



Agency for Healthcare Research and Quality

Advancing Excellence in Health Care

www.ahrq.gov

Healthcare Cost and Utilization Project (HCUP)

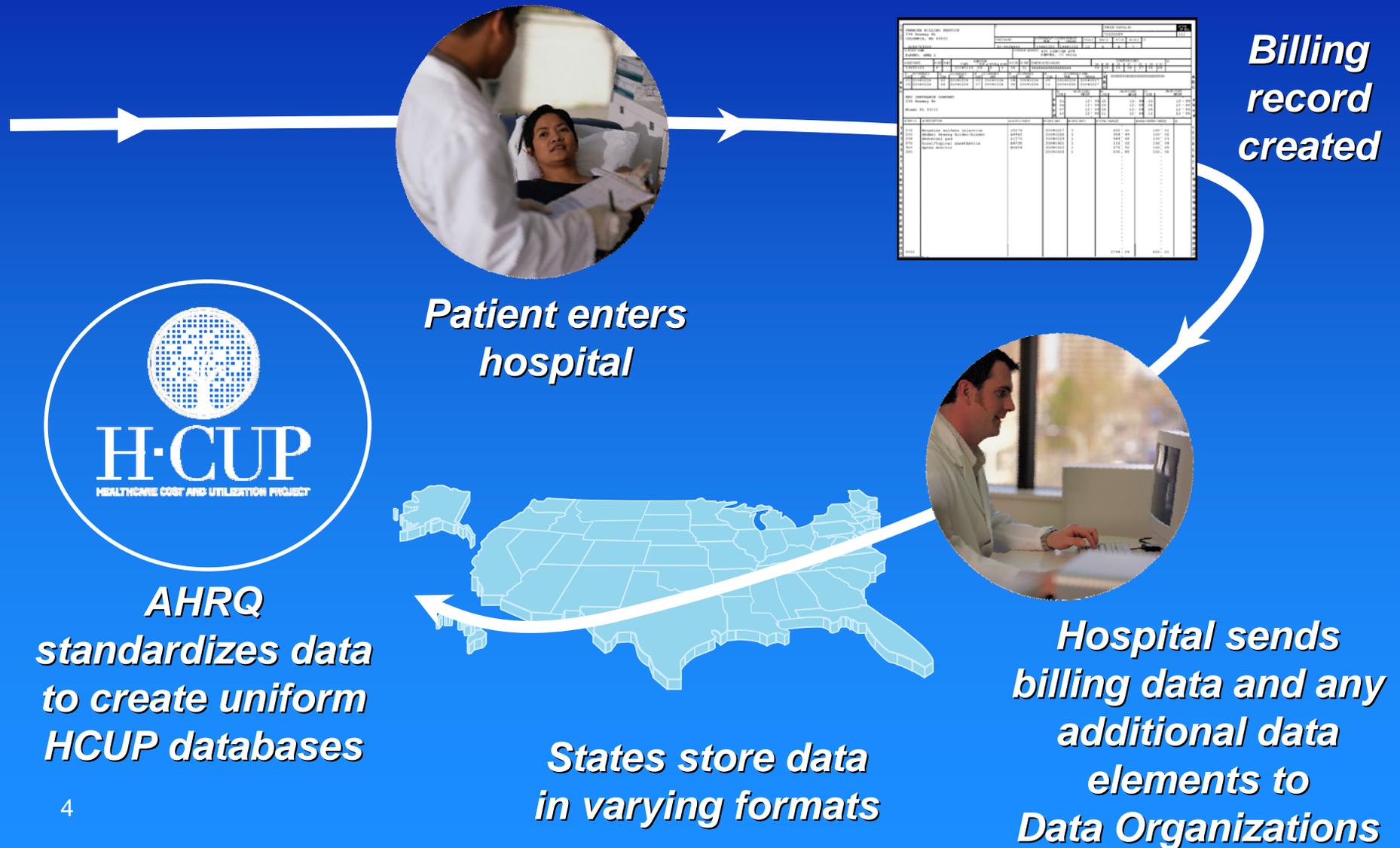
***Healthcare Data and Tools
... And an Overview of HCUPnet***

Anne Elixhauser, Ph.D.

State Healthcare Quality Improvement Workshop

January 17, 2008 -- Phoenix, AZ

The Making of HCUP Data



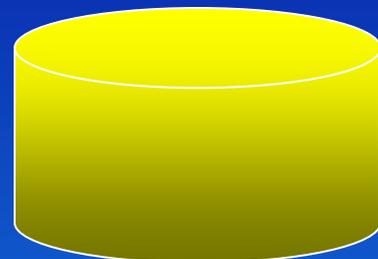


What is HCUP? And what is it not?



What it is	<i>What it is not</i>
Claims (bills) for health care encounters	<i>A survey</i>
All payer, including the uninsured	<i>Specific to a single payer, e.g. Medicare</i>
Hospital, ambulatory surgery, emergency department data	<i>Outpatient visits, pharmacy, laboratory</i>
All claims	<i>A sample</i>
Accessible multiple ways: raw data, regular reports, on-line	<i>Just another database</i>

HCUP is a Family of Databases, Tools, Products



HCUP Databases



Software Tools



6 User Support



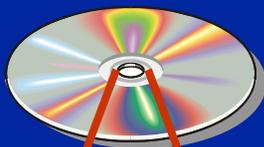
Research Publications



HCUPnet

Types of HCUP Databases

**State
Inpatient
Databases
(SID)**



**State
Ambulatory
Surgery
Databases
(SASD)**

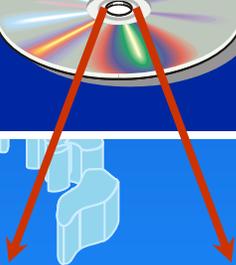


**State
Emergency
Department
Databases
(SEDD)**



**Nationwide
Inpatient
Sample
(NIS)**

**Kids'
Inpatient
Database
(KID)**





HCUP Supports High Impact Health Services, Policy, and Clinical Research



HSR

American Journal of
PUBLIC HEALTH



The NEW ENGLAND
JOURNAL of MEDICINE

JAMA

HEALTH AFFAIRS
The Policy Journal of the Health Sphere

CANCER

ANNALS OF **SURGERY**
A Monthly Review of Surgical Science Since 1885

PEDIATRICS

JGIM Journal of General Internal Medicine

Health Economics

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

Pharmacoeconomics

THE LANCET

Newsweek
• Make Newsweek Your Homepage

INQUIRY

International Journal of
Health Care Finance & Economics

RURAL HEALTH THE JOURNAL OF

MMWR
Morbidity and Mortality Weekly Report

National Healthcare Disparities Report

www.qualitytools.ahrq.gov/disparitiesreport

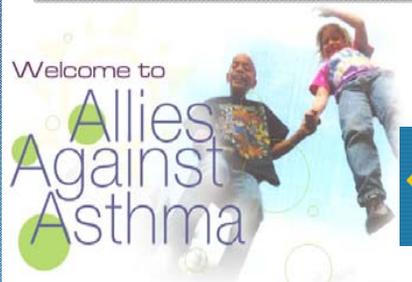
OBSTETRICS & GYNECOLOGY



HCUP Supports Federal and Non-Federal Initiatives



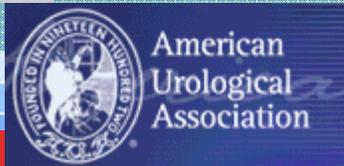
OFFICE OF MANAGEMENT AND BUDGET



Injury Control Research Center



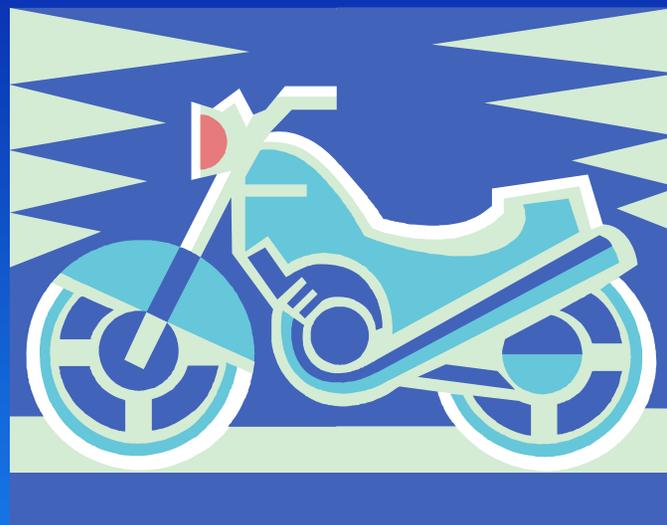
GAO
U.S. Government Accountability Office



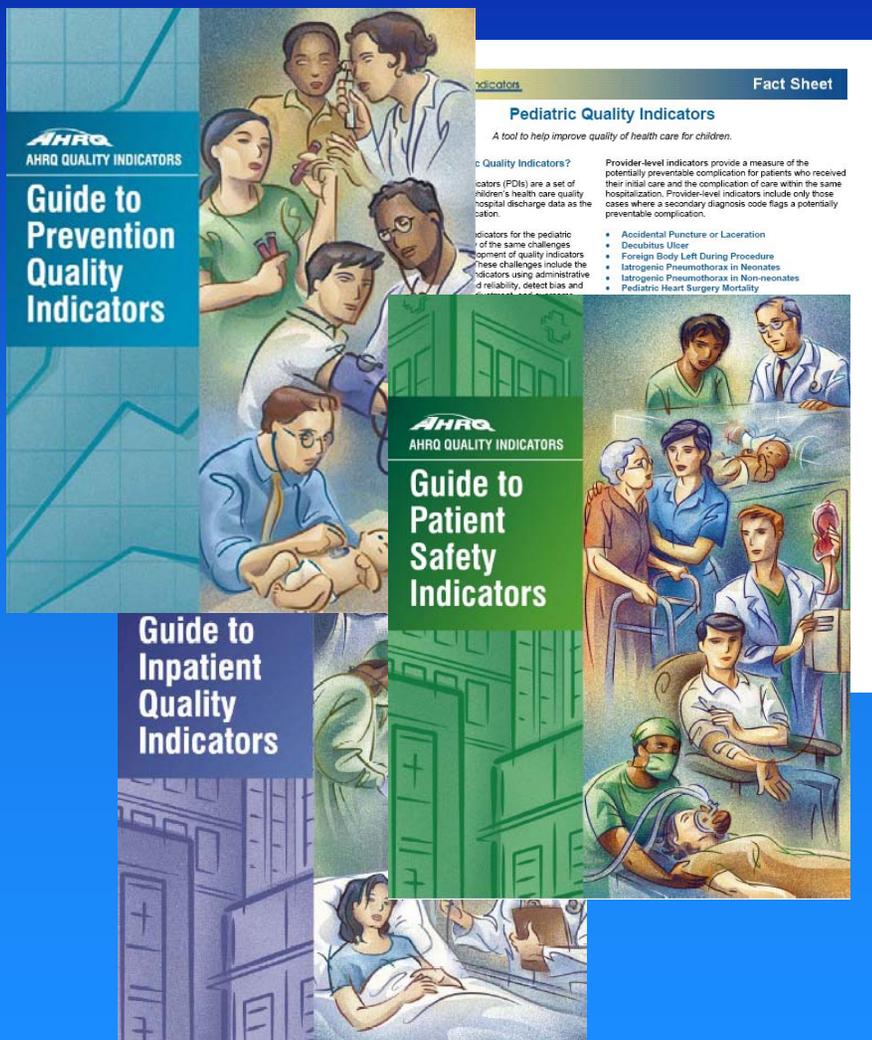
Supports Policy Deliberations and Legislation

HCUP was used to
determine national and
state burden of hospital
care following motorcycle
injuries

Analyses used in West
Virginia's hearings to
remove their motorcycle-
helmet law



AHRQ Quality Indicators



- Most widely used HCUP tool
- Used for reporting hospital quality of care
- AHRQ provides benchmarks against which to compare your numbers

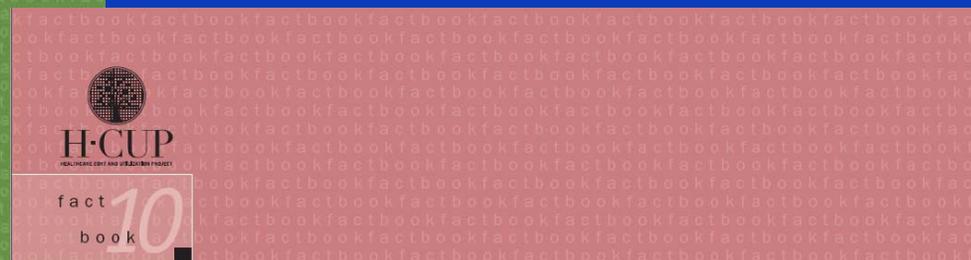
HCUP Fact Books



Preventable Hospitalizations:



Serving the Uninsured Safety-Net Hospitals, 2004



Care of Adults With Mental Health and Substance Abuse Disorders in U.S. Community Hospitals, 2004



STATISTICAL BRIEF #36

August 2007

Trends in Potentially Preventable Hospitalizations among Adults and Children, 1997-2004

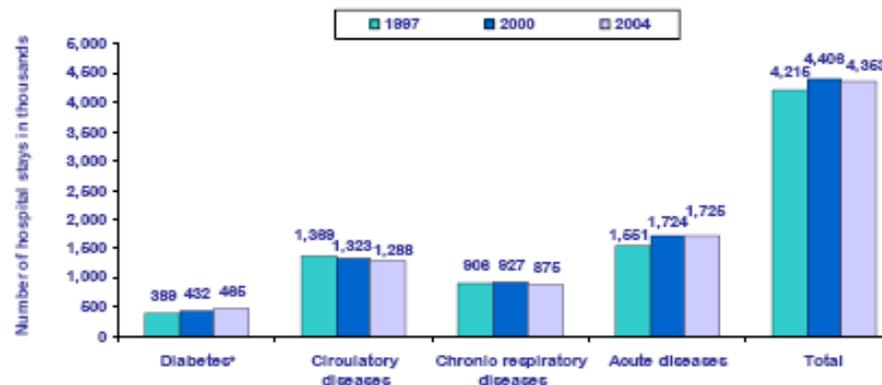
Allison Russo, M.P.H., H. Joanna Jiang, Ph.D., Marguerite Barret

Introduction

Because of major concerns with both the cost and quality of health care, a priority of policy makers and health care providers is to identify areas where quality improvement and lower costs coincide. Potentially preventable admissions—inpatient stays that could be prevented with high quality primary and preventive care—are an area where higher quality care can cost less. Higher rates of “preventable hospitalizations” identify areas where potential improvements in the health care delivery system could be made to improve patient outcomes and decrease costs. Changes in the rates over time may signal an improvement or worsening in the quality of ambulatory care, in access to timely and effective treatment of certain conditions for specific populations, or in the adoption of healthy behaviors.



Figure 1. Trends of total hospital stays for potentially preventable conditions, 1997-2004



*The diabetes category includes hospital stays for uncontrolled diabetes without complications, short-term diabetes complications, and long-term diabetes complications.

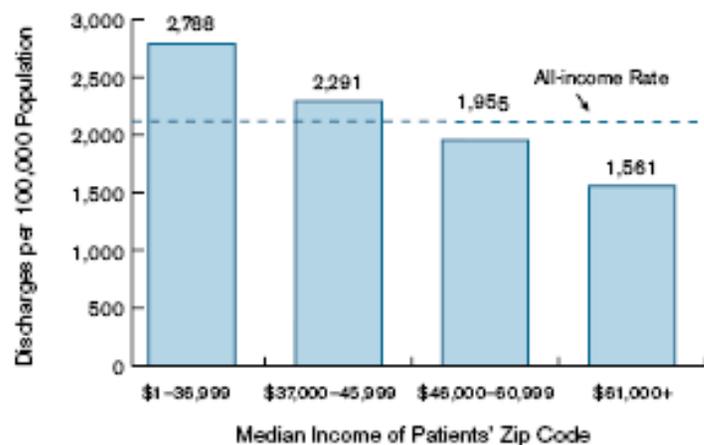
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997, 2000, and 2004.

Other Statistical Briefs Include:

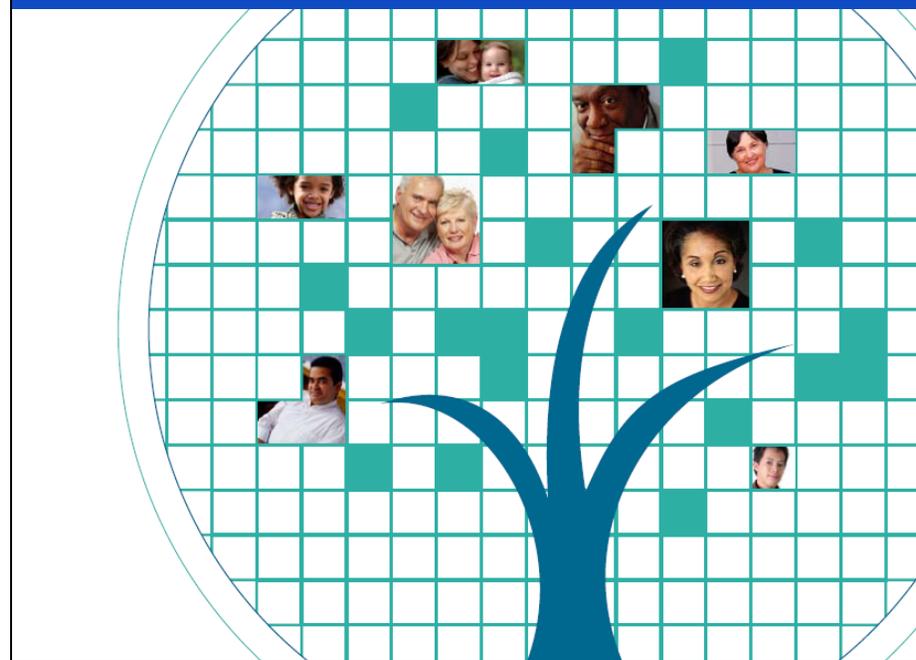
- Hospital stays related to depression
- Trends in risk-adjusted mortality
- Trends in preventable hospitalizations
- Infections with MRSA in U.S. hospitals
- Childbirth-related stays in U.S. hospitals
- Adverse drug events
- Admissions for traumatic brain injury
- Bariatric surgery utilization and outcomes
- The national hospital bill
- ...

Facts and Figures

Discharge Prevalence for All-listed Diabetes by Median Income of Patients' Zip Code,* 2005



*Quartile populations from 2005 Claritas ZIP-Demographic Data were adjusted to reflect total population estimate from the U.S. Census Bureau.



HCUP FACTS AND FIGURES:

STATISTICS ON HOSPITAL-BASED CARE
IN THE UNITED STATES, 2005



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://hcupnet.ahrq.gov>

What types of questions can HCUPnet answer?

- What are the *most common conditions* treated in hospitals in my state?
- What are the *most expensive* conditions? procedures?
- *How many* CABGs were performed in 2003?
- What *percentage* of hospitalizations are *uninsured*?
- For *what conditions are uninsured* patients hospitalized? patients covered by *Medicaid*?
- What is the *trend* in hospitalizations for MRSA?
- What is the *cost* of C-section versus vaginal deliveries?
- What *types of hospitals* treat what kinds of patients?
- What types of patients are seen in the *emergency department* and then admitted to the hospital?



- Skip Navigation
- AHRQ Home
 - Questions?
 - Contact Us

Welcome to H·CUPnet
 HCUPnet is a free, on-line query system based on data from the Healthcare Cost and Utilization Project (HCUP) that provides access to health statistics and information on hospital inpatient, emergency department, and ambulatory surgery center stays for

HCUPnet is a powerful online query tool that gives you free, instant access to healthcare statistics.

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 \(NIS\)](#)

▶ [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 \(SID\)](#)

▶ [Quick National Data](#)

Ready-to-use tables on commonly requested information from the HCUP Nationwide Inpatient Database (KID), and

▶ [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 - Medicaid, Private, Uninsured](#)

...stays billed to a specific payer? Create your own statistics by payer, alone or compared to other payers from the HCUP State Inpatient Database (SID).

HCUPnet provides national information on hospital stays based on the Nationwide Inpatient Sample.

Statistics on Emergency Department Visits

▶ [State Statistics on Emergency Department Visits](#)

Create your own statistics on emergency department visits for participating States from the HCUP State Emergency Department Databases (SEDD) and the SID. [Overview of the State Emergency Department Databases \(SEDD\)](#)

Ready-to-use tables on commonly requested information from the HCUP State Emergency Department Databases (SEDD) and SID.

AHRQ Quality Indicators (QIs)

- 2005 nationwide data now available.
- Information on use of Emergency Departments from selected States.
- 2004 nationwide data on AHRQ Quality Indicators.
- 2005 data for selected States.
- Payer path - statistics by payer, including dually eligible.
- 2003 data for Kids' Inpatient Database (KID).



[More information on HCUP data, tools, and reports](#)

What is HCUP?
 Brief description - what is HCUP?
 Want to purchase data to do your own analysis?

The statistics in HCUPnet would not be possible without statewide data collection projects that provide data to HCUP.

HCUPnet is based on aggregate data from participating hospitals.

Select State and year:

State	2005	2004	2003	2002	2001	2000	1999	1998	1997	
Arizona	▶	Link to State Web site								
Arkansas	▶	▶								Link to State Web site
California	▶	Link to State Web site								
Colorado	▶	Link to State Web site								
Florida	▶	Link to State Web site								
Hawaii	▶	Link to State Web site								
Iowa	▶	Link to State Web site								
Kentucky	▶					Link to State Web site				
Maine			▶	▶	▶					Link to State Web site
Massachusetts	▶	Link to State Web site								
Michigan	▶					Link to State Web site				
Minnesota	▶					Link to State Web site				
Missouri	▶					Link to State Web site				
Nebraska	▶					Link to State Web site				
Nevada	▶	▶	▶	▶						Link to State Web site
New Hampshire	▶	▶	▶							Link to State Web site
New Jersey	▶	Link to State Web site								
New York	▶									
North Carolina	▶									
Oklahoma	▶									
Oregon	▶									
Rhode Island	▶	▶	▶	▶						
South Carolina	▶									
Utah	▶									
Vermont	▶					Link to State Web site				
Washington	▶	Link to State Web site								
West Virginia	▶					Link to State Web site				
Wisconsin	▶					Link to State Web site				

Statistics are based on the definition of "corresponding short-term, general inpatient care" including public hospitals. Exclude psychiatric hospital dependency tree.

... and it gives access to data from participating states from HCUP's State Inpatient Databases.



United States Department of Health & Human Services



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H-CUPnet

Information on stays in hospitals for participating States from the HCUP State Inpatient Databases (SID)

HCUPnet Home

Lay or
researcher

Select the type of query you want:

- ▶ [Statistics on specific diagnoses or procedures](#)
Information on specific diagnoses and procedures for a single year (select year on the next page)
- ▶ [Statistics on all hospital stays](#)
Information on all stays for a specific year, not by diagnoses or procedures (select year on the next page)
- ▶ [Trends](#)
State trends on all stays, diagnoses, and procedures
- ▶ [Rank order specific diagnoses or procedures](#)
Rank diagnoses or procedures by key outcomes and measures such as number of discharges and total charges

HCUPnet takes you through a step-by-step process to select the information you want.

Advancing Excellence in

[Home](#) | [Privacy Policy](#) | [Freedom of Information Act](#)

the U.S. Government's Official Web Portal



United States Department of Health & Human Services



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H-CUPnet

Information on stays in hospitals for participating States from the HCUP State Inpatient Databases (SID)

HCUPnet Home

Lay or researcher

Select type of query

Select state

Select diagnoses or procedures

Principal or all-listed

Select codes

Do you want information on:

- ▶ [Diagnoses grouped by Clinical Classifications Software \(CCS\)?](#)

You can search for specific conditions and groups of conditions under this option.

- ▶ [Specific diagnoses by ICD-9-CM?](#)

You will need to use an ICD-9-CM coding manual to identify ICD-9-CM codes for this option.

- ▶ [Diagnosis Related Groups \(DRG\)?](#)

You can search for specific DRGs under this option.

- ▶ [Major Diagnostic Categories \(MDC\)?](#)

You can search for specific MDCs under this option.

- ▶ [Procedures grouped by Clinical Classifications Software \(CCS\)?](#)

You can search for specific procedures and groups of procedures under this option.

- ▶ [Specific procedures by ICD-9-CM?](#)

You will need to use an ICD-9-CM coding manual to identify ICD-9-CM codes for this option.

- ▶ [Related conditions and procedures?](#)

You select the level of diagnosis and procedure information: ICD codes, Clinical Classifications, DRGS.

Clipboard
ICD-9-CM
Diagnosis
Major Diagnostic Category
Related conditions and procedures



United States Department of Health & Human Services



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H·CUPnet

Information on stays in hospitals for participating States from the HCUP State Inpatient Database

[HCUPnet Home](#)

[Lay or researcher](#)

[Select type of query](#)

[Select state](#)

[Select diagnoses or procedures](#)

[Principal or all-listed](#)

[Select codes](#)

[View](#)

Select outcomes and measures for which you want statistics

Check one or more

Number of discharges

Percent died in the hospital

Length of stay, mean

Discharge status

Length of stay, median

Percent admitted from emergency department

Hospital charges, mean

Percent admitted from another hospital

Hospital charges, median

Percent admitted from long term care facility

[>> Next >>](#)

HCUPnet provides information on:

- numbers of discharges
- hospital LOS and charges
- discharge status
- how patients were admitted



United States Department of Health & Human Services



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H-CUPnet

Information on stays in hospitals for participating States from the HCUP State Inpatient Databases

[HCUPnet Home](#)

[Lay or researcher](#)

[Select type of query](#)

[Select state](#)

[Select diagnoses or procedures](#)

[Principles or all-li](#)

Select patient and hospital characteristics

Check one or more

- All patients in all hospitals

- Patient age, in categories
- Gender
- Payer (insurance status)
- Location of patient's residence (rural/urban)
- Race/ethnicity

- Hospital ownership (public, for-profit, not-for-profit)?
- Hospital teaching status (teaching vs. not)?
- Hospital location (metropolitan vs. non-metropolitan)?
- Hospital bedsize (small vs. medium vs. large)?

[>> Next >>](#)

Are you interested in particular patient groups? Specific hospital characteristics?

State statistics - 2005 New York - principal procedure only

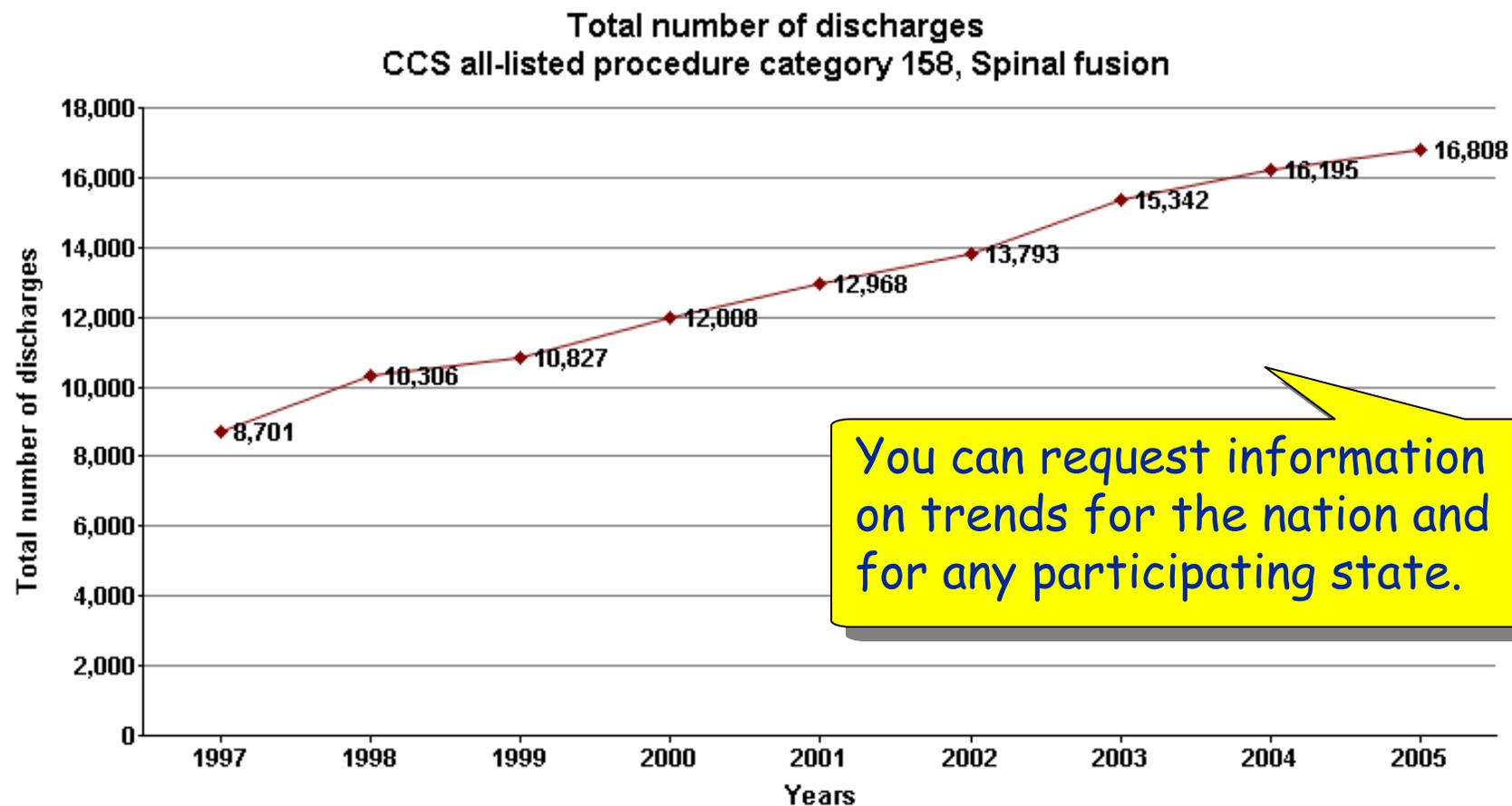
Outcomes by patient and hospital characteristics for CCS principal procedure category 158 Spinal fusion

		Total number of discharges	LOS (length of stay), days (mean)	Charges, \$ (mean)	Admitted from emergency department	In-hospital deaths
All discharges		14,743 (100.00%)	4.9	48,729	974 (6.61%)	41 (0.28%)
Age group	1-17	768 (5.21%)	6.3	76,345	20 (2.60%)	*
	18-44	4,364 (29.60%)	3.9	43,130	264 (6.05%)	*
	45-64	6,636 (45.01%)	4.6	46,757	396 (5.97%)	13 (0.20%)
	65-84	2,860 (19.40%)	6.5	54,293	260 (9.09%)	16 (0.56%)
	85+	115 (0.78%)	8.5	51,974	34 (29.57%)	*
Sex	Male	6,858 (46.52%)	4.9	47,951	555 (8.09%)	28 (0.41%)
	Female	7,883 (53.47%)	4.9	49,406	419 (5.32%)	13 (0.16%)
	Missing	*	*	*	*	*
Payer	Medicare	3,382 (22.94%)	6.5	54,280	301 (8.90%)	24 (0.71%)
	Medicaid	1,062 (7.20%)	6.8	52,110	148 (13.94%)	*
	Private insurance	7,583 (51.43%)	4.3	48,886	412 (5.43%)	*
	Uninsured	164 (1.11%)	7.0	45,107	31 (18.90%)	*
	Other	2,552 (17.31%)	3.6	39,730	82 (3.21%)	*
Residence	Large metro	10,219 (69.31%)	5.2	52,523	760 (7.44%)	36 (0.35%)
	Small metro	3,018 (20.47%)	4.2	41,946	145 (4.80%)	*
	Non-metro	1,466 (9.94%)	4.1	39,730	31 (2.11%)	*
	Missing	40 (0.27%)	5.7	63,345	0	0
Race/ethnicity	White	10,362 (70.28%)	4.6	46,757	555 (5.35%)	28 (0.27%)
	Black	1,350 (9.16%)	6.2	59,074	148 (10.96%)	13 (0.96%)
	Hispanic	878 (5.96%)	5.8	59,074	148 (16.74%)	13 (1.49%)
	Asian/Pacific Islander	201 (1.36%)	5.5	50,729	148 (7.36%)	13 (6.47%)
	Native American	15 (0.10%)	5.7	40,729	148 (9.19%)	13 (8.12%)
	Other	613 (4.16%)	6.4	59,074	148 (24.16%)	13 (2.12%)
	Missing	1,324 (8.98%)	4.4	54,293	148 (11.18%)	13 (0.98%)
Owner	Government	2,378 (16.13%)	5.5	48,886	148 (6.23%)	13 (0.55%)
	Private, not-for-profit	12,365 (83.87%)	4.8	48,886	826 (6.72%)	28 (0.23%)

You get your results instantly.
HCUPnet is based on aggregated statistics to speed data transfer and protect patient confidentiality.

State statistics - New York - all-listed

HCUPnet provides trend information for the 9 period: 1997-2005



Number of discharges

CCS all-listed procedure category and name	1997	1998	1999	2000	2001	2002	2003	2004	2005
158 Spinal fusion	8,701	10,306	10,827	12,008	12,968	13,793	15,342	16,195	16,808

Repeat this query on another database:

Nationwide Inpatient Sample (NIS)

- ▶ 2005
- ▶ 2004
- ▶ 2003
- ▶ 2002
- ▶ 2001
- ▶ 2000
- ▶ 1999
- ▶ 1998
- ▶ 1997

Kids' Inpatient Database (KID)

- ▶ 2003
- ▶ 2000
- ▶ 1997

You can repeat your query instantly on another database.

State Inpatient Databases (SID)

State	2005	2004	2003	2002	2001	2000	1999	1998	1997	
Arizona	▶	▶	▶	▶	▶	▶	▶	▶	▶	Link to State Web site
Arkansas	▶	▶								Link to State Web site
California	▶	▶	▶	▶	▶	▶	▶	▶	▶	Link to State Web site
Colorado	▶	▶	▶	▶	▶	▶	▶	▶	▶	Link to State Web site
Florida	▶	▶	▶	▶	▶	▶	▶	▶	▶	Link to State Web site
Hawaii	▶	▶	▶	▶	▶	▶	▶	▶	▶	Link to State Web site



H-CUPnet

Information on encounters that start in the ED for participating States from the HCUP State Inpatient Databases
Emergency Department Databases (SEDD)

[HCUPnet Home](#)

Select types
of visits

Select type
of query

Select
state

Results

- ▶ [Display a printer-friendly version \(Try printing in landscape for best results\)](#)
- ▶ [Save as an Excel spreadsheet](#)
- ▶ [Repeat this query on another database](#)
- ▶ [Run a new query on this database - **keep** all previous selections](#)
- ▶ [HCUPnet home - **keep** all previous selections](#)
- ▶ [HCUPnet home - **clear** all previous selections](#)

HCUPnet also provides information on ED visits for some states.

State statistics - 2004 Aggregate (all States combined)

All ED visits (those that resulted in admission to the hospital and those that did not)

Outcomes for all discharges

	All ED Visits	Admitted to the hospital from the ED	Discharged from the ED
Total number of discharges	25,870,058	4,038,847	21,831,211
LOS (length of stay), days (mean)	0.9	4.9	0.1
Charges, \$ (mean)	4,152	21,416	948
Died during ED visit	38,018 (0.17%)	N/A	38,018 (0.17%)
Died during hospital stay	134,598 (3.33%)	134,598 (3.33%)	N/A
Admitted to hospital from ED	4,038,847 (15.61%)	4,038,847 (100.00%)	0 (0.00%)



H-CUPnet

National information on measures of health care quality based on the NIS, using the AHRQ Quality Indicators (QIs)

[HCUPnet Home](#)

[Select indicator](#)

[Select PQIs/IQIs/PSIs/PDIs](#)

Indicator Selection

For which indicators would you like national benchmarks?

Prevention Quality Indicators - PQIs (ambulatory care sensitive conditions)

- [Detailed statistics for 2004](#)
- [Detailed statistics for 2003](#)
- [Trends for 1994, 1997, 2000, 2001, 2002, 2003, and 2004](#)

Inpatient Quality Indicators - IQIs (mortality and utilization)

- [Detailed statistics for 2004](#)
- [Detailed statistics for 2003](#)
- [Trends for 1994, 1997, 2000, 2001, 2002, 2003, and 2004](#)

Patient Safety Indicators - PSIs (potentially avoidable complications and adverse events)

- [Detailed statistics for 2004](#)
- [Detailed statistics for 2003](#)
- [Trends for 1994, 1997, 2000, 2001, 2002, 2003, and 2004](#)

Pediatric Quality Indicators - PDIs (measures of health care quality for children)

- [Detailed statistics for 2004](#)
- [Detailed statistics for 2003](#)
- [Trends for 1994, 1997, 2000, 2001, 2002, 2003, and 2004](#)

Defin

PQIs are measures that can be derived from discharge data to identify "ambulatory care sensitive conditions." These are conditions for which early intervention can potentially prevent or reduce the severity of disease. [>more>](#)

IQIs are a set of measures that can be derived from hospital discharge data to identify potential complications and adverse events among inpatients. [>more>](#)

PSIs are measures that can be derived from discharge data to identify potentially avoidable complications and adverse events among inpatients. [>more>](#)

PDIs focus on children and represent measures of health care quality for children in hospitals and identify potential complications and adverse events among children.

... and on national-level information on quality of care, based on the AHRQ Quality Indicators.



- [Skip Navigation](#)
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Search AHRQ



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.

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 \(NIS\)](#)

▶ [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 \(SID\)](#)

▶ [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).

Statistics on Emergency Department Use

▶ [State Statistics on All ED Visits](#)

Create your own statistics on emergency department visits for participating States from the HCUP State Emergency Department Databases (SEDD) and the SID. [Overview of the State Emergency Department Databases \(SEDD\)](#)

▶ [Quick State Statistics](#)

Ready-to-use tables on commonly requested information from the SEDD and SID.

AHRQ Quality Indicators (QIs)

Visit HCUPnet at:
<http://hcupnet.ahrq.gov>

First Time Visitor?

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

What's New?

- New cost information for national hospital stays for 2005.
- 2005 nationwide data now available.
- Information on use of Emergency Departments from selected States.
- 2004 nationwide data on AHRQ Quality Indicators.
- 2005 data for selected States.
- Payer path - statistics by payer, including dually eligible.
- 2003 data for Kids' Inpatient Database (KID).



[More information on HCUP data, tools, and reports](#)

What is HCUP?

Brief description - what is HCUP? Want to purchase data to do your own analysis?

The statistics in HCUPnet would not be possible without statewide data collection projects that provide data to HCUP.

HCUPnet is based on aggregate



H·CUP
HEALTHCARE COST AND UTILIZATION PROJECT

For more information

- General Technical Assistance—HCUP User Support
 - E-mail: hcup@ahrq.gov
 - Phone: 1-866-290-HCUP (4287)
- Anne Elixhauser—
 - E-mail: anne.elixhauser@ahrq.hhs.gov