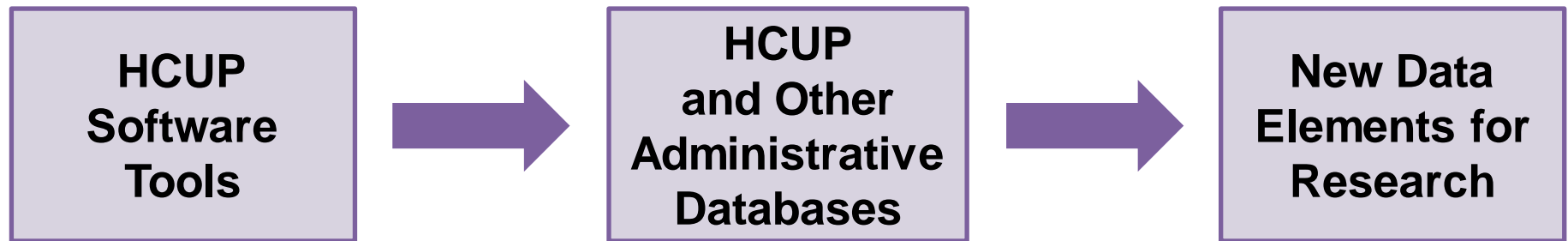
[www.hcup-us.ahrq.gov/datavisualizations/covid-19-inpatient-trends.jsp](http://www.hcup-us.ahrq.gov/datavisualizations/covid-19-inpatient-trends.jsp)

What Are the  
HCUP Software Tools?

# HCUP Software Tools Augment HCUP and Other Administrative Databases



- Create new data elements from existing data, thereby enhancing a researcher's ability to conduct analyses
- May be applied to HCUP and other administrative databases



[www.hcup-us.ahrq.gov/tools\\_software.jsp](http://www.hcup-us.ahrq.gov/tools_software.jsp)

# HCUP Software Tools Available for Different Coding Systems



- Coding systems based on setting of care (e.g., inpatient and outpatient)
- Apply to either diagnosis codes or procedure codes
- Consider which coding system is appropriate for your analysis to identify the right HCUP software tool to use

## Diagnosis-Related

ICD-10-CM  
ICD-9-CM

## Procedure-Related

ICD-10-PCS  
HCPCS Level I (CPTs)  
HCPCS Level II  
ICD-9-CM

# Types of Diagnosis Codes Included in HCUP Databases



## Diagnosis Coding Systems

- **ICD-10-CM** (International Classification of Diseases, Tenth Revision, Clinical Modification)
  - Implemented in the United States starting on October 1, 2015
  - Included on inpatient and outpatient data
- **ICD-9-CM** (International Classification of Diseases, Ninth Revision, Clinical Modification)
  - Used in the United States prior to October 1, 2015
  - Included on inpatient and outpatient data

# ICD-10-CM Diagnosis-Related HCUP Software Tools



Need to identify clinical categories that encompass similar codes?



**Clinical Classifications Software Refined (CCSR) for ICD-10-CM diagnoses**

Want to identify comorbidities?



**Elixhauser Comorbidity Software Refined for ICD-10-CM**

Need to identify diagnoses indicating chronic conditions?



**Chronic Condition Indicator (CCI) for ICD-10-CM [beta version]**

**These tools apply to both inpatient and outpatient data**

# CCSR for ICD-10-CM Diagnoses Identifies Broad Clinical Categories



- The CCSR for ICD-10 CM groups diagnoses into clinically meaningful categories that:
  - ▶ Capitalize on the specificity of the ICD-10-CM coding scheme
  - ▶ Retain the clinical concepts from the Clinical Classifications Software (CCS) for ICD-9-CM, when possible
- Includes ICD-10-CM diagnosis codes valid as of October 2015 through current fiscal year

ICD-10-CM Codes	CCSR Categories
I2101 I2102 I2109 I2111 I2119 I2121 I2129 I213 I214 I219 I21A1 I21A9 I220 I221 I222 I228 I229	<b>CIR009: Acute myocardial infarction</b>
K251 K253 K255 K257 K259 K261 K263 K265 K267 K269 K271 K273 K275 K277 K279 K281 K283 K285 K287 K289	<b>DIG005: Gastroduodenal ulcer</b>



# Key Characteristics of the CCSR for ICD-10-CM



Characteristic	Description
Number of categories	More than 530 CCSR categories
Category naming convention	Categories start with three-character body system abbreviation followed by three digits. Examples: <ul style="list-style-type: none"><li>• CIR007 Essential hypertension</li><li>• NEO023 Bone cancer</li></ul>
Category assignment is not mutually exclusive	Some codes cross-classified to more than one CCSR category
Output from SAS software	Flexibility to choose between file output versions

# Default CCSR for ICD-10-CM Categorization Scheme Available



Do you need a default CCSR category for a specific analytic purpose, such as ranking principal diagnoses in inpatient data?



**CCSR for ICD-10-CM default  
categorization scheme**

Default CCSR categories are mutually exclusive, and they are based on hierarchical guidelines that relied on clinical coding rules, clinical input on the etiology/pathology of diseases, coding input, and standards from other Federal agencies

# Elixhauser Comorbidity Software Refined for ICD-10-CM Identifies Pre-existing Conditions



- Allows researchers to control for comorbidities that are not directly related to the reason for the inpatient stay or outpatient encounter because they can affect:
  - ▶ Resource allocation (e.g., length of stay or total hospital charges)
  - ▶ Outcomes used to assess the quality of care (e.g., in-hospital mortality)
- Includes ICD-10-CM diagnosis codes valid as of October 2015 through current fiscal year

# Key Characteristics of the Elixhauser Comorbidity Software Refined for ICD-10-CM



Characteristic	Description
Number of comorbidities	38 comorbidity measures
Indicators that the diagnosis was present on admission	Required to assign 18 of the 38 comorbidity measures to identify pre-existing conditions, as opposed to medical conditions that arise during the hospital stay
Comorbidity assignment is not mutually exclusive	Some codes cross-classified to more than one comorbidity measure
Clinically similar comorbidity measures	Some comorbidity measures clinically similar but differentiated by severity Examples: <ul style="list-style-type: none"><li>• Diabetes, uncomplicated</li><li>• Diabetes, complicated</li></ul>

# CCI for ICD-10-CM (Beta Version) Readily Identifies Chronic Conditions



Classifies diagnoses into one of four types of conditions:

Type of Diagnosis	Examples
Chronic	Malignant cancer, diabetes, obesity
Acute	Pregnancy, initial encounter of injury
Both chronic and acute	Persistent asthma with (acute) exacerbation, sickle-cell disease with acute chest syndrome
Not applicable	External cause of morbidity codes, injury sequela codes

Includes ICD-10-CM diagnosis codes valid as of  
October 2015 through the current fiscal year

# Similar HCUP Software Tools for ICD-9-CM Diagnoses



- ICD-9 CM Diagnosis-related tools
  - ▶ Clinical Classifications Software (CCS) for ICD-9-CM diagnoses
  - ▶ Chronic Condition Indicator (CCI) for ICD-9-CM
  - ▶ Elixhauser Comorbidity Software for ICD-9-CM
- ICD-9-CM diagnosis-related tools are similar in concept but differ in methodology
  - ▶ Should not be used to trend between ICD-9-CM and ICD-10-CM

[www.hcup-us.ahrq.gov/tools\\_software.jsp](http://www.hcup-us.ahrq.gov/tools_software.jsp)

# Types of Procedure Codes Included in HCUP Databases



## Procedure Coding Systems

- **ICD-10-PCS** (International Classification of Diseases, Tenth Revision, Procedure Coding System)
  - Implemented in the United States starting on October 1, 2015
  - Reported only on inpatient data
- **ICD-9-CM**
  - Used in the United States prior to October 1, 2015
  - Reported on inpatient data and sometimes on outpatient data
- **HCPCS** (Healthcare Common Procedure Coding System)
  - **Level I CPT** (Current Procedural Terminology)
  - **HCPCS Level II**
  - Available in all data years
  - Applicable to outpatient procedures and physician services

# ICD-10-PCS Procedure-Related HCUP Software Tools



Need to identify inpatient procedure categories that encompass similar codes?



**Clinical Classifications Software Refined (CCSR) for ICD-10-PCS Procedures**

Want to identify therapeutic/diagnostic operating room procedures?



**Procedure Classes Refined for ICD-10-PCS**

Need to identify services based on procedure and/or revenue center codes?



**Utilization Flags for Revenue Center Codes and ICD-10-PCS [beta version]**

**These tools apply to only inpatient data**



# CCSR for ICD-10-PCS Procedures Identifies Broad Procedure Categories



- The CCSR for ICD-10-PCS groups procedure codes into clinically meaningful categories that:
  - ▶ Capitalize on the taxonomy and specificity of the ICD-10-PCS coding scheme
  - ▶ Retain the surgical concepts from the CCS for ICD-9-CM, when possible
- Includes ICD-10-PCS procedure codes valid as of October 2015 through current fiscal year

ICD-10-PCS Codes	CCSR Categories
10D00Z0 10D00Z1 10D00Z2	PGN003: Cesarean section
009U30Z 009U3ZX 009U3ZZ	
00JU3ZZ	CNS002: Lumbar puncture

# Key Characteristics of the CCSR for ICD-10-PCS

Characteristic	Description
Number of categories	More than 320 CCSR categories
Category naming convention	<p>Categories start with three-character body system abbreviation followed by three digits.</p> <p>Examples:</p> <ul style="list-style-type: none"><li>• CAR003 Coronary artery bypass grafts (CABG)</li><li>• NCM001 Planar nuclear medicine imaging</li></ul>
Category assignment is mutually exclusive	Codes classified to one and only one CCSR category
Output from SAS software	Flexibility to choose between file output versions

# Procedure Classes Refined for ICD-10-PCS Identifies OR Procedures



- Procedure Classes Refined for ICD-10-PCS facilitates health services research by allowing the researcher to readily determine:
  - ▶ Whether a procedure is expected to be performed in an operating room (OR)
  - ▶ Whether a procedure is diagnostic or therapeutic
- Includes ICD-10-PCS procedure codes valid as of October 2015 through current fiscal year

# Four Procedure Class Categories



The Procedure Classes Refined for ICD-10-PCS assigns all codes to one of four categories:

Category	Description	Example
Minor Diagnostic	Non-OR procedures that are diagnostic	B244ZZZ, Ultrasonography of Right Heart
Minor Therapeutic	Non-OR procedures that are therapeutic	02HQ33Z, Insertion of Infusion Device into Right Pulmonary Artery, Percutaneous Approach
Major Diagnostic	Procedures that are considered OR procedures that are performed for diagnostic reasons	02BV0ZX, Excision of Superior Vena Cava, Open Approach, Diagnostic
Major Therapeutic	Procedures that are considered OR procedures that are performed for therapeutic reasons	0210093, Bypass Coronary Artery, One Site from Coronary Artery with Autologous Venous Tissue, Open Approach

# Utilization Flags for Revenue Center Codes and ICD-10-PCS (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 fiscal year for 2017–2020
  - ▶ Currently a beta version

**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
- Renal dialysis
- Observation services
- Intensive care unit

# Similar HCUP Software Tools for ICD-9-CM Procedures



- ICD-9-CM procedure-related tools:
  - ▶ Clinical Classifications Software (CCS) for ICD-9-CM procedures
  - ▶ Procedure Classes for ICD-9-CM
  - ▶ Utilization Flags for Revenue Center Codes and ICD-9-CM
  - ▶ Surgery Flags for ICD-9-CM
    - No version available for ICD-10-PCS
- ICD-9-CM procedure-related tools are similar in concept but differ in methodology
  - ▶ Should not be used to trend between ICD-9-CM and ICD-10-PCS

[www.hcup-us.ahrq.gov/tools\\_software.jsp](http://www.hcup-us.ahrq.gov/tools_software.jsp)

# CPT and HCPCS Level II Procedure-Related HCUP Software Tools



Need to identify procedure categories that encompass similar CPT and HCPCS Level II codes?



**Clinical Classifications Software (CCS) for Services and Procedures**

Want to identify CPT procedures by use of OR and degree of invasiveness?



**Surgery Flags Software for Services and Procedures**

**These tools apply to only outpatient data and require users to agree to the license for use of CPT**

# CCS-Services and Procedures Groups HCPCS Codes Into Procedure Categories



- Categories align with the CCS for ICD-9-CM procedures
  - ▶ Added categories unique to the professional services and supplies identified by CPT and Level II HCPCS codes
  - ▶ Example: CCS 245 Telehealth for remote monitoring, telephone calls, online communication, etc.

CPT or HCPCS Level II Codes	CCS-Services and Procedures Categories
60210 60212 60220 60225 60240 60252 60254 60260 60270 60271	CCS 10: Thyroidectomy, partial or complete
0308T 65920 66820 66825 66830 66840 66850 66852 66920 66930 66940 66982	CCS 15: Lens and cataract procedures

**CCS-Services and Procedures has not been modified to align with the CCSR for ICD-10-PCS**



# Surgery Flags Software for Services and Procedures Identifies Surgical Procedures



Subset of CPT codes are classified as one of three categories:

Category	Description	Examples
Narrow	A narrowly defined surgery that is usually a major therapeutic procedure	Arthroplasty, organ transplant
Broad	A more broadly defined surgery that includes major diagnostic and invasive minor therapeutic procedures	Biopsy of tissue (not within internal organ), episiotomy
Neither	Neither a narrowly nor broadly defined surgery	Injections, lithotripsy

# Summary of HCUP Software Tool Availability



HCUP Software Tool Purpose	ICD-10-CM/PCS	ICD-9-CM	CPT/HCPCS Level II Codes
Groups diagnoses into categories	CCSR for ICD-10-CM	CCS for ICD-9-CM	
Identifies comorbidities	Elixhauser Comorbidity Software Refined for ICD-10-CM	Elixhauser Comorbidity Software for ICD-9-CM	
Identifies chronic conditions	CCI for ICD-10-CM [beta version]	CCI for ICD-9-CM	
Groups procedures into categories	CCSR for ICD-10-PCS	CCS for ICD-9-CM	CCS-Services and Procedures
Identifies operating room procedures	Procedure Classes Refined for ICD-10-PCS	Procedure Classes for ICD-9-CM	
Identifies specific services	Utilization Flags for Revenue Center Codes and ICD-10-PCS [beta version]	Utilization Flags for Revenue Center Codes and ICD-9-CM	
Identifies procedures by use of operating room and invasiveness		Surgery Flags for ICD-9-CM	Surgery Flags Software for Services and Procedures

# HCUP Software Tool Versioning



- Tools are updated annually to reflect the most recent coding updates
  - ▶ CPT/HCPCS Level II codes are updated on a calendar year basis (effective on January 1)
  - ▶ ICD-10-CM and ICD-10-PCS codes are updated on a fiscal year basis (effective October 1)
- Tools use specific file naming conventions to indicate applicable version of the underlying codes (vyyyy.r):
  - ▶ Where yyyy represents either fiscal year for ICD-10-CM/PCS or calendar year for CPT/HCPCS and *r* represents the release number within year
    - For example, the first release of the CCSR for ICD-10-CM diagnoses that includes codes valid through fiscal year 2021 is v2021.1

# Availability of HCUP Software Tools on HCUP Databases



- ICD-10-CM/PCS refined tools are being added to the HCUP databases
  - ▶ 2018 HCUP nationwide databases include the CCSR for ICD-10-CM diagnoses
  - ▶ 2019 HCUP nationwide databases and 2020 HCUP State databases will include:
    - Elixhauser Comorbidity Software Refined for ICD-10-CM
    - CCSR for ICD-10-PCS procedures
    - Procedure Classes Refined for ICD-10-PCS

# HCUP Supplemental Files



How Can You Use the  
HCUP Supplemental  
Files?

# HCUP Supplemental Files Augment Applicable HCUP Databases



- Provide access to additional data elements or analytically useful information
- Either they are available for download from the HCUP-US website or they may be ordered when purchasing the applicable HCUP database

**Designed to be used only with the HCUP databases**

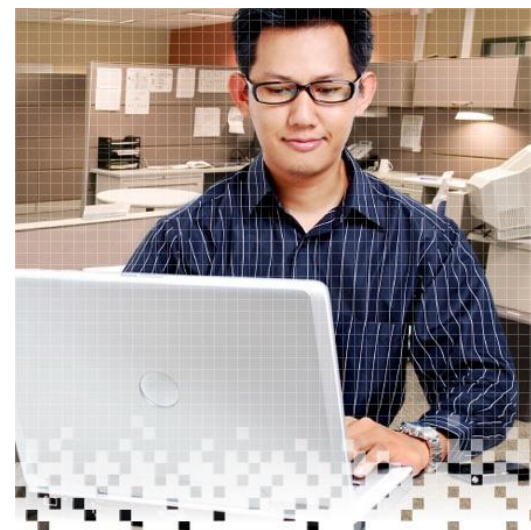
[www.hcup-us.ahrq.gov/tools\\_software.jsp](http://www.hcup-us.ahrq.gov/tools_software.jsp)

# Available HCUP Supplemental Files



- Cost-to-Charge Ratio (CCR) Files
- American Hospital Association (AHA) Linkage Files
- Supplemental Variables for Revisit Analyses
- Trend Weights Files (NIS and KID)
- Hospital Market Structure (HMS) Files
- NIS Hospital Ownership File

[www.hcup-us.ahrq.gov/tools\\_software.jsp](http://www.hcup-us.ahrq.gov/tools_software.jsp)



# HCUP Cost-to-Charge Ratio (CCR) Files Convert Total Charges to Costs



Available for HCUP inpatient databases (NIS, KID, NRD, and SID) beginning 2001 and one HCUP ED database (SEDD) beginning 2017



Hospital-Level  
Data



APICC  
GAIPCC  
CCSR\_NIS  
CCSR\_NRD  
APECC  
GAEPCC

Apply Ratios



Convert Total  
Charges to Costs

[www.hcup-us.ahrq.gov/db/ccr/costtocharge.jsp](http://www.hcup-us.ahrq.gov/db/ccr/costtocharge.jsp)



# AHA Linkage Files Provide Linkage For HCUP Hospital Identifiers



- Linkage between hospital identifiers on the HCUP State Databases to those on the AHA Annual Survey Databases
- Files are unique by State and year and are available for a subset of HCUP Partners that release AHA identifiers



\*Must be purchased separately from the AHA

[www.hcup-us.ahrq.gov/db/state/ahalinkage/aha\\_linkage.jsp](http://www.hcup-us.ahrq.gov/db/state/ahalinkage/aha_linkage.jsp)

# HCUP Supplemental Variables for Revisit Analyses



- Availability varies by State, specifically those that provide synthetic patient identifiers to HCUP
- Allow linkage across settings and time (e.g., hospital readmissions, ED visits following hospital discharge)
- Adhere to strict privacy guidelines
- Storage of variables varies by data year
  - ▶ For 2003–2008, released as stand-alone files
  - ▶ Starting 2009, included on the Core File of the SID, SASD, or SEDD

The screenshot shows the 'User Support' page for the Healthcare Cost & Utilization Project (HCUP). The page is organized into several sections:

- DO YOUR OWN ANALYSIS:** Includes 'RESEARCH TOOLS' and 'REQUEST DATA'. Under 'RESEARCH TOOLS', there are links for 'Tools for ICD-10-CM/PCS', 'Tools for CPT and HCPCS Level II', and 'Tools for ICD-9-CM'. Under 'REQUEST DATA', there are links for 'Clinical Classifications Software (CCS) for ICD-9-CM', 'Chronic Condition Indicator (CCI) for ICD-9-CM', 'Elkhäuser Comorbidity Software for ICD-9-CM', 'Utilization Flags for Revenue Center Codes and ICD-9-CM', 'Procedure Classes for ICD-9-CM', and 'Surgery Flags for ICD-9-CM'.
- EXPLORE EXPERT RESEARCH & LIMITED DATASETS:** Includes 'REPORTS & PUBLICATIONS', 'DATA VISUALIZATIONS', and 'DATA QUERY TOOLS'. Under 'REPORTS & PUBLICATIONS', there are links for 'HCUP Supplemental Files', 'NIS-Trend Weights Files', 'NIS Hospital Ownership Files', 'NIS 1993-2002 Discharge-Level Supplemental Files', 'KID-Trend File', 'Cost-to-Charge Ratio (CCR) Files', 'Hospital Market Structure (HMS) Files', 'Supplemental Variables for Revisit Analyses' (highlighted), and 'American Hospital Association (AHA) Linkage Files'. Under 'DATA QUERY TOOLS', there are links for 'AHRQ Quality Indicators (QIs)'.

At the bottom of the page, there is a note: 'The HCUP variables for revisit analyses can be used to track sequential visits for a patient within in a state and across facilities and hospitals settings (inpatient, emergency department, ambulatory surgery) while adhering to strict privacy guidelines. There are two HCUP supplemental variables: • Synthetic person-level identifiers that have been verified against the patient's date of birth and gender and examined for completeness (HCUP variable [VisitLink](#)). • A timing variable that can be used to determine the days between hospital events for an individual without the use of actual dates (admission, discharge or birth) (HCUP variable [DaysToEvent](#)).

# NIS and KID Trend Weights Files Adjust Discharge Weights for Longitudinal Analyses



- Adjust discharge weights to account for sample redesign of the NIS (2012) and KID (2000) when trending across these years
- Files are needed for longitudinal analyses that span these redesign time periods

[www.hcup-us.ahrq.gov/db/nation/nis/trendwghts.jsp](http://www.hcup-us.ahrq.gov/db/nation/nis/trendwghts.jsp)

[www.hcup-us.ahrq.gov/db/nation/kid/kidtrends.jsp](http://www.hcup-us.ahrq.gov/db/nation/kid/kidtrends.jsp)

# HCUP Hospital Market Structure Files Contain Measures of Hospital Competition



- Estimate the intensity of competition that hospitals may face under various definitions of market area, including:
  - ▶ Markets defined by geopolitical boundaries
  - ▶ Fixed radius defined by 15 miles
  - ▶ Variable radius that varies to capture majority of hospital discharges
  - ▶ Patient flow
- Available for the NIS, KID, and SID for data years 1997, 2000, 2003, 2006, and 2009

[www.hcup-us.ahrq.gov/toolssoftware/hms/hms.jsp](http://www.hcup-us.ahrq.gov/toolssoftware/hms/hms.jsp)

# HCUP NIS Ownership Files Facilitate Analyses by Ownership Categories



- Provide uncollapsed ownership categories (government, non-Federal, private, nonprofit, and private, investor-owned) to facilitate longitudinal analyses
- Available for 1998–2007 for the NIS because these data years include a version of hospital ownership that provides collapsed values for some strata

[www.hcup-us.ahrq.gov/db/nation/nis/nisownership.jsp](http://www.hcup-us.ahrq.gov/db/nation/nis/nisownership.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](http://www.hcup-us.ahrq.gov/tools_software.jsp)
- All supplemental files available for free
- The supplemental files 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](http://www.hcup-us.ahrq.gov/tech_assist/centdist.jsp)

What Should You Do If  
You Have Questions  
About HCUP?

# HCUP User Support Website



- Find detailed information on HCUP databases, tools, and products
- Access HCUPnet, HCUP Fast Stats, HCUP Summary Trend Tables, Data Visualizations, 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](http://www.hcup-us.ahrq.gov)

HEALTHCARE COST & UTILIZATION PROJECT  
User Support

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DO YOUR OWN ANALYSIS | EXPLORE EXPERT RESEARCH & LIMITED DATASETS

DATABASE INFORMATION | RESEARCH TOOLS | REQUEST DATA | REPORTS & PUBLICATIONS | DATA VISUALIZATIONS | DATA QUERY TOOLS

Healthcare Cost and Utilization Project (HCUP)

**What is HCUP?**  
The Healthcare Cost and Utilization Project (HCUP) includes the largest collection of longitudinal hospital care data in the United States.

- **Overview of HCUP**
- **Online HCUP Overview Course** is an interactive course that provides information about HCUP data, software tools, and products
- **Frequently Asked Questions**

**HCUP Products**  
Learn about HCUP products including State and nationwide databases, software and online tools, and reports.

- **HCUP Databases** contain information on inpatient stays, emergency department visits, and ambulatory care
- **HCUPnet** is an online query system that provides immediate access to health statistics
- **HCUP Fast Stats** is an online query tool that uses visual displays to compare national or State statistics on a range of healthcare topics.
- **HCUP Research Tools** provide complementary tools and software to use with HCUP and similar databases
- **HCUP Reports** feature findings, publications, and technical reports on HCUP issues

**HCUP Services**  
Utilize HCUP services to purchase HCUP data, get answers to your HCUP-related questions, and learn how to use the HCUP databases.

- **Purchase HCUP data** through the HCUP Central Distributor
- **HCUP Technical Assistance** answers questions and provides support to HCUP users
- **HCUP Online Tutorial Series** provides free tutorials on HCUP data and tools, including training on technical methods for conducting research with HCUP data
- **HCUP Data Use Agreement Training Tool** is a required tutorial for all purchasers and users of HCUP data that defines how the data can be used

**Join the HCUP Mailing List**  
Join the [HCUP Mailing List](#) to receive information on new HCUP data, tools, and products.

**What's New**

**New Findings: All-A-Glance Related to ED Visits for Dental Conditions** (11/3/22)  
AHRQ has released a new data brief on [State and District Emergency Department Visits for Dental Conditions and Related Costs Variation Across the United States](#) by Cecilia Braccio and Anne Bui, 2018 and 2020.

**HCUP Fast Stats Data Update** (11/2/22)  
AHRQ has released new information in [HCUP Fast Stats](#). The [State Trends in Hospital Utilization by State for Emergency Department Visits from 2019 and 2021](#) quarterly data, when available, for use by 34 States. The [State Trends in Hospital Utilization by State for Emergency Department Visits from 2019 and 2021](#) quarterly data, when available, for use by 34 States. The [State Trends in Hospital Utilization by State for Emergency Department Visits from 2019 and 2021](#) quarterly data, when available, for use by 34 States. The [State Trends in Hospital Utilization by State for Emergency Department Visits from 2019 and 2021](#) quarterly data, when available, for use by 34 States. The [State Trends in Hospital Utilization by State for Emergency Department Visits from 2019 and 2021](#) quarterly data, when available, for use by 34 States.

**Read the latest edition of the HCUP News** (10/27/22)  
The [Summer 2022 News](#) is now available.

**Updates to HCUP Software Tools** (5/31/22)  
AHRQ has released updates to two software tools: the [CCS for Services and Procedures](#) (2021) and the [Survey Data for Services and Procedures](#) (2021).

**HCUP Fast Stats Data Update** (5/25/22)  
AHRQ has released new information in [HCUP Fast Stats](#). The [National Hospital Discharge Data](#) report has been updated to include national statistics through 2019. The [State National Hospital Discharge Data](#) report has been updated to include 2019 national and 2020 State inpatient data for 45 States.

**New Findings: All-A-Glance Related to Heat Exposure** (4/21/22)  
AHRQ has released a new data brief on [HCUP Emergency All-A-Glance Emergency Department Visits for Diseases Directly Related to Heat Exposure by State Across Countries in the United States](#) 2018-2020.

**HCUP Statistical Brief #295-#296** (6/23/22)

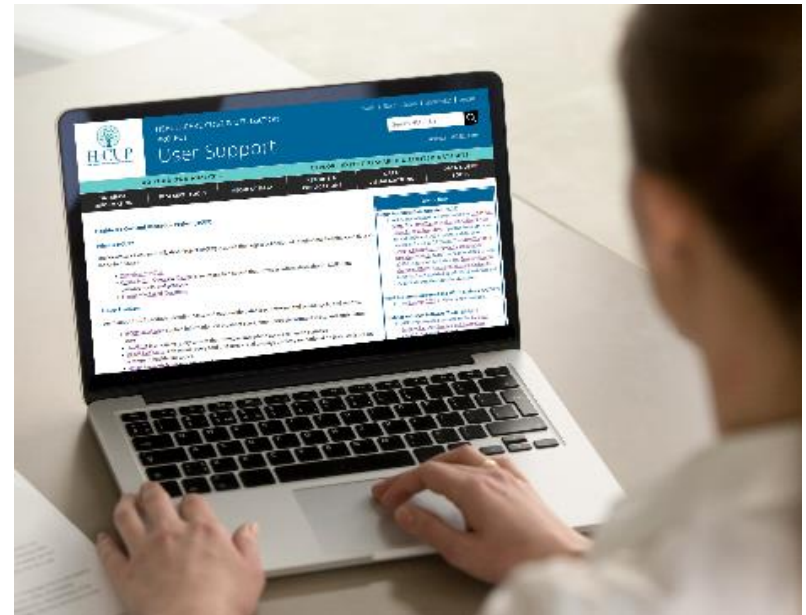


# Using HCUP Technical Assistance

## Technical Assistance Team

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

Email: [hcup@ahrq.gov](mailto:hcup@ahrq.gov)



# Interactive Online HCUP Tutorials and Training Courses

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



The image displays a stack of seven overlapping screenshots from the HCUP training website. The top-most screenshot is the 'HCUP National Estimates' module, showing a navigation menu with 'Introduction', 'NIS', 'NEDS', 'KID', and 'Wrap-Up'. Below the menu is a 'Key Points' section with the heading 'Weighting is a key concept when working with the HCUP national databases'. The second screenshot is 'Load and Check HCUP Data', featuring a navigation menu with 'Introduction', 'Load', 'Check', and 'Wrap-Up', and a video thumbnail. The third screenshot is 'HCUP Calculating Standard Errors', with a navigation menu including 'Introduction', 'Standard Errors', 'Standard Errors for Subsets', 'Significance Testing', and 'Wrap-Up'. The fourth screenshot is 'HCUP Sample Design: National Databases', showing a navigation menu with 'Introduction', 'NIS', 'NEDS', 'KID', 'Common Errors', and 'Wrap-Up'. The fifth screenshot is 'The HCUP Overview Course', with a navigation menu including 'Introduction 1a', 'resources', and 'help'. The sixth screenshot is 'HCUP Using Multiple Years of Data', with a navigation menu including 'Introduction', 'menu', and 'resources'. The bottom-most screenshot is 'The HCUP Software Tools Tutorial', which is a landing page titled 'The HCUP Software Tools Tutorial Module Landing Page'. It contains a paragraph: 'This tutorial is organized into the following four modules. To learn more about the HCUP software tools included in each module, hover over the specific module box. To navigate to a given module, click on the specific module box.' Below the text are four blue buttons: 'Tools for ICD-10-CM Diagnoses (Module 1)', 'Tools for ICD-10-PCS Procedures (Module 2)', 'Tools for CPT and HCPCS Level II Services and Procedures (Module 3)', and 'Tools for ICD-9-CM Diagnoses and Procedures (Module 4)'. The website's header includes the AHRQ logo and navigation links: HOME, DATABASE DESIGN, USING THE NRD, GLOSSARY, RESOURCES, HELP.

# Visit HCUP's Virtual Exhibit Booth



- The HCUP Virtual Exhibit Booth provides materials typically offered at the HCUP conference exhibit booths
- Includes brochures, participation maps, an overview presentation of HCUP, and additional information that provides general project information

The screenshot shows the 'User Support' page for the 'HEALTHCARE COST & UTILIZATION PROJECT'. The page is divided into two main sections: 'DO YOUR OWN ANALYSIS' and 'EXPLORE EXPERT RESEARCH & LIMITED DATASETS'. The 'DO YOUR OWN ANALYSIS' section includes 'DATABASE INFORMATION', 'RESEARCH TOOLS', and 'REQUEST DATA'. The 'EXPLORE EXPERT RESEARCH & LIMITED DATASETS' section includes 'REPORTS & PUBLICATIONS', 'DATA VISUALIZATIONS', and 'DATA QUERY TOOLS'. The main content area is titled 'HCUP VIRTUAL EXHIBIT BOOTH' and provides a description of the booth. It also includes sections for 'General Project Information', 'HCUP Brochures', 'State Participation in HCUP', 'HCUP Databases Available for Purchase', and 'HCUPnet'. The 'General Project Information' section lists links for 'New to HCUP? Get to know us and stay connected' and 'What is HCUP? HCUP Fact Sheet'. The 'HCUP Brochures' section lists various databases and their file sizes. The 'State Participation in HCUP' section provides information on the data included in HCUP and links to participation maps. The 'HCUP Databases Available for Purchase' section lists databases available for purchase through the HCUP Central Distributor. The 'HCUPnet' section provides information on accessing HCUP data. The 'Fast Stats' section provides information on the online query tool. The 'HCUP Overview Presentation' section provides information on the overview presentation.

[www.hcup-us.ahrq.gov/news/exhibit\\_booth.jsp](http://www.hcup-us.ahrq.gov/news/exhibit_booth.jsp)

# Join the HCUP Email List



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

A screenshot of the AHRQ website's email update sign-up form. The page header includes the U.S. Department of Health & Human Services logo and text, and navigation links for 'About Us', 'Careers', 'Contact Us', 'Español', 'FAQ', and 'Email Updates'. The AHRQ logo and tagline 'Agency for Healthcare Research and Quality, Advancing Excellence in Health Care' are prominently displayed. A search bar is visible on the right. The main content area is titled 'E-mail Updates' and contains the instruction: 'To sign up for updates or to access your subscriber preferences, please enter your E-mail address.' Below this is a text input field labeled '\*Email Address'. At the bottom of the form are two buttons: 'Submit' and 'Cancel'.

<https://subscriptions.ahrq.gov/accounts/USAHRQ/subscriber/new>

# Questions/Comments?

Email: [hcup@ahrq.gov](mailto:hcup@ahrq.gov)

