

## STATISTICAL BRIEF #225

June 2017

### Trends in Hospital Inpatient Stays in the United States, 2005–2014

*Kimberly W. McDermott, Ph.D., Anne Elixhauser, Ph.D., and Ruirui Sun, Ph.D.*

#### Introduction

As a large component that accounts for one-third of health care expenditures in the United States, hospital inpatient care has experienced changes in utilization and costs over the past decade.<sup>1</sup> Factors including general population growth, the aging baby boom generation, and the rising prevalence of chronic disease suggest that demand for hospital care will only increase. However, growing efforts to reduce unnecessary hospitalizations, greater use of chronic disease management programs, and a shift toward outpatient treatment may result in a decrease in hospital stays. Importantly, all of these factors may have a variable impact on different patient populations, which may result in varying trends in utilization, costs, and condition prevalence across demographic and payer groups.

This Healthcare Cost and Utilization Project (HCUP) Statistical Brief presents data from HCUP Fast Stats<sup>2</sup> on trends in national hospital utilization and costs from 2005 to 2014, as well as the most common diagnoses for hospital inpatient stays during these years. Trends in the number of inpatient stays over the 10-year period are provided by hospitalization type (maternal, neonatal, mental health, injury, surgical, and medical). The change in inpatient stays and cost per stay from 2005 to 2014 is broken down by select patient characteristics. Comparisons are provided for the population rates of hospital stays by age group, sex, and community-level income (median household income of patient's ZIP Code), as well as the distribution of hospital stays by expected payer and hospitalization type in 2005 and 2014. Finally, the most common diagnoses among inpatient stays overall and by age group are presented. Differences greater than 10 percent between estimates are noted in the text.

#### Highlights

- Between 2005 and 2014, the inflation-adjusted mean cost per inpatient stay increased by 12.7 percent, from \$9,500 to \$10,900.
- Inflation-adjusted cost per stay for patients covered by private insurance or Medicaid increased 16–18 percent. Cost per stay for Medicare-covered patients and the uninsured changed minimally.
- The rate of inpatient stays decreased the most among patients in the highest income quartiles (15–20 percent decrease).
- The proportion of Medicaid-covered inpatient stays increased by 15.7 percent, whereas the proportion paid by private insurance and that were uninsured decreased by 12.5 and 13.0 percent, respectively.
- Mental health/substance use accounted for nearly 6 percent of all inpatient stays in 2014, up 20.1 percent from 2005.
- Between 2005 and 2014, septicemia and osteoarthritis became two of the five most common reasons for inpatient stays. Septicemia hospital stays almost tripled.
- Nonspecific chest pain and coronary atherosclerosis decreased by more than 60 percent from 2005 to 2014, falling off the list of top 10 reasons for hospitalization.

<sup>1</sup> Gonzalez JM. National Health Care Expenses in the U.S. Civilian Noninstitutionalized Population, 2011. MEPS Statistical Brief #425. November 2013. Agency for Healthcare Research and Quality, Rockville, MD. [www.meps.ahrq.gov/data\\_files/publications/st425/stat425.pdf](http://www.meps.ahrq.gov/data_files/publications/st425/stat425.pdf). Accessed March 1, 2017.

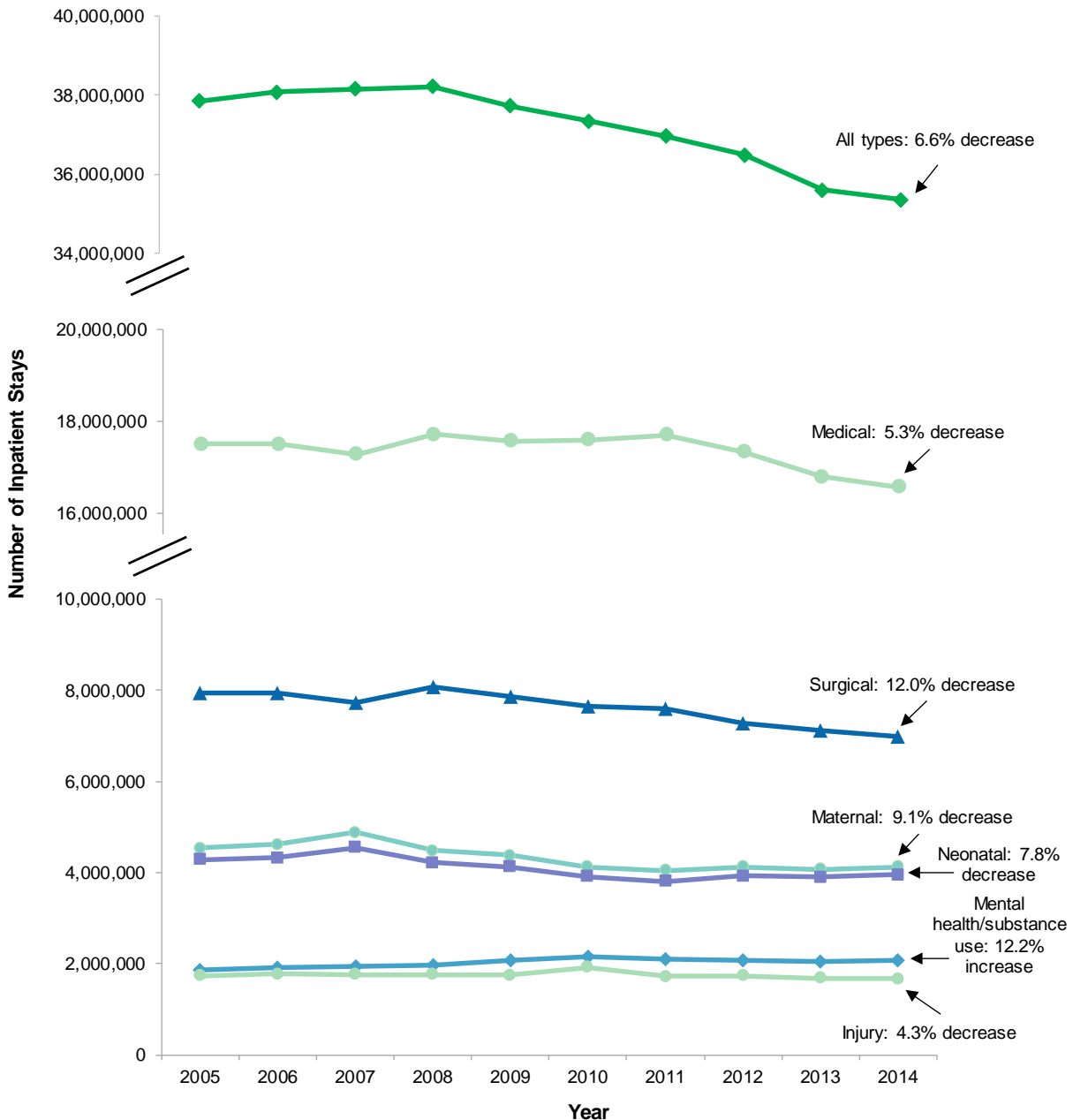
<sup>2</sup> Agency for Healthcare Research and Quality. HCUP Fast Stats Web site, National Hospital Utilization and Costs path. [www.hcup-us.ahrq.gov/faststats/landing.jsp](http://www.hcup-us.ahrq.gov/faststats/landing.jsp). Accessed January 31, 2017.

## Findings

### Trends in number of inpatient stays by hospitalization type, 2005–2014

Figure 1 presents trends in the number of inpatient stays from 2005 to 2014 by hospitalization type—medical, surgical, maternal, neonatal, mental health/substance use, and injury.

**Figure 1. Number of inpatient stays by hospitalization type, with percentage change from 2005 to 2014**



Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), HCUP Fast Stats, Trends in Inpatient Stays ([www.hcup-us.ahrq.gov/faststats/landing.jsp](http://www.hcup-us.ahrq.gov/faststats/landing.jsp)) based on the HCUP National (Nationwide) Inpatient Sample (NIS)

- The number of hospital stays for mental health/substance use increased from 2005 to 2014, whereas the number of surgical stays decreased. All other hospitalization types decreased less than 10 percent.

The number of hospital stays for mental health/substance use increased by 12.2 percent between 2005 and 2014. In contrast, the number of surgical stays decreased by 12.0 percent during this time period. All other types of hospital stays decreased less than 10 percent.

*Characteristics of inpatient stays, 2005 and 2014*

Table 1 presents utilization and cost data for inpatient stays in 2005 and 2014, as well as the percent change between 2005 and 2014, by select patient characteristics.

**Table 1. Number of inpatient stays and mean cost per stay by patient characteristics, 2005 and 2014**

| Characteristic              | Inpatient stays, N (millions) |      |                | Mean cost per stay, \$    |               |                |
|-----------------------------|-------------------------------|------|----------------|---------------------------|---------------|----------------|
|                             | 2005                          | 2014 | Percent change | 2005 (inflation-adjusted) | 2014 (actual) | Percent change |
| All stays                   | 37.8                          | 35.4 | -6.6           | 9,500                     | 10,900        | 12.7           |
| Patient sex                 |                               |      |                |                           |               |                |
| Male                        | 15.5                          | 15.1 | -2.7           | 10,900                    | 12,400        | 12.0           |
| Female                      | 22.2                          | 20.3 | -8.8           | 8,600                     | 9,800         | 12.6           |
| Patient age, years          |                               |      |                |                           |               |                |
| 0-17                        | 6.8                           | 5.6  | -17.9          | 5,700                     | 6,700         | 15.3           |
| 18-44                       | 9.7                           | 8.7  | -10.3          | 7,000                     | 7,900         | 12.1           |
| 45-64                       | 8.4                           | 8.7  | 4.0            | 11,900                    | 13,600        | 12.5           |
| 65-74                       | 4.7                           | 5.2  | 8.5            | 12,800                    | 14,300        | 10.5           |
| 75+                         | 8.1                           | 7.2  | -11.8          | 11,300                    | 12,000        | 5.5            |
| Payer                       |                               |      |                |                           |               |                |
| Medicare                    | 14.0                          | 13.8 | -1.6           | 11,700                    | 12,800        | 8.3            |
| Medicaid                    | 7.4                           | 8.0  | 8.1            | 7,400                     | 8,900         | 17.5           |
| Private insurance           | 13.3                          | 10.8 | -18.2          | 8,500                     | 10,200        | 16.2           |
| Uninsured                   | 2.0                           | 1.7  | -18.7          | 8,200                     | 8,800         | 6.9            |
| Community-level income      |                               |      |                |                           |               |                |
| Quartile 1 (lowest)         | 10.3                          | 10.2 | -0.5           | 8,900                     | 10,100        | 12.2           |
| Quartile 2                  | 9.4                           | 9.5  | 1.4            | 9,200                     | 10,600        | 13.4           |
| Quartile 3                  | 9.1                           | 8.0  | -12.4          | 9,700                     | 11,200        | 12.9           |
| Quartile 4 (highest)        | 8.2                           | 6.9  | -15.6          | 10,200                    | 12,000        | 14.8           |
| Hospitalization type        |                               |      |                |                           |               |                |
| Maternal                    | 4.5                           | 4.1  | -9.1           | 4,000                     | 4,600         | 12.8           |
| Neonatal                    | 4.3                           | 3.9  | -7.8           | 3,500                     | 4,300         | 19.2           |
| Mental health/substance use | 1.8                           | 2.1  | 12.2           | 6,700                     | 6,700         | -0.7           |
| Injury                      | 1.7                           | 1.7  | -4.3           | 12,600                    | 15,200        | 17.1           |
| Surgical                    | 7.9                           | 7.0  | -12.0          | 18,900                    | 22,700        | 16.4           |
| Medical                     | 17.5                          | 16.6 | -5.3           | 8,100                     | 9,100         | 11.4           |

Note: Cost per stay is rounded to the nearest 100. Percent change is based on unrounded data values. Mean cost per stay in 2005 was inflation adjusted using 2014 as the base year.

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), HCUP Fast Stats, Trends in Inpatient Stays ([www.hcup-us.ahrq.gov/faststats/landing.jsp](http://www.hcup-us.ahrq.gov/faststats/landing.jsp)) based on the HCUP National (Nationwide) Inpatient Sample (NIS)

- **Between 2005 and 2014, the total number of hospital stays decreased for several patient subgroups, including patients younger than 45 years and those older than 74 years, patients with private insurance or no insurance, and patients in the two highest income quartiles.**

Across all patient demographic subgroups and payers, the number of hospital stays decreased or remained relatively stable between 2005 and 2014. The number of stays decreased among three age groups: 0–17 years (down 17.9 percent), 18–44 years (down 10.3 percent), and 75 years or older (down 11.8 percent). For patients aged 45–64 and 65–74 years, the number of hospital stays did not change substantially during the 10-year time period.

In addition, the number of stays among the privately insured and the uninsured decreased by nearly 20 percent. In terms of community-level income, the number of stays decreased 12–16 percent among patients in the two highest income quartiles.

- **Inflation-adjusted mean cost per stay increased between 2005 and 2014 overall and across nearly all patient subgroups.**

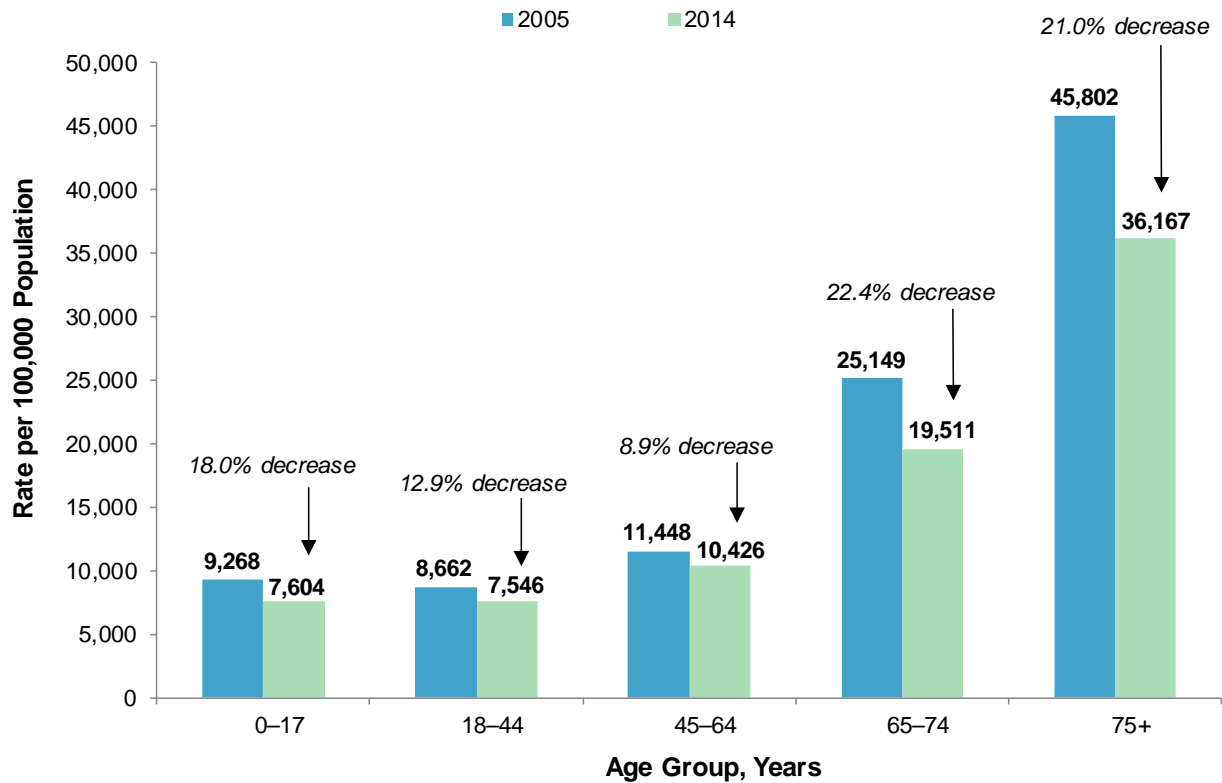
The overall average cost per hospital stay increased by 12.7 percent from 2005 to 2014, adjusting for inflation. Cost increases of between 10 and 20 percent occurred for all patient subgroups, except for patients aged 75 years and older, Medicare-covered and uninsured patients, and patients with mental health/substance use stays.

Among payer groups with cost increases from 2005 to 2014, costs for patients covered by private insurance or Medicaid increased by 16–18 percent.

Other subgroups with large increases in mean cost per stay were patients aged 0–17 years (up 15.3 percent) and patients hospitalized for neonatal care (up 19.2 percent), injuries (up 17.1 percent), and surgery (up 16.4 percent).

Figure 2 presents the rate of inpatient stays per 100,000 population by patient age group in 2005 and 2014.

**Figure 2. Population rate of inpatient stays by age group, 2005 and 2014**



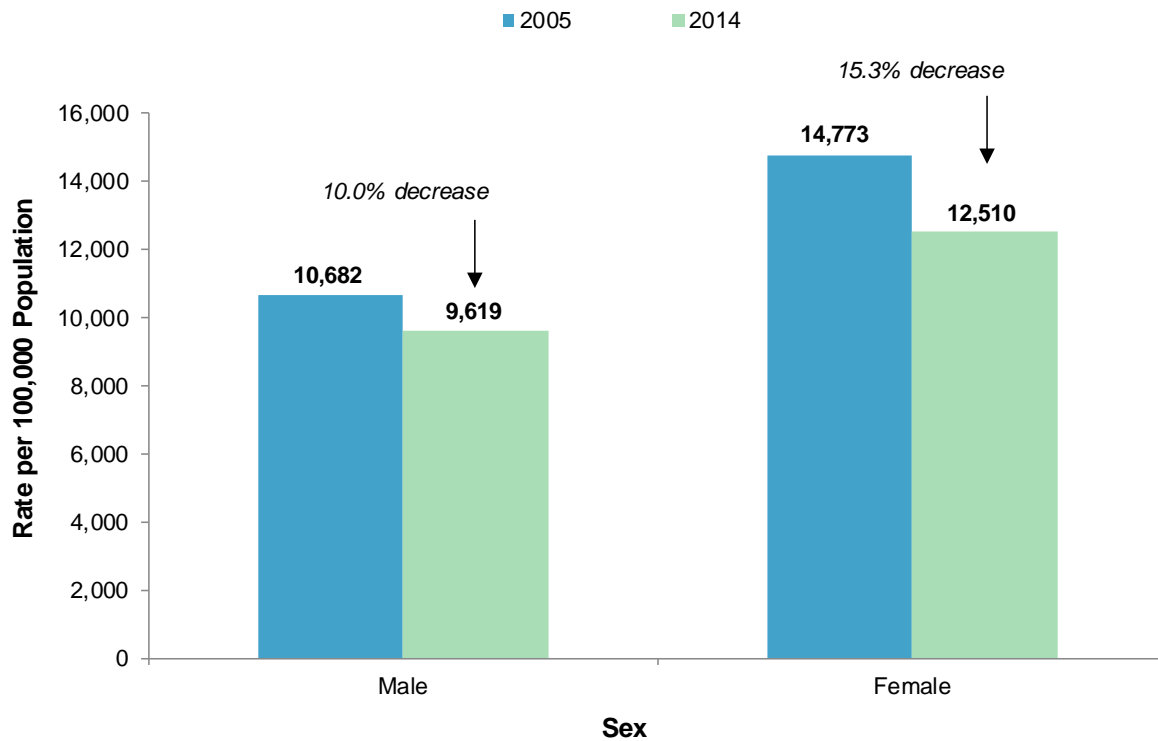
Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), HCUP Fast Stats, Trends in Inpatient Stays ([www.hcup-us.ahrq.gov/faststats/landing.jsp](http://www.hcup-us.ahrq.gov/faststats/landing.jsp)) based on the HCUP National (Nationwide) Inpatient Sample (NIS)

- **Between 2005 and 2014, the rate of inpatient stays per 100,000 population decreased across all age groups.**

Figure 2 examines the population-based rate of inpatient stays, which accounts for changes in the size of the population in each age group. From 2005 to 2014, the rate of inpatient stays decreased 18.0 percent among patients aged 0–17 years, 12.9 percent among patients aged 18–44 years, 22.4 percent among patients aged 65–74 years, and 21.0 percent among patients aged 75 years and older. In both 2005 and 2014, patients aged 75 years and older had the highest rate of stays, followed by patients aged 65–74 years.

Figure 3 presents the rate of inpatient stays per 100,000 population by patient sex in 2005 and 2014.

**Figure 3. Population rate of inpatient stays by sex, 2005 and 2014**



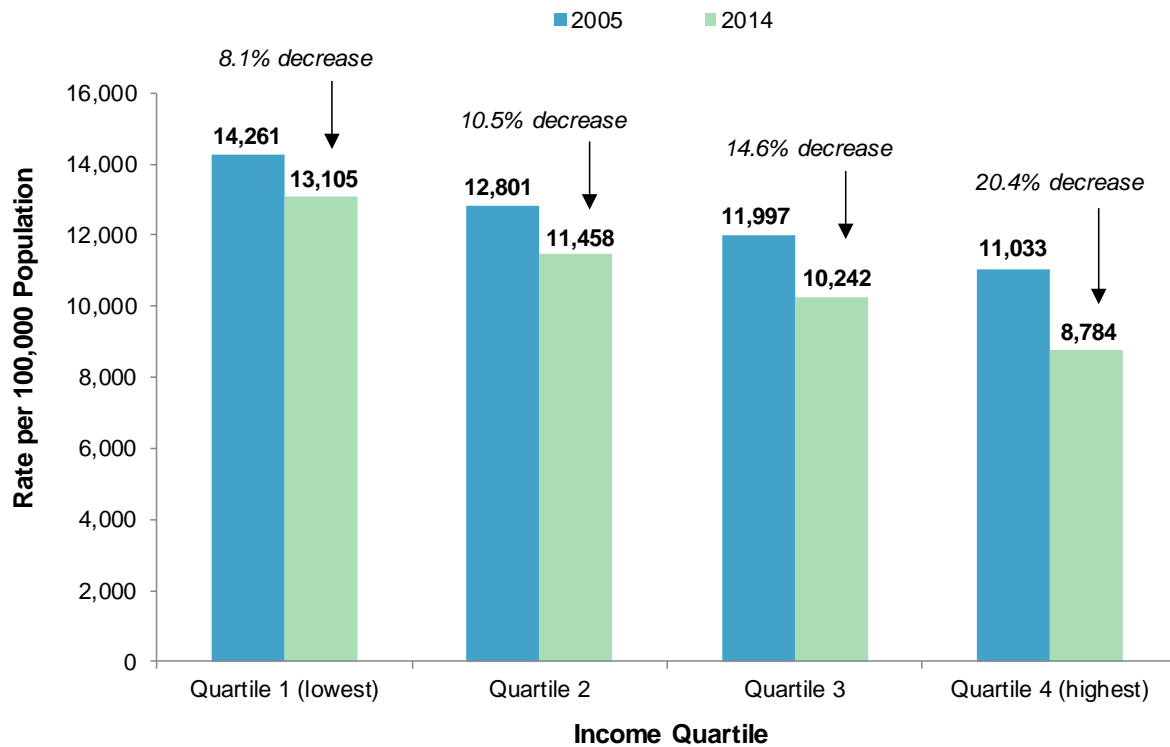
Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), HCUP Fast Stats, Trends in Inpatient Stays ([www.hcup-us.ahrq.gov/faststats/landing.jsp](http://www.hcup-us.ahrq.gov/faststats/landing.jsp)) based on the HCUP National (Nationwide) Inpatient Sample (NIS)

- **Between 2005 and 2014, the population rate of inpatient stays decreased more for females than for males.**

From 2005 to 2014, the rate of hospital stays decreased 10.0 percent among males and 15.3 percent among females. In both years, females had higher rates of hospital stays than males. (Note that hospitalizations for females include hospital stays for pregnancy and delivery.)

Figure 4 presents the rate of inpatient stays per 100,000 population by median household income of the patient's ZIP code (community-level income) in 2005 and 2014.

**Figure 4. Population rate of inpatient stays by community-level income, 2005 and 2014**



Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), HCUP Fast Stats, Trends in Inpatient Stays ([www.hcup-us.ahrq.gov/faststats/landing.jsp](http://www.hcup-us.ahrq.gov/faststats/landing.jsp)) based on the HCUP National (Nationwide) Inpatient Sample (NIS)

- **In both 2005 and 2014, the lower the community-level income, the higher the hospitalization rate.**

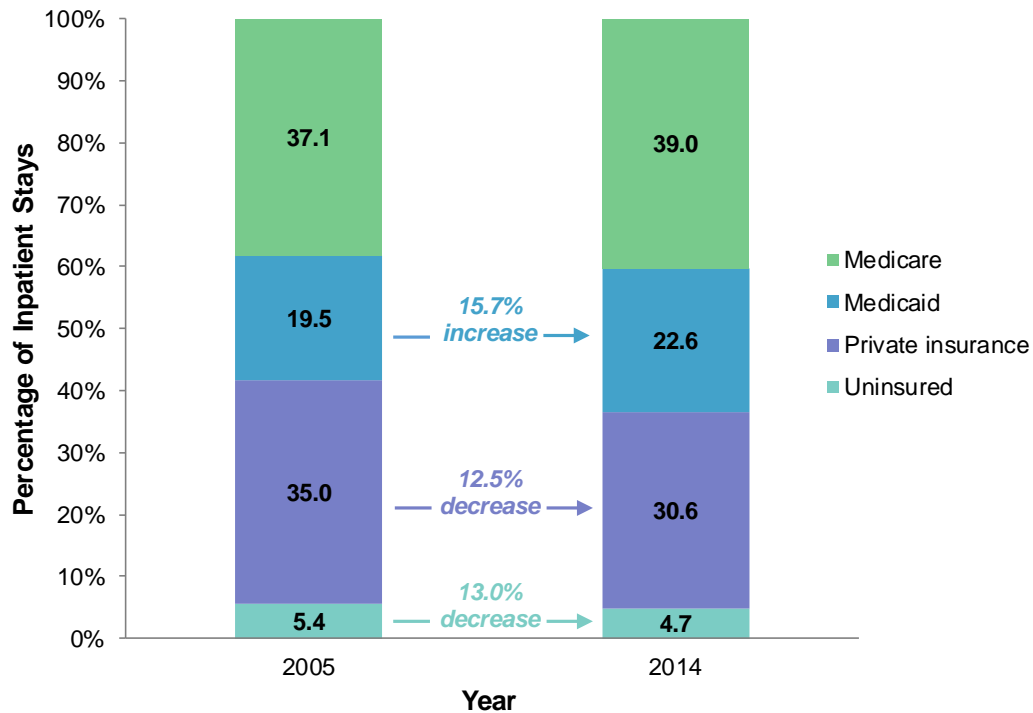
In 2014, patients from communities with the lowest income levels (quartile 1) had the highest rate of hospital stays (13,105 per 100,000 population), followed by the second lowest income quartile (quartile 2; 11,458), the second highest income quartile (quartile 3; 10,242), and the highest income quartile (quartile 4; 8,784).

- **Between 2005 and 2014, the population rate of inpatient stays decreased more for patients from areas with higher community-level incomes.**

From 2005 to 2014, the rate of hospital stays decreased the most for patients from the highest income areas—a 20.4 percent decrease for the highest community income group (quartile 4) and a 14.6 percent decrease for the next highest (quartile 3). Patients from the lowest income areas experienced the smallest decrease in hospitalization rates.

Figure 5 presents the distribution of inpatient stays by expected primary payer—Medicare, Medicaid, private insurance, and uninsured—in 2005 and 2014.

**Figure 5. Percentage distribution of inpatient stays by expected primary payer, 2005 and 2014**



Note: “Other” payers and missing payer data constituted approximately 3 percent of all stays and were excluded.

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), HCUP Fast Stats, Trends in Inpatient Stays ([www.hcup-us.ahrq.gov/faststats/landing.jsp](http://www.hcup-us.ahrq.gov/faststats/landing.jsp)) based on the HCUP National (Nationwide) Inpatient Sample (NIS)

- **Medicare was the most common expected payer for hospital care and together with Medicaid paid for more than 60 percent of all hospital stays in 2014.**

In 2014, government payers (Medicare and Medicaid) paid for 61.6 percent of all hospital stays. The ranking of payers did not change over the preceding decade.

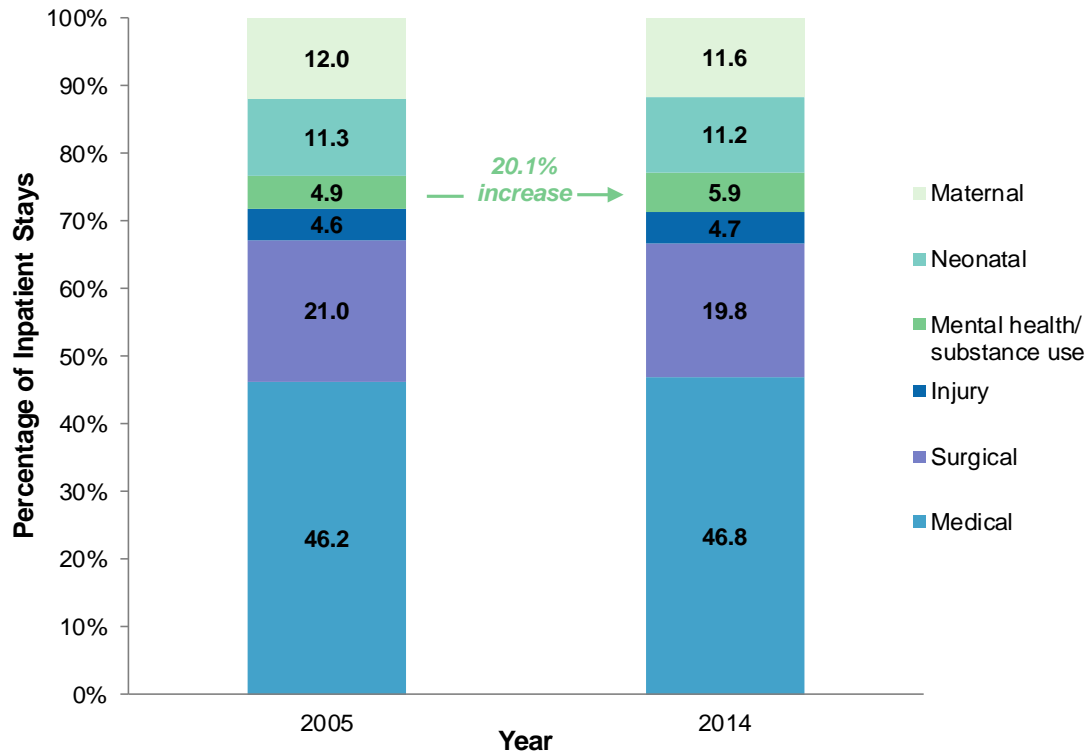
- **The proportion of uninsured inpatient stays and those with private insurance decreased from 2005 to 2014, whereas the proportion of Medicaid-covered stays increased.**

Between 2005 and 2014, the proportion of hospital stays for those covered by private insurance and those with no insurance decreased by approximately 13 percent. In contrast, the proportion of stays covered by Medicaid increased by 15.7 percent, whereas the proportion of Medicare patients changed by less than 10 percent.



Figure 6 presents the distribution of inpatient stays by hospitalization type—maternal, neonatal, mental health/substance use, injury, surgical, medical—in 2005 and 2014.

**Figure 6. Percentage distribution of inpatient stays by hospitalization type, 2005 and 2014**



Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), HCUP Fast Stats, Trends in Inpatient Stays ([www.hcup-us.ahrq.gov/faststats/landing.jsp](http://www.hcup-us.ahrq.gov/faststats/landing.jsp)) based on the HCUP National (Nationwide) Inpatient Sample (NIS)

- **The only hospitalization type that changed substantially from 2005 to 2014 was mental health/substance use, which increased 20 percent from 2005 to 2014.**

Between 2005 and 2014, the proportion of inpatient stays for mental health/substance use increased from 4.9 percent to 5.9 percent of all hospital stays, a 20.1 percent increase. The proportion of stays for other hospitalization types remained relatively stable.

In both 2005 and 2014, medical hospitalizations constituted the highest proportion of stays (approximately 46–47 percent), followed by surgical (20–21 percent), maternal (12 percent), neonatal (11 percent), mental health/substance use (5–6 percent), and injury (5 percent).

*Most common diagnoses for inpatient stays, 2005 and 2014*

Table 2 lists the 10 most common principal diagnoses for inpatient stays in 2005 and 2014, ranked by their frequency in 2014.

**Table 2. Most common diagnoses for hospital stays, 2005 and 2014**

| Principal diagnosis                              | 2005 |                   |              | 2014 |                   |              | Percent change in number of stays |
|--|------|-------------------|--------------|------|-------------------|--------------|-----------------------------------|
|  | Rank | Number of stays   | Percent      | Rank | Number of stays   | Percent      |                                   |
| <b>All stays</b>                                 |      | <b>37,843,000</b> | <b>100.0</b> |      | <b>35,358,800</b> | <b>100.0</b> | <b>-6.6</b>                       |
| Pregnancy, childbirth                            | 1    | 4,564,000         | 12.1         | 1    | 4,153,700         | 11.7         | -9.9                              |
| Newborns, neonates                               | 2    | 4,288,300         | 11.3         | 2    | 3,954,100         | 11.2         | -8.5                              |
| Septicemia                                       | —    | 518,000           | 1.4          | 3    | 1,514,100         | 4.3          | 192.3                             |
| Osteoarthritis                                   | 7    | 715,900           | 1.9          | 4    | 1,070,500         | 3.0          | 49.5                              |
| Congestive heart failure                         | 5    | 1,053,100         | 2.8          | 5    | 901,400           | 2.5          | -14.4                             |
| Pneumonia  | 3    | 1,303,900         | 3.4          | 6    | 882,700           | 2.5          | -32.3                             |
| Mood disorders                                   | 8    | 690,900           | 1.8          | 7    | 851,100           | 2.4          | 23.2                              |
| Cardiac dysrhythmias                             | 9    | 674,200           | 1.8          | 8    | 665,600           | 1.9          | -1.3                              |
| Complication of device/implant/graft             | —    | 596,000           | 1.6          | 9    | 633,000           | 1.8          | 6.2                               |
| Acute myocardial infarction                      | 10   | 641,700           | 1.7          | 10   | 608,800           | 1.7          | -5.1                              |
| Coronary atherosclerosis and other heart disease | 4    | 1,076,100         | 2.8          | —    | 397,700           | 1.1          | -63.0                             |
| Nonspecific chest pain                           | 6    | 798,200           | 2.1          | —    | 295,800           | 0.8          | -62.9                             |

Notes: Number of stays is rounded to the nearest 100. Percent is based on unrounded values. Maternal and neonatal stays are grouped by Major Diagnostic Category (MDC 14: Pregnancy, Childbirth, and Puerperium and MDC 15: Newborn and Other Neonates (Perinatal Period)). Nonmaternal and nonneonatal principal diagnoses are grouped using the Clinical Classification Software (CCS). Minor discrepancies with other data sources such as HCUPnet may appear because of differences in the coding systems in use at the time analyses were performed. Dashes indicate that the diagnosis was not ranked among the 10 most common.

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), HCUP Fast Stats, Most Common Diagnoses for Inpatient Stays ([www.hcup-us.ahrq.gov/faststats/landing.jsp](http://www.hcup-us.ahrq.gov/faststats/landing.jsp)) based on the HCUP National (Nationwide) Inpatient Sample (NIS), and HCUPnet ([www.hcupnet.ahrq.gov/](http://www.hcupnet.ahrq.gov/)) based on the HCUP NIS

- **Stays that involved pregnancy, childbirth, and being born were by far the most common types of hospitalizations.**

Pregnancy and childbirth were the most common reason for hospitalization in 2005 and 2014, and newborn and neonatal stays were the second most common reason. In sum, hospitalizations that involved pregnancy, giving birth, and being born comprised 23.4 percent of all hospital stays in 2005 and 22.9 percent of stays in 2014.

- **Septicemia, osteoarthritis, and congestive heart failure were the most common nonmaternal, nonneonatal principal diagnoses for inpatient stays in 2014.**

Eight diagnoses were among the 10 most common reasons for inpatient stays in both 2005 and 2014: pregnancy and childbirth, newborn infants, osteoarthritis, congestive heart failure, pneumonia, mood disorders, cardiac dysrhythmias, and acute myocardial infarction.

Septicemia and complication of device/implant/graft rose to top 10 conditions in 2014 but were not on the top 10 list a decade earlier. Coronary atherosclerosis and nonspecific chest pain were among the most common diagnoses in 2005 but not in 2014.

- **The number of stays for septicemia, osteoarthritis, and mood disorders increased from 2005 to 2014.**

Between 2005 and 2014, the number of stays for septicemia nearly tripled, from 518,000 to 1,514,100, a 192.3 percent increase. Stays for osteoarthritis increased by 49.5 percent from 715,900 to 1,070,500. Stays for mood disorders increased by 23.2 percent from 690,900 to 851,100.

- **The number of stays for coronary atherosclerosis, nonspecific chest pain, pneumonia, and congestive heart failure decreased from 2005 to 2014.**

The number of hospital stays for 4 of the top 10 conditions in 2004 decreased by 14 percent or more by 2014. From 2005 to 2014, the number of stays for coronary atherosclerosis and other heart disease decreased by approximately 63 percent (from 1,076,100 to 397,700) as did nonspecific chest pain (from 798,200 to 295,800). The number of stays for pneumonia decreased by 32.3 percent (from 1,303,900 to 882,700). Stays for congestive heart failure decreased by 14.4 percent (from 1,053,100 to 901,400).

Table 3 presents the most common nonmaternal, nonneonatal diagnoses for inpatient stays in 2005 and 2014 by age group.

**Table 3. Top five nonmaternal, nonneonatal principal diagnoses among hospital stays by age group, 2005 and 2014**

| Rank                    | 2005  |                  |              | 2014  |                  |              |
|-------------------------|---|------------------|--------------|---|------------------|--------------|
|                         | Principal diagnosis   | Number of stays  | Percent      | Principal diagnosis   | Number of stays  | Percent      |
| <b>Ages 0–17 years</b>  |   | <b>6,814,500</b> | <b>100.0</b> |   | <b>5,595,100</b> | <b>100.0</b> |
| 1                       | Pneumonia   | 179,800          | 2.6          | Mood disorders  | 117,200          | 2.1          |
| 2                       | Asthma  | 147,300          | 2.2          | Asthma  | 103,300          | 1.8          |
| 3                       | Acute bronchitis  | 139,200          | 2.0          | Pneumonia   | 88,200           | 1.6          |
| 4                       | Fluid and electrolyte disorders                                 | 123,400          | 1.8          | Acute bronchitis  | 85,700           | 1.5          |
| 5                       | Appendicitis and other appendiceal conditions                   | 86,800           | 1.3          | Epilepsy; convulsions   | 63,800           | 1.1          |
| <b>Ages 18–44 years</b> |   | <b>9,718,900</b> | <b>100.0</b> |   | <b>8,714,900</b> | <b>100.0</b> |
| 1                       | Mood disorders  | 352,200          | 3.6          | Mood disorders  | 405,500          | 4.7          |
| 2                       | Schizophrenia and other psychotic disorders                     | 190,600          | 2.0          | Schizophrenia and other psychotic disorders                     | 197,700          | 2.3          |
| 3                       | Skin and subcutaneous tissue infections                         | 162,100          | 1.7          | Septicemia  | 189,100          | 2.2          |
| 4                       | Spondylosis; intervertebral disc disorders; other back problems | 162,000          | 1.7          | Diabetes mellitus with complications                            | 166,100          | 1.9          |
| 5                       | Nonspecific chest pain  | 150,800          | 1.6          | Skin and subcutaneous tissue infections                         | 152,700          | 1.8          |
| <b>Ages 45–64 years</b> |   | <b>8,372,600</b> | <b>100.0</b> |   | <b>8,709,300</b> | <b>100.0</b> |
| 1                       | Coronary atherosclerosis and other heart disease                | 447,000          | 5.3          | Osteoarthritis  | 444,000          | 5.1          |
| 2                       | Nonspecific chest pain  | 375,500          | 4.5          | Septicemia  | 440,600          | 5.1          |
| 3                       | Osteoarthritis  | 263,400          | 3.1          | Mood disorders  | 257,500          | 3.0          |
| 4                       | Pneumonia   | 261,300          | 3.1          | Spondylosis; intervertebral disc disorders; other back problems | 238,700          | 2.7          |
| 5                       | Spondylosis; intervertebral disc disorders; other back problems | 257,900          | 3.1          | Complication of device; implant or graft                        | 233,600          | 2.7          |
| <b>Ages 65–74 years</b> |   | <b>4,748,600</b> | <b>100.0</b> |   | <b>5,150,500</b> | <b>100.0</b> |
| 1                       | Coronary atherosclerosis and other heart disease                | 297,500          | 6.3          | Osteoarthritis  | 381,700          | 7.4          |
| 2                       | Osteoarthritis  | 234,100          | 4.9          | Septicemia  | 317,700          | 6.2          |
| 3                       | Congestive heart failure; nonhypertensive                       | 221,000          | 4.7          | Congestive heart failure; nonhypertensive                       | 195,400          | 3.8          |
| 4                       | Pneumonia   | 215,700          | 4.5          | Chronic obstructive pulmonary disease and bronchiectasis        | 171,600          | 3.3          |
| 5                       | Chronic obstructive pulmonary disease and bronchiectasis        | 174,400          | 3.7          | Cardiac dysrhythmias  | 167,900          | 3.3          |
| <b>Ages 75+</b>         |   | <b>8,138,200</b> | <b>100.0</b> |   | <b>7,177,300</b> | <b>100.0</b> |
| 1                       | Congestive heart failure; nonhypertensive                       | 565,600          | 6.9          | Septicemia  | 543,700          | 7.6          |
| 2                       | Pneumonia   | 533,700          | 6.6          | Congestive heart failure; nonhypertensive                       | 451,400          | 6.3          |
| 3                       | Cardiac dysrhythmias  | 301,000          | 3.7          | Pneumonia   | 335,200          | 4.7          |
| 4                       | Coronary atherosclerosis and other heart disease                | 280,400          | 3.4          | Cardiac dysrhythmias  | 281,600          | 3.9          |
| 5                       | Acute cerebrovascular disease                                   | 245,700          | 3.0          | Acute cerebrovascular disease                                   | 254,300          | 3.5          |

Notes: Number of stays is rounded to the nearest 100. Percent is based on unrounded values. Principal diagnosis is grouped using the Clinical Classification Software (CCS). Minor discrepancies with other data sources such as HCUPnet may appear because of differences in the coding systems in use at the time analyses were performed.

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), HCUP Fast Stats, Most Common Diagnoses for Inpatient Stays ([www.hcup-us.ahrq.gov/faststats/landing.jsp](http://www.hcup-us.ahrq.gov/faststats/landing.jsp)) based on the HCUP National (Nationwide) Inpatient Sample (NIS)

- **Mood disorders was one of the top three nonmaternal, nonneonatal conditions treated in U.S. hospitals for patients aged 0–17, 18–44, and 45–64 years in 2014. For patients aged 0–17 and 45–64 years, mood disorders was not among the most frequent conditions a decade earlier.**

In 2014, mood disorders was the most common nonmaternal, nonneonatal diagnosis for patients aged 0–17 years (2.1 percent), and patients aged 18–44 years (4.7 percent), and the third most common diagnosis for patients aged 45–64 years (3.0 percent).

As shown in Table 2, mood disorders was a top-10 condition in both 2005 and 2014. Table 3 shows that patients aged 18–44 years accounted for approximately one-half of all mood disorder diagnoses during these years, making it the most common diagnosis among this age group in both 2005 (3.6 percent) and 2014 (4.7 percent). Another mental health diagnosis, schizophrenia and other psychotic disorders, ranked second in this age group in both years (2.0 percent in 2005 and 2.3 percent in 2014).

- **Diabetes mellitus was the fourth most common nonmaternal diagnosis among patients aged 18–44 years in 2014.**

Diabetes mellitus with complications ranked fourth in the top nonmaternal diagnoses among patients aged 18–44 years (1.9 percent) in 2014. It was not among the top five diagnoses for this age group a decade earlier.

- **Between 2005 and 2014, osteoarthritis became the leading condition treated in the hospital among patients aged 45–74 years, while coronary atherosclerosis fell off the top five list from the leading position.**

As shown in Table 2, osteoarthritis was the fourth most common hospital diagnosis overall in 2014. Table 3 shows that osteoarthritis was the most common diagnosis for patients aged 45–64 years (5.1 percent) and patients aged 65–74 years (7.4 percent)—an increase of more than 60 percent from 2005 for both age groups.

Coronary atherosclerosis was the most common diagnosis for patients aged 45–64 years and 65–74 years in 2005 but was not among the top five diagnoses for these age groups in 2014.

- **By 2014, septicemia was a top-five hospital diagnosis for every age group except patients aged 0–17 years.**

As shown in Table 2, septicemia was the third most common diagnosis overall in 2014. Table 3 shows that more than one-third of septicemia diagnoses were among patients aged 75 years and older, making it the most common diagnosis among this age group (7.6 percent). In addition, septicemia was the second most common diagnosis for patients aged 45–64 years (5.1 percent) and 65–74 years (6.2 percent), and the third most common diagnosis for patients aged 18–44 years (2.2 percent), excluding maternal diagnoses.

## Data Source

The estimates in this Statistical Brief are based upon data from the Healthcare Cost and Utilization Project (HCUP) 2005–2014 National (Nationwide) Inpatient Sample (NIS). The statistics were generated from HCUP Fast Stats, a free, online tool that provides users with easy access to the latest HCUP-based statistics for health information topics; and from HCUPnet, a free, online query system that provides users with immediate access to the largest set of publicly available, all-payer national, regional, and State-level hospital care databases from HCUP.<sup>3</sup> Supplemental sources included population denominator data for use with HCUP databases, derived from information available from the Bureau of the Census<sup>4</sup> and Claritas.<sup>5</sup>

## Definitions

*Diagnoses, ICD-9-CM, Clinical Classifications Software (CCS), diagnosis-related groups (DRGs), and major diagnostic categories (MDCs)*

The *principal diagnosis* is that condition established after study to be chiefly responsible for the patient's admission to the hospital.

ICD-9-CM is the International Classification of Diseases, Ninth Revision, Clinical Modification, which assigns numeric codes to diagnoses. There are approximately 14,000 ICD-9-CM diagnosis codes.

CCS categorizes ICD-9-CM diagnosis codes into a manageable number of clinically meaningful categories.<sup>6</sup> This clinical grouper makes it easier to quickly understand patterns of diagnoses. CCS categories identified as Other typically are not reported; these categories include miscellaneous, otherwise unclassifiable diagnoses.

DRGs comprise a patient classification system that categorizes patients into groups that are clinically coherent and homogeneous with respect to resource use. DRGs group patients according to diagnosis, type of treatment (procedure), age, and other relevant criteria. Each hospital stay has one assigned DRG.

MDCs assign ICD-9-CM principal diagnosis codes to one of 25 general diagnosis categories.

*Types of hospitals included in the HCUP National (Nationwide) Inpatient Sample*

The National (Nationwide) Inpatient Sample (NIS) is based on data from community hospitals, which are defined as short-term, non-Federal, general, and other hospitals, excluding hospital units of other institutions (e.g., prisons). The NIS includes obstetrics and gynecology, otolaryngology, orthopedic, cancer, pediatric, public, and academic medical hospitals. Excluded are long-term care facilities such as rehabilitation, psychiatric, and alcoholism and chemical dependency hospitals. Beginning in 2012, long-term acute care hospitals are also excluded. However, if a patient received long-term care, rehabilitation, or treatment for a psychiatric or chemical dependency condition in a community hospital, the discharge record for that stay will be included in the NIS.

*Unit of analysis*

The unit of analysis is the hospital discharge (i.e., the hospital stay), not a person or patient. This means that a person who is admitted to the hospital multiple times in 1 year will be counted each time as a separate discharge from the hospital.

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<sup>3</sup> Agency for Healthcare Research and Quality. HCUPnet Web site. [www.hcupnet.ahrq.gov/](http://www.hcupnet.ahrq.gov/). Accessed January 31, 2017.

<sup>4</sup> Barrett M, McCarty J, Coffey R, Levit K. Population Denominator Data for Use with the HCUP Databases (Updated with 2015 Population Data). HCUP Methods Series Report #2016-04. September 29, 2016. U.S. Agency for Healthcare Research and Quality. [www.hcup-us.ahrq.gov/reports/methods/2016-04.pdf](http://www.hcup-us.ahrq.gov/reports/methods/2016-04.pdf). Accessed January 31, 2017.

<sup>5</sup> Claritas. Claritas Demographic Profile. [www.claritas.com](http://www.claritas.com). Accessed June 23, 2017.

<sup>6</sup> Agency for Healthcare Research and Quality. HCUP Clinical Classifications Software (CCS) for ICD-9-CM. Healthcare Cost and Utilization Project (HCUP). Rockville, MD: Agency for Healthcare Research and Quality. Updated October 2016. [www.hcup-us.ahrq.gov/toolsoftware/ccs/ccs.jsp](http://www.hcup-us.ahrq.gov/toolsoftware/ccs/ccs.jsp). Accessed January 31, 2017.

### *Costs and charges*

Total hospital charges were converted to costs using HCUP Cost-to-Charge Ratios based on hospital accounting reports from the Centers for Medicare & Medicaid Services (CMS).<sup>7</sup> *Costs* reflect the actual expenses incurred in the production of hospital services, such as wages, supplies, and utility costs; *charges* represent the amount a hospital billed for the case. For each hospital, a hospital-wide cost-to-charge ratio is used. Hospital charges reflect the amount the hospital billed for the entire hospital stay and do not include professional (physician) fees. For the purposes of this Statistical Brief, costs are reported to the nearest hundred.

Mean cost per stay was inflation adjusted using the Gross Domestic Product (GDP) Price Index from the U.S. Department of Commerce, Bureau of Economic Analysis (BEA), with 2014 as the index base.<sup>8</sup> That is, all costs are expressed in 2014 dollars.

### *Median community-level income*

Median community-level income is the median household income of the patient's ZIP Code of residence. Income levels are separated into population-based quartiles with cut-offs determined using ZIP Code demographic data obtained from Claritas. The income quartile is missing for patients who are homeless or foreign.

### *Payer*

Payer is the expected primary payer for the hospital stay. To make coding uniform across all HCUP data sources, payer combines detailed categories into general groups:

- Medicare: includes patients covered by fee-for-service and managed care Medicare
- Medicaid: includes patients covered by fee-for-service and managed care Medicaid
- Private Insurance: includes Blue Cross, commercial carriers, and private health maintenance organizations (HMOs) and preferred provider organizations (PPOs)
- Uninsured: includes an insurance status of *self-pay* and *no charge*
- Other: includes Workers' Compensation, TRICARE/CHAMPUS, CHAMPVA, Title V, and other government programs

Hospital stays billed to the State Children's Health Insurance Program (SCHIP) may be classified as Medicaid, Private Insurance, or Other, depending on the structure of the State program. Because most State data do not identify patients in SCHIP specifically, it is not possible to present this information separately.

For this Statistical Brief, when more than one payer is listed for a hospital discharge, the first-listed payer is used.

### *Hospitalization type (service line)*

Coding criteria for the six hospitalization types are based on principal ICD-9-CM diagnosis codes, CCS categories, and DRGs. Each discharge was assigned to a single hospitalization type hierarchically, based on the following order: maternal, neonatal, mental health, injury, surgical, and medical. All discharges are categorized in one of the six mutually exclusive types of service lines.

## **About HCUP**

The Healthcare Cost and Utilization Project (HCUP, pronounced "H-Cup") is a family of health care databases and related software tools and products developed through a Federal-State-Industry partnership and sponsored by the Agency for Healthcare Research and Quality (AHRQ). HCUP databases bring together the data collection efforts of State data organizations, hospital associations, and private data organizations (HCUP Partners) and the Federal government to create a national information

<sup>7</sup> Agency for Healthcare Research and Quality. HCUP Cost-to-Charge Ratio (CCR) Files. Healthcare Cost and Utilization Project (HCUP). 2001–2014. Rockville, MD: Agency for Healthcare Research and Quality. Updated November 2016. [www.hcup-us.ahrq.gov/db/state/costtocharge.jsp](http://www.hcup-us.ahrq.gov/db/state/costtocharge.jsp). Accessed January 31, 2017.

<sup>8</sup> U.S. Bureau of Economic Analysis. National Income and Product Account Tables, Table 1.1.4 Price Indexes for Gross Domestic Product. [www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1#reqid=9&step=1&isuri=1](http://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1#reqid=9&step=1&isuri=1). Accessed January 31, 2017.

resource of encounter-level health care data. HCUP includes the largest collection of longitudinal hospital care data in the United States, with all-payer, encounter-level information beginning in 1988. These databases enable research on a broad range of health policy issues, including cost and quality of health services, medical practice patterns, access to health care programs, and outcomes of treatments at the national, State, and local market levels.

HCUP would not be possible without the contributions of the following data collection Partners from across the United States:

**Alaska** Department of Health and Social Services  
**Alaska** State Hospital and Nursing Home Association  
**Arizona** Department of Health Services  
**Arkansas** Department of Health  
**California** Office of Statewide Health Planning and Development  
**Colorado** Hospital Association  
**Connecticut** Hospital Association  
**District of Columbia** Hospital Association  
**Florida** Agency for Health Care Administration  
**Georgia** Hospital Association  
**Hawaii** Health Information Corporation  
**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  
**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** Association of Hospitals and Health Systems  
**Oregon** Office of Health Analytics  
**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** Health Care Authority  
**Wisconsin** Department of Health Services



## Wyoming Hospital Association

### About Statistical Briefs

HCUP Statistical Briefs are descriptive summary reports presenting statistics on hospital inpatient, ambulatory surgery, and emergency department use and costs, quality of care, access to care, medical conditions, procedures, patient populations, and other topics. The reports use HCUP administrative health care data.

### About the NIS

The HCUP National (Nationwide) Inpatient Sample (NIS) is a nationwide database of hospital inpatient stays. The NIS is nationally representative of all community hospitals (i.e., short-term, non-Federal, nonrehabilitation hospitals). The NIS includes all payers. It is drawn from a sampling frame that contains hospitals comprising more than 95 percent of all discharges in the United States. The vast size of the NIS allows the study of topics at the national and regional levels for specific subgroups of patients. In addition, NIS data are standardized across years to facilitate ease of use. Over time, the sampling frame for the NIS has changed; thus, the number of States contributing to the NIS varies from year to year. The NIS is intended for national estimates only; no State-level estimates can be produced.

The 2012 NIS was redesigned to optimize national estimates. The redesign incorporates two critical changes:

- Revisions to the sample design—starting with 2012, the NIS is now a *sample of discharge records from all HCUP-participating hospitals*, rather than a sample of hospitals from which all discharges were retained (as is the case for NIS years before 2012).
- Revisions to how hospitals are defined—the NIS now uses the *definition of hospitals and discharges supplied by the statewide data organizations* that contribute to HCUP, rather than the definitions used by the American Hospital Association (AHA) Annual Survey of Hospitals.

The new sampling strategy is expected to result in more precise estimates than those that resulted from the previous NIS design by reducing sampling error: for many estimates, confidence intervals under the new design are about half the length of confidence intervals under the previous design. The change in sample design for 2012 necessitates recomputation of prior years' NIS data to enable analyses of trends that use the same definitions of discharges and hospitals.

### About HCUPnet

HCUPnet ([www.hcupnet.ahrq.gov/](http://www.hcupnet.ahrq.gov/)) is an online query system that offers instant access to the largest set of all-payer health care databases that are publicly available. HCUPnet has an easy step-by-step query system that creates tables and graphs of national and regional statistics as well as data trends for community hospitals in the United States. HCUPnet generates statistics using data from HCUP's National (Nationwide) Inpatient Sample (NIS), the Kids' Inpatient Database (KID), the Nationwide Emergency Department Sample (NEDS), the Nationwide Readmissions Database (NRD), the State Inpatient Databases (SID), and the State Emergency Department Databases (SEDD).

### About HCUP Fast Stats

HCUP Fast Stats ([www.hcup-us.ahrq.gov/faststats/landing.jsp](http://www.hcup-us.ahrq.gov/faststats/landing.jsp)) is an interactive, online tool that provides easy access to the quarterly HCUP-based statistics for select State and national health information topics. HCUP Fast Stats uses side-by-side comparisons of visual statistical displays, trend figures, or simple tables to convey complex information at a glance. Topics currently available in HCUP Fast Stats include the State Trends in Hospital Use by Payer; National Hospital Utilization and Costs; and Opioid-Related Hospital Use, National and State. HCUP Fast Stats presents statistics using data from HCUP's National (Nationwide) Inpatient Sample (NIS), the Nationwide Emergency Department Sample (NEDS), the State Inpatient Databases (SID), and the State Emergency Department Databases (SEDD).

## For More Information

For other information on hospitalizations in the United States, refer to the HCUP Statistical Briefs located at [www.hcup-us.ahrq.gov/reports/statbriefs/sb\\_hospoverview.jsp](http://www.hcup-us.ahrq.gov/reports/statbriefs/sb_hospoverview.jsp).

For additional HCUP statistics, visit:

- HCUP Fast Stats at [www.hcup-us.ahrq.gov/faststats/landing.jsp](http://www.hcup-us.ahrq.gov/faststats/landing.jsp) for easy access to the latest HCUP-based statistics for health information topics
- HCUPnet, HCUP's interactive query system, at [www.hcupnet.ahrq.gov/](http://www.hcupnet.ahrq.gov/)

For more information about HCUP, visit [www.hcup-us.ahrq.gov/](http://www.hcup-us.ahrq.gov/).

For a detailed description of HCUP and more information on the design of the National (Nationwide) Inpatient Sample (NIS), please refer to the following database documentation:

Agency for Healthcare Research and Quality. Overview of the National (Nationwide) Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP). Rockville, MD: Agency for Healthcare Research and Quality. Updated December 2016. [www.hcup-us.ahrq.gov/nisoverview.jsp](http://www.hcup-us.ahrq.gov/nisoverview.jsp). Accessed January 31, 2017.

## Suggested Citation

McDermott KW (IBM Watson Health), Elixhauser A (AHRQ), Sun R (AHRQ). Trends in Hospital Inpatient Stays in the United States, 2005–2014. HCUP Statistical Brief #225. June 2017. Agency for Healthcare Research and Quality, Rockville, MD. [www.hcup-us.ahrq.gov/reports/statbriefs/sb225-Inpatient-US-Stays-Trends.pdf](http://www.hcup-us.ahrq.gov/reports/statbriefs/sb225-Inpatient-US-Stays-Trends.pdf).

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AHRQ welcomes questions and comments from readers of this publication who are interested in obtaining more information about access, cost, use, financing, and quality of health care in the United States. We also invite you to tell us how you are using this Statistical Brief and other HCUP data and tools, and to share suggestions on how HCUP products might be enhanced to further meet your needs. Please e-mail us at [hcp@ahrq.gov](mailto:hcp@ahrq.gov) or send a letter to the address below:

Sharon B. Arnold, Ph.D., Acting Director  
Center for Delivery, Organization, and Markets  
Agency for Healthcare Research and Quality  
5600 Fishers Lane  
Rockville, MD 20857

This Statistical Brief was posted online on June 27, 2017.