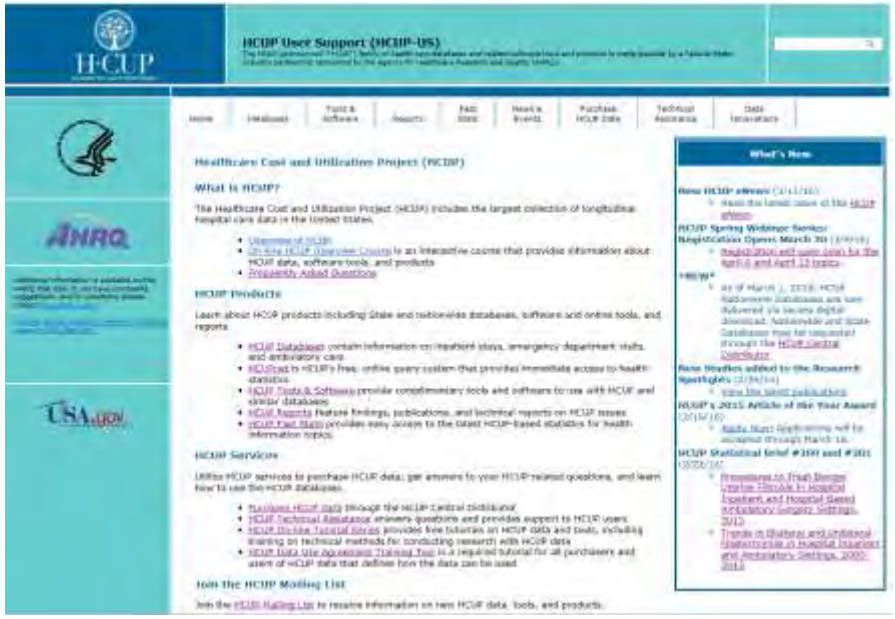
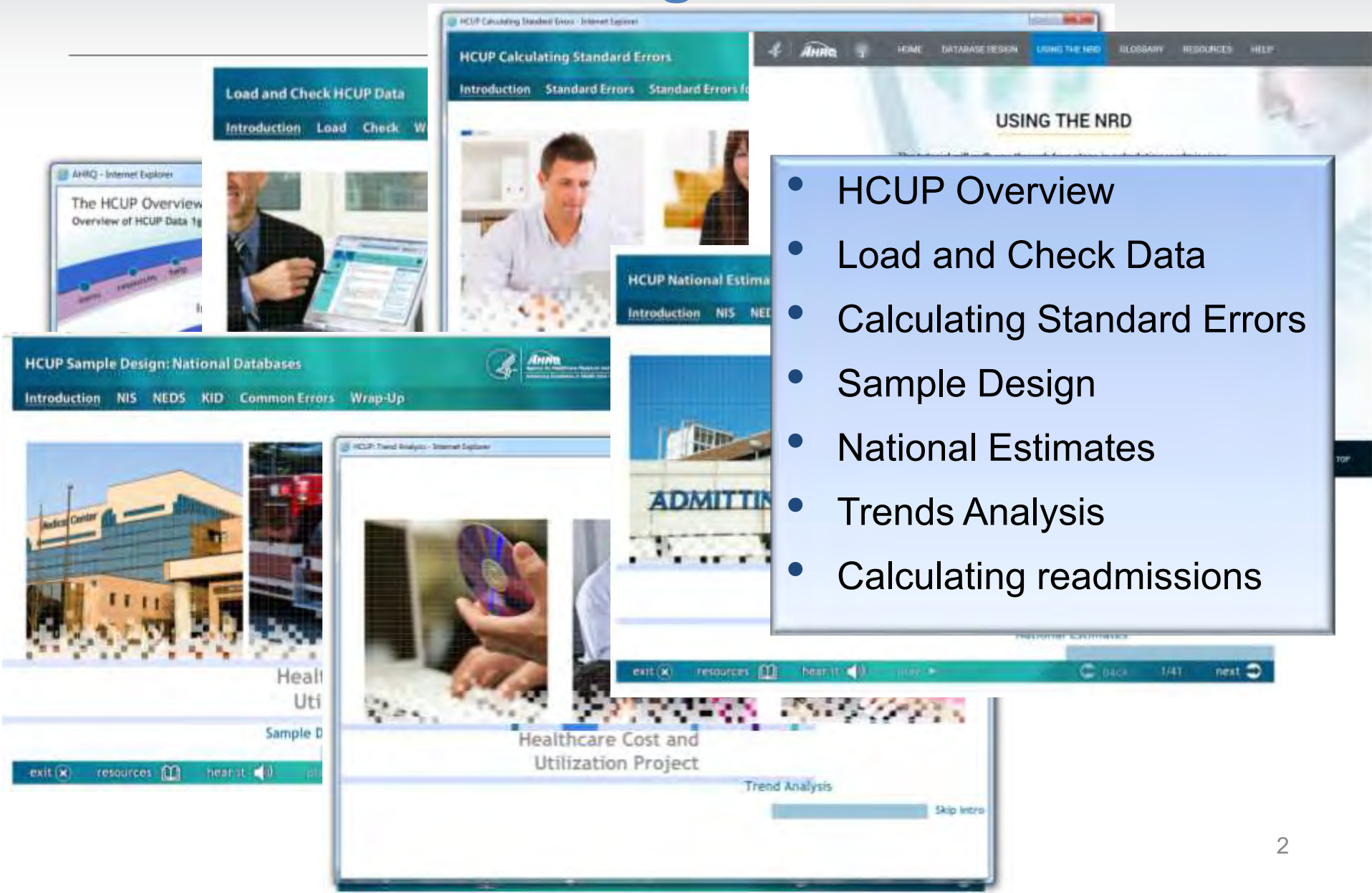
HCUP-US User Support Web Site

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

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



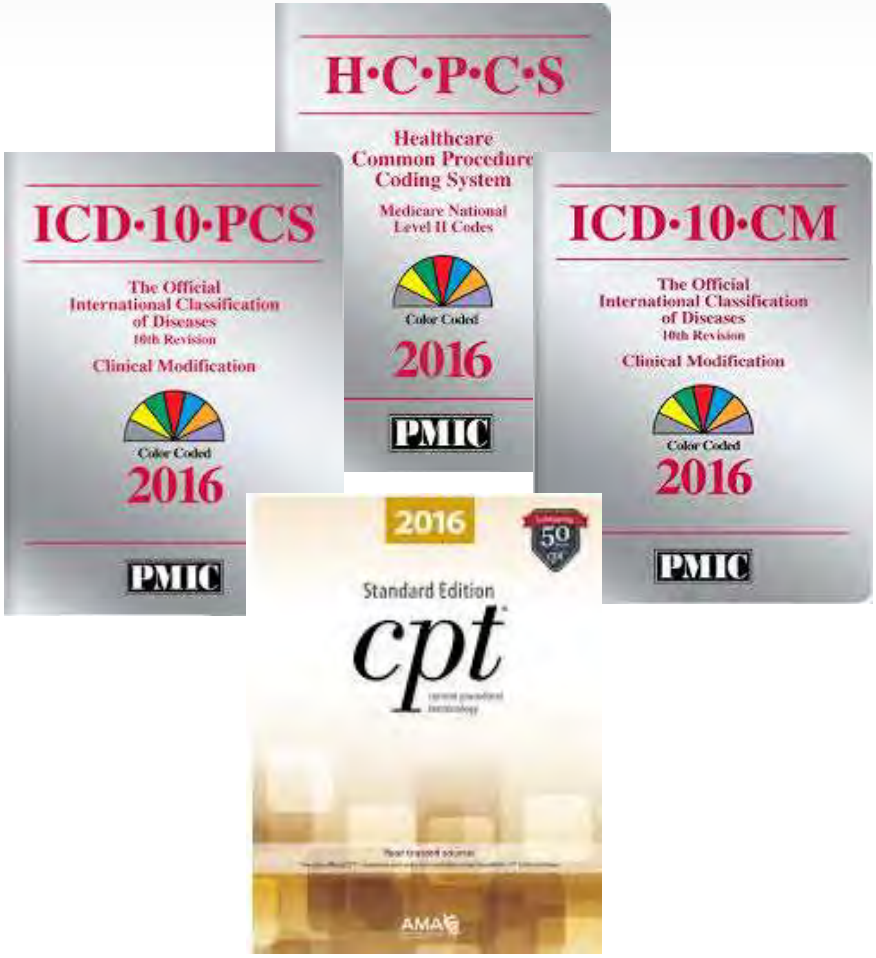
Online Training: Video Tutorials



- HCUP Overview
- Load and Check Data
- Calculating Standard Errors
- Sample Design
- National Estimates
- Trends Analysis
- Calculating readmissions

Clinical and Quality Measurement Tools

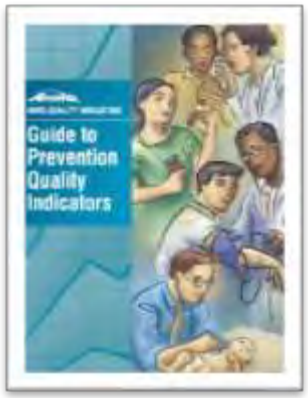
- Clinical Classifications Software*
- Procedure Classes*
- Chronic Condition Indicator*
- Comorbidity Software*
- Utilization Flags*
- Surgery Flags*
- AHRQ Quality Indicators
  - Prevention Quality Indicators
  - Inpatient Quality Indicators
  - Patient Safety Indicators
  - Pediatric Quality Indicators

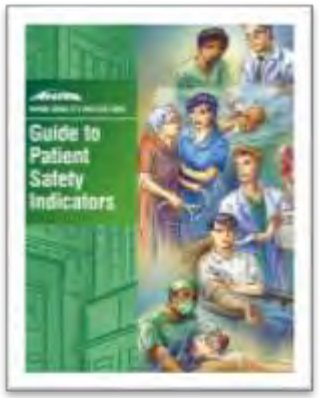


* Already available on most HCUP databases

AHRQ Quality Indicators

- Creates measures of health care quality using inpatient administrative data
  - **4 Quality Indicators**
    1. Prevention Quality Indicators
    2. Inpatient Quality Indicators
    3. Patient Safety Indicators
    4. Pediatric Indicators



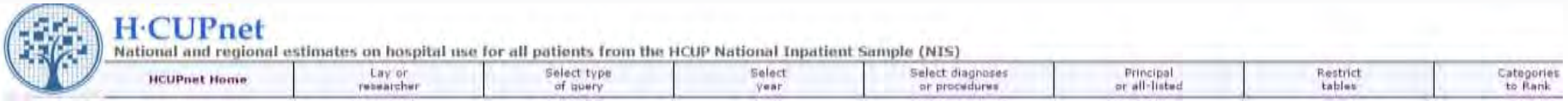


HCUPnet: Quick, Free Access to HCUP Data

- Free online query system
- Users generate tables of outcomes by diagnoses and procedures
- Data can be cross-classified by patient and hospital characteristics
- HCUPnet can answer many questions

http://hcupnet.ahrq.gov

Ranking: Most common procedures
Most expensive diagnoses



2013 National statistics - all-listed
Restrict tables to operating room procedures

Rank order of CCS all-listed procedure category by

Rank	CCS all-listed procedure category and name		Total number of discharges	Standard error of total number of discharges
1.	134	Cesarean section	1,239,540	22,831
2.	115	Circumcision	1,074,250	21,531
3.	152	Arthroplasty knee	732,570	14,787
4.	45	Percutaneous coronary angioplasty (PTCA)	499,100	10,766
5.	153	Hip replacement, total and partial	493,685	10,747
6.	158	Spinal fusion	454,640	10,502
7.	3	Laminectomy, excision intervertebral disc	452,425	10,187
8.	61	Other OR procedures on vessels other than head and	431,525	7,660
9.	84	Cholecystectomy and common duct exploration	393,660	4,493

Most common OR procedures:

#1 C-section
#2 Circumcision
#3 Knee arthroplasty
#4 PTCA
#5 Hip replacement

2013 National statistics - principal diagnosis only

Rank order of CCS principal diagnosis category by Aggregate costs

Rank	CCS principal diagnosis category and name		Total number of discharges	Aggregate costs	Standard error of total number of discharges	Standard error of aggregate costs
1.	2	Septicemia (except in labor)	1,297,045	23,663,246,691	16,046	313,393,727
2.	203	Osteoarthritis				190
3.	218	Liveborn				882
4.	237	Complication of device, implant or graft				058
5.	100	Acute myocardial infarction				072
6.	108	Congestive heart failure, nonhypertensive				893
7.	205	Spondylosis, intervertebral disc disorders, other back problems				368
8.	122	Pneumonia (except that caused by tuberculosis and sexually transmitted diseas				979
9.	101	Coronary atherosclerosis				953
10.	109	Acute cerebrovascular disease				278

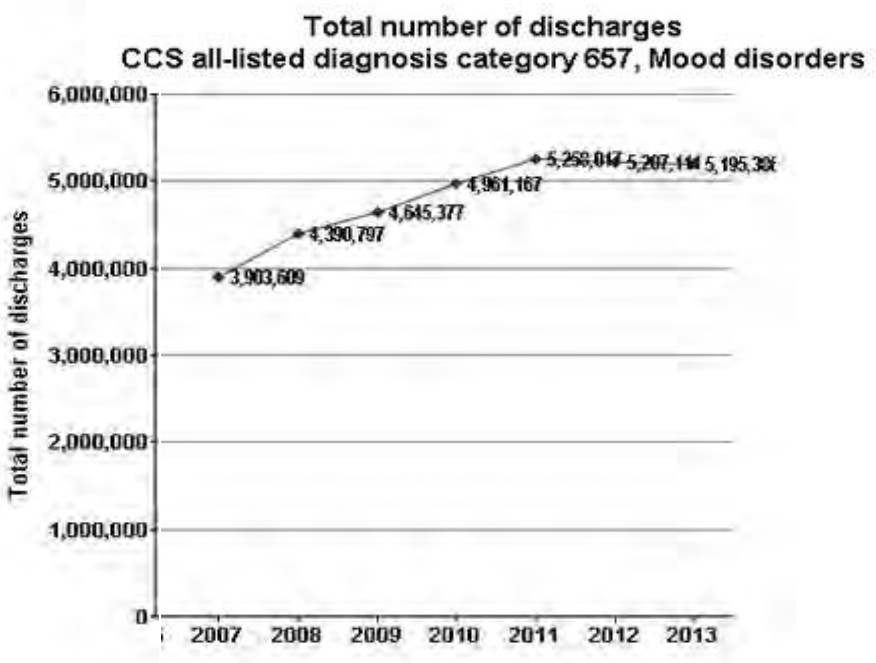
Most expensive conditions:

#1 Septicemia
#2 Osteoarthritis
#3 Liveborn
#4 Complication of device, implant
#5 AMI

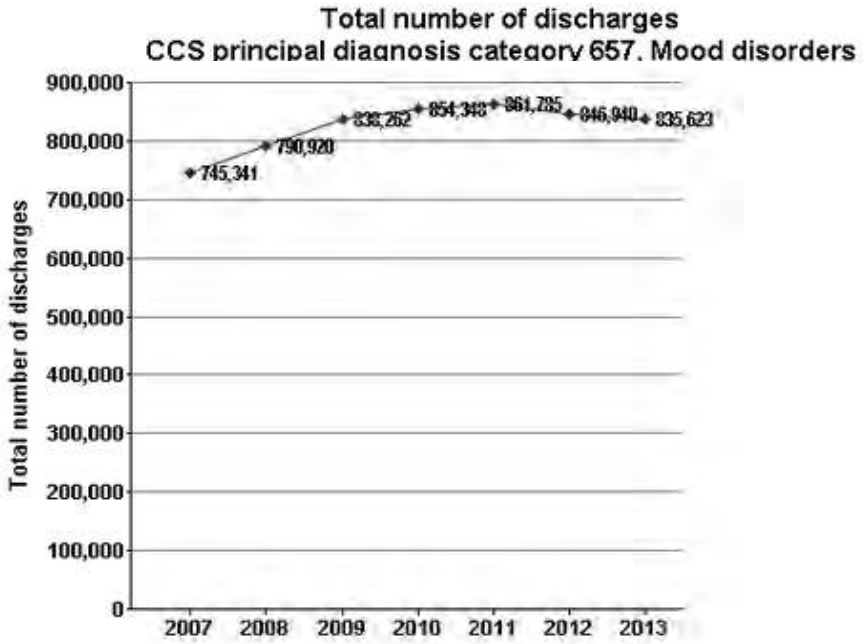
http://hcupnet.ahrq.gov

Trends

National statistics - all-listed



National statistics



Over 5 million hospital stays with all-listed diagnosis of mood disorders.

836,000 stays with a principal diagnosis of mood disorders.

http://hcupnet.ahrq.gov

Enough cases to do my analysis? How do my estimates compare?

2013 National statistics - principal diagnosis only

Outcomes for CCS principal diagnosis category 2 Septicemia (except in labor)

		Total number of discharges	LOS (length of stay), days (mean)	Costs, $ (mean)	Aggregate costs	In-hospital deaths
All discharges		1,297,045 (100.00%)	7.6	18,318	23,663,246,691	159,690 (12.31%)
Age group	<1	9,800 (0.76%)	10.9	27,232	264,135,345	285 (2.91%)
	1-17	10,380 (0.80%)	8.6	31,005	316,393,197	320 (3.08%)
	18-44	150,855 (11.63%)	7.2	17,867	2,683,388,727	6,955 (4.61%)
	45-64	366,605 (28.26%)	8.4	21,108	7,693,704,490	37,915 (10.34%)
	65-84	544,255 (41.96%)	7.6	18,018	9,773,312,069	74,425 (13.67%)
	85+	215,090 (16.58%)	6.5	13,586	2,930,646,567	39,785 (18.50%)
	Missing	*	11.0	27,772	1,666,294	*

Outcomes for CCS principal diagnosis category 2 Septicemia (except in labor) - Standard errors

		Total number of discharges	LOS (length of stay), days (mean)	Costs, $ (mean)	Aggregate costs	In-hospital deaths
All discharges		16,046	0.038	185	313,393,727	2,175 (0.11%)
Age group	<1	562	0.633	2,408	30,723,344	42 (0.39%)
	1-17	570	0.343	2,060	31,907,258	46 (0.41%)
	18-44	2,508	0.085	322	62,151,752	235 (0.14%)
	45-64	4,925	0.054	244	122,404,228	685 (0.15%)
	65-84	7,285	0.040	169	133,098,158	1,158 (0.14%)
	85+	3,361	0.049	181	60,816,736	768 (0.23%)
	Missing	*	1.848	6,420	661,820	*

http://hcupnet.ahrq.gov

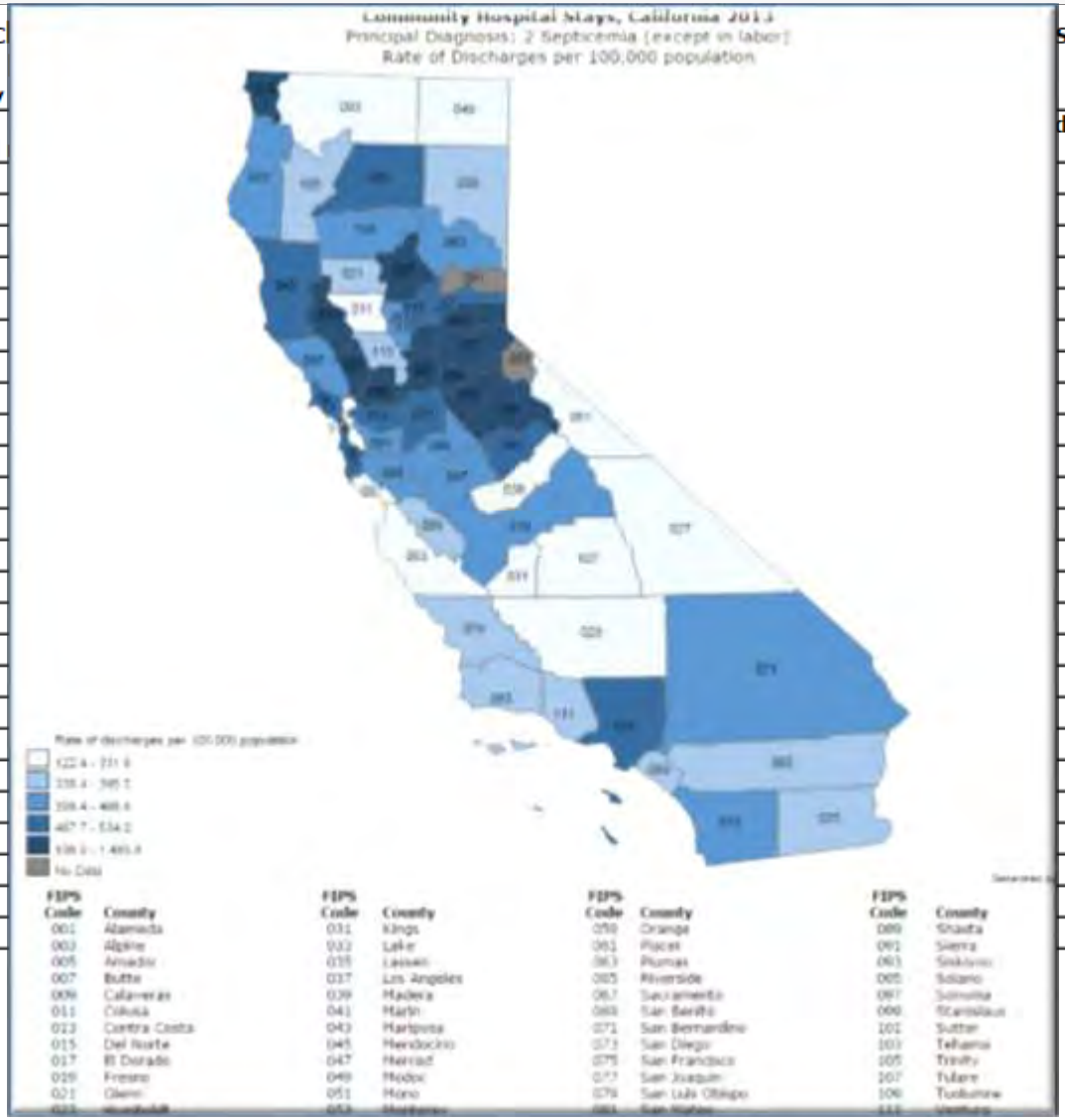
County-level statistics

http://hcupnet.ahrq.gov

Number and rate of disc
2 Septicemia (except in
CCS principal diagnosis category

stics

	Total	discharges per 100,000 population Map
US Total		411.9
State Total		486.3
Alameda, California		498.5
Amador, California		538.0
Butte, California		1,323.3
Calaveras, California		560.1
Colusa, California		265.9
Contra Costa, California		524.7
Del Norte, California		618.1
El Dorado, California		558.1
Fresno, California		472.4
Glenn, California		372.3
Humboldt, California		415.8
Imperial, California		461.5
Inyo, California		180.6
Kern, California		416.1
Kings, California		471.0
Lake, California		465.4
Lassen, California		438.3
Los Angeles, California		532.3
Madera, California		312.1
Marin, California		396.7
Mariposa, California		323.8
Mendocino, California		422.5
Merced, California		603.9
Modoc, California		231.6



Readmissions

All patient readmissions within 30 days
National statistics, 2013

Index stay - 2 Septicemia (except in labor)
Index stay defined by the principal diagnosis, using Clinical Classification Software (CCS)

		Index Stays		Readmitted within 30 days								
				Readmissions with the same CCS as a principal diagnosis			Readmissions with the same CCS in any diagnosis			Readmissions for any cause		
		Number of stays	Mean cost $ per stay	Number of stays	Percent readmitted	Mean cost $ per stay	Number of stays	Percent readmitted	Mean cost $ per stay	Number of stays	Percent readmitted	Mean cost $ per stay
Overall		1,011,496	18,500	47,167	4.7	21,548	64,557	6.4	23,640	191,156	18.9	16,499
Age group	1-17	8,961	25,317	---	---	---	---	---	---	1,550	17.3	23,627
	18-44	126,501	18,059	4,375	3.5	21,835	6,682	5.3	24,566	19,975	15.8	16,818
	45-64	288,783	21,225	13,054	4.5	24,445	18,688	6.5	26,946	56,962	19.7	17,908
	65+	587,251	17,148	29,621	5.0	20,195	38,875	6.6	21,702	112,669	19.2	15,632
Sex	Male	488,719	19,606	24,087	4.9	22,447	33,575	6.9	24,811	94,838	19.4	17,388
	Female	522,777	17,469	23,080	4.4	20,609	30,982	5.9	22,370	96,318	18.4	15,626
Payer	Medicare	680,596	17,765	35,087	5.2	20,742	46,965	6.9	22,444	136,207	20.0	15,980
	Medicaid	114,497	23,273	5,847	5.1	25,768	8,205	7.2	28,280	24,742	21.6	18,233
	Private insurance	145,525	18,595	4,436	3.0	22,280	6,787	4.7	26,443	21,508	14.8	18,222
	Uninsured	45,299	16,086	968	2.1	19,691	1,423	3.1	21,306	5,029	11.1	14,762
Median income for zipcode	First quartile (lowest)	279,626	17,959	13,306	4.8	20,008	18,252	6.5	21,856	55,021	19.7	15,122
	Second quartile	268,433	17,915	12,096	4.5	21,444	16,765	6.2	23,397	50,313	18.7	16,063
	Third quartile	241,634	18,624	11,024	4.6	21,698	15,018	6.2	23,860	44,616	18.5	16,846
	Fourth quartile (highest)	205,105	19,910	10,009	4.9	23,857	13,516	6.6	26,419	38,135	18.6	18,805
Patient residence	Metropolitan	817,660	18,945	39,679	4.9	22,321	54,236	6.6	24,371	157,395	19.2	16,942
	Non-Metropolitan	193,835	16,714	7,487	3.9	17,688	10,321	5.3	20,005	33,761	17.4	14,517

Reasons for readmissions within 30 days
National statistics, 2013

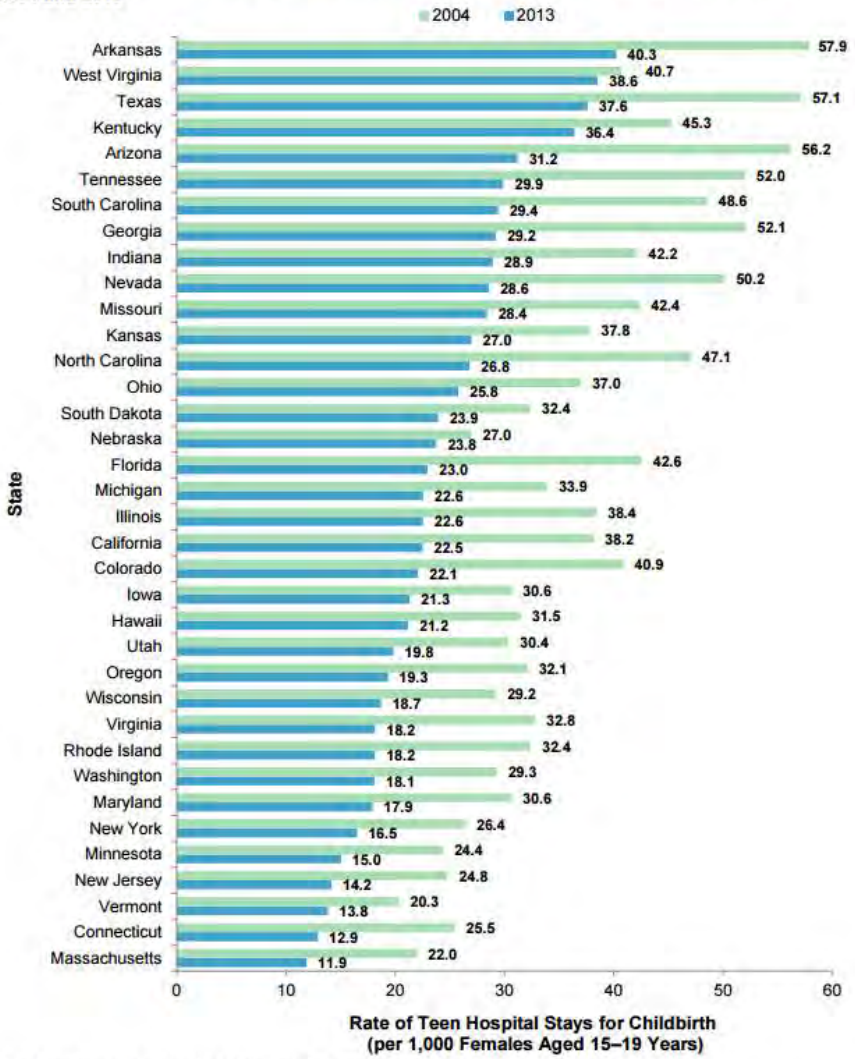
Index stay - 2 Septicemia (except in labor)
Index stay defined by the principal diagnosis, using Clinical Classification Software (CCS)

	Readmitted within 30 days				
	Readmissions with the same CCS in any diagnosis			Readmissions for any cause		
	CCS principal diagnosis category	Number of stays	Percent readmitted	CCS principal diagnosis category	Number of stays	Percent readmitted
Most frequent principal diagnosis	2 Septicemia (except in labor)	47,167	73.1	2 Septicemia (except in labor)	47,167	24.7
	237 Complication of device, implant or graft	4,153	6.4	122 Pneumonia (except that caused by tuberculosis and sexually transmitted diseases)	9,181	4.8
	238 Complications of surgical procedures or medical care	1,120	1.7	237 Complication of device, implant or graft	7,700	4.0
	122 Pneumonia (except that caused by tuberculosis and sexually transmitted diseases)	785	1.2	108 Congestive heart failure, nonhypertensive	7,449	3.9
	131 Respiratory failure, insufficiency, arrest (adult)	665	1.0	157 Acute and unspecified renal failure	6,654	3.5

http://hcupnet.ahrq.gov

HCUP Statistical Briefs

Figure 4. The rate of hospital stays for childbirth among teens aged 15–19 years by State, 2004 and 2013



Note: Teen hospital stays for childbirth in each State were identified according to the location of the hospital.

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), 2004 and 2013 State Inpatient Databases (SID)

H-CUP

STATISTICAL BRIEF #206

August 2016

Teen Hospital Stays for Childbirth, 2004–2013

Kathryn R. Finger, Ph.D., M.P.H., and Megan M. Hendrick, M.S.W.

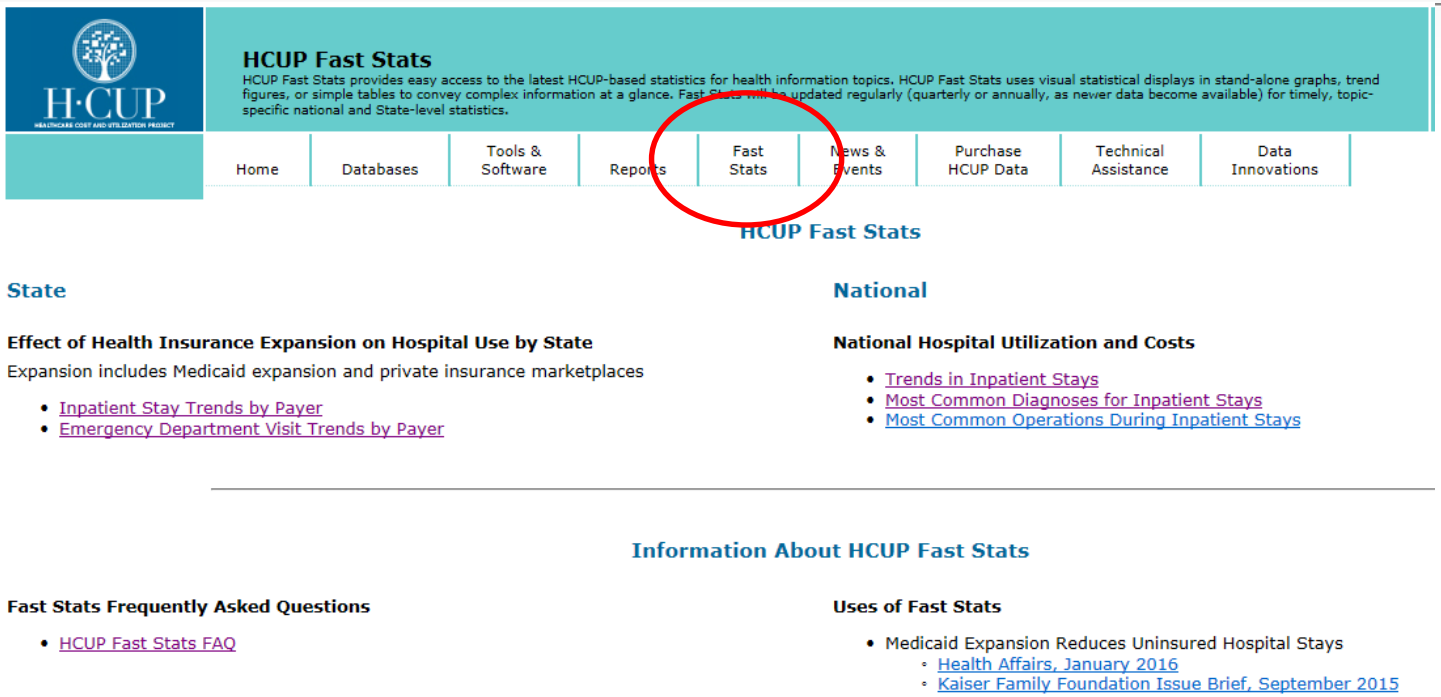
Introduction

The national teen birth rate has declined almost continuously over the last several decades, from a high of 61.8 per 1,000 females aged 15–19 years in 1991 to 24.3 in 2013.[1] Nevertheless, the rate remains higher in the United States than in many other industrialized countries.[2] The teen birth rate also remains higher in certain regions of the United States, such as the South.[3]

Not only can teen pregnancy have immediate and long-term social and economic consequences, such as lower educational attainment, unemployment, and poverty,[4] teen mothers and their infants often have poor health outcomes. Compared with older women who give birth, pregnant teens have been found to be more likely to start prenatal care later, to smoke or abuse other substances during pregnancy, and to suffer from mental illness.[5,6] Teens also have higher rates of certain pregnancy-related complications than older women, including pregnancy-induced hypertension and anemia, and they are more likely to deliver a preterm or low-birth-weight infant.[7]

- In 2013, childbirth was the leading reason for teen hospital stays, constituting nearly half of all inpatient hospital stays among females aged 15–19 years.
- Of the 265,370 teen hospital stays for childbirth in 2013, which amounted to $1.1 billion in hospital costs, over 70 percent were paid by Medicaid.
- The rate of teen hospitalizations for childbirth increased from 2004 through 2007 from 41.8 to 44.5 stays per 1,000 females aged 15–19 years but thereafter decreased to 24.3 in 2013.
- From 2007 through 2013, the rate of childbirth hospitalizations decreased faster for teens aged 15–17 years than for those aged 18–19 years (50 vs. 42 percent decrease).
- Across States, the rate of teen hospitalizations for childbirth varied by a factor of 3.
- The rate of teen hospitalizations for childbirth was highest in the South at 32.5 in 2004. Through 2013, the rate decreased by 39 percent in the South compared with a decrease of over 40 percent in other regions. Thus, the rate in the South (12.3) remained higher than in any other region in 2013.
- Teen hospital stays for childbirth also were highest and declined the least in low-income, metropolitan, and rural areas.
- Although teens were less likely to have a C-section than women aged 20–44 years, they were more likely to have pre-eclampsia or eclampsia, poor fetal growth, and anemia.

HCUP Fast Stats



- HCUP Fast Stats provides easy access to the latest for specific health information topics.
- Uses visual statistical displays in stand-alone graphs, trend figures, or simple tables to convey complex information at a glance.
- Information updated regularly (as newer data become available).

http://www.hcup-us.ahrq.gov/faststats/landing.jsp

HCUP Fast Stats – *Effect of Health Insurance Expansion on Hospital Use*

HCUP Fast Stats - Effect of Health Insurance Expansion on Inpatient Stays

HCUP Fast Stats provides easy access to the latest HCUP-based statistics for health information topics. This section provides State-level trends in hospital inpatient stays by expected payer.

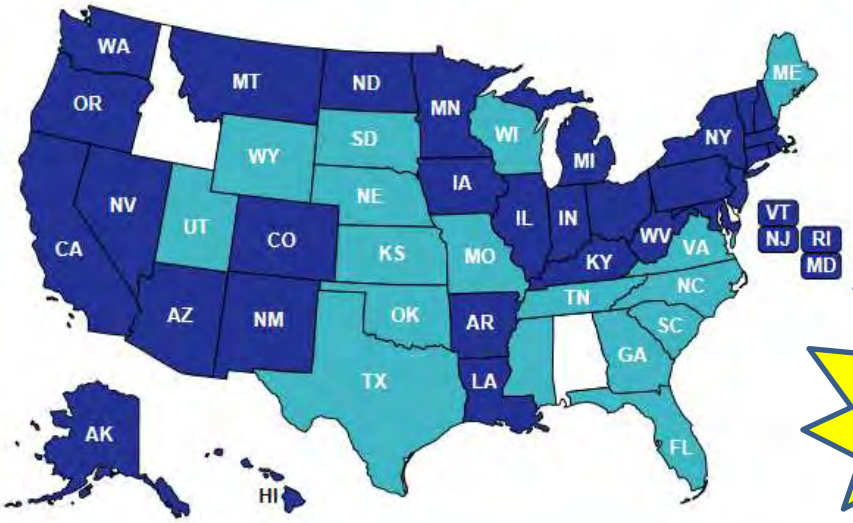
Home | Databases | Tools & Software | Reports | Fast Stats | News & Events | Purchase HCUP Data | Technical Assistance | Data Innovations

Effect of Health Insurance Expansion on Inpatient Stays

Click map to select one of the identified States, or select from list and click Select: Alaska* Select *Medicaid expansion State

Information is available for labeled States.

A tutorial for Effect of Health Insurance Expansion on Inpatient Stays is available.



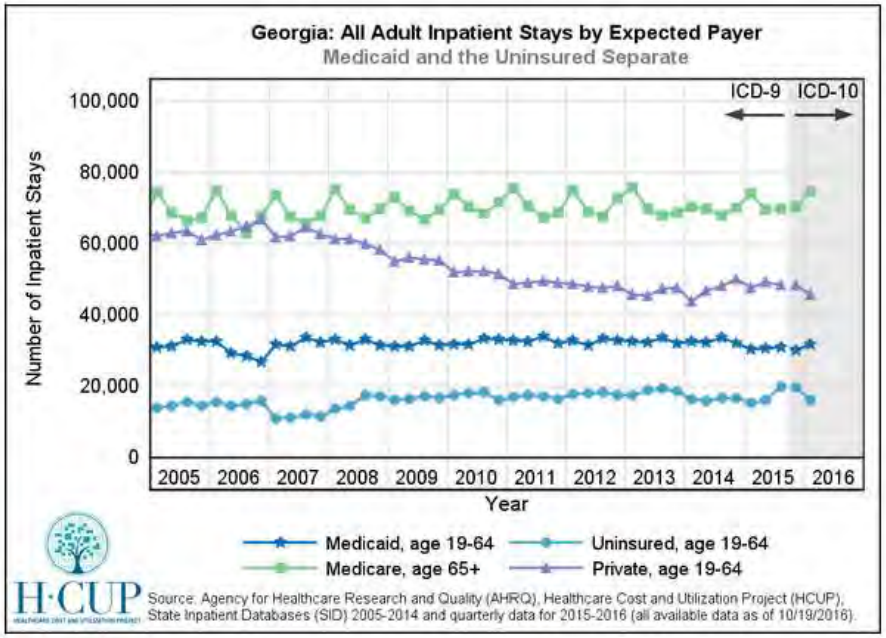
Most recently added: ED data

Medicaid expansion States in HCUP | Medicaid nonexpansion States in HCUP | Non-HCUP States

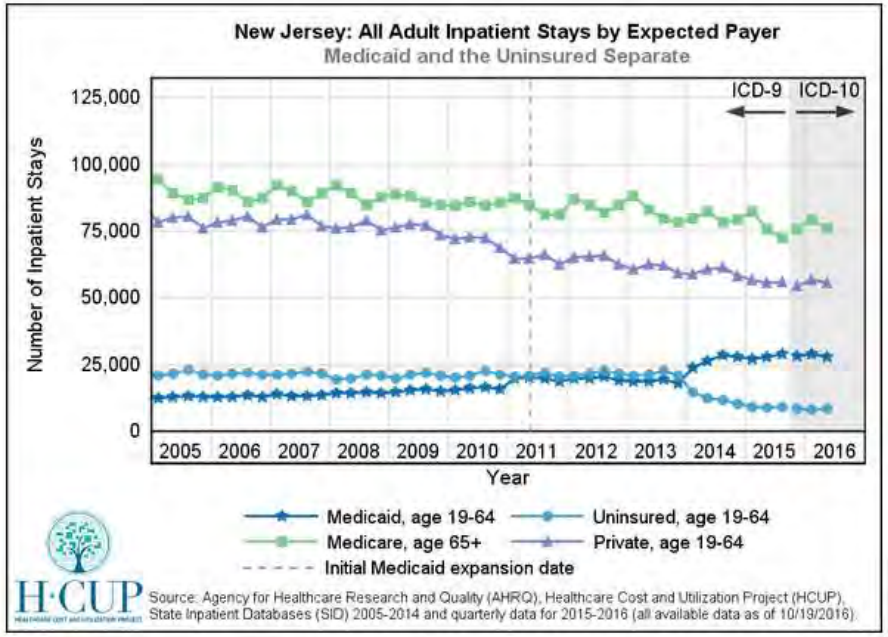
HCUP Fast Stats—
Effect of Health Insurance Expansion on Inpatient Stays

Compare a Medicaid expansion state to a non-expansion state—

All inpatient stays



Non-expansion state

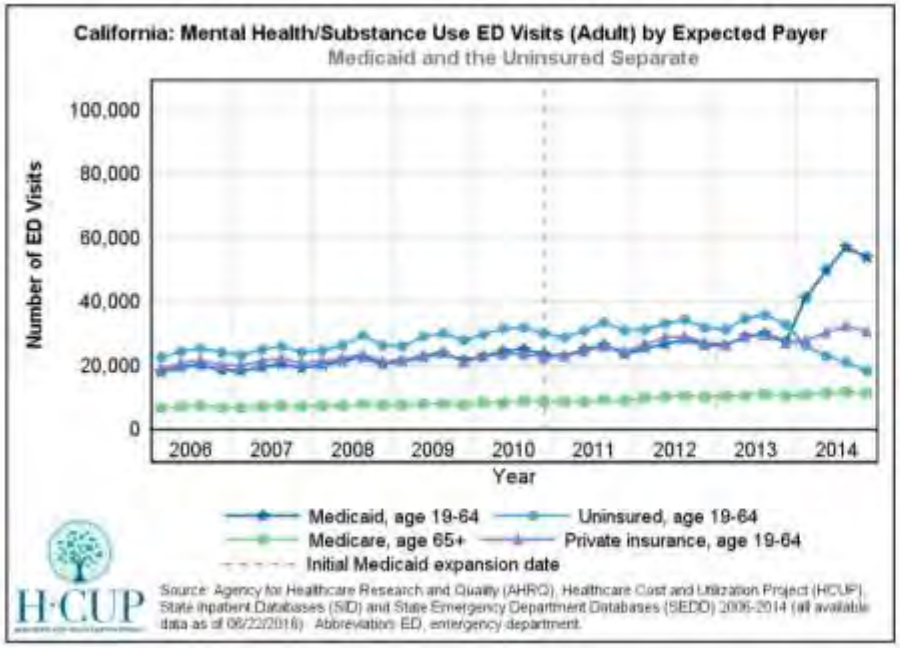


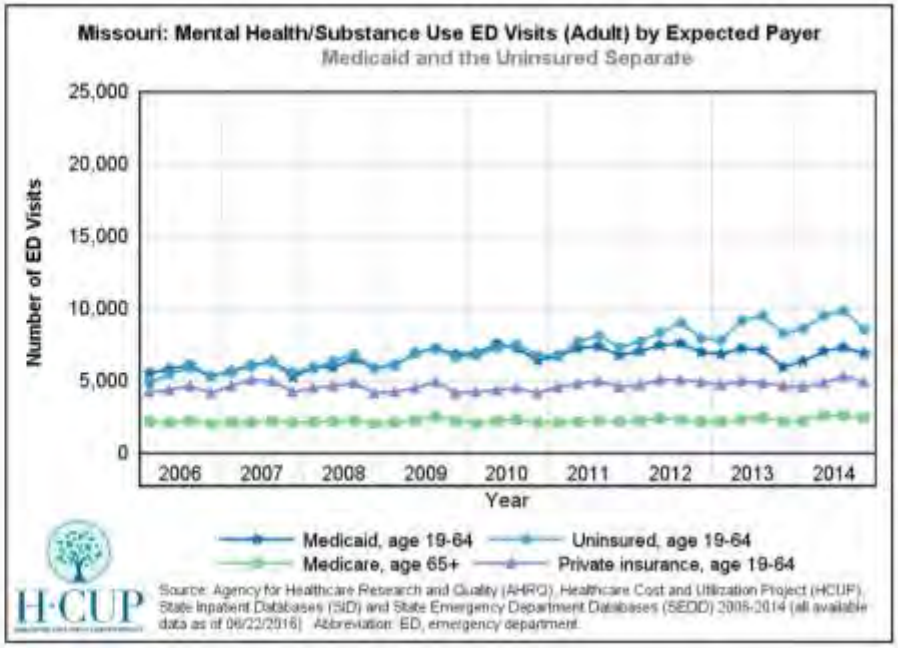
Medicaid expansion state

HCUP Fast Stats—
Effect of Health Insurance Expansion on *Emergency Department Visits*

Compare a Medicaid expansion state to a non-expansion state—

Mental Health and Substance Abuse ED Visits



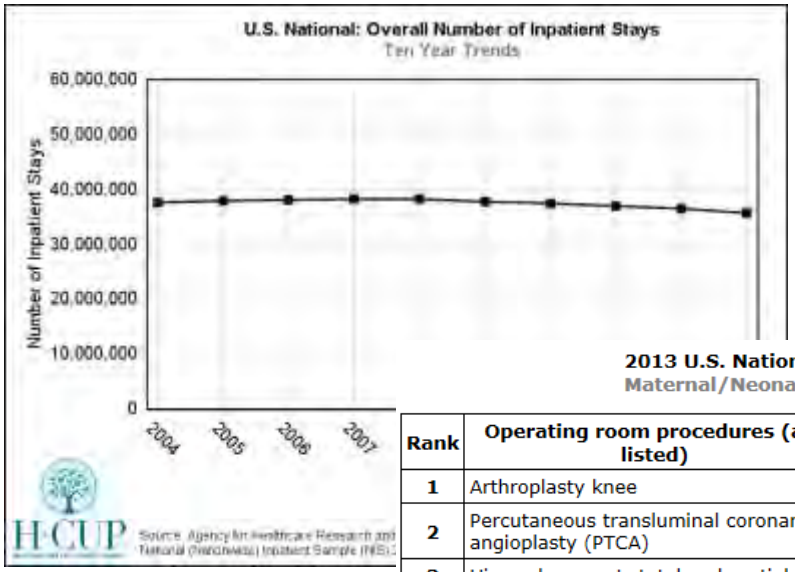


Medicaid expansion state

Non-expansion state

HCUP Fast Stats – *National Hospital Utilization and Costs*

- Includes information on trends in inpatient stays, the most common diagnoses for inpatient stays, and the most common operations during inpatient stays.



2013 U.S. National Inpatient Stays
Maternal/Neonatal Stays Included

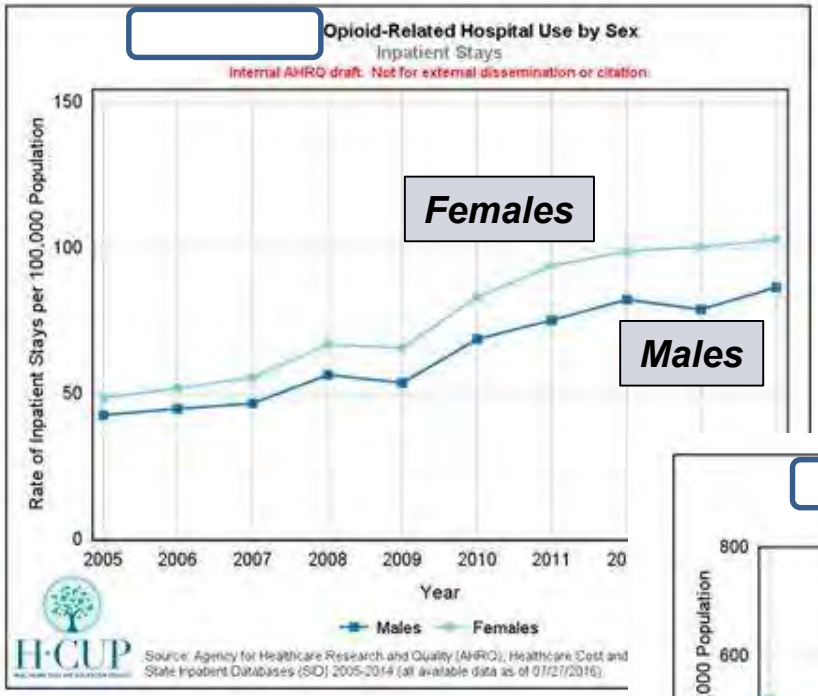
Rank	Principal diagnosis	Total number of stays	Rate of stays per 100,000
1	Liveborn	3,764,533	1,196
2	Septicemia (except in labor)	1,297,045	412
3	Osteoarthritis	1,023,070	325
4	Pneumonia (except that caused by tuberculosis or sexually transmitted disease)	960,594	305
5	Congestive heart failure; nonhypertensive	882,179	280
6	Mood disorders	835,623	265
7	Cardiac dysrhythmias	709,560	225
	ulmonary disease	644,744	205
	e; implant or graft	631,960	201
	of birth; puerperium nt of mother	625,390	199

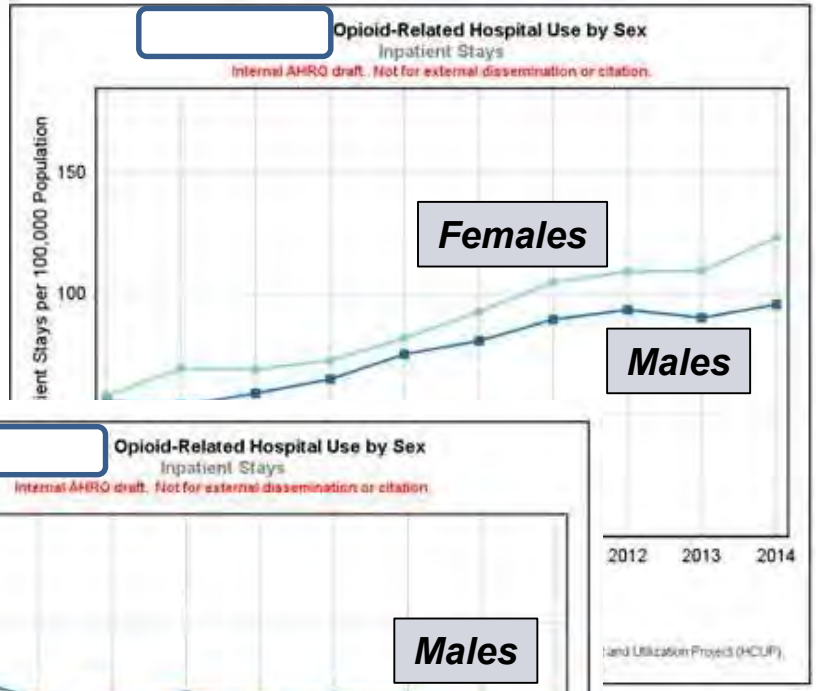
earch and Quality (AHRQ), Healthcare Cost and Utilization Project (NIS), 2013

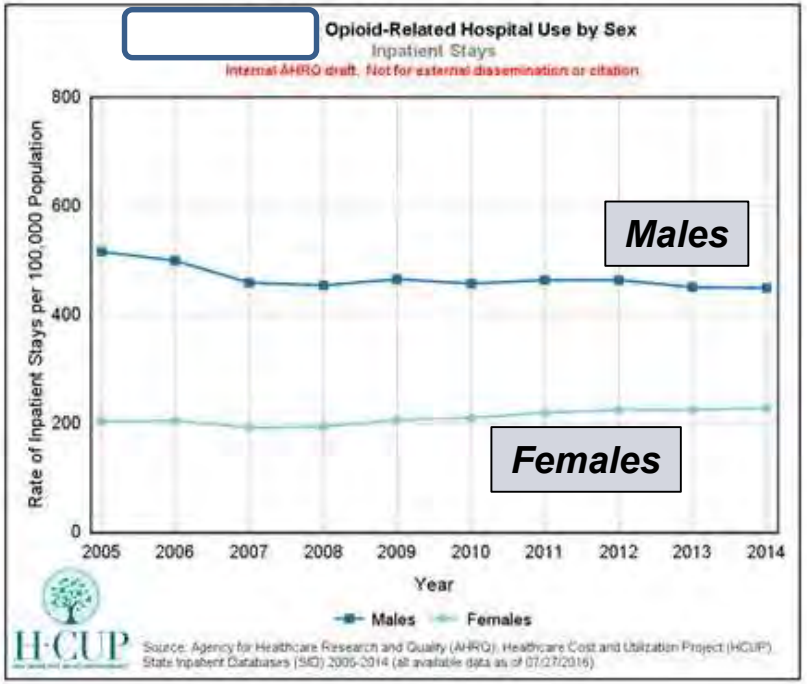
2013 U.S. National Inpatient Stays
Maternal/Neonatal Stays Excluded

Rank	Operating room procedures (all-listed)	Total number of stays	Rate of stays per 100,000
1	Arthroplasty knee	732,550	233
2	Percutaneous transluminal coronary angioplasty (PTCA)	498,975	158
3	Hip replacement; total and partial	493,675	157
4	Spinal fusion	454,550	144
5	Laminectomy; excision intervertebral disc	452,115	144
6	Other OR procedures on vessels other than head and neck	421,995	134
7	Cholecystectomy and common duct exploration	387,980	123
8	Partial excision bone	344,915	110
9	Colorectal resection	302,485	96

Newest path of HCUP Fast Stats – Opioids in Inpatient and ED







Going live: mid- Nov 2016

What Challenges has HCUP Faced?

Challenge #1: How to *gather* the data

- This was originally called “HCUP-3” -- previous HCUPs got data directly from hospitals/vendors
- Growing number of states with data collection systems—worked to build on those systems
- Required that we define our purpose
  - Research—not regulatory, not facility-specific reporting
- Goal: Provide value to prospective partners
  - National collection of data that showed benefit
- Technical part relatively easy—building connections was the challenge

What Challenges has HCUP Faced? (cont'd)

Challenge #2: How to *disseminate* the data

- Previous HCUPs had no public database release
- Invented the Nationwide Inpatient Sample
  - Only requirement for HCUP participation
  - Everything else has been voluntary
  - Originally distributed through NTIS (delays, costs)
- Created HCUP Central Distributor
  - Mechanism to disseminate data beyond the NIS
  - State databases, more national databases
- Again, gradual process of obtaining agreements
- No substitute for benefits of public access to data

What Challenges has HCUP Faced? (cont'd)

Challenge #3: How to enable *use* of the data

- Again, voluntary
- HCUPnet: online reporting
- National Quality and Disparities Reports
  - Initially, not all states participated
- Evolution towards more information dissemination
  - Remain sensitive to avoid identifying persons or facilities in our reports
- Now more and more area-level reporting
  - HCUPnet Community Statistics: County level
  - HCUP Fast Stats: State level
  - HCUP Statistical Briefs: State level

What Challenges has HCUP Faced? (cont'd)

Challenge #4: How to make the data more *robust*

- Improved data quality coming from the states
- Have always sought linkages (AHA ID, ZIP Code)
- Developed methods to address limitations
  - Revisit variables allow linkage without compromising confidentiality
    - Work across databases and time
- Studies to explore linkages with other data
  - Vital statistics, death data (feasibility studies with States)
  - Laboratory data (State grants)
  - Climate data (research study with CDC)

What is the Future for HCUP? Where can HCUP go from here?

- Further linkages with external data sources
- New databases, tools, and products
- Expanding the user population
- How to:
  - Support AHRQ's mission
  - Remain relevant
  - Incorporate new data possibilities
  - Maintain confidentiality
  - Maintain HCUP's identity without expanding beyond HCUP's staffing capacity, expertise, and funding

We are doing this together – need your ideas!

What can APCDs learn from HCUP?

- "Never underestimate the power of a small group of committed people…"
  - You need strong sponsoring voices
  - Inside and outside your organization
- Partnership is crucial
  - Cooperation -- not competition, not regulatory
  - Identify who will bring the organizations together and keep them together
- Understand your audience/your constituency
  - Researchers
  - Policymakers, funders

What can APCDs learn from HCUP? (cont'd)

- Once you reach a critical mass of participation, it will build on itself
- But how to reach critical mass?
  - Bring together the leaders in the states
  - Identify a few critical people who will support standards and data sharing
  - Define how each participant will benefit
  - Define advantages that can only be met by coming together

What can APCDs learn from HCUP? (cont'd)

- Define your research advantage
  - What can the data tell you?
  - How is it unique? Why can't you get this anywhere else?
- But don't get hemmed in
  - Build in flexibility to address a range of research topics
- Build a uniform database
  - Either build your databases with standards in mind **OR**
  - Convert into a standard format
- Acknowledge limitations—Build on strengths

What can APCDs learn from HCUP? (cont'd)

- Bring together data people and researchers in the same organization
  - To use the data, build databases, build tools
  - Will imagine more ways to use the data
- Create tools that help you use the data better
  - Disseminate them so others can use them
  - Maintain them so they remain useful
  - Takes resources and commitment

What can APCDs learn from HCUP? (cont'd)

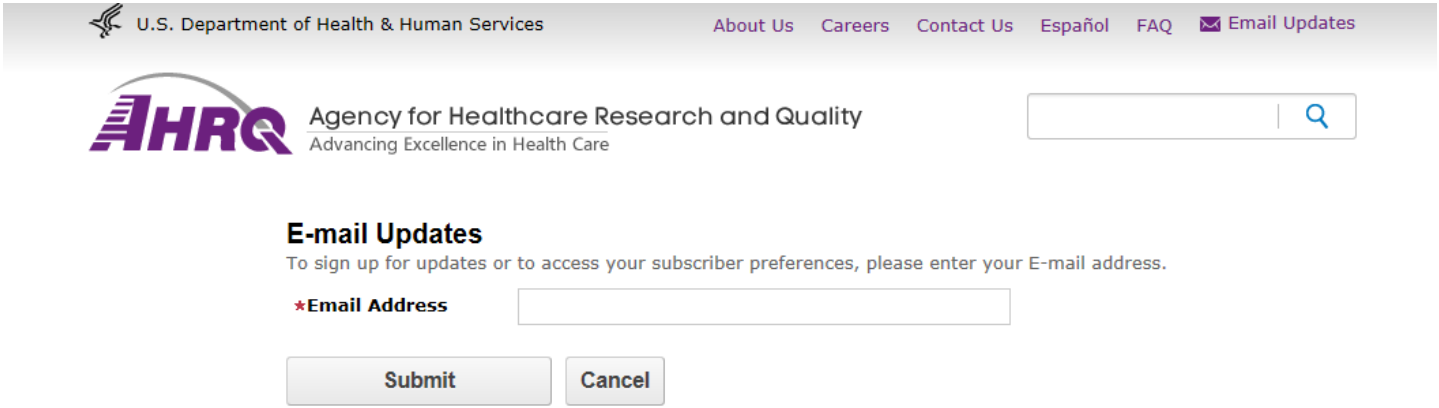
- Set up a sales/reimbursement structure that benefits the data organizations
- Enable state-to-state comparisons
  - Don't be afraid of differences
  - Promote differences as a way of addressing problems
- Build a way to provide national benchmarks
- Build databases from your databases
  - Can be general national databases like the NIS or NEDS
  - Can be population-specific like the KID
  - Can be focused on specific types of events like the NRD

What can APCDs learn from HCUP? (cont'd)

- Set up information dissemination vehicles
  - Don't be afraid to try new ideas—drop what doesn't work
  - Publish or post on a regular basis
  - Choose topics with policy significance and engage media
- Set up awards for best uses of the data
- Work with other organizations to use your data
  - Set up collaborations to extend analysis beyond your organization's capacity
  - Partner with outside organizations
    - Research organizations (e.g., universities)
    - Government (e.g., CDC)
    - Private research firms (e.g., PIRE)

Communicate and Inform

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



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

Healthcare Cost and Utilization Project (HCUP)

H·CUP

HEALTHCARE COST AND UTILIZATION PROJECT

Questions/Comments?

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