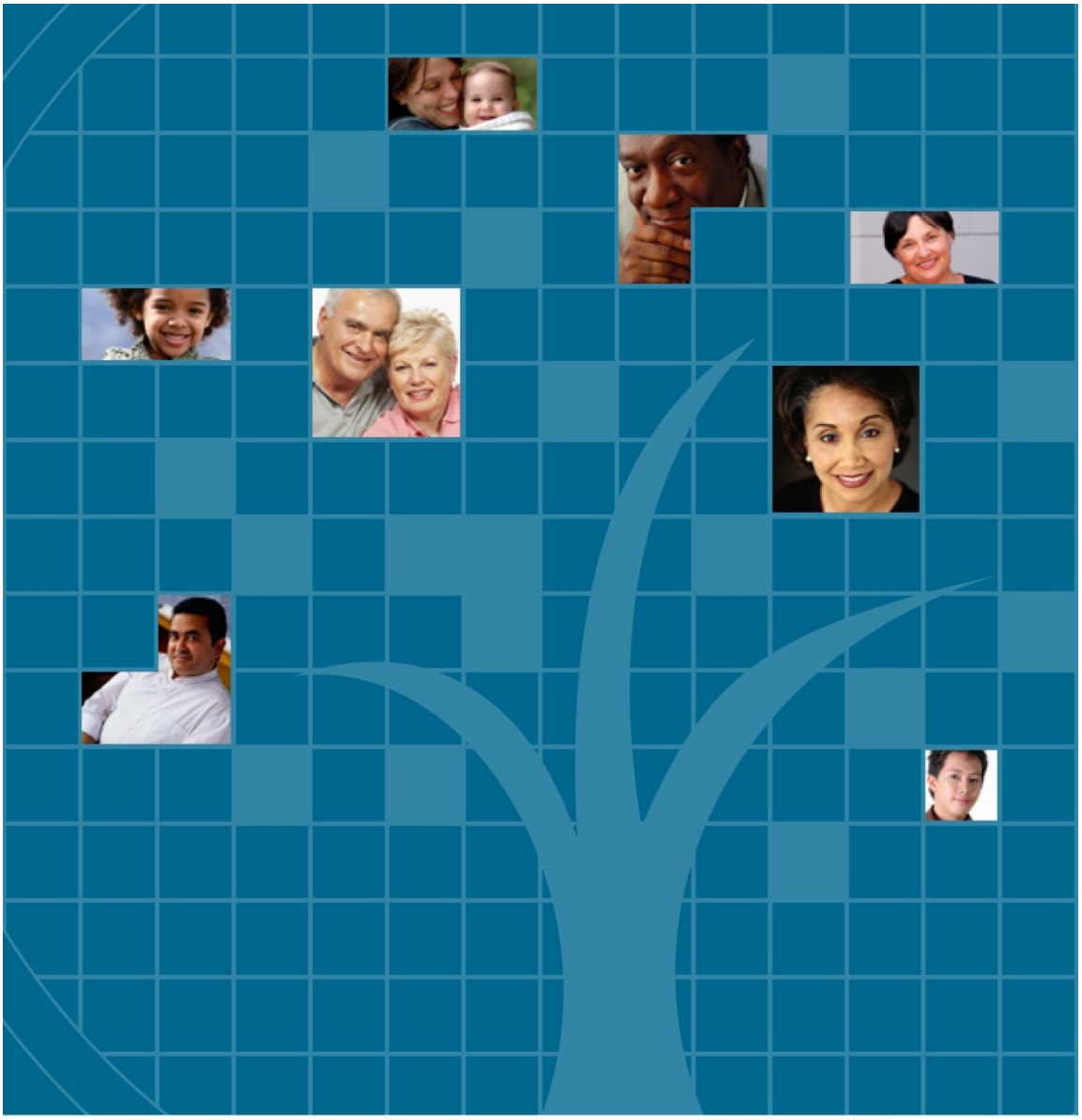
HCUP FACTS AND FIGURES:

STATISTICS ON HOSPITAL-BASED CARE IN THE UNITED STATES, 2009



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H·CUP
HEALTHCARE COST AND UTILIZATION PROJECT

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HIGHLIGHTS

HCUP Facts and Figures: Statistics on Hospital-based Care in the United States, 2009 presents information from the 2009 Healthcare Cost and Utilization Project (HCUP) Nationwide Inpatient Sample (NIS), with trend information as far back as 1993. The NIS consists of discharge records for all inpatients treated in a sample of approximately 1,000 hospitals. These discharges are weighted to represent all inpatient stays in community hospitals across the nation, so this report presents national estimates for the U.S.

Community hospitals include all non-Federal, short-term, acute care hospitals. This excludes psychiatric and substance abuse facilities, short-term rehabilitation hospitals, and Federal hospitals (Department of Defense, Department of Veterans Affairs, and Indian Health Service).

OVERVIEW STATISTICS FOR INPATIENT HOSPITAL STAYS	EXHIBIT
▪ The number of hospital stays increased from 34.7 million in 1997 to 39.4 million in 2009, a 14-percent increase overall, or an average annual increase of 1.1 percent. However, the rate of hospitalizations remained unchanged between 1997 and 2009: there were 1,278 hospital stays for every 10,000 persons in the United States in 1997 and 1,284 stays per 10,000 persons in 2009.	1.1
▪ Between 1997 and 2009, the aggregate inflation-adjusted costs for hospitalizations—the actual costs of producing hospital services—increased 57 percent. Costs rose from $229.6 billion to $361.5 billion—an average annual increase of 3.9 percent.	1.1
▪ The average length of stay (ALOS) in 2009 (4.6 days) was almost 20-percent shorter than in 1993 (5.7 days). The ALOS declined throughout most of the 1990s and has remained unchanged since 2000.	1.2
▪ In 2009, Medicare and Medicaid were the expected primary payers for more than half (57 percent) of all inpatient hospital stays (accounting for 14.7 and 8.0 million hospital stays, respectively).	1.3b
▪ Between 1997 and 2009, uninsured and Medicaid stays (both up 42 percent) grew at three times the rate of all stays.	1.3c
▪ The number of stays billed to Medicare grew by 17 percent from 1997 to 2009, while private insurance was unchanged.	1.3c
▪ The number of discharges to home health care grew by 68 percent between 1997 and 2009.	1.4b
▪ Uninsured and Medicaid stays accounted for over half (52 percent) of all stays discharged against medical advice, but only one-quarter (26 percent) of all other stays.	1.4c
▪ Persons residing in the poorest communities had a 19-percent higher rate of hospitalization in 2009 (1,420 stays per 10,000 population) than those residing in all other communities (1,189 stays per 10,000 population).	1.5b

INPATIENT HOSPITAL STAYS BY DIAGNOSIS	EXHIBIT
▪ Hospitalizations per 10,000 population for musculoskeletal conditions increased by 15 percent, from 95 stays per 10,000 population in 1997 to 110 stays per 10,000 population in 2009.	2.1
▪ The rate of stays for circulatory conditions decreased by 13 percent over the 12-year period, falling from 217 stays per 10,000 population in 1997 to 189 stays per 10,000 population in 2009.	2.1
▪ Liveborn (newborn infant) (4.2 million stays) was the most common diagnosis and accounted for more than 10 percent of all hospital stays. Since 1997, the rate of stays for newborn infants has remained stable (from 139 in 1997 to 135 in 2009 per 10,000 population).	2.2a
▪ Pneumonia (3.0 percent of all stays) and congestive heart failure (2.6 percent) were the second and third most common reasons for hospitalization.	2.2a
▪ The fourth and seventh most frequent principal diagnoses in 2009 (osteoarthritis and septicemia) were not among the most frequent diagnoses in 1997. Between 1997 and 2009, stays per 10,000 population for osteoarthritis increased 95 percent, and stays per 10,000 population for septicemia increased by 78 percent.	2.2a
▪ Mood disorders was ranked seventh in 1997 and fifth in 2009, and increased nearly 20 percent per population over this time period, from 24 to 28 stays per 10,000.	2.2a
▪ Three circulatory diseases—congestive heart failure, coronary atherosclerosis, and cardiac dysrhythmias—were among the top ten most frequent principal diagnoses in 2009.	2.2a
▪ In 2009, acute renal failure was the most rapidly growing condition with an increase of 245 percent, from 3.6 to 12.4 stays per 10,000 population.	2.2b
▪ Osteoarthritis was the most common condition for adults 45-64 with an increase of 151 percent in the rate of stays per 10,000 population. Between 1997 and 2009, osteoarthritis increased by 58 percent among adults aged 65-84 and was the second most common condition.	2.4
▪ Spondylosis, intervertebral disc disorders, and other back problems—the fourth most common condition among 45-64 year olds—remained relatively stable from 1997 to 2009.	2.4
▪ Three of the most common conditions with Medicaid as the primary payer were pregnancy and childbirth-related: liveborn (newborn infant), trauma to the vulva and perineum due to childbirth, and previous C-section. Altogether, stays for these conditions made up approximately 30 percent of all Medicaid stays.	2.5

▪ Four of the most common conditions for uninsured hospital stays increased from 1997 to 2009: alcohol-related disorders (36 percent), mood disorders (64 percent), non-specific chest pain (99 percent), and skin and subcutaneous tissue infections (176 percent).	2.5

INPATIENT HOSPITAL STAYS BY PROCEDURE	EXHIBIT
▪ The rate of stays with procedures remained relatively stable at about 1,300 stays per 10,000 population from 1997 to 2009.	3.1a
▪ Blood transfusion occurred in over ten percent of all hospital stays that included a procedure and was the most frequently performed procedure in 2009. The rate of blood transfusion more than doubled from 1997 to 2009.	3.1a
▪ Cesarean section was the most frequent major operating room procedure—performed on 1.4 million females in 2009.	3.1a
▪ The rate of stays with knee arthroplasty increased 84 percent from 12 per 10,000 population in 1997 to 22 per 10,000 population in 2009. Knee arthroplasty was the fourteenth most common inpatient procedure in 2009.	3.1a
▪ The rate of respiratory intubation and mechanical ventilation grew rapidly from 1997 to 2009 among 45-64 year olds (69 percent), 65-84 year olds (33 percent), and seniors 85 years and older (28 percent).	3.2
▪ Diagnostic cardiac catheterization and coronary arteriography was common for 45-64 year olds (638,000 procedures) and 65-84 year olds (664,000 procedures), but the rate of procedures declined about 20 percent from 1997 to 2009 in both age groups.	3.2

COSTS FOR INPATIENT HOSPITAL STAYS	EXHIBIT
▪ In 2009, the aggregate cost for all hospital stays was $361.5 billion.	4.1a
▪ The top three conditions with the highest aggregate costs—septicemia, osteoarthritis, and coronary atherosclerosis—accounted for more than 11 percent of all hospital costs in 2009.	4.1a
▪ When conditions were grouped by diagnostic category, the circulatory system accounted for the largest share of hospital costs (20 percent).	4.5a
▪ Medicare, the single largest payer for hospitalizations in 2009, accounted for 46 percent of aggregate inpatient costs.	4.4a
▪ Medicaid stays accounted for 15 percent of in-hospital costs.	4.4a
▪ Private insurance was responsible for 30 percent of aggregate costs; the uninsured were responsible for 5 percent.	4.4a
▪ The majority of costs for circulatory conditions (60 percent) were billed to Medicare. One-quarter of circulatory system costs (25 percent) were covered by private insurance.	4.5c
▪ Between 1997 and 2009, inflation-adjusted aggregate costs for community hospital stays rose from $229.6 billion to $361.5 billion.	4.1a
▪ Overall, growth in intensity of services accounted for 72 percent of the growth in aggregate costs, while population growth was responsible for 27 percent of total growth and an increased number of stays per population accounted for only 1.2 percent of growth.	4.2

WOMEN'S HEALTH	EXHIBIT
▪ In 2009, almost 6 out of every 10 hospital stays were for females. Specifically, 42 percent of all stays were for males, 12 percent were for females hospitalized for pregnancy and childbirth (maternal stays), and 46 percent were for females hospitalized for non-maternal conditions.	5.1a & 5.1b
▪ Females were more likely than males to be hospitalized across all communities and all regions. For example, the rate of hospitalization for females in the lowest income communities was 34 percent higher than males and the female hospitalization rate in the highest income communities was 38 percent higher. Similarly, females were 20-41 percent more likely than males to be hospitalized across all regions in the U.S.	5.1a

▪ Medicare was the primary payer for the largest percentage of male stays (39 percent) and non-maternal female stays (45 percent).	5.1c
▪ Forty-five percent of maternal stays had Medicaid as the primary payer.	5.1c
▪ The number of uninsured hospital stays was similar for males (1.2 million) and females (1.1 million).	5.1a
▪ The average length of hospital stay declined for males and non-maternal females from 5.2 to 4.8-4.9 days from 1997 to 2009; however, the average length of hospital stay increased slightly for maternal females from 2.5 to 2.7 days.	5.1d
▪ On average, hospital stays for non-maternal females cost less than stays for males ($9,400 versus $10,400).	5.1f
▪ Stays for maternal females cost an average of $3,900, less than half of the cost of a non-maternal stay.	5.1f
▪ The total cost for hospital care in the U.S. was $361.5 billion in 2009—47 percent for males, 48 percent for non-maternal females, and 5 percent for maternal females.	5.1g
▪ Pregnancy and childbirth was the most common reason for hospitalizations of females – 295 hospital stays per 10,000 population.	5.2b
▪ Circulatory conditions were less common reasons for hospital stays for females (176 per 10,000 population) than for males (202 per 10,000 population). On the other hand, respiratory system conditions were more common for females (135 per 10,000 population) than for males (123 per 10,000 population).	5.2b
▪ Hospitalization for urinary tract infections in females was 2.5 times higher than in males.	5.2c
▪ Biliary tract hospital stays were 67 percent higher in females than males.	5.2c
▪ Osteoarthritis occurred at a 47-percent higher rate in females than males.	5.2c
▪ Compared with females, males had higher rates of hospitalization for coronary atherosclerosis (77 percent higher) and acute myocardial infarction, or heart attack (62 percent higher).	5.2c
▪ Average hospital costs were lower for females than males for congestive heart failure, acute cerebrovascular disease, coronary atherosclerosis, and acute myocardial infarction.	5.2d
▪ Hospital costs were similar for females and males for stays involving complication of device, implant or graft; osteoarthritis; spondylosis; and complication of surgical procedures or medical care.	5.2d

▪ Females accounted for a higher rate of hospital stays for mood disorders in 2009 than males (41 stays per 10,000 population for females and 34 stays per 10,000 population for males).	5.3a
▪ The rate of mood disorders has been greater for females compared with males over the 12-year period from 1997 to 2009. Females had a 42-percent higher rate of hospitalization for mood disorders than males in 1997, a difference that narrowed to 21 percent in 2009.	5.3a
▪ The rate of stays for mood disorders was consistently higher among females than males across all age groups in 2009, with the exception of adults age 85 and older, where the rates were similar for males and females.	5.3b
▪ The highest rate of hospitalization among females for mood disorders was in the Midwest (50 stays per 10,000 population)—2.5 times higher than the lowest rate in the West (20 stays per 10,000).	5.3c
▪ The largest male-to-female difference in hospitalizations for mood disorders was in the South, where the hospitalization rate for females (34 per 10,000 population) was 36 percent higher than for males (25 per 10,000 population).	5.3c
▪ The rate of cholecystectomy was 71 percent higher for females than for males.	5.4a
▪ The rate of knee arthroplasty for females was 57 percent higher than for males.	5.4a
▪ The rate of knee arthroplasty increased by 69 percent for females 65 to 84 years old (from 72 stays per 10,000 population in 1997 to 122 stays per 10,000 population in 2009), while it increased by only 55 percent for males (from 58 stays per 10,000 population in 1997 to 90 stays per 10,000 population in 2009).	5.4b
▪ The rate of hip replacement for females was 38 percent higher than for males.	5.4a
▪ Hip replacements for females age 45 to 64 years old increased by 81 percent from 10 per 10,000 population in 1997 to 17 per 10,000 population in 2009. The rate for males in this period nearly doubled, from 10 per 10,000 population in 1997 to 19 per 10,000 population in 2009.	5.4c
▪ Asthma was a common condition among children 1 to 2, 3 to 5, 6 to 9, and 10 to 14 years old. Among 1 to 9 year olds, males had 64- to 75-percent higher rates of stays for asthma compared to females.	5.5a
▪ Mood disorders were common among 10 to 14 and 15 to 17 year olds. Females 15 to 17 years old had a 70-percent higher rate of hospitalization for mood disorders in 2009 than males (46 female stays per 10,000 population versus 27 male stays per 10,000 population).	5.5a

▪ Diagnostic spinal tap was a top five procedure among children less than 1, 1 to 2, 6 to 9, and 10 to 14 years old. Among 6 to 9 year olds, males had a higher rate of diagnostic spinal tap in the hospital than females (3 male stays versus 2 female stays per 10,000 children). For all other age groups, the rate of diagnostic spinal tap was similar between males and females.	5.5b
▪ Appendectomy was frequently performed in children 3 to 5, 6 to 9, 10 to 14, and 15 to 17 years old. With the exception of children 3 to 5 years, males had 36- to 50-percent higher rates of appendectomy than females.	5.5b
▪ There were 4.6 million maternal stays in 2009, up from 4.3 million in 1997.	5.6b
▪ The rate of stays for childbirth among 20 to 24 year olds remained stable from 1997 to 2007 and then declined 14 percent from 2007 to 2009 (from 1,082 to 951 stays per 10,000 population).	5.6a
▪ The rate of stays for childbirth among 25-34 year olds increased 20 percent between 1997 to 2007 (from 950 to 1,141 stays per 10,000 population) and then declined 13 percent to 1,012 stays per 10,000 population.	5.6a
▪ The rate of vaginal deliveries decreased 16 percent, from 79 percent of all deliveries in 1997 to 66 percent in 2009. The rate of Cesarean sections increased by 60 percent between 1997 and 2009, from 21 percent of all deliveries to 34 percent of all deliveries.	5.6d
▪ The highest rate of C-sections was for females 35-44 years old—44 percent of all deliveries in this age group were via C-section in 2009, a 52-percent increase since 1997 (when the C-section rate was 29 percent in this age group).	5.6e
▪ For teenage births (15-19 years old), 24 percent of all deliveries were via C-section in 2009, up 71 percent from 14 percent in 1997.	5.6e
▪ The rate of vaginal delivery with episiotomy decreased 66 percent – from 23 percent of all deliveries in 1997 to 8 percent in 2009.	5.6f
▪ The rate of vaginal birth following induction increased 24 percent (from 124 to 154 stays per 1,000 deliveries). However, the increase for C-section following induction was even higher—a 73-percent increase from 1997 to 2009 (from 22 to 38 stays per 1,000 deliveries).	5.6g
▪ The rate of vaginal birth after C-section declined 67 percent from 1997 to 2009 (from 42 to 14 stays per 1,000 deliveries).	5.6h
▪ During this same time period, the rate of repeat C-sections nearly doubled from 77 to 149 repeat C-sections per 1,000 deliveries.	5.6h

INTRODUCTION

The mission of the Agency for Healthcare Research and Quality (AHRQ) is to improve the quality, safety, efficiency, and effectiveness of health care for all Americans. To help fulfill this goal, AHRQ sponsors the Healthcare Cost and Utilization Project (HCUP), a family of health care databases and related software tools, products, and statistical reports to inform policy makers, health system leaders, researchers, and the public.

Through partnerships with a number of State, Federal, and Industry organizations, HCUP has grown from a single database limited to inpatient hospital care to a family of six state- and national-level databases, covering inpatient, ambulatory surgery, emergency department, and pediatric encounters. As a result, HCUP has become the largest all-payer resource of multi-year hospital discharge data from community, non-Federal, short-term (acute care), general, and specialty hospitals in the U.S.

The HCUP databases enable research on a wide range of topics, including treatment use and diagnostic trends, medical practice patterns, readmissions, cost and quality of health services, preventable hospitalizations, payer trends, and outcomes of treatments at the national, state, and local market levels. The Nationwide Inpatient Sample (NIS), the most popular of the six HCUP databases, is the data source for the 2009 *HCUP Facts and Figures*.

This fifth annual edition of *HCUP Facts and Figures* highlights the rich potential of HCUP by providing targeted analysis of important trends in hospital care organized around high-interest topics, such as hospital and discharge characteristics, diagnoses, procedures, and costs. In addition to providing updates on many topics presented in previously published HCUP *Fact Books*, *Statistical Briefs*, and *HCUP Facts and Figures*, there is a special section in this year's report that details differences and trends in women's health.

This report demonstrates the wealth of information accessible through HCUP and illustrates the types of analyses that can be conducted using the NIS. Many of the statistics presented in this report are available online through HCUPnet (http://hcupnet.ahrq.gov/). Graphical presentations, statistical tables, and bulleted notes highlight key facts and emerging trends for each topic.

HCUP databases continue to grow: Every year since 1988, HCUP has released new, expanded information on inpatient, emergency department, and ambulatory surgery services. HCUP's inpatient databases now include more than 95 percent of all community hospital discharges in the U.S. HCUP is positioned to assist in understanding many of the hospital-related health care challenges that Americans will face in the future. As the U.S. embarks on a major health reform initiative to cover the uninsured, expand coverage for other populations, and continue its effort to improve the quality and value of care, AHRQ's successful collaboration with its HCUP Partners will continue to provide essential hospital information to measure progress towards these goals.

We invite you to tell us how you are using *HCUP Facts and Figures* and other HCUP data and tools. Please share your stories and suggestions on how HCUP products might be enhanced to further meet your needs by e-mailing us at hcup@ahrq.gov or sending a letter to the address below.

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HCUP AND ITS DATA PARTNERS

HCUP 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, private data organizations, and the Federal government to create a national information resource of encounter-level health care data. The HCUP Partnership has grown from 8 states in 1988 to 45 states in 2011, and it would not be possible without the current contributions from the following data collection Partners:

Alaska State Hospital & Nursing Association
Arizona Department of Health Services
Arkansas Department of Health
California Office of Statewide Health Planning and Development
Colorado Hospital Association
Connecticut 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 and Hospitals
Maine Health Data Organization
Maryland Health Services Cost Review Commission
Massachusetts Division of Health Care Finance and Policy
Michigan Health & Hospital Association
Minnesota Hospital Association
Missouri Hospital Industry Data Institute
Montana MHA — An Association of Montana Health Care Providers
Nebraska Hospital Association
Nevada Department of Health and Human Services
New Hampshire Department of Health & Human Services
New Jersey Department of Health and Senior Services
New Mexico Health Policy Commission
New York State Department of Health
North Carolina Department of Health and Human Services
Ohio Hospital Association
Oklahoma State Department of Health
Oregon Association of Hospitals and Health Systems
Pennsylvania Health Care Cost Containment Council
Rhode Island Department of Health
South Carolina State Budget & Control Board
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

SECTION 1 OVERVIEW STATISTICS FOR INPATIENT HOSPITAL STAYS

HIGHLIGHTS

- The number of hospital stays increased from 34.7 million in 1997 to 39.4 million in 2009, a 14-percent increase overall, or an average annual increase of 1.1 percent. However, the rate of hospitalizations remained unchanged between 1997 and 2009: there were 1,278 hospital stays for every 10,000 persons in the United States in 1997 and 1,284 stays per 10,000 persons in 2009.
- Between 1997 and 2009, the aggregate inflation-adjusted costs for hospitalizations—the actual costs of producing hospital services—increased 57 percent. Costs rose from $229.6 billion to $361.5 billion—an average annual increase of 3.9 percent.
- The average length of stay (ALOS) in 2009 (4.6 days) was almost 20-percent shorter than in 1993 (5.7 days). The ALOS declined throughout most of the 1990s and has remained unchanged since 2000.
- In 2009, Medicare and Medicaid were the expected primary payers for more than half (57 percent) of all inpatient hospital stays (accounting for 14.7 and 8.0 million hospital stays, respectively).
- Between 1997 and 2009, uninsured and Medicaid stays (both up 42 percent) grew at three times the rate of all stays.
- The number of stays billed to Medicare grew by 17 percent from 1997 to 2009, while private insurance was unchanged.
- The number of discharges to home health care grew by 68 percent between 1997 and 2009.
- Uninsured and Medicaid stays accounted for over half (52 percent) of all stays discharged against medical advice, but only one-quarter (26 percent) of all other stays.
- Persons residing in the poorest communities had a 19-percent higher rate of hospitalization in 2009 (1,420 stays per 10,000 population) than those residing in all other communities (1,189 stays per 10,000 population).

EXHIBIT 1.1 Characteristics of U.S. Community Hospitals

Characteristics of U.S. Community Hospitals, 1997 and 2009

UTILIZATION, CHARGES, AND COSTS	1997	2009
Stays		
Total stays in millions	34.7	39.4
Number of stays per 10,000 population*	1,278	1,284
Total days of care in millions	168.1	180.6
Average length of stay in days	4.8	4.6
Percent of discharges from:		
Metropolitan hospitals	84%	86%
Teaching hospitals	47%	46%
Hospital ownership		
Non-Federal government hospitals	14%	13%
Private not-for-profit hospitals	73%	71%
Private for-profit hospitals	13%	14%
Charges and costs†		
Charges		
Average charges per stay	$11,300	$30,700
Average inflation-adjusted charges per stay in 2009 dollars**	$14,600	$30,700
Costs		
Total aggregate costs in billions	$177.1	$361.5
Average costs per stay	$5,100	$9,200
Inflation-adjusted costs in 2009 dollars**		
Total aggregate costs in billions	$229.6	$361.5
Average costs per stay	$6,600	$9,200

* Calculated using resident population for July 2009 from the U.S. Bureau of the Census, retrieved on June 27, 2011 (http://www.census.gov/popest/national/asrh/2009-nat-res.html).

† Charges represent amounts billed by hospitals. These amounts are seldom paid in full by insurers or patients. Costs are calculated from charges using reported cost-to-charge ratios calculated from information on Medicare Cost Reports, submitted by hospitals to the Centers for Medicare and Medicaid Services (CMS).

** Adjusted for inflation using the GDP deflator (http://www.bea.gov/national/nipaweb/SelectTable.asp, Table 1.1.4. Price Indexes for Gross Domestic Product).

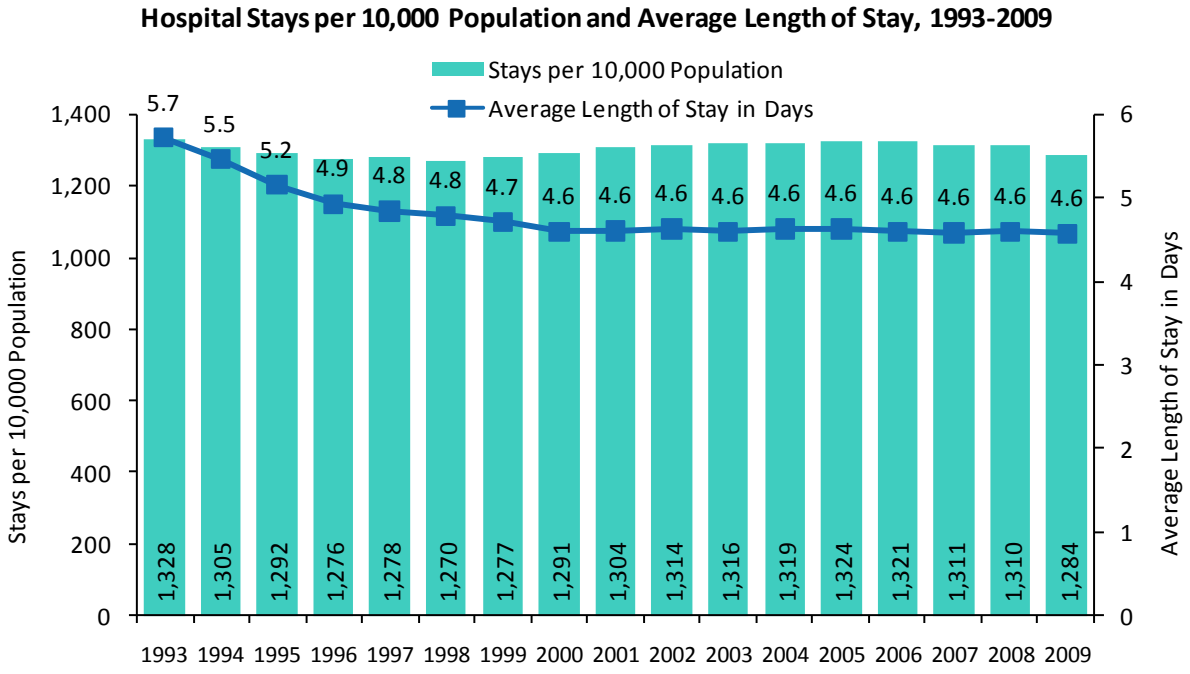
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2009.

Hospital costs rose rapidly and hospital characteristics changed slowly over time.

- The number of hospital stays increased from 34.7 million in 1997 to 39.4 million in 2009, a 14-percent increase overall, or an average annual increase of 1.1 percent. However, the rate of hospitalizations remained unchanged between 1997 and 2009: there were 1,278 hospital stays for every 10,000 persons in the United States in 1997 and 1,284 stays per 10,000 persons in 2009.
- The percent of community hospital stays changed little in terms of metropolitan location, teaching status, and type of ownership between 1997 and 2009. Most hospital stays (86 percent) were in facilities located in metropolitan areas, nearly half were in teaching hospitals, and almost three-quarters were in private not-for-profit facilities.

- Average inflation-adjusted charges per stay—what patients are billed for their rooms, nursing care, diagnostic tests, procedures, and other services—rose from $14,600 in 1997 to $30,700 in 2009. Few patients or insurers paid those amounts because of discounts negotiated with hospitals.
- Between 1997 and 2009, the aggregate inflation-adjusted costs for hospitalizations—the actual costs of producing hospital services—increased 57 percent. Costs rose from $229.6 billion to $361.5 billion—an average annual increase of 3.9 percent.

EXHIBIT 1.2 Inpatient Hospital Stays and Average Length of Stay

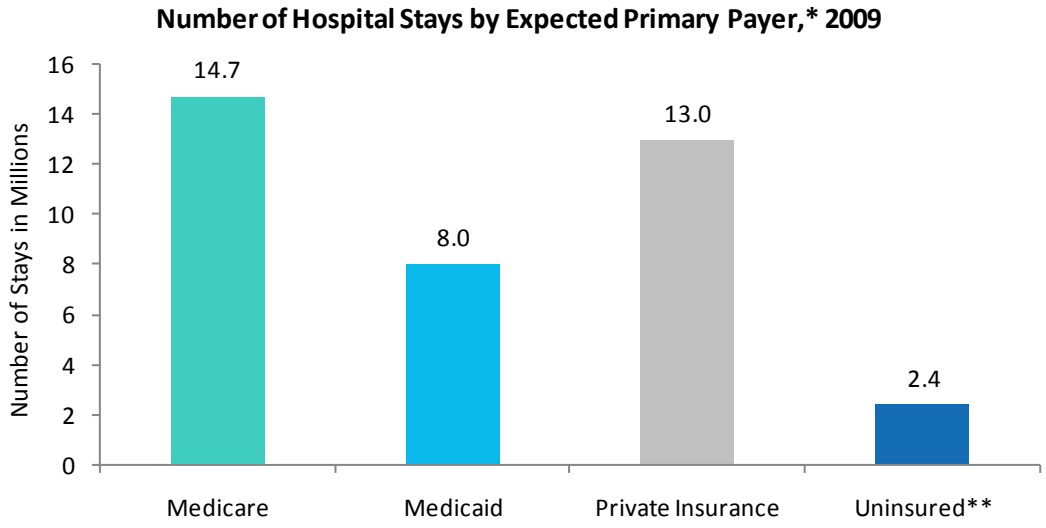


Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1993-2009.

The average length of stay in U.S. community hospitals stabilized beginning in 2000, while the number of hospital stays per 10,000 population remained stable throughout the 1993-2009 period.

- The average length of stay (ALOS) in 2009 (4.6 days) was almost 20-percent shorter than in 1993 (5.7 days). The ALOS declined throughout most of the 1990s and has remained unchanged since 2000.
- From 1993 to 2009, the annual rate of stays was relatively stable at about 1,300 stays per 10,000 population.

EXHIBIT 1.3 Expected Primary Payer

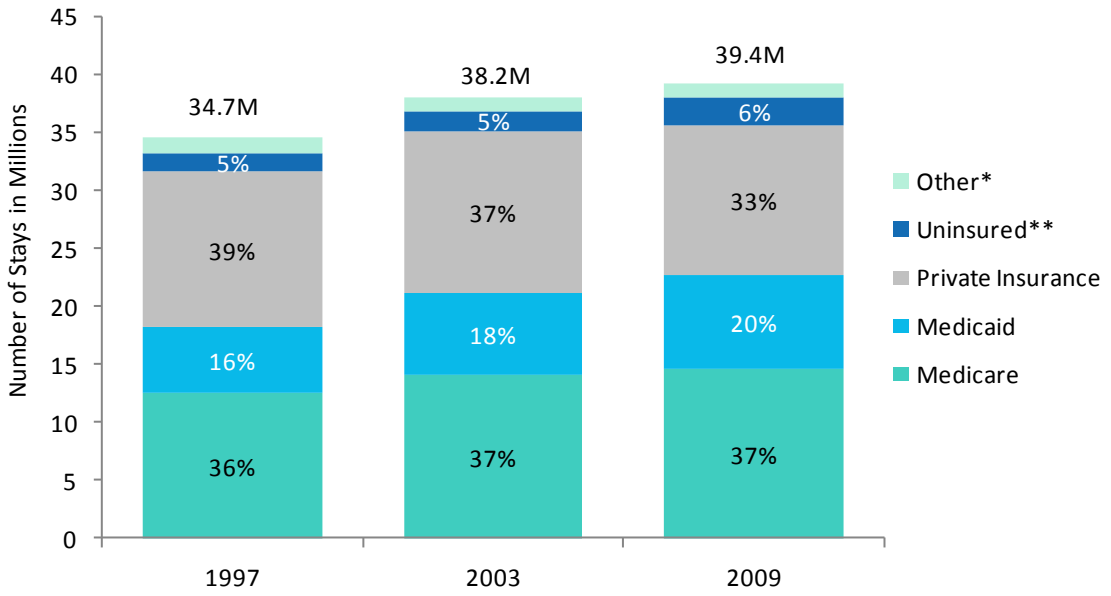


* There are an additional 1.3 million stays (3 percent of stays) with "other" as the expected primary payer. "Other" payer includes Workers' Compensation, TRICARE, CHAMPUS, CHAMPVA, Title V, and other government programs.
** Includes stays classified as self-pay or no charge.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

The primary payer bears the major financial responsibility for the hospital stay. Although other payers, including the patients themselves, may also pay part of the cost of hospitalization, only the expected primary payers are depicted in this section.

- In 2009, Medicare, which covers patients who are 65 and older or disabled, was the expected primary payer for the largest number of stays (14.7 million), followed by private insurance (13.0 million).
- Medicaid, the primary source of insurance for low-income families and individuals, was the expected primary payer for 8.0 million stays.
- There were 2.4 million uninsured stays in 2009.

Number and Distribution of Hospital Stays by Expected Primary Payer, 1997-2009



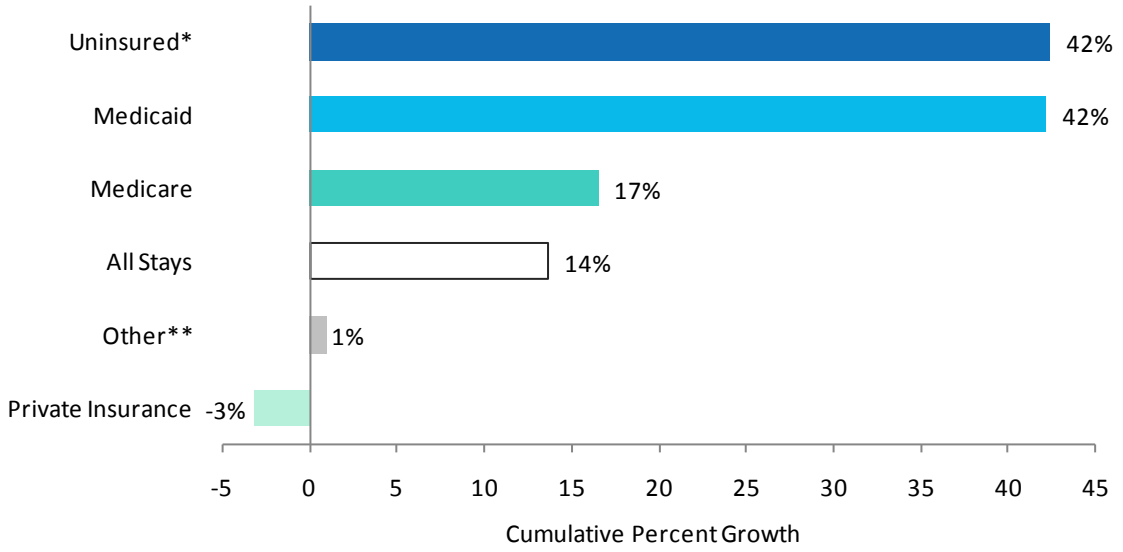
* Includes other payers such as Workers' Compensation, TRICARE, CHAMPUS, CHAMPVA, Title V, and other government programs.
** Includes stays classified as self-pay or no charge.
Note: Excludes a small number of stays (96,000 or 0.3 percent in 1997, 76,000 or 0.2 percent in 2003, 84,000 or 0.2 percent in 2009) with missing payer.
Note: Bar segments representing 4 percent or less have not been labeled.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997-2009.

The number of stays increased steadily in the 12-year period, growing from 34.7 million in 1997 to 39.4 million in 2009.

- In 2009, Medicare and Medicaid were the expected primary payers for more than half (57 percent) of all inpatient hospital stays (accounting for 14.7 and 8.0 million hospital stays, respectively).
  - The percentage of stays billed to Medicare remained relatively stable from 1997 to 2009 at 36-37 percent.
  - Unlike Medicare, the share of stays with Medicaid as an expected payer increased throughout most of the period, from 16 percent in 1997 to 20 percent in 2009.
- Between 1997 and 2009, the percentage of stays billed to private insurance fell from 39 percent to 33 percent. This reflects the steady decline in the share of the population with private insurance coverage.[1]
- In both 1997 and 2009, about 5 percent of stays were listed as uninsured, but increased from 1.7 million hospital stays in 1997 to 2.4 million in 2009.

[1] National Center for Health Statistics. Health, United States, 2010: With Special Feature on Death and Dying. Hyattsville, MD, 2011.

Growth in Number of Hospital Stays by Expected Primary Payer, 1997-2009



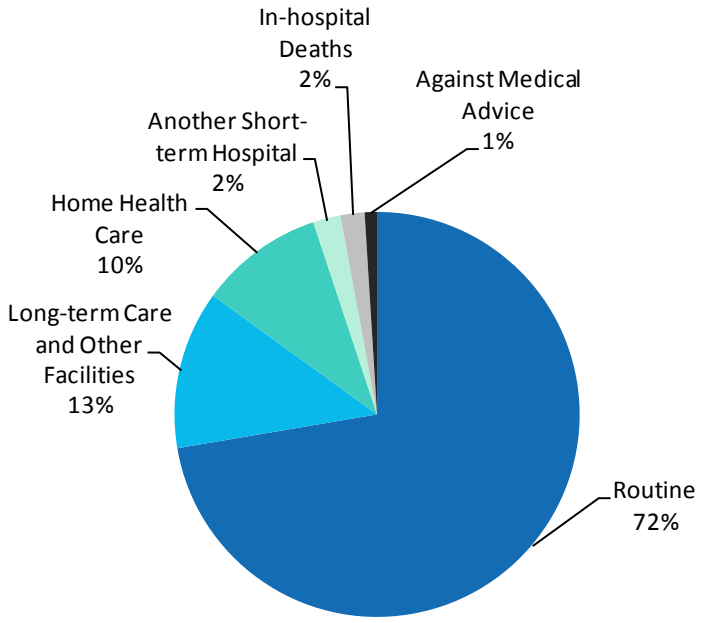
* Includes stays classified as self-pay or no charge.
** Includes other payers such as Workers' Compensation, TRICARE, CHAMPUS, CHAMPVA, Title V, and other government programs.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2009.

Between 1997 and 2009, the number of hospital stays grew by 14 percent; however, growth varied widely by expected primary payer.

- Uninsured and Medicaid stays (both up 42 percent) grew at three times the rate of all stays.
- The number of stays billed to Medicare grew by 17 percent from 1997 to 2009.
- While stays billed to the uninsured, Medicaid, and Medicare experienced substantial growth between 1997 and 2009, growth in the number of stays billed to private insurance and other payers was not significant (-3 percent and 1 percent, respectively).

EXHIBIT 1.4 Discharge Status

Distribution of Hospital Stays by Discharge Status, 2009



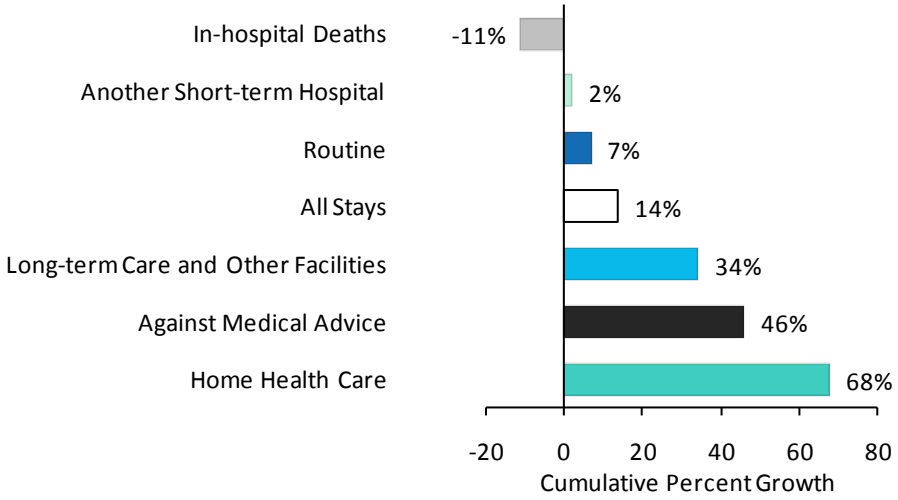
39.4 Million Stays

Note: Excludes a small number of stays with missing discharge status.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

Discharge status indicates the circumstance surrounding the discharge or where the patient went after discharge from the hospital. Most discharges were routine in nature, but discharges to follow-on care were also frequent.

- The most common patient discharge status was routine (72 percent, or 28.5 million stays), with the patient being sent home without closely-supervised health care.
- Discharge to a long-term care facility (5.0 million stays) was the second most common type of discharge, accounting for 13 percent of stays.
- Discharge to the home with home health care supervision accounted for 10 percent of stays (3.9 million stays).
- Remaining discharge circumstances each accounted for 2 percent or less of stays. These included discharge to another short-term hospital (864,500 stays), in-hospital deaths (757,800 stays), or discharge against medical advice (385,600 stays).

Growth in Number of Hospital Stays by Discharge Status, 1997-2009

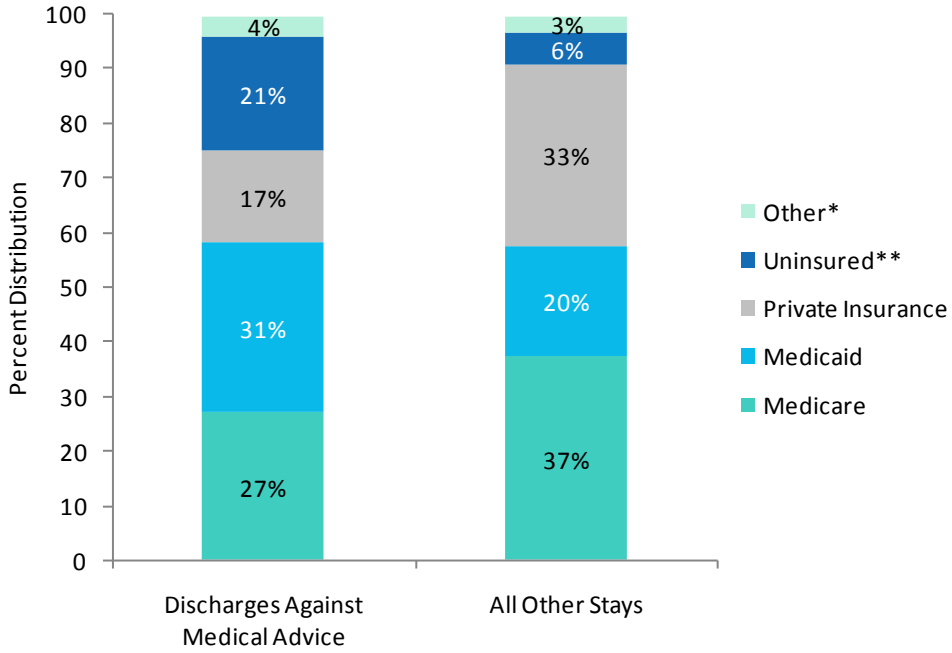


Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2009.

The total number of stays increased 14 percent from 1997 to 2009, but the rate of growth varied by discharge status.

- The number of stays discharged to follow-on care has increased as the average length of stay has fallen.
  - The number of discharges to home health care grew by 68 percent.
  - Discharges to nursing homes and long-term care increased by 34 percent.
- The number of patients who left the hospital against medical advice, although small, rose by 46 percent—the second fastest increase of any discharge type.
- The number of discharges for in-hospital deaths declined by 11 percent between 1997 and 2009.
- Discharges to another short-term hospital remained stable between 1997 and 2009.

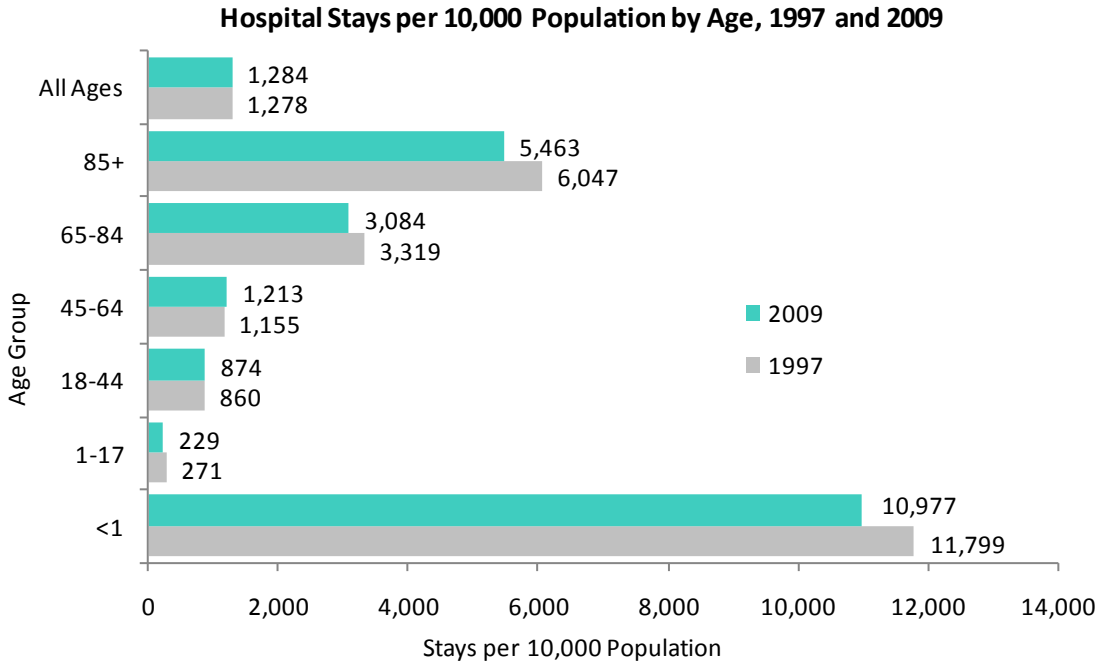
Distribution of Discharges Against Medical Advice and All Other Hospital Stays by Payer, 2009



* Includes other payers such as Workers' Compensation, TRICARE, CHAMPUS, CHAMPVA, Title V, and other government programs.
** Includes stays classified as self-pay or no charge.
Note: Excludes a small number of stays (84,000 or 0.2 percent) with missing payer.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

- Uninsured and Medicaid stays accounted for over half (52 percent) of all stays discharged against medical advice, but only one-quarter (26 percent) of all other stays.
  - Twenty-one percent of all discharges against medical advice were uninsured, while only 6 percent of all other stays were uninsured.
  - Similarly, Medicaid covered 31 percent of discharges against medical advice, but only 20 percent of all other stays.
- Private insurance was the primary payer for only 17 percent of discharges against medical advice but for 33 percent of all other stays.
- Medicare-covered discharges accounted for 27 percent of stays discharged against medical advice and 37 percent of all other stays.

EXHIBIT 1.5 Patient Age

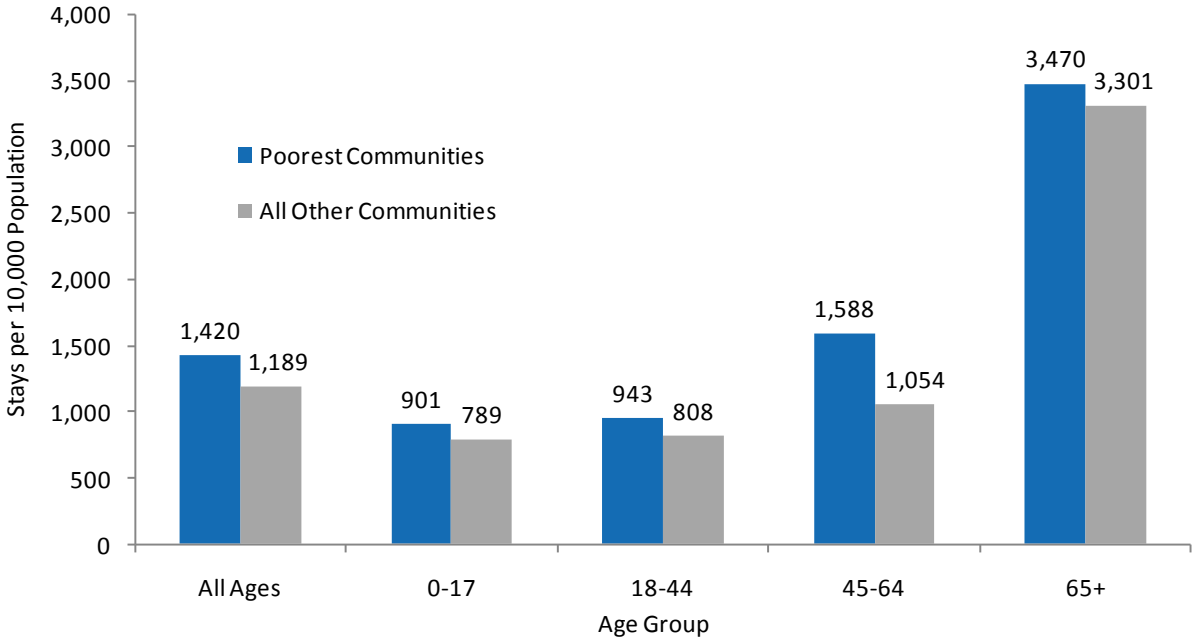


Note: Excludes a small number of stays (10,000 or 0.3 percent in 1997, 52,000 or 0.1 percent in 2009) with missing age.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2009.

Across all age groups, there were 1,284 hospital stays for every 10,000 persons in the United States in 2009, essentially the same as the rate of 1,278 stays in 1997.

- Older people had a greater chance of hospitalization in both 1997 and 2009.
  - For adults 85 and older, there were 6,047 stays per 10,000 persons in 1997 and 5,463 in 2009.
  - Adults 65-84 years old were hospitalized at a rate of 3,084 stays per 10,000 population, down from 3,319 stays per 10,000 population in 1997.
- There were fewer than 300 hospital stays for every 10,000 children 1-17 years old in 1997 and 2009.
- While older age was generally associated with higher hospitalization rates, infants younger than 1 year of age experienced the highest rates of hospitalization: 11,799 hospitalizations per 10,000 infants in 1997 and 10,977 hospitalizations per 10,000 infants in 2009. These high rates of hospital stays occur because nearly all births happen in the hospital and some infants require additional hospitalization in the first year of life.
- The rate of hospitalization per 10,000 population for 65-84 year olds and those 85 and older fell by 7 percent and 10 percent, respectively, between 1997 and 2009, while the rates for the younger age groups remained stable.

Hospital Stays per 10,000 Population by Age in the Poorest* and All Other Communities, 2009



* The poorest communities are defined by ZIP Code and have median household income of less than $40,000, the lowest income quartile.
Note: Excludes a small number of stays (1,274,100 or 3 percent) with missing age or income.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

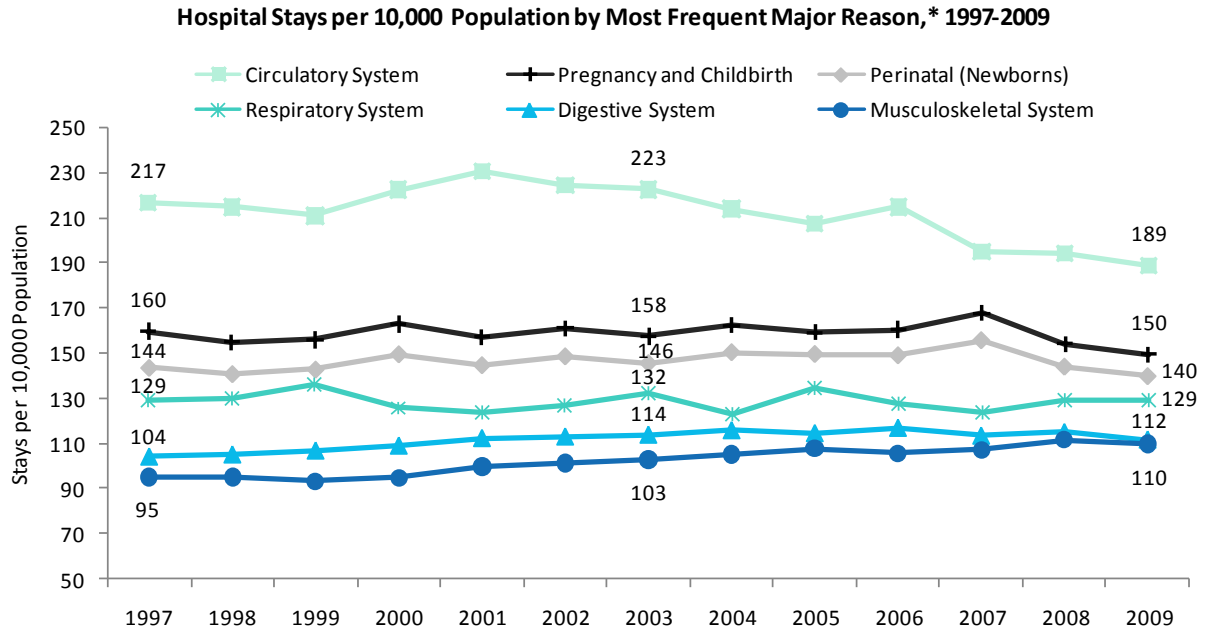
- Persons residing in the poorest communities had a 19-percent higher rate of hospitalization in 2009 (1,420 stays per 10,000 population) than those residing in all other communities (1,189 stays per 10,000 population). This was especially pronounced for adults 18-44 and 45-64 where hospitalization rates were significantly higher in the poorest communities than in all other communities.
- Community income level had the least impact on the hospitalization rates of the youngest and oldest patients, since hospitalization rates in the poorest communities were not significantly different from rates in all other communities.
  - The rate of hospitalization for children 0-17 in the lowest income communities was 901 stays per 10,000 population, and 789 stays per 10,000 population in all other communities.
  - Among adults 65 and older, there were 3,470 stays per 10,000 population in the poorest communities and 3,301 stays per 10,000 population in wealthier communities.

SECTION 2 INPATIENT HOSPITAL STAYS BY DIAGNOSIS

HIGHLIGHTS

- Hospitalizations per 10,000 population for musculoskeletal conditions increased by 15 percent, from 95 stays per 10,000 population in 1997 to 110 stays per 10,000 population in 2009.
- The rate of stays for circulatory conditions decreased by 13 percent over the 12-year period, falling from 217 stays per 10,000 population in 1997 to 189 stays per 10,000 population in 2009.
- Liveborn (newborn infant) (4.2 million stays) was the most common diagnosis and accounted for more than 10 percent of all hospital stays. Since 1997, the rate of stays for newborn infants has remained stable (from 139 in 1997 to 135 in 2009 per 10,000 population).
- Pneumonia (3.0 percent of all stays) and congestive heart failure (2.6 percent) were the second and third most common reasons for hospitalization.
- The fourth and seventh most frequent principal diagnoses in 2009 (osteoarthritis and septicemia) were not among the most frequent diagnoses in 1997. Between 1997 and 2009, stays per 10,000 population for osteoarthritis increased 95 percent, and stays per 10,000 population for septicemia increased by 78 percent.
- Mood disorders was ranked seventh in 1997 and fifth in 2009, and increased nearly 20 percent per population over this time period, from 24 to 28 stays per 10,000.
- Three circulatory diseases—congestive heart failure, coronary atherosclerosis, and cardiac dysrhythmias—were among the top ten most frequent principal diagnoses in 2009.
- In 2009, acute renal failure was the most rapidly growing condition with an increase of 245 percent, from 3.6 to 12.4 stays per 10,000 population.
- Osteoarthritis was the most common condition for adults 45-64 with an increase of 151 percent in the rate of stays per 10,000 population. Between 1997 and 2009, osteoarthritis increased by 58 percent among adults aged 65-84 and was the second most common condition.
- Spondylosis, intervertebral disc disorders, and other back problems—the fourth most common condition among 45-64 year olds—remained relatively stable from 1997 to 2009.
- Three of the most common conditions with Medicaid as the primary payer were pregnancy and childbirth-related: liveborn (newborn infant), trauma to the vulva and perineum due to childbirth, and previous C-section. Altogether, stays for these conditions made up approximately 30 percent of all Medicaid stays.
- Four of the most common conditions for uninsured hospital stays increased from 1997 to 2009: alcohol-related disorders (36 percent), mood disorders (64 percent), non-specific chest pain (99 percent), and skin and subcutaneous tissue infections (176 percent).

EXHIBIT 2.1 Reasons for Hospital Stays



* Based on principal diagnosis defined by Major Diagnostic Category (MDC).
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997-2009.

Changes in stays per 10,000 population between 1997 and 2009 for the most common reasons for hospitalization varied by condition.

- Hospitalizations per 10,000 population for musculoskeletal conditions increased by 15 percent, from 95 stays per 10,000 population in 1997 to 110 stays per 10,000 population in 2009.
- The rate of stays for circulatory conditions decreased by 13 percent over the 12-year period, falling from 217 stays per 10,000 population in 1997 to 189 stays per 10,000 population in 2009.
- The rate of stays was similar in 1997 and 2009 for respiratory, digestive, pregnancy and childbirth-related, and perinatal conditions. Some of these conditions experienced variation in the rates in the intervening years.

EXHIBIT 2.2 Most Frequent Principal Diagnoses

Number of Stays, Stays per 10,000 Population, and Growth of the Most Frequent Principal Diagnoses for Hospital Stays, 1997 and 2009

	NUMBER OF STAYS IN THOUSANDS		STAYS PER 10,000 POPULATION		CUMULATIVE GROWTH IN RATE
PRINCIPAL CCS DIAGNOSIS	1997	2009	1997	2009	1997-2009
All stays	34,679	39,435	1,278	1,284	1%‡
Liveborn (newborn infant)	3,777	4,159	139	135	-3%‡
Pneumonia	1,232	1,165	45	38	-16%
Congestive heart failure	991	1,023	37	33	-9%
Osteoarthritis	418	921	15	30	95%
Mood disorders	641	873	24	28	20%
Coronary atherosclerosis	1,407	832	52	27	-48%
Septicemia	413	831	15	27	78%
Cardiac dysrhythmias	572	807	21	26	25%
Trauma to vulva and perineum due to childbirth	713	751	26	24	-7%‡
Chronic obstructive pulmonary disease and bronchiectasis	551	733	20	24	18%

‡2009 stays per 10,000 population are not statistically different from 1997 stays per 10,000 population at p<0.05.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2009.

In 2009, there were 39.4 million hospital stays or 1,284 stays per 10,000 population. The number of stays per population has remained stable since 1997.

- The 10 most frequent principal diagnoses accounted for about 30 percent of all stays in 2009.
  - Liveborn (newborn infant) (4.2 million stays) was the most common diagnosis and accounted for more than 10 percent of all hospital stays. Since 1997, the rate of stays for newborn infants has remained stable (from 139 in 1997 to 135 in 2009 per 10,000 population).
  - Trauma to vulva and perineum due to childbirth ranked ninth in 2009 and the rate per 10,000 population remained relatively stable between 1997 and 2009.
  - Pneumonia (3.0 percent of all stays) and congestive heart failure (2.6 percent) were the second and third most common reasons for hospitalization.
  - The fourth and seventh most frequent principal diagnoses in 2009 (osteoarthritis and septicemia) were not among the most frequent diagnoses in 1997. Between 1997 and 2009, stays per 10,000 population for osteoarthritis increased 95 percent, and stays per 10,000 population for septicemia increased by 78 percent.
  - Mood disorders was ranked seventh in 1997 and fifth in 2009, and increased nearly 20 percent per population over this time period, from 24 to 28 stays per 10,000.
  - Chronic obstructive pulmonary disease was the tenth most common condition in 2009 and increased 18 percent since 1997.
- Three circulatory diseases—congestive heart failure, coronary atherosclerosis, and cardiac dysrhythmias—were among the top ten most frequent principal diagnoses in 2009.
  - Stays for both congestive heart failure and coronary atherosclerosis decreased between 1997 and 2009. Congestive heart failure accounted for 37 stays per 10,000 population in 1997 and 33 stays per 10,000 population in 2009, a decrease of 9 percent. Coronary atherosclerosis decreased by 48 percent per 10,000 population between 1997 and 2009.
  - Hospital stays per 10,000 population for cardiac dysrhythmias increased by 25 percent.

Number of Stays, Stays per 10,000 Population, and Growth of Selected Principal Diagnoses for Hospital Stays, 1997 and 2009

PRINCIPAL CCS DIAGNOSIS	NUMBER OF STAYS IN THOUSANDS		STAYS PER 10,000 POPULATION		CUMULATIVE GROWTH IN RATE
	1997	2009	1997	2009	1997-2009
All stays	34,679	39,435	1,278	1,284	1%‡
Diagnoses with most rapid growth in stays per population*					
Acute renal failure	98	382	3.6	12.4	245%
Prolonged pregnancy	104	275	3.8	9.0	134%
Acute posthemorrhagic anemia	10	26	0.4	0.9	123%
Anemia	100	231	3.7	7.5	104%
Diabetes mellitus without complications	10	22	0.4	0.7	103%
Malaise and fatigue	13	30	0.5	1.0	101%
Pulmonary heart disease	80	182	3.0	5.9	101%
Osteoarthritis	418	921	15.4	30.0	95%
Septicemia	413	831	15.2	27.1	78%
Maternal stay with previous C-section	271	542	10.0	17.7	77%

‡ 2009 stays per 10,000 population are not statistically different from 1997 stays per 10,000 population at $p<0.05$.

* Includes only conditions with at least 100,000 stays in either 2009 or 1997.

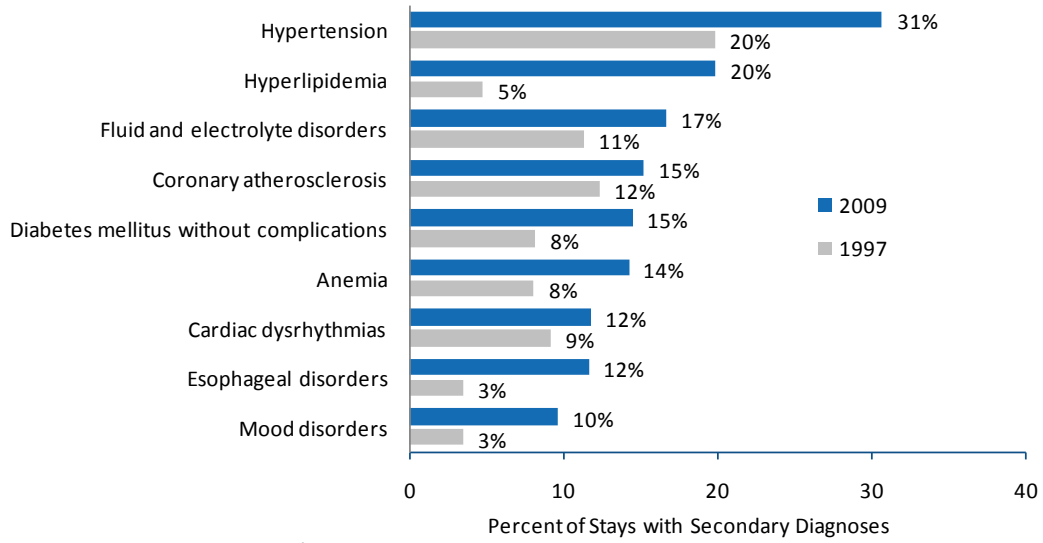
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2009.

This exhibit shows the top ten conditions with the most growth in the number of hospital stays per 10,000 population. Overall, hospital stays remained stable from 1997 to 2009, with a 1-percent change in stays per 10,000 population over this time period. However, there is variation in growth rates among conditions.

- In 2009, acute renal failure was the most rapidly growing condition with an increase of 245 percent, from 3.6 to 12.4 stays per 10,000 population.
- Two of the most rapidly growing conditions were related to pregnancy and childbirth. Prolonged pregnancy (ranked second) and maternal stay with a previous C-section (ranked 10th) grew at 134 and 77 percent per 10,000 population, respectively.
- Although circulatory diseases are common conditions, only one was among the top ten most rapidly growing in 2009. Pulmonary heart disease, ranked 7th, increased by over 100 percent per 10,000 population in 2009.

EXHIBIT 2.3 Most Frequent Secondary Diagnoses

Percent of All Hospital Stays with Common Secondary Diagnoses, 1997 and 2009*



* Excludes stays related to pregnancy, childbirth, and newborn infants.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2009.

- From 1997 to 2009, there was a substantial increase in the share of stays with a secondary diagnosis of hypertension (from 20 to 31 percent).
- Stays with a secondary diagnosis of hyperlipidemia increased from 5 percent in 1997 to 20 percent in 2009.
- The percent of stays with a secondary diagnosis of mood disorders more than tripled from 3 percent in 1997 to 10 percent in 2009.
- Stays with esophageal disorders have more than quadrupled since 1997, accounting for 3 percent of stays with a secondary diagnosis in 1997 and 12 percent of stays with a secondary diagnosis in 2009.

EXHIBIT 2.4 Most Frequent Principal Diagnoses by Age

Number of Stays, Stays per 10,000 Population, and Growth of the Most Frequent Principal Diagnoses for Hospital Stays by Age, 1997 and 2009

	NUMBER OF STAYS IN THOUSANDS		STAYS PER 10,000 POPULATION		CUMULATIVE GROWTH IN RATE
AGE GROUP AND PRINCIPAL CCS DIAGNOSIS	1997	2009	1997	2009	1997-2009
All ages, total stays*	**34,679**	**39,435**	**1,278**	**1,284**	**1%‡**
< 1 year, total stays	**4,426**	**4,678**	**11,799**	**10,977**	**-7%‡**
Liveborn (newborn infant)	3,776	4,155	10,067	9,751	-3%‡
Acute bronchitis	108	85	288	201	-30%
Hemolytic jaundice and perinatal jaundice	33	44	88	102	16%
Pneumonia	55	33	148	77	-48%
Short gestation, low birth weight, and fetal growth retardation	22	21	59	49	-17%‡
1-17 years, total stays	**1,821**	**1,611**	**271**	**229**	**-15%‡**
Asthma	159	126	24	18	-24%
Pneumonia	135	125	20	18	-12%‡
Mood disorders	64	86	10	12	29%‡
Appendicitis and other appendiceal conditions	65	81	10	12	19%
Fluid and electrolyte disorders	64	63	10	9	-6%‡
18-44 years, total stays	**9,444**	**9,922**	**860**	**874**	**2%‡**
Trauma to vulva and perineum due to childbirth	676	721	62	64	3%‡
Maternal stay with previous C-section	270	539	25	47	93%
Mood disorders	335	436	30	38	26%
Prolonged pregnancy	99	265	9	23	159%
Normal pregnancy and/or delivery	511	256	47	23	-51%
45-64 years, total stays	**6,496**	**9,629**	**1,155**	**1,213**	**5%‡**
Osteoarthritis	105	372	19	47	151%
Coronary atherosclerosis	526	348	94	44	-53%
Non-specific chest pain	242	345	43	43	1%‡
Spondylosis, intervertebral disc disorders, and other back problems	190	286	34	36	6%‡
Pneumonia	199	271	35	34	-3%‡
65-84 years, total stays	**10,121**	**10,468**	**3,319**	**3,084**	**-7%**
Congestive heart failure	581	507	191	149	-22%
Osteoarthritis	281	494	92	146	58%
Pneumonia	514	432	168	127	-25%
Cardiac dysrhythmias	333	417	109	123	13%
Coronary atherosclerosis	741	405	243	119	-51%
85+ years, total stays	**2,362**	**3,076**	**6,047**	**5,463**	**-10%**
Congestive heart failure	202	244	517	433	-16%
Pneumonia	197	183	504	325	-36%
Septicemia	76	148	196	263	35%
Urinary tract infections	75	137	191	243	27%
Cardiac dysrhythmias	70	126	179	224	25%

* Includes a small number of stays (50,000 or 0.1 percent) with missing age.

‡ 2009 stays per 10,000 population are not statistically different from 1997 stays per 10,000 population at p<0.05.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2009.

Infants, children and young adults:

- Overall, the rate of stays for infants, children 1-17, and adults 18-44 remained relatively stable from 1997 to 2009.
- Pregnancy, childbirth, and liveborn infants:
  - In 2009, most stays for children under one year old were for liveborn (newborn infants).
  - Among 18-44 year olds, previous C-sections increased 93 percent between 1997 and 2009, while normal pregnancy and/or delivery fell 51 percent.
- The rate of asthma stays declined 24 percent among children 1-17 years between 1997 and 2009, while the rate of stays for appendicitis increased 19 percent.
- Mood disorders was the third most common diagnosis for children 1-17 and adults 18-44 years.

Older adults:

- Musculoskeletal conditions:
  - Osteoarthritis was the most common condition for adults 45-64 with an increase of 151 percent in the rate of stays per 10,000 population.
  - Between 1997 and 2009, osteoarthritis increased by 58 percent among adults aged 65-84 and was the second most common condition.
  - Spondylosis, intervertebral disc disorders, and other back problems—the fourth most common condition among 45-64 year olds—remained relatively stable from 1997 to 2009.
- Cardiovascular conditions were common diagnoses for adults 45 years and older. However, specific diagnoses differed between age groups for older adults:
  - Coronary atherosclerosis was the second most common condition for adults 45-64; the rate of these stays declined by 53 percent between 1997 and 2009. This condition ranked fifth for 65-84 year olds, with the rate of stays declining 51 percent between 1997 and 2009.
  - Congestive heart failure (CHF) was the most common condition for adults 65-84 and 85 and older. In 2009, CHF accounted for 149 hospital stays per 10,000 population among all adults in the U.S. aged 65-84 and 433 stays per 10,000 population among all adults 85 and older.
  - Congestive heart failure decreased per 10,000 population for both 65-84 year olds and those 85 and older, by 22 and 16 percent, respectively.
  - Cardiac dysrhythmias was the reason for 224 hospitalizations per 10,000 population in 2009 among adults age 85 years and older, an increase of 25 percent since 1997.
- Among adults 85 and older, hospitalizations for septicemia (up 35 percent) and urinary tract infections (up 27 percent) increased at more than twice the rate of all hospitalizations for this age group between 1997 and 2009.

All patients:

- Pneumonia was a top five condition for all groups except 18-44 year olds and declined for most ages:
  - Hospital stays for pneumonia declined for infants (down 48 percent).
  - In 2009, stays for pneumonia remained relatively stable among children 1-17 years and adults 45-64 years old.
  - Stays for pneumonia fell among 65-84 year olds (down 25 percent) and for adults aged 85 and older (36 percent).

EXHIBIT 2.5 Most Frequent Principal Diagnoses by Payer

Number of Stays, Percent Distribution, and Growth of the Most Frequent Principal Diagnoses for Hospital Stays by Payer, 1997 and 2009

	NUMBER OF STAYS IN THOUSANDS		PERCENT OF PAYER-SPECIFIC TOTAL STAYS		CUMULATIVE GROWTH IN NUMBER OF STAYS
PAYER† AND PRINCIPAL CCS DIAGNOSIS	1997	2009	1997	2009	1997-2009
All payers, total stays*	**34,679**	**39,435**	**100%**	**100%**	**14%**
Medicare	**12,618**	**14,708**	**100%**	**100%**	**17%‡**
Congestive heart failure	757	762	6%	5%	1%
Pneumonia	703	643	6%	4%	-9%
Septicemia	276	547	2%	4%	98%
Cardiac dysrhythmias	375	525	3%	4%	40%
Chronic obstructive pulmonary disease and bronchiectasis	380	507	3%	3%	34%
Medicaid	**5,644**	**8,027**	**100%**	**100%**	**42%**
Liveborn (newborn infant)	1,224	1,874	22%	23%	53%
Trauma to vulva and perineum due to childbirth	224	291	4%	4%	30%
Mood disorders	147	239	3%	3%	63%
Maternal stay with previous C-section	84	237	1%	3%	182%
Pneumonia	166	178	3%	2%	7%‡
Private insurance	**13,388**	**12,958**	**100%**	**100%**	**-3%‡**
Liveborn (newborn infant)	2,204	1,948	16%	15%	-12%‡
Trauma to vulva and perineum due to childbirth	431	401	3%	3%	-7%‡
Osteoarthritis	117	359	1%	3%	207%
Spondylosis, intervertebral disc disorders, and other back problems	258	288	2%	2%	11%‡
Mood disorders	227	285	2%	2%	26%
Uninsured**	**1,676**	**2,388**	**100%**	**100%**	**42%**
Liveborn (newborn infant)	191	218	11%	9%	15%‡
Mood disorders	55	90	3%	4%	64%
Non-specific chest pain	39	78	2%	3%	99%
Skin and subcutaneous tissue infections	28	77	2%	3%	176%
Alcohol-related disorders	48	65	3%	3%	36%

† Population denominators are not available by payer.

* Excludes a small number of stays (68,000 or 0.2 percent) with missing payer.

‡ 2009 stays are not statistically different from 1997 stays at $p<0.05$.

** Includes stays classified as self-pay or no charge.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2009.

This exhibit shows the top five reasons for hospital stays for each primary payer. The principal diagnoses for hospitalizations by primary payer generally varied, although some conditions were frequent across payers.

Medicare:

- Congestive heart failure (CHF) was the most common principal diagnosis among stays with Medicare as a primary payer, making up 5 percent of all Medicare stays in 2009.
- Pneumonia (643,000 Medicare stays in 2009) was the second most common diagnosis.
- Septicemia, cardiac dysrhythmias, and chronic obstructive pulmonary disease were also frequent reasons for hospital stays among Medicare stays. The number of Medicare stays for septicemia grew by 98

percent between 1997 and 2009. The number of stays for cardiac dysrhythmias and chronic obstructive pulmonary disease grew by 40 percent and 34 percent, respectively.

Medicaid:

- Three of the most common conditions with Medicaid as the primary payer were pregnancy and childbirth-related: liveborn (newborn infant), trauma to the vulva and perineum due to childbirth, and previous C-section. Altogether, stays for these conditions made up approximately 30 percent of all Medicaid stays.
- Liveborn (newborn infants) with a primary payer of Medicaid grew 53 percent from 1997 to 2009. Previous C-section grew 182 percent over this same time period.
- Mood disorders was the third most common condition with Medicaid as the primary payer and grew 63 percent from 1997 to 2009.

Private Insurance:

- Liveborn (newborn infant) stays were the most common hospital stay paid for by private insurance, accounting for 15 percent of all private insurance stays. The number of liveborn (newborn infants) covered by private insurance remained relatively stable between 1997 and 2009.
- Osteoarthritis and back problems were also among the top conditions for private insurance. Private insurance stays for osteoarthritis increased by 207 percent between 1997 and 2009. Stays for treatment of a back problem remained relatively stable during this period.
- Mood disorders was a frequent cause of hospitalization among the privately insured, and increased by 26 percent between 1997 and 2009.

Uninsured:

- Although the uninsured stays comprised only 6 percent of total stays in 2009, they accounted for about one-quarter (23 percent) of all stays for alcohol-related conditions and over 10 percent of all stays for skin infections, mood disorders, and non-specific chest pain.
- Mood disorders was the second most common principal diagnosis among uninsured stays, making up 4 percent of all uninsured stays in 2009.
- Four of the most common conditions for uninsured hospital stays increased from 1997 to 2009: alcohol-related disorders (36 percent), mood disorders (64 percent), non-specific chest pain (99 percent), and skin and subcutaneous tissue infections (176 percent).

SECTION 3 INPATIENT HOSPITAL STAYS BY PROCEDURE

HIGHLIGHTS

- The rate of stays with procedures remained relatively stable at about 1,300 stays per 10,000 population from 1997 to 2009.
- Blood transfusion occurred in over ten percent of all hospital stays that included a procedure and was the most frequently performed procedure in 2009. The rate of blood transfusion more than doubled from 1997 to 2009.
- Cesarean section was the most frequent major operating room procedure—performed on 1.4 million females in 2009.
- The rate of stays with knee arthroplasty increased 84 percent from 12 per 10,000 population in 1997 to 22 per 10,000 population in 2009. Knee arthroplasty was the fourteenth most common inpatient procedure in 2009.
- The rate of respiratory intubation and mechanical ventilation grew rapidly from 1997 to 2009 among 45-64 year olds (69 percent), 65-84 year olds (33 percent), and seniors 85 years and older (28 percent).
- Diagnostic cardiac catheterization and coronary arteriography was common for 45-64 year olds (638,000 procedures) and 65-84 year olds (664,000 procedures), but the rate of procedures declined about 20 percent from 1997 to 2009 in both age groups.

EXHIBIT 3.1 Most Frequent All-listed Procedures

Number of Stays, Stays per 10,000 Population, and Growth of the Most Frequent All-listed Procedures for Hospital Stays, 1997 and 2009

	NUMBER OF STAYS WITH THE PROCEDURE IN THOUSANDS		STAYS PER 10,000 POPULATION WITH THE PROCEDURE		CUMULATIVE GROWTH IN RATE
ALL-LISTED CCS PROCEDURES	1997	2009	1997	2009	1997-2009
All stays (with and without procedures)	34,679	39,435	1,278	1,284	1% ‡
All stays with any procedure	21,257	24,730	783	806	3% ‡
Percent of all stays with a procedure	61%	63%			
Blood transfusion	1,097	2,829	40	92	128%
Prophylactic vaccinations and inoculations	567	1,796	21	59	180%
Respiratory intubation and mechanical ventilation	919	1,498	34	49	44%
Diagnostic cardiac catheterization, coronary arteriography	1,461	1,476	54	48	-11% ‡
Cesarean section	800	1,382	29	45	53%
Repair of obstetric laceration	1,137	1,343	42	44	4% ‡
Upper gastrointestinal endoscopy	1,105	1,242	41	40	-1% ‡
Circumcision	1,164	1,174	43	38	-11%
Artificial rupture of membranes to assist delivery	747	932	28	30	10% ‡
Fetal monitoring	1,002	860	37	28	-24% ‡
Hemodialysis	473	837	17	27	56%
Echocardiogram	632	813	23	26	14% ‡
Percutaneous transluminal coronary angioplasty (PTCA)	581	693	21	23	5% ‡
Knee arthroplasty	329	686	12	22	84%
Enteral and parenteral nutrition	277	576	10	19	84%
Colonoscopy and biopsy	531	564	20	18	-6% ‡
Laminectomy, excision intervertebral disc	425	504	16	16	5% ‡
Hysterectomy	587	483	22	16	-27%
Incision of pleura, thoracentesis, chest drainage	349	476	13	16	20%
Cholecystectomy and common duct exploration	448	460	16	15	-9%

‡ 2009 stays per 10,000 population are not statistically different from 1997 stays per 10,000 population at p<0.05.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2009.

The rate of stays with procedures remained relatively stable at about 1,300 stays per 10,000 population from 1997 to 2009. About two-thirds of hospital stays involved at least one procedure.

- Blood transfusion occurred in over ten percent of all hospital stays that included a procedure and was the most frequently performed procedure in 2009. The rate of blood transfusion more than doubled from 1997 to 2009.
- Vaccinations were the second most frequent procedure performed in 2009. The rate of stays with vaccinations, typically hepatitis B immunizations for liveborn infants, increased by 180 percent from 1997 to 2009.

- The rate of stays with cardiac catheterization, the fourth most common procedure in 2009, remained relatively stable from 1997 to 2009, at about 50 per 10,000 population.
- Cesarean section was the most frequent major operating room procedure—performed on 1.4 million females in 2009.
- The rate of stays with knee arthroplasty increased 84 percent from 12 per 10,000 population in 1997 to 22 per 10,000 population in 2009. Knee arthroplasty was the fourteenth most common inpatient procedure in 2009.

Number of Stays, Stays per 10,000 Population, and Growth of Selected All-listed Procedures for Hospital Stays, 1997 and 2009

ALL-LISTED CCS PROCEDURES	NUMBER OF STAYS WITH THE PROCEDURE IN THOUSANDS		STAYS PER 10,000 POPULATION WITH THE PROCEDURE		CUMULATIVE GROWTH IN RATE
	1997	2009	1997	2009	1997-2009
Procedures with most rapid growth in stays per population*					
Indwelling catheter	60	203	2	7	198%
Prophylactic vaccinations and inoculations	567	1,796	21	59	180%
Blood transfusion	1,097	2,829	40	92	128%
Spinal fusion	202	448	7	15	96%
Incision and drainage, skin and subcutaneous tissue	118	248	4	8	85%
Knee arthroplasty	329	686	12	22	84%
Enteral and parenteral nutrition	277	576	10	19	84%
Hemodialysis	473	837	17	27	56%
Cesarean section	800	1,382	29	45	53%
Respiratory intubation and mechanical ventilation	919	1,498	34	49	44%
Hip replacement	291	438	11	14	33%

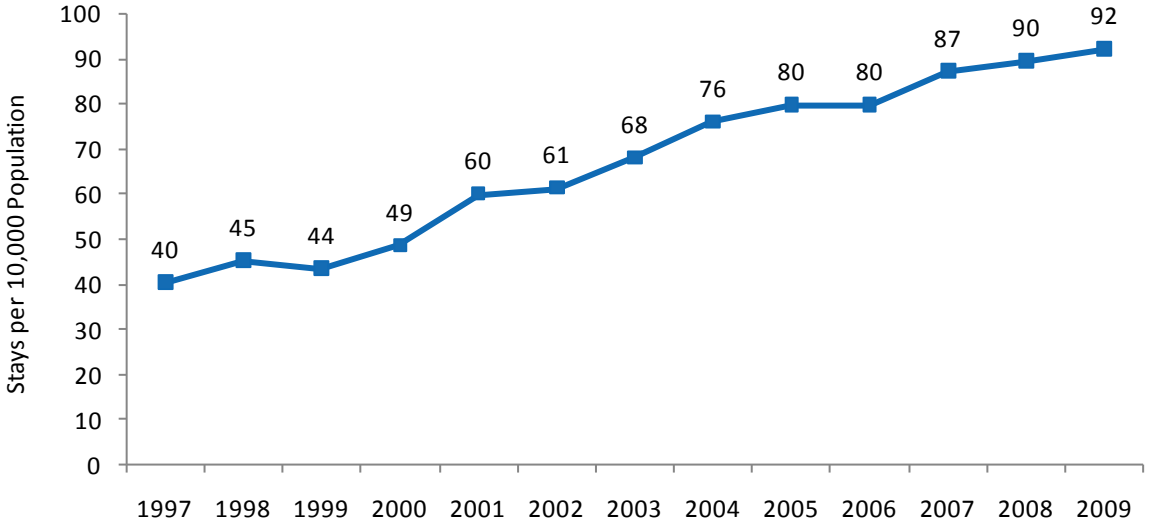
* Includes only procedures with at least 100,000 stays in either 2009 or 1997. 2009 stays per 10,000 population are statistically different from 1997 stays per 10,000 population at $p<0.05$.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2009.

The majority of the top ten most rapidly growing all-listed procedures were also among the most frequent procedures.

- Stays with indwelling catheter approximately tripled from 1997 to 2009, increasing from 2 stays per 10,000 population in 1997 to 7 stays per population in 2009.
- The rate of hospitalizations with spinal fusion doubled from 7 stays per 10,000 population in 1997 to 15 stays per 10,000 population in 2009.
- The rate of stays with hip replacement grew 33 percent, from 11 stays per 10,000 population in 1997 to 14 stays per 10,000 population in 2009.

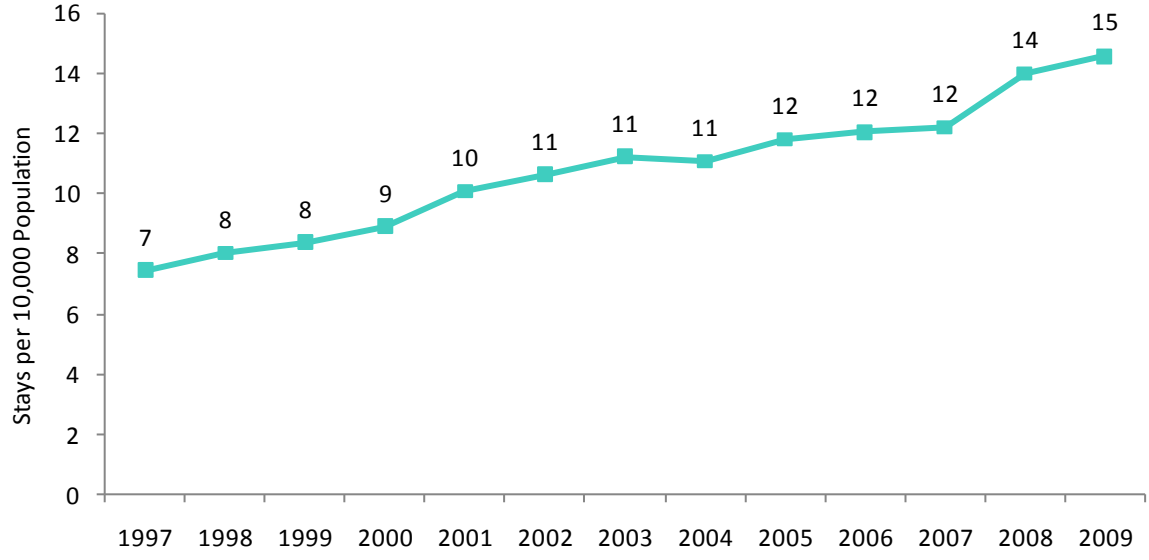
Hospital Stays per 10,000 Population with All-listed Blood Transfusion, 1997-2009



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997-2009.

- The rate of stays with all-listed blood transfusion has increased at a relatively steady rate from 40 stays per 10,000 population in 1997 to 92 stays per 10,000 population in 2009.

Hospital Stays per 10,000 Population with All-listed Spinal Fusion, 1997-2009



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997-2009.

- The rate of stays with all-listed spinal fusion increased at a relatively steady rate from 7 stays per 10,000 population in 1997 to 15 stays per 10,000 population in 2009.

EXHIBIT 3.2 Most Frequent All-listed Procedures by Age

Number of Stays, Stays per 10,000 Population, and Growth of the Most Frequent All-listed Procedures for Hospital Stays by Age, 1997 and 2009

	NUMBER OF STAYS IN THOUSANDS		STAYS PER 10,000 POPULATION		CUMULATIVE GROWTH IN RATE
AGE GROUP AND ALL-LISTED CCS PROCEDURES	1997	2009	1997	2009	1997-2009
All ages, total stays†	**34,679**	**39,435**	**1,278**	**1,284**	**1%‡**
< 1 year, total stays	**4,426**	**4,678**	**11,799**	**10,977**	**-7%‡**
Prophylactic vaccinations and inoculations	549	1,516	1,463	3,556	143%
Circumcision	1,159	1,170	3,089	2,746	-11%
Respiratory intubation and mechanical ventilation	163	176	434	414	-5%‡
Enteral and parenteral nutrition	39	122	104	287	176%
Diagnostic spinal tap	147	85	391	199	-49%
1-17 years, total stays	**1,821**	**1,611**	**271**	**229**	**-15%‡**
Appendectomy	74	84	11	12	8%‡
Repair of obstetric laceration	58	53	9	8	-13%
Blood transfusion	26	47	4	7	70%‡
Cancer chemotherapy	43	38	6	5	-15%‡
Respiratory intubation and mechanical ventilation	30	34	4	5	7%‡
18-44 years, total stays	**9,444**	**9,922**	**860**	**874**	**2%‡**
Cesarean section	773	1,349	70	119	69%
Repair of obstetric laceration	1,079	1,289	98	114	16%
Artificial rupture of membranes to assist delivery	706	899	64	79	23%
Fetal monitoring	952	829	87	73	-16%‡
Blood transfusion	147	332	13	29	119%
45-64 years, total stays	**6,496**	**9,629**	**1,155**	**1,213**	**5%‡**
Blood transfusion	247	788	44	99	126%
Diagnostic cardiac catheterization, coronary arteriography	578	638	103	80	-22%
Respiratory intubation and mechanical ventilation	186	443	33	56	69%
Upper gastrointestinal endoscopy	275	404	49	51	4%‡
Hemodialysis	154	328	27	41	51%
65-84 years, total stays	**10,121**	**10,468**	**3,319**	**3,084**	**-7%**
Blood transfusion	514	1,245	169	367	118%
Diagnostic cardiac catheterization, coronary arteriography	738	664	242	196	-19%
Respiratory intubation and mechanical ventilation	366	543	120	160	33%
Upper gastrointestinal endoscopy	530	494	174	145	-16%
Knee arthroplasty	201	366	66	108	63%
85+ years, total stays	**2,362**	**3,076**	**6,047**	**5,463**	**-10%**
Blood transfusion	138	375	353	667	89%
Upper gastrointestinal endoscopy	122	134	313	238	-24%
Respiratory intubation and mechanical ventilation	65	121	168	215	28%
Echocardiogram	65	86	165	154	-7%‡
Treatment, fracture or dislocation of hip and femur	87	86	222	153	-31%

† Includes a small number of stays (51,500 or 0.1 percent) with missing age.

‡ 2009 stays per 10,000 population are not statistically different from 1997 stays per 10,000 population at p<0.05.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2009.

While some of the most frequent procedures varied by age group, some were common across several age groups.

- Blood transfusion was a top five procedure in all age groups except infants less than 1 year old. It was the third most common procedure for 1-17 year olds and the first for adults 45-64, 65-84, and 85 years and older. Blood transfusion was one of the fastest growing procedures from 1997 to 2009, more than doubling for patients 18-44, 45-64, and 65-84.
- Respiratory intubation and mechanical ventilation was common for all age groups except 18 to 44 year olds. The rate of respiratory intubation and mechanical ventilation grew rapidly from 1997 to 2009 among 45-64 year olds (69 percent), 65-84 year olds (33 percent), and seniors 85 years and older (28 percent).
- Diagnostic cardiac catheterization and coronary arteriography was common for 45-64 year olds (638,000 procedures) and 65-84 year olds (664,000 procedures), but the rate of procedures declined about 20 percent from 1997 to 2009 in both age groups.

For infants:

- The most common procedures performed on infants were routine procedures, such as vaccinations (performed in 3,556 stays per 10,000 infants) and circumcision (performed in 2,746 stays per 10,000 infants).
  - In 2009, 1.2 million circumcisions were completed in the hospital (55 percent of male liveborn infants).
- Procedures on infants also included those done for complex conditions affecting severely ill babies, such as respiratory intubation and mechanical ventilation (414 stays per 10,000 infants), enteral/parenteral nutrition (287 stays per 10,000 infants), and diagnostic spinal tap (199 stays per 10,000 infants).
  - The rate of enteral and parenteral nutrition, or tube feeding, during infant hospitalizations increased 176 percent whereas the rate of spinal tap procedures decreased 49 percent.

For children 1-17:

- Appendectomy was the most common procedure for 1-17 year olds, performed in 12 stays per 10,000 population in this age group.
- Other top procedures common in stays for children included repair of obstetric laceration in teen deliveries, blood transfusion, cancer chemotherapy, and respiratory intubation and mechanical ventilation.

For adults 18-44:

- Four of the top five most common procedures were related to pregnancy and childbirth for adults 18-44 years old.
  - Cesarean sections and repair of obstetric laceration were the most frequently performed procedures, performed in 119 and 114 stays per 10,000 population among this age group in 2009.
  - The rate of Cesarean sections increased by 69 percent from 1997 to 2009.
  - The rate of stays with artificial rupture of membranes to assist delivery also experienced rapid growth from 1997 to 2009 (up 23 percent), while the rate of fetal monitoring procedures remained relatively stable.
- Blood transfusion was the fifth most frequent procedure among adults 18-44 years old, and the rate of this procedure more than doubled from 1997 to 2009 (from 13 to 29 stays per 10,000 population).

For adults 45-64 and 65-84:

- In 2009, the top four most frequently performed procedures were the same for individuals 45-64 and 65-84 years old: blood transfusion, diagnostic cardiac catheterization and coronary arteriography, respiratory intubation and mechanical ventilation, and upper gastrointestinal endoscopy.
  - Blood transfusion was the leading procedure for 45-64 year olds and 65-84 year olds, and the rate of stays with this procedure more than doubled in both age groups from 1997 to 2009.

  - Diagnostic cardiac catheterization and coronary arteriography was the second most common procedure performed in each of these age groups.
- Hemodialysis was a top procedure among individuals 45-64, and the rate of stays with this procedure increased by about 50 percent from 1997 to 2009 (from 27 to 41 stays per 10,000 population).
- Knee replacement was a top procedure among individuals 65-84, and the rate of stays with this procedure increased by 63 percent from 1997 to 2009 (from 66 to 108 stays per 10,000 population).

For adults 85 years and older:

- For patients 85 years and older, blood transfusion was the most common procedure, occurring in 667 stays per 10,000 population.
- Echocardiogram was the fourth most frequent procedure for patients 85 years and older (86,000 stays), and the rate of stays with this procedure remained relatively stable from 1997 to 2009 (7 percent decline).
- Treatment of a fracture or dislocation of the hip and femur was a frequent procedure performed during a hospital stay and appeared only in this age group.
  - The rate of stays for treatment of a hip fracture or dislocation declined (31 percent) from 1997 to 2009, accounting for 86,000 stays in 2009.

SECTION 4 COSTS FOR INPATIENT HOSPITAL STAYS

HIGHLIGHTS

- In 2009, the aggregate cost for all hospital stays was $361.5 billion.
- The top three conditions with the highest aggregate costs—septicemia, osteoarthritis, and coronary atherosclerosis—accounted for more than 11 percent of all hospital costs in 2009.
- When conditions were grouped by diagnostic category, the circulatory system accounted for the largest share of hospital costs (20 percent).
- Medicare, the single largest payer for hospitalizations in 2009, accounted for 46 percent of aggregate inpatient costs.
- Medicaid stays accounted for 15 percent of in-hospital costs.
- Private insurance was responsible for 30 percent of aggregate costs; the uninsured were responsible for 5 percent.
- The majority of costs for circulatory conditions (60 percent) were billed to Medicare. One-quarter of circulatory system costs (25 percent) were covered by private insurance.
- Between 1997 and 2009, inflation-adjusted aggregate costs for community hospital stays rose from $229.6 billion to $361.5 billion.
- Overall, growth in intensity of services accounted for 72 percent of the growth in aggregate costs, while population growth was responsible for 27 percent of total growth and an increased number of stays per population accounted for only 1.2 percent of growth.

EXHIBIT 4.1 Cost by Diagnosis

Aggregate Costs for Hospital Stays by Principal Diagnosis, 1997, 2003, and 2009

PRINCIPAL CCS DIAGNOSIS	TOTAL INFLATION-ADJUSTED† HOSPITAL COSTS IN BILLIONS: 2009 DOLLARS			COST PER STAY			AVERAGE ANNUAL GROWTH IN AGGREGATE COSTS
	1997	2003	2009	1997	2003	2009	1997-2009
All diagnoses	$229.6	$324.3	$361.5	$6,600	$8,500	$9,200	3.9%
Septicemia	$4.3	$5.7	$15.4	$10,300	$14,800	$18,500	11.3%
Osteoarthritis	$4.9	$8.2	$13.6	$11,800	$14,000	$14,800	8.8%
Coronary atherosclerosis	$15.3	$18.2	$13.4	$10,900	$14,500	$16,100	-1.1%
Liveborn (newborn infant)	$8.3	$10.7	$11.6 ‡	$2,200	$2,600	$2,800	2.8%
Acute myocardial infarction	$9.6	$13.1	$11.5	$13,100	$17,500	$18,200	1.5%
Complication of device, implant or graft	$5.8	$9.5	$11.4	$11,800	$16,000	$17,000	5.8%
Congestive heart failure	$7.0	$11.4	$10.7 ‡	$7,000	$10,200	$10,400	3.6%
Pneumonia	$9.3	$11.5	$10.5	$7,600	$8,800	$9,000	1.0%
Spondylosis, intervertebral disc disorders, and other back problems	$3.6	$7.1	$9.9	$6,700	$10,900	$15,100	8.8%
Respiratory failure	$3.5	$5.3	$8.1	$17,400	$22,000	$21,400	7.4%
Cardiac dysrhythmias	$3.7	$6.9	$7.5 ‡	$6,500	$9,800	$9,300	6.1%
Acute cerebrovascular disease	$5.7	$7.0	$7.4 ‡	$9,200	$12,500	$13,400	2.3%
Complication of surgical procedures or medical care	$3.0	$5.1	$6.1	$8,600	$11,200	$11,800	5.9%
Chronic obstructive pulmonary disease and bronchiectasis	$3.5	$4.6	$5.4	$6,300	$7,400	$7,400	3.8%
Biliary tract disease	$3.5	$4.6	$4.8 ‡	$7,600	$10,000	$10,100	2.8%
Rehabilitation care, fitting of prostheses, and adjustment of devices	$3.9	$4.9 ‡	$4.8 ‡	$10,000	$10,700	$11,800	1.8%
Diabetes mellitus with complications	$2.9	$4.3	$4.6 ‡	$7,000	$8,900	$8,700	3.9%
Fracture of neck of femur (hip)	$3.3	$4.0	$4.4	$10,100	$13,000	$14,300	2.3%
Mood disorders	$3.3	$4.2	$4.3 ‡	$5,100	$5,200	$4,900	2.4%
Heart valve disorders	$2.6	$3.4	$4.2 ‡	$27,200	$35,400	$36,700	4.2%

† Adjusted for inflation using the GDP deflator (http://www.bea.gov/national/nipaweb/SelectTable.asp, Table 1.1.4. Price Indexes for Gross Domestic Product).

‡ Inflation-adjusted hospital costs are not statistically different from previously reported year shown on table at p<0.05.

Note: Aggregate costs for residual codes and those not elsewhere classified are not shown here. As a result, aggregate costs for all body systems may be larger than the sum of the component parts.

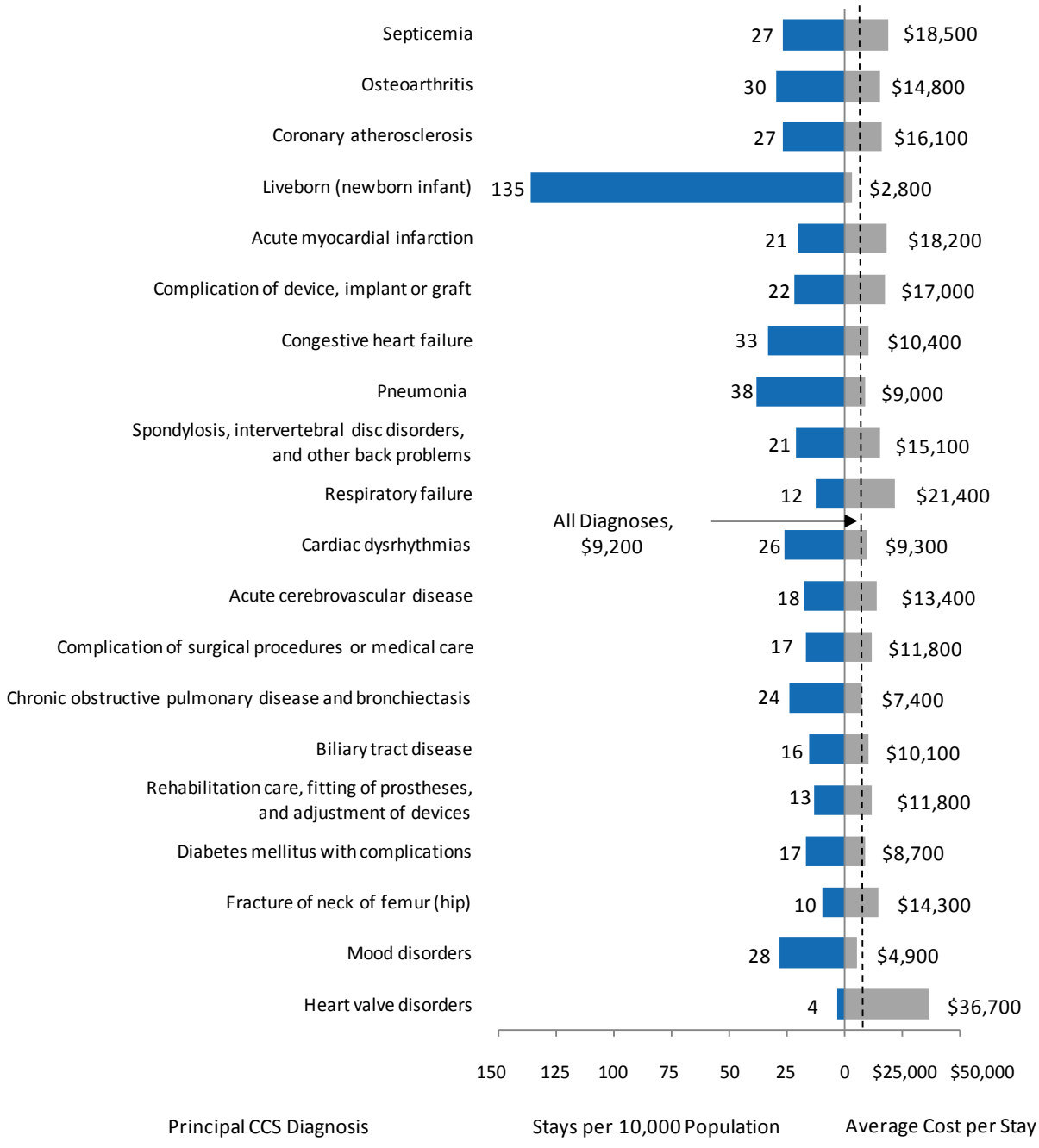
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997, 2003, and 2009.

This table presents the twenty conditions with the highest total costs in 2009. For each condition, the aggregate cost and the cost per stay are shown for 1997, 2003, and 2009; the average annual growth in aggregate costs between 1997 and 2009 is also provided.

- Inflation-adjusted aggregate costs for community hospital stays for all diagnoses rose from $229.6 billion in 1997 to $361.5 billion in 2009.
- The top three conditions with the highest aggregate costs—septicemia, osteoarthritis, and coronary atherosclerosis—accounted for more than 11 percent of all hospital costs in 2009.
  - Septicemia was the most expensive condition in 2009, and among these most expensive conditions, its costs grew the fastest between 1997 and 2009.
- Five of the twenty most expensive conditions were cardiovascular: coronary atherosclerosis, acute myocardial infarction, congestive heart failure, acute cerebrovascular disease, and cardiac dysrhythmias.
  - With the exception of costs of stays for congestive heart failure and cardiac dysrhythmias, the costs for these cardiovascular diagnoses grew at a slower pace than total hospital costs between 1997 and 2009.

- Three of the twenty most expensive conditions were musculoskeletal: osteoarthritis, spondylosis, intervertebral disc disorders, and other back problems, and fracture of neck of femur (hip).
  - Costs for osteoarthritis and spondylosis grew at more than twice the pace of total hospital costs between 1997 and 2009.
- Between 1997 and 2009, costs for septicemia, osteoarthritis and spondylosis grew at two to three times the rate of total hospital costs. Costs for coronary atherosclerosis, acute myocardial infarction and pneumonia grew at a slower pace than overall costs.

Hospital Stays per 10,000 Population and Cost per Stay by Principal Diagnosis, 2009



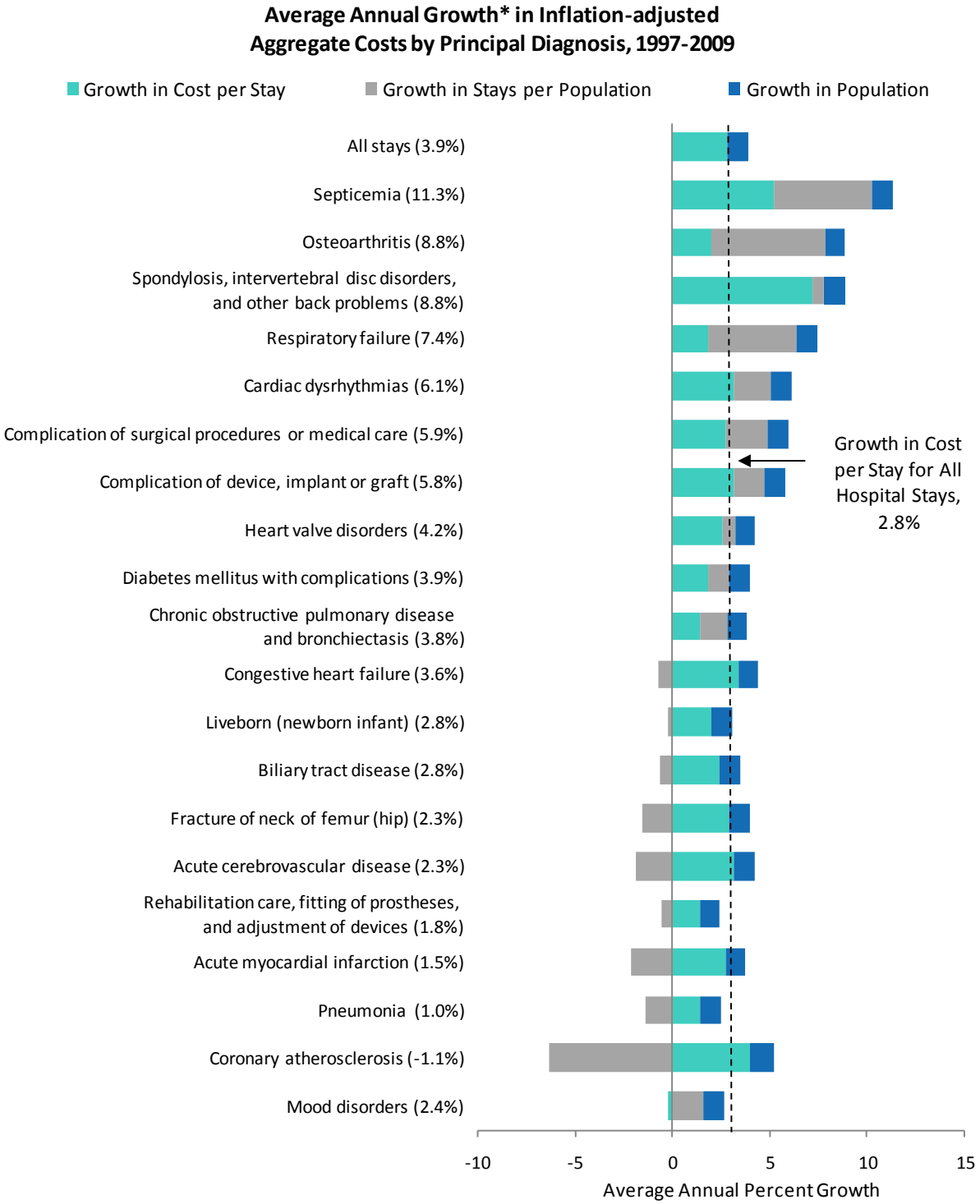
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

The figure above shows the rate of hospital stays and the average cost per stay for the twenty conditions with the highest total inpatient costs in 2009. Conditions are ordered by the aggregate costs of inpatient stays.

- Hospital stays for septicemia cost a total of $15.4 billion and occurred at a rate of 27 stays per 10,000 population. The average cost per stay was $18,500, about twice as much as the average cost for all stays.
- There were 135 hospital stays for liveborn (newborn infants) for every 10,000 population. These stays were responsible for $11.6 billion in hospital costs; each stay cost an average of $2,800.

- Stays for mood disorders cost a total of $4.3 billion; there were 28 of these stays per 10,000 population. This diagnosis had the lowest average cost per stay ($4,900) after liveborn (newborn infants).

EXHIBIT 4.2 Cost Factors Accounting for Growth by Diagnosis



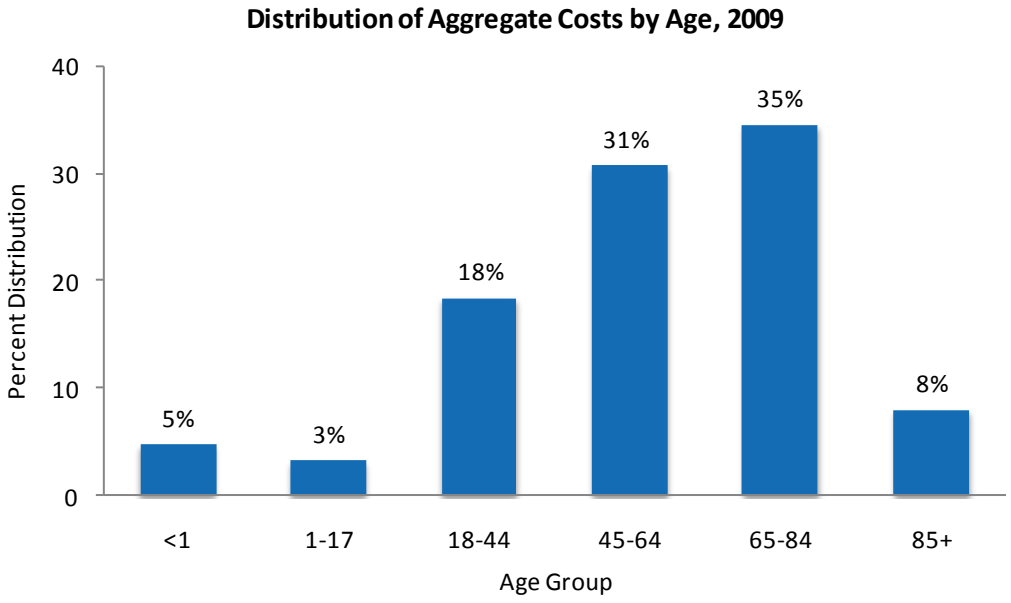
* Bar segments depict the portion of growth attributable to each of the factors listed in the key. The net average annual growth is noted in the axis label.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2009.

Exhibit 4.2 shows the average annual growth in aggregate costs for the twenty most costly reasons for hospitalization. The contribution of the growth in the number of stays, the growth in the cost per stay and population growth to the growth in aggregate costs of each condition are also indicated.

- Aggregate costs for stays in community hospitals grew 3.9 percent annually between 1997 and 2009. The factors that comprised this overall growth were:
  - Greater intensity of services (cost per stay) provided during the hospital stay (averaging 2.8 percent annually),
  - Population growth (up 1.0 percent annually), and
  - Growth in the number of stays per person remained stable.
- Overall, growth in intensity of services accounted for 72 percent of the growth in aggregate costs, while population growth was responsible for 27 percent of total growth and an increased number of stays per population accounted for only 1.2 percent of growth.
- Higher than average growth in cost per stay, indicating greater intensity of service utilization and more expensive interventions, accounted for 81 percent of the growth in the costs of stays for spondylosis, while population growth and growth in stays per population accounted for 12 percent and 7 percent, respectively.
- Growth in stays per person made up the majority of the growth in costs for stays for:
  - osteoarthritis,
  - respiratory failure, and
  - mood disorders.
- The increase in number of stays per person was a relatively more important factor in cost growth for the following stays than it was for stays overall:
  - septicemia,
  - cardiac dysrhythmias,
  - complication of surgical procedures or medical care,
  - complication of device, implant or graft,
  - diabetes mellitus with complications, and
  - chronic obstructive pulmonary disease and bronchiectasis.
- The decline in hospitalizations per population dampened increases in the net cost of hospital stays for:
  - coronary artherosclerosis,
  - congestive heart failure,
  - acute cerebrovascular disease,
  - fracture of neck of femur (hip),
  - rehabilitation care,
  - acute myocardial infarction, and
  - pneumonia.

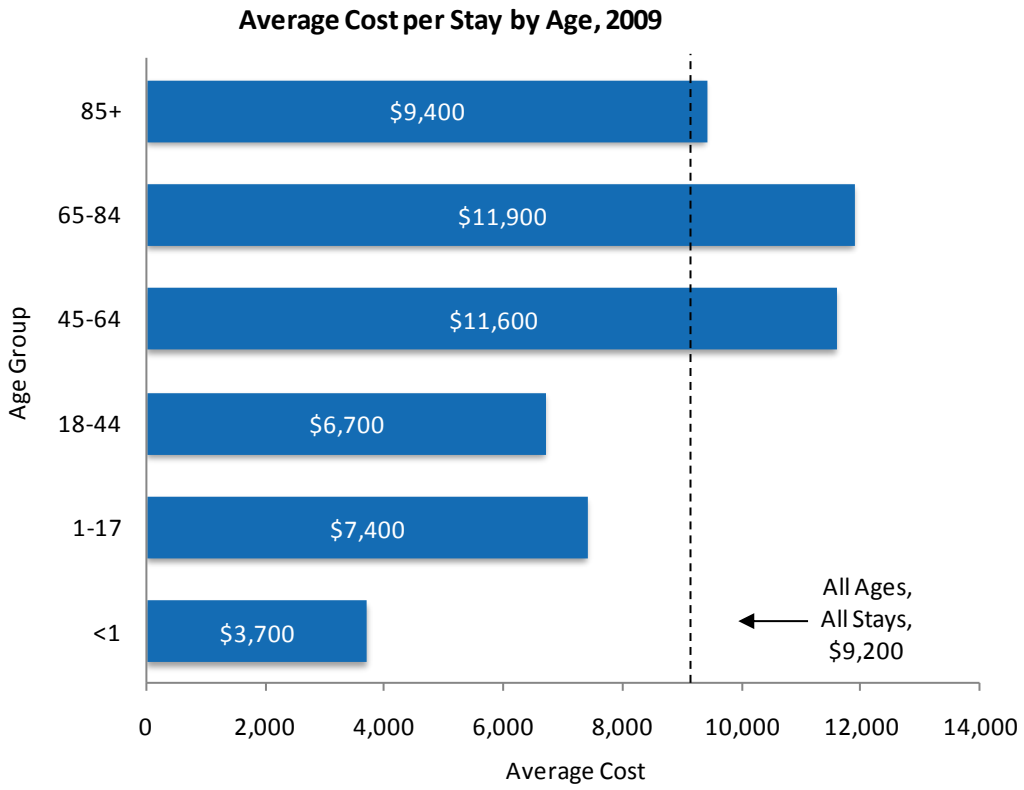
EXHIBIT 4.3 Cost by Age



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

In 2009, the aggregate cost for all hospital stays was $361.5 billion.

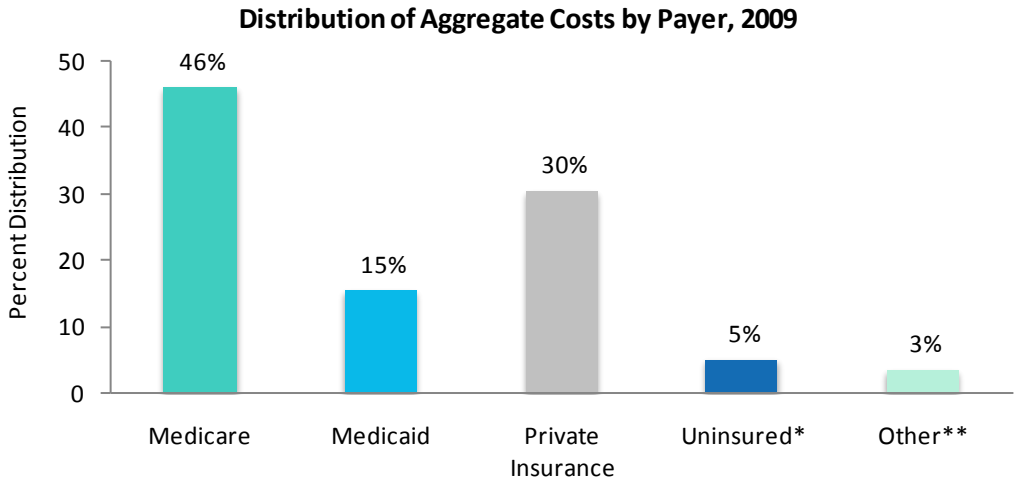
- Non-elderly adult stays accounted for 49 percent of the aggregate cost of all inpatient stays and stays for patients 65 and older accounted for 43 percent of all inpatient costs.
- Stays among patients 45-64 and 65-84 years accounted for larger shares of aggregate costs (31 and 35 percent, respectively) relative to other age groups.



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

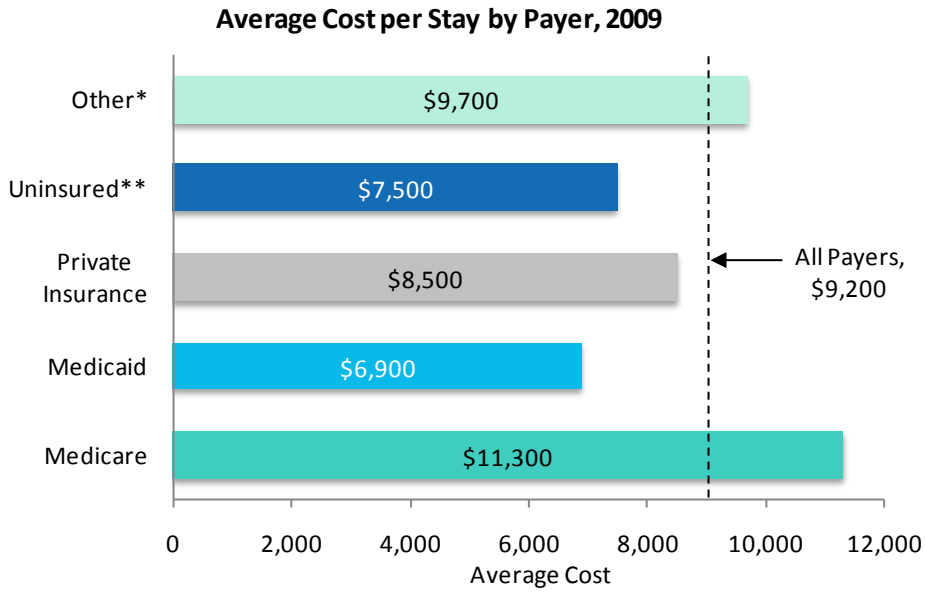
- Stays for patients under one year of age cost $3,700 on average. The overwhelming majority of these stays were for liveborn infants.
- On average, the costs per stay for all patients 1-17 years ($7,400) was less than the average cost per stay across all age groups ($9,200).
- The average cost of a stay for patients 18-44 years was $6,700.
- The average cost per stay for patients 45-64 years and 65-84 years was similar—$11,600 and $11,900, respectively— and was greater than the cost per stay across all age groups ($9,200).
- The average cost per stay for patients 85 years and over was $9,400.

EXHIBIT 4.4 Cost by Payer



* Includes stays classified as self-pay or no charge.
** Includes other payers such as Workers' Compensation, TRICARE, CHAMPUS, CHAMPVA, Title V, and other government programs.
Note: Excludes a small number of stays (84,000 or 0.2 percent) with missing payer that have a small sum of missing costs ($768 million or 0.2 percent).
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

- Medicare, the single largest payer for hospitalizations in 2009, accounted for 46 percent of aggregate inpatient costs.
- Medicaid stays accounted for 15 percent of in-hospital costs.
- Private insurance was responsible for 30 percent of aggregate costs; the uninsured were responsible for 5 percent.

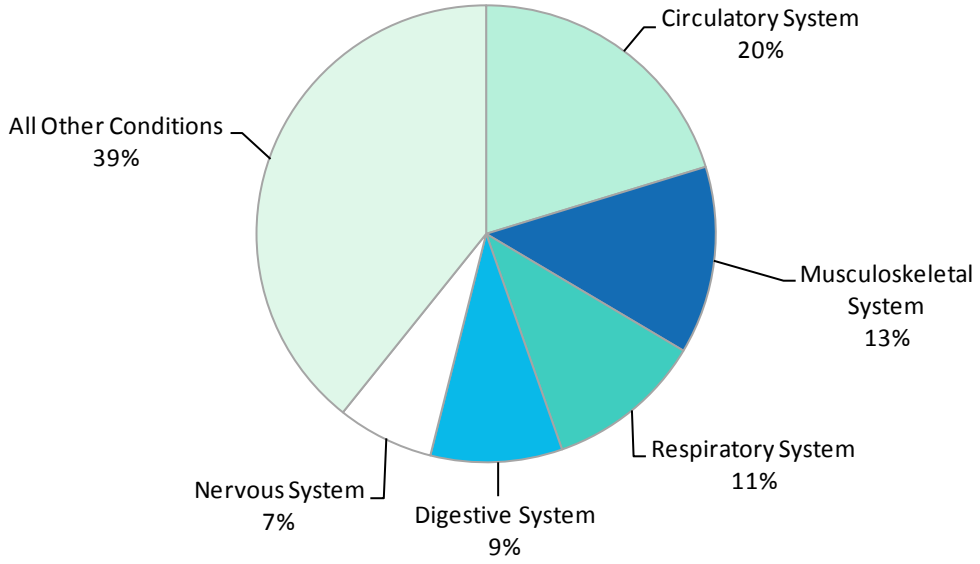


* Includes other payers such as Workers' Compensation, TRICARE, CHAMPUS, CHAMPVA, Title V, and other government programs.
** Includes stays classified as self-pay or no charge.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

- Medicare stays had the highest average cost per hospital stay ($11,300).
- The average cost per stay billed to private insurance ($8,500), the uninsured ($7,500), and Medicaid ($6,900) was lower than the all payer average cost per stay ($9,200).

EXHIBIT 4.5 Cost by Diagnostic Category

Distribution of Aggregate Costs by Diagnostic Category,* 2009



Total Aggregate Costs: $361.5 Billion

* Based on principal diagnosis defined by Major Diagnostic Category (MDC).
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

- Circulatory conditions accounted for the largest share of hospital costs (20 percent) in 2009.
- Additional diagnostic categories responsible for large portions of hospital costs included:
  - Musculoskeletal conditions (13 percent),
  - Respiratory conditions (11 percent),
  - Digestive conditions (9 percent), and
  - Nervous system conditions (7 percent).

Aggregate Costs and Percent Distribution for Each Payer by Diagnostic Category,† 2009

MAJOR DIAGNOSTIC CATEGORY	MEDICARE	MEDICAID	PRIVATE INSURANCE	UNINSURED*	OTHER**
	COSTS IN BILLIONS (PERCENT)				
Total cost	$165.7 (100.0%)	$55.2 (100.0%)	$109.8 (100.0%)	$17.8 (100.0%)	$12.3 (100.0%)
Circulatory system	$43.6 (26.3%)	$6.2 (11.2%)	$18.5 (16.8%)	$3.2 (17.8%)	$1.8 (14.7%)
Musculoskeletal system	$23.3 (14.1%)	$3.2 (5.7%)	$17.1 (15.6%)	$1.3 (7.4%)	$2.8 (22.7%)
Respiratory system	$23.0 (13.9%)	$5.7 (10.3%)	$8.6 (7.9%)	$1.7 (9.5%)	$1.0 (8.3%)
Digestive system	$16.2 (9.8%)	$3.8 (6.9%)	$10.7 (9.8%)	$1.9 (10.4%)	$1.0 (7.8%)
Nervous system	$11.4 (6.9%)	$3.5 (6.4%)	$7.4 (6.7%)	$1.5 (8.3%)	$0.9 (7.2%)
All other conditions	$48.2 (29.1%)	$32.9 (59.6%)	$47.4 (43.2%)	$8.3 (46.5%)	$4.8 (39.3%)

† Based on principal diagnosis defined by Major Diagnostic Category (MDC).

* Includes stays classified as self-pay or no charge.

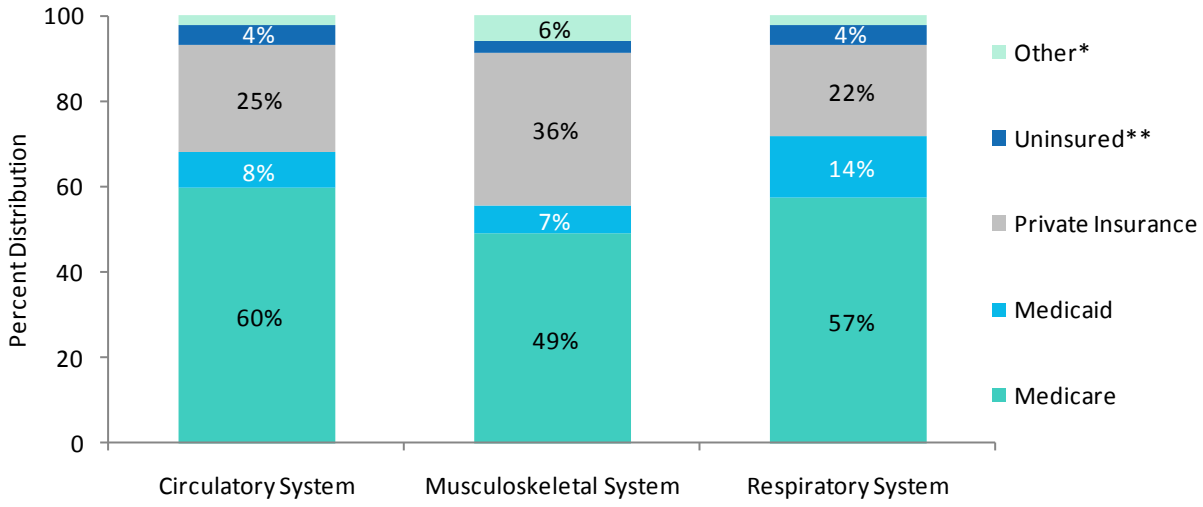
** Includes other payers such as Workers' Compensation, TRICARE, CHAMPUS, CHAMPVA, Title V, and other government programs.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

Costs by diagnostic category varied by payer, as did the distribution of costs.

- Stays for circulatory conditions accounted for the largest share of hospital costs for Medicare (26.3 percent), private insurance (16.8 percent), and the uninsured (17.8 percent).
- Stays for musculoskeletal conditions accounted for larger shares of hospital costs for Medicare (14.1 percent) and private insurance (15.6 percent) than for Medicaid (5.7 percent) and the uninsured (7.4 percent).

Distribution of Aggregate Costs by Payer for Selected Diagnostic Categories, † 2009



† Based on principal diagnosis defined by Major Diagnostic Category (MDC).
* Includes other payers such as Workers' Compensation, TRICARE, CHAMPUS, CHAMPVA, Title V, and other government programs.
** Includes stays classified as self-pay or no charge.
Note: Each diagnostic category excludes a small percentage of stays (0.2 percent) with missing payer that have a small percentage of missing costs (0.2 percent).
Note: Bar segments representing 3 percent or less have not been labeled.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

- The majority of costs for circulatory conditions (60 percent) were billed to Medicare. One-quarter of circulatory system costs (25 percent) were covered by private insurance. Medicaid was billed for 8 percent of the costs and 4 percent were for the uninsured.
- About half (49 percent) of the costs for musculoskeletal conditions were for stays with Medicare as primary expected payer. Stays covered by private insurance accounted for 36 percent of these costs while just 7 percent of the costs were for stays covered by Medicaid.
- The majority of costs for respiratory conditions (57 percent) were billed to Medicare. Private insurance and Medicaid were respectively billed for 22 percent and 14 percent of the aggregate costs.

SECTION 5 WOMEN'S HEALTH

HIGHLIGHTS

Overview of Female and Male Hospital Stays

- In 2009, almost 6 out of every 10 hospital stays were for females. Specifically, 42 percent of all stays were for males, 12 percent were for females hospitalized for pregnancy and childbirth (maternal stays), and 46 percent were for females hospitalized for non-maternal conditions.
- Females were more likely than males to be hospitalized across all communities and all regions. For example, the rate of hospitalization for females in the lowest income communities was 34 percent higher than males and the female hospitalization rate in the highest income communities was 38 percent higher. Similarly, females were 20-41 percent more likely than males to be hospitalized across all regions in the U.S.
- Medicare was the primary payer for the largest percentage of male stays (39 percent) and non-maternal female stays (45 percent).
- Forty-five percent of maternal stays had Medicaid as the primary payer.
- The number of uninsured hospital stays was similar for males (1.2 million) and females (1.1 million).
- The average length of hospital stay declined for males and non-maternal females from 5.2 to 4.8-4.9 days from 1997 to 2009; however, the average length of hospital stay increased slightly for maternal females from 2.5 to 2.7 days.
- On average, hospital stays for non-maternal females cost less than stays for males ($9,400 versus $10,400).
- Stays for maternal females cost an average of $3,900, less than half of the cost of a non-maternal stay.
- The total cost for hospital care in the U.S. was $361.5 billion in 2009—47 percent for males, 48 percent for non-maternal females, and 5 percent for maternal females.

Common Conditions During Hospital Stays for Females

- Pregnancy and childbirth was the most common reason for hospitalizations of females – 295 hospital stays per 10,000 population.
- Circulatory conditions were less common reasons for hospital stays for females (176 per 10,000 population) than for males (202 per 10,000 population). On the other hand, respiratory system conditions were more common for females (135 per 10,000 population) than for males (123 per 10,000 population).
- Hospitalization for urinary tract infections in females was 2.5 times higher than in males.
- Biliary tract hospital stays were 67 percent higher in females than males.
- Osteoarthritis occurred at a 47-percent higher rate in females than males.

- Compared with females, males had higher rates of hospitalization for coronary atherosclerosis (77 percent higher) and acute myocardial infarction, or heart attack (62 percent higher).
- Average hospital costs were lower for females than males for congestive heart failure, acute cerebrovascular disease, coronary atherosclerosis, and acute myocardial infarction.
- Hospital costs were similar for females and males for stays involving complication of device, implant or graft; osteoarthritis; spondylosis; and complication of surgical procedures or medical care.

Mood Disorders

- Females accounted for a higher rate of hospital stays for mood disorders in 2009 than males (41 stays per 10,000 population for females and 34 stays per 10,000 population for males).
- The rate of mood disorders has been greater for females compared with males over the 12-year period from 1997 to 2009. Females had a 42-percent higher rate of hospitalization for mood disorders than males in 1997, a difference that narrowed to 21 percent in 2009.
- The rate of stays for mood disorders was consistently higher among females than males across all age groups in 2009, with the exception of adults age 85 and older, where the rates were similar for males and females.
- The highest rate of hospitalization among females for mood disorders was in the Midwest (50 stays per 10,000 population)—2.5 times higher than the lowest rate in the West (20 stays per 10,000).
- The largest male-to-female difference in hospitalizations for mood disorders was in the South, where the hospitalization rate for females (34 per 10,000 population) was 36 percent higher than for males (25 per 10,000 population).

Procedures

- The rate of cholecystectomy was 71 percent higher for females than for males.
- The rate of knee arthroplasty for females was 57 percent higher than for males.
- The rate of knee arthroplasty increased by 69 percent for females 65 to 84 years old (from 72 stays per 10,000 population in 1997 to 122 stays per 10,000 population in 2009), while it increased by only 55 percent for males (from 58 stays per 10,000 population in 1997 to 90 stays per 10,000 population in 2009).
- The rate of hip replacement for females was 38 percent higher than for males.
- Hip replacements for females age 45 to 64 years old increased by 81 percent from 10 per 10,000 population in 1997 to 17 per 10,000 population in 2009. The rate for males in this period nearly doubled, from 10 per 10,000 population in 1997 to 19 per 10,000 population in 2009.

Children

- Asthma was a common condition among children 1 to 2, 3 to 5, 6 to 9, and 10 to 14 years old. Among 1 to 9 year olds, males had 64- to 75-percent higher rates of stays for asthma compared to females.
- Mood disorders were common among 10 to 14 and 15 to 17 year olds. Females 15 to 17 years old had a 70-percent higher rate of hospitalization for mood disorders in 2009 than males (46 female stays per 10,000 population versus 27 male stays per 10,000 population).
- Diagnostic spinal tap was a top five procedure among children less than 1, 1 to 2, 6 to 9, and 10 to 14 years old. Among 6 to 9 year olds, males had a higher rate of diagnostic spinal tap in the hospital than females (3 male stays versus 2 female stays per 10,000 children). For all other age groups, the rate of diagnostic spinal tap was similar between males and females.

- Appendectomy was frequently performed in children 3 to 5, 6 to 9, 10 to 14, and 15 to 17 years old. With the exception of children 3 to 5 years, males had 36- to 50-percent higher rates of appendectomy than females.

Childbirth

- There were 4.6 million maternal stays in 2009, up from 4.3 million in 1997.
- The rate of stays for childbirth among 20 to 24 year olds remained stable from 1997 to 2007 and then declined 14 percent from 2007 to 2009 (from 1,082 to 951 stays per 10,000 population).
- The rate of stays for childbirth among 25-34 year olds increased 20 percent between 1997 to 2007 (from 950 to 1,141 stays per 10,000 population) and then declined 13 percent to 1,012 stays per 10,000 population.
- The rate of vaginal deliveries decreased 16 percent, from 79 percent of all deliveries in 1997 to 66 percent in 2009. The rate of Cesarean sections increased by 60 percent between 1997 and 2009, from 21 percent of all deliveries to 34 percent of all deliveries.
- The highest rate of C-sections was for females 35-44 years old—44 percent of all deliveries in this age group were via C-section in 2009, a 52-percent increase since 1997 (when the C-section rate was 29 percent in this age group).
- For teenage births (15-19 years old), 24 percent of all deliveries were via C-section in 2009, up 71 percent from 14 percent in 1997.
- The rate of vaginal delivery with episiotomy decreased 66 percent – from 23 percent of all deliveries in 1997 to 8 percent in 2009.
- The rate of vaginal birth following induction increased 24 percent (from 124 to 154 stays per 1,000 deliveries). However, the increase for C-section following induction was even higher—a 73-percent increase from 1997 to 2009 (from 22 to 38 stays per 1,000 deliveries).
- The rate of vaginal birth after C-section declined 67 percent from 1997 to 2009 (from 42 to 14 stays per 1,000 deliveries).
- During this same time period, the rate of repeat C-sections nearly doubled from 77 to 149 repeat C-sections per 1,000 deliveries.

EXHIBIT 5.1 Overview of Female and Male Hospital Stays

Number of Stays and Stays per 10,000 Population by Age, Income, Region, Patient Residence, and Payer by Sex, 2009

	NUMBER OF STAYS IN THOUSANDS		STAYS PER 10,000 POPULATION	
PRINCIPAL CCS DIAGNOSIS	MALES	FEMALES	MALES	FEMALES
All stays*	16,440	22,891	1,086	1,472 §
Percent of all hospital stays	42%	58%	-	-
Age				
< 1 year	2,425	2,264	11,132	10,867
1-17 years	775	813	216	237
18-44 years	2,581	7,321	447	1,313 §
45-64 years	4,790	4,822	1,236	1,187
65-84 years	4,814	5,651	3,201	2,990
85+ years	1,055	2,021	5,917	5,251 §
Median household income of patient's ZIP Code				
Quartile 1 (lowest)	4,549	6,304	1,209	1,619 §
Quartile 2	4,227	5,944	1,095	1,502 §
Quartile 3	3,737	5,272	987	1,355 §
Quartile 4 (highest)	3,342	4,735	903	1,245 §
Region				
Northeast	3,379	4,284	1,267	1,523 §
Midwest	3,758	5,231	1,143	1,545 §
South	6,171	8,974	1,111	1,561 §
West	3,132	4,403	870	1,224 §
Patient residence				
Large central metro	4,838	6,762	1,081	1,462 §
Large fringe metro	3,804	5,510	1,036	1,455 §
Medium and small metro	4,329	6,001	970	1,306 §
Micropolitan and noncore	3,041	4,138	1,215	1,631 §
Primary expected payer†			**PERCENT DISTRIBUTION**	
Medicare	6,452	8,251	44%	56% §
Medicaid	2,866	5,130	36%	64% §
Private insurance	5,176	7,730	40%	60% §
Uninsured**	1,238	1,143	52%	48%
Other***	670	592	53%	47%

* Excludes a small number of stays (155,000 or 0.4 percent) with missing age or sex.

§ Female stays per 10,000 population are statistically different from male stays per 10,000 population at p<0.05. For payers, female stays are statistically different from male stays at p<0.05.

† Population denominators are not available by payer.

** Includes stays classified as self-pay or no charge.

*** Includes other payers such as Workers' Compensation, TRICARE, CHAMPUS, CHAMPVA, Title V, and other government programs.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

Males accounted for 42 percent of all hospital stays and females accounted for 58 percent of all hospital stays in 2009. Almost 6 out of every 10 hospital stays in 2009 were for females.

- There were 11,132 male stays and 10,867 female stays for every 10,000 children less than 1 year old in the United States in 2009, although the number of stays between sexes was similar.
- The rate of stays among 18-44 year old females was about three times the rate of similarly aged males (1,313 versus 447 stays per 10,000 population); this difference is largely due to childbirth-related hospitalizations among females.
- Among those 85 years and older, the rate of stays was higher for males than females (5,917 male stays and 5,251 female stays per 10,000 persons).
- Females were more likely to be hospitalized than males across all communities:
  - In the lowest income communities, the rate of female stays was 34 percent higher than for males.
  - In higher income communities, the rate for females was 37-38 percent higher than for males.
- Similarly, females were more likely to be hospitalized across all four regions:
  - In the South, the rate of hospitalization for females was 41 percent higher than for males (1,561 female stays per 10,000 population compared to 1,111 male stays).
  - In the West, the rate for females was also 41 percent higher than for males (1,224 female stays per 10,000 population compared to 870 male stays).
  - In the Midwest, the rate of female stays was 35 percent higher than for males (1,545 versus 1,143 stays per 10,000 population).
  - In the Northeast, the rate of female stays was only 20 percent higher than for males (1,523 versus 1,267 male stays per 10,000 population).
- Female rates of hospitalization were also higher than male rates across all areas of patient residence:
  - The largest difference between females and males was in large fringe metro areas (suburbs), where the rate of female stays (1,455 female stays per 10,000 population) was 40 percent higher than the male rate of stays (1,036 male stays per 10,000 population).
  - The rate of female stays was 34-35 percent higher than the rate of male stays in large central metro, medium and small metro, and micropolitan and noncore areas.
- In 2009, Medicare was the primary payer for 6.5 million (44 percent) male stays and 8.3 million (56 percent) female stays.
- Medicaid was the primary payer for an additional 2.9 million (36 percent) male stays and 5.1 million (64 percent) female stays. The Medicaid program covers childbirth-related stays, resulting in a large difference in the number of Medicaid stays for males and females.
- The number of uninsured stays between females and males was similar (1.1 million female stays and 1.2 million male stays).

Number of Stays and Stays per 10,000 Population by Age, Income, Region, Patient Residence, and Payer for Maternal and Non-maternal Females,* 2009

PRINCIPAL CCS DIAGNOSIS	NUMBER OF STAYS IN THOUSANDS		STAYS PER 10,000 POPULATION	
	MATERNAL FEMALES (15-44 YEARS)	NON-MATERNAL FEMALES (ALL AGES)	MATERNAL FEMALES (15-44 YEARS)	NON-MATERNAL FEMALES (ALL AGES)
All stays**	4,568	18,279	737	1,175 §
Percent of all hospital stays	12%	46%	-	-
Age				
0-14 years	-	2,729	-	902
15-19 years	468	285	446	272 §
20-24 years	1,121	351	1,073	336 §
25-34 years	2,320	939	1,141	462 §
35-44 years	659	1,480	319	716 §
45+ years	-	12,485	-	1,970
Median household income of patient's ZIP Code				
Quartile 1 (lowest)	1,191	5,103	747	1,311 §
Quartile 2	1,164	4,771	737	1,206 §
Quartile 3	1,077	4,186	690	1,075 §
Quartile 4 (highest)	1,009	3,714	681	977 §
Region				
Northeast	709	3,566	643	1,268 §
Midwest	964	4,257	722	1,257 §
South	1,846	7,110	805	1,237 §
West	1,049	3,347	706	930 §
Patient residence				
Large central metro	1,482	5,265	774	1,139 §
Large fringe metro	1,187	4,310	789	1,138 §
Medium and small metro	1,162	4,830	631	1,051 §
Micropolitan and noncore	680	3,454	713	1,362 §
Primary expected payer†				
Medicare	29	8,221 §	-	-
Medicaid	2,044	3,067 §	-	-
Private insurance	2,169	5,541 §	-	-
Uninsured***	198	942 §	-	-
Other****	120	471 §	-	-

* Maternal female stays are hospital stays for females ages 15 to 44 who are pregnant or gave birth. Non-maternal female stays are hospital stays for females of all ages who are not pregnant and did not give birth.

** Excludes a small number of stays (155,000 or 0.4 percent) with missing age or sex.

§ Non-maternal female stays per 10,000 population are statistically different from maternal female stays per 10,000 population at $p<0.05$. For payers, non-maternal female stays are statistically different from maternal female stays at $p<0.05$.

† Population denominators are not available by payer.

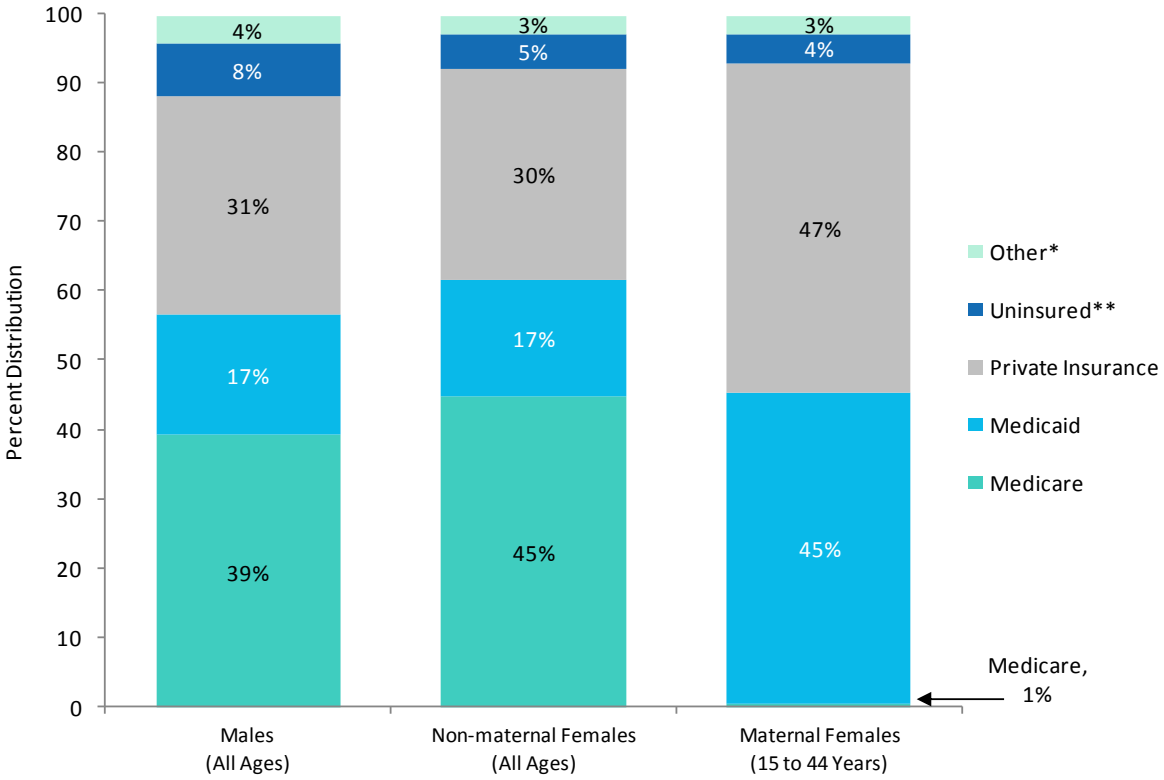
*** Includes stays classified as self-pay or no charge.

**** Includes other payers such as Workers' Compensation, TRICARE, CHAMPUS, CHAMPVA, Title V, and other government programs.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

- In 2009, maternal females accounted for 737 stays per 10,000 population and non-maternal females comprised 1,175 stays per 10,000 population.
- The rates of maternal stays were highest among 20 to 24 year olds and 25 to 34 year olds, as expected. The rate of non-maternal stays tended to increase by age group, with the exception of 0 to 14 year olds, a group that includes newborns. Non-maternal females 45 years and older had the highest hospitalization rate (1,970 stays per 10,000 population).
- In the poorest communities, the rate of non-maternal female stays was 75 percent higher than the rate of maternal female stays (747 maternal stays and 1,311 non-maternal stays per 10,000 population).
- Among maternal females, the rate of hospital stays in the lowest income quartile was 10 percent higher than in the highest income quartile. However, among non-maternal females, the rate of stays in the lowest income quartile was 34 percent higher than in the highest income quartile.
- The rate of non-maternal female hospitalizations was higher than the rate for maternal females across all regions:
  - The greatest difference occurred in the Northeast, where the rate of non-maternal stays was 97 percent higher than the rate of maternal stays (1,268 non-maternal stays per 10,000 population versus 643 maternal stays).
  - In the Midwest, the rate of non-maternal female stays was 74 percent higher than the rate of maternal female stays (1,257 non-maternal female stays per 10,000 population versus 722 maternal female stays).
  - In the South, the rate of non-maternal female stays was 54 percent higher than the rate of maternal female stays (1,237 non-maternal female stays per 10,000 population versus 805 maternal female stays).
  - In the West, the rate of non-maternal female stays was only 32 percent higher than the rate of maternal female stays (930 non-maternal female stays per 10,000 population versus 706 maternal female stays).
- Non-maternal females also experienced higher rates of stays than maternal females across all areas of patient residence:
  - The largest difference (91 percent) in the rate of hospital stays between maternal and non-maternal females by patient residence was in micropolitan and noncore areas (713 maternal and 1,362 non-maternal stays per 10,000 population).
  - In medium and small metro areas, non-maternal females had a 67-percent higher rate of stays than maternal females (631 maternal female and 1,051 non-maternal female stays per 10,000 population).
  - The rate of stays among non-maternal females was 47 percent higher than the rate for maternal females in large central metro areas (774 maternal female and 1,139 non-maternal female stays per 10,000 population).
  - The rate of non-maternal female stays (1,138 non-maternal female stays per 10,000 population) was 44 percent higher than the rate of maternal female stays (789 maternal female stays per 10,000 population) in large fringe metro areas.
- In 2009, private insurance was the primary payer for 2.2 million maternal stays. Medicaid was the primary payer for an additional 2.0 million maternal stays.
- Medicare was the primary payer for the greatest number of non-maternal stays (8.2 million non-maternal stays), followed by private insurance (5.5 million non-maternal stays).

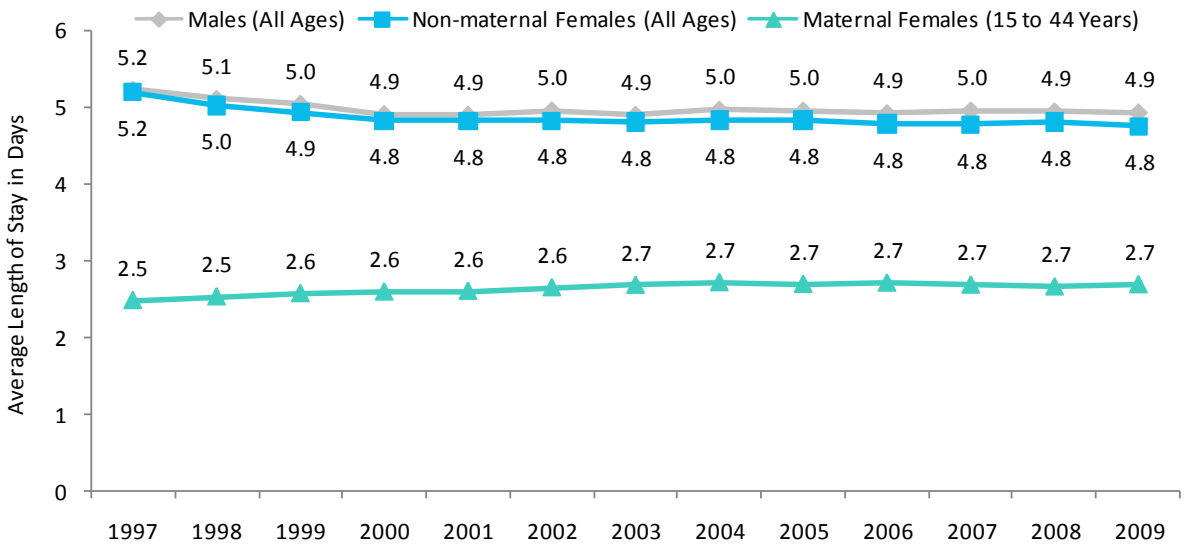
Distribution of Hospital Stays by Payer and Sex, 2009



* Includes other payers such as Workers' Compensation, TRICARE, CHAMPUS, CHAMPVA, Title V, and other government programs.
** Includes stays classified as self-pay or no charge.
Note: Excludes a small number of stays (104,000 or 0.3 percent) with missing sex.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

- In 2009, Medicare was the primary payer for the largest percentage of male stays (39 percent) and non-maternal female stays (45 percent).
- Because Medicare covers disabled individuals of all ages, a small share of maternal stays (1 percent) had a primary payer of Medicare.
- Forty-five percent of maternal stays had Medicaid as the primary payer. Private insurance was the primary payer for 47 percent of maternal stays.
- Private insurance was the primary payer for about 30 percent of both male and non-maternal female stays.

Average Length of Stay by Sex, 1997-2009

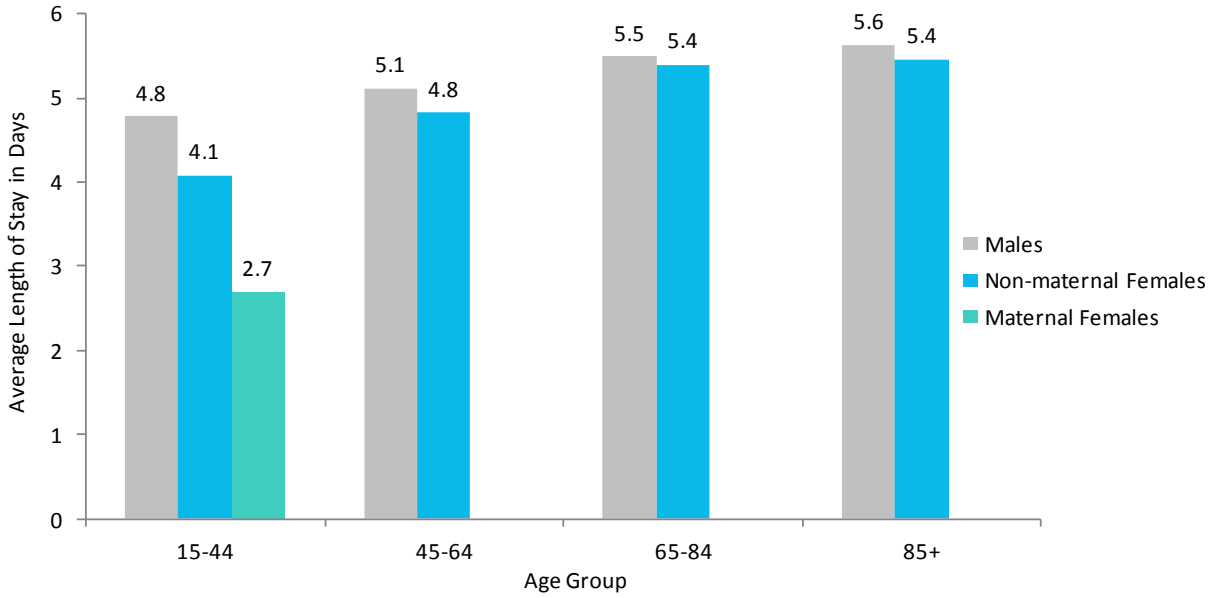


Note: Excludes a small number of stays (104,000 or 0.3 percent) with missing sex.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997-2009.

Although the average length of hospital stay declined for males and non-maternal females, the average length of hospital stay increased slightly for maternal females from 1997 to 2009.

- The average length of hospital stay for male stays decreased from 5.2 days in 1997 to 4.9 days in 2009.
- For non-maternal female stays, the average length of hospital stay decreased from 5.2 days in 1997 to 4.8 days in 2009.
- Maternal females had a slight increase in the average length of hospital stay over this time period (from 2.5 to 2.7 days), but since 2003 length of stay has been stable.

Average Length of Stay by Age and Sex, 2009

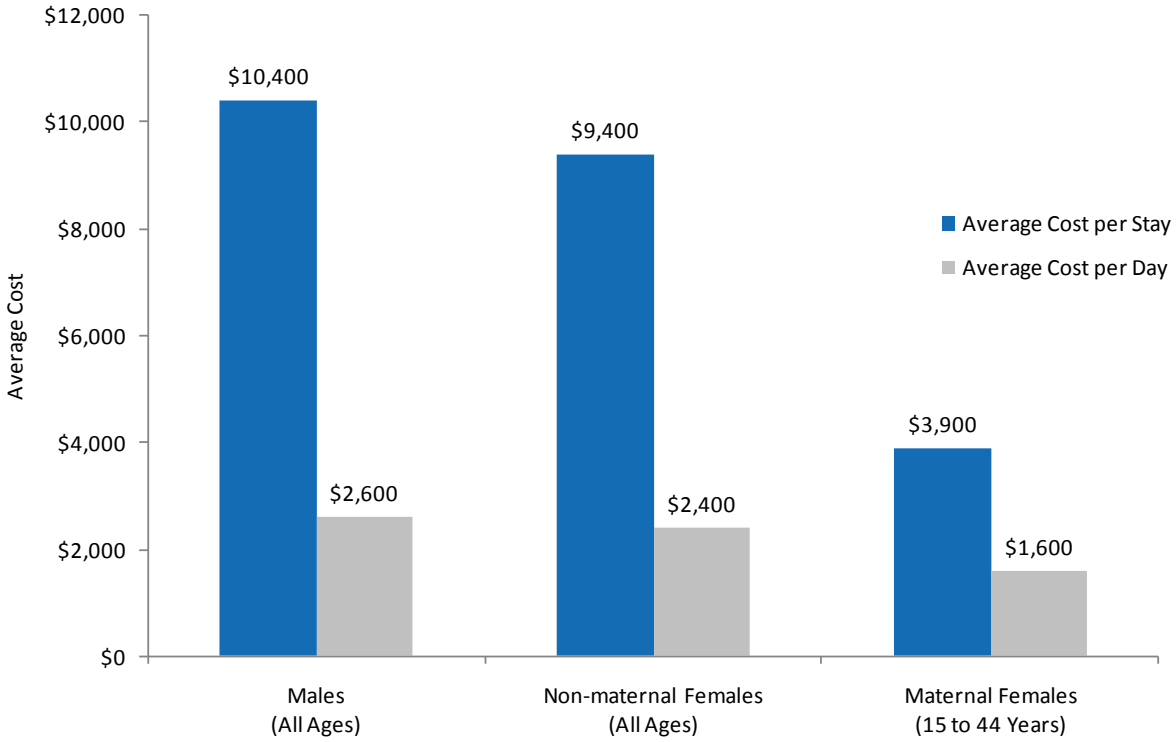


Note: Excludes a small number of stays (104,000 or 0.3 percent) with missing sex.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

The average length of hospital stay generally increased with age for both sexes.

- Maternal females 15 to 44 years old had an average length of hospital stay of 2.7 days, compared to 4.1 days for non-maternal females and 4.8 days for males.
- For all age groups, except 65 to 84 years old, males had a significantly longer average length of hospital stay than non-maternal females.

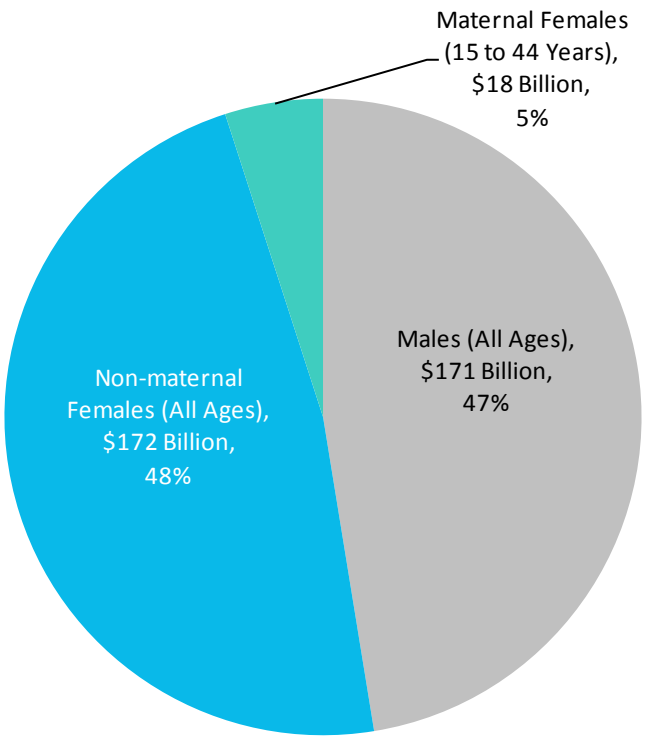
Average Cost per Stay and per Day by Sex, 2009



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

- On average, hospital stays for non-maternal females cost less than stays for males ($9,400 versus $10,400).
- The average cost per day of a hospital stay was about $200 less for non-maternal females than for males ($2,400 versus $2,600).
- Stays for maternal females cost an average of $3,900, less than half of the cost of a non-maternal stay.
- The average cost per day of a maternal stay was about $800 less than the average cost per day of a non-maternal stay.

Distribution of Aggregate Costs by Sex, 2009

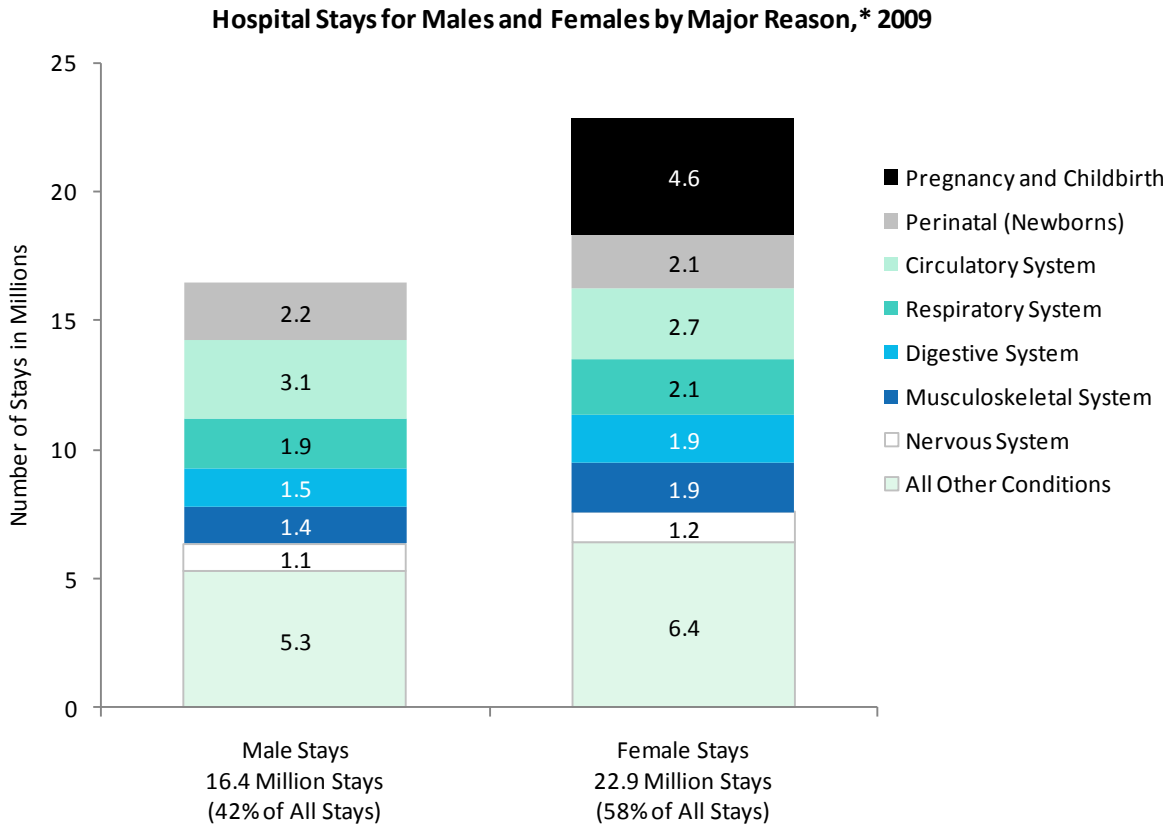


Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

In 2009, hospital stays in the U.S. cost a total of $361.5 billion.

- Of the 53 percent of costs attributable to stays for females, 48 percent was for non-maternal stays and 5 percent was for maternal stays.
- Overall, females accounted for a larger share of the total costs than males. However, when maternal females are excluded, females and males accounted for similar shares of total costs.

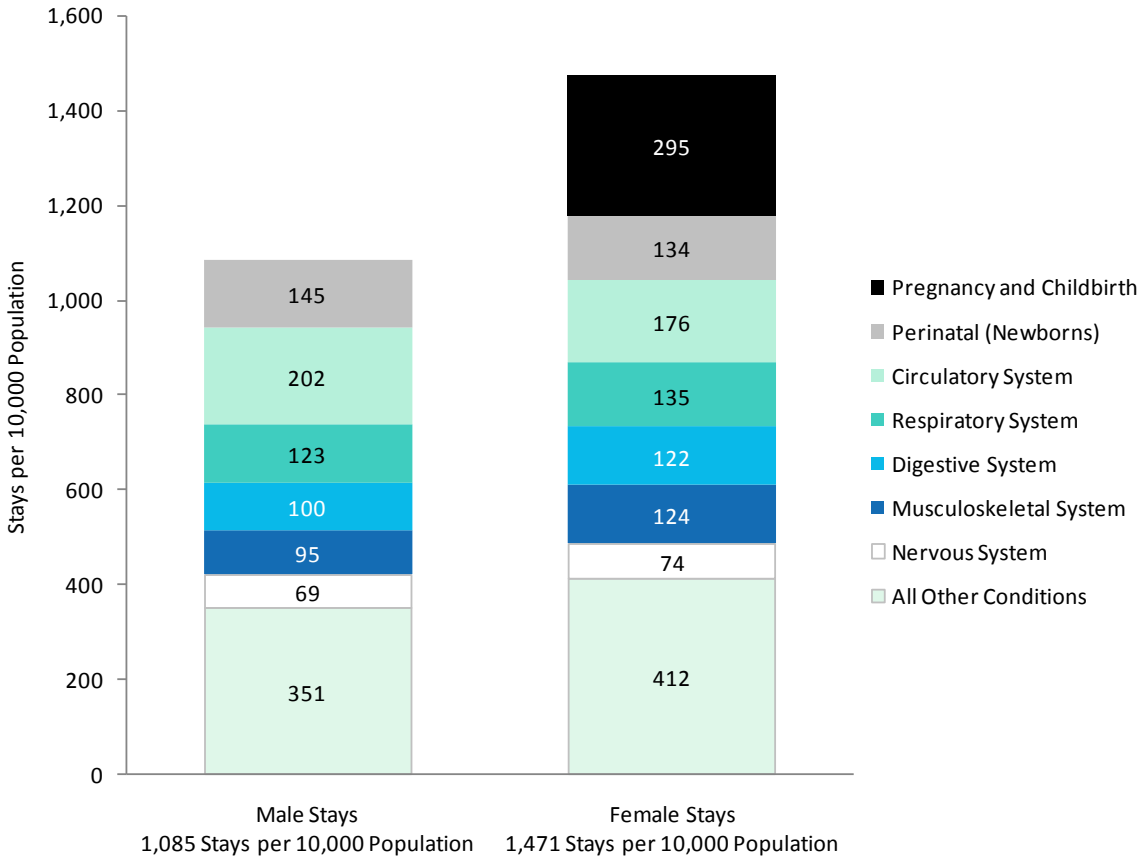
EXHIBIT 5.2 Common Conditions During Hospital Stays for Females



* Based on principal diagnosis defined by Major Diagnostic Category (MDC).
Note: Excludes a small number of stays (111,000 or 0.3 percent) with missing sex.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

- Giving birth (mothers) or being born (infants) accounted for 8.9 million hospitalizations in 2009, about 23 percent of all hospital stays.
- Males accounted for 16.4 million hospitalizations, while females experienced 22.9 million stays.
- When stays for pregnancy and childbirth are excluded, circulatory conditions were the most frequent cause of hospital stays for both males and females in 2009, accounting for 5.8 million stays. Circulatory conditions accounted for 19 percent of male stays and 12 percent of female stays.
- Excluding pregnancy and childbirth, the largest sex differences in reasons for hospitalization were for diseases of the musculoskeletal system (1.9 million female versus 1.4 million male stays).
- Even when pregnancy and childbirth stays are excluded, females accounted for more stays than males – 18.3 million stays for females compared to 16.4 million stays for males.

Hospital Stays per 10,000 Population for Males and Females by Major Reason,* 2009



* Based on principal diagnosis defined by Major Diagnostic Category (MDC).
Note: Excludes a small number of stays (111,000 or 0.3 percent) with missing sex.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

- Males experienced 1,085 stays per 10,000 population, while females experienced 1,471 stays per 10,000 population.
- Even when pregnancy and childbirth stays are excluded, the rate of hospitalizations for females was higher than that for males—1,176 stays per 10,000 population for females compared to 1,085 stays per population for males.
- Giving birth or being born accounted for 289 stays per 10,000 population in 2009 (rate is for the total population; data not shown).
- Excluding pregnancy and childbirth, the largest sex differences in reasons for hospitalization were for diseases of the musculoskeletal system (124 stays per 10,000 population for females versus 95 stays per 10,000 population for males) and digestive system (122 stays per 10,000 females versus 100 stays per 10,000 males).
- Among male non-newborn stays, circulatory conditions had the highest rate of stays (202 per 10,000 population), followed by respiratory conditions (123 per 10,000 population).
- For females, the rate of stays for pregnancy and childbirth (295 per 10,000 population) was higher than for any other condition. Circulatory conditions (176 per 10,000 population) and respiratory system conditions (135 per 10,000 population) were other major reasons for female hospitalizations.
- Respiratory system conditions were more common for females (135 per 10,000 population) than for males (123 per 10,000 population).

Number of Stays and Stays per 10,000 Population for the Most Frequent Principal Diagnoses for Hospital Stays, Adults 18 Years and Older by Sex, 2009

PRINCIPAL CCS DIAGNOSIS	NUMBER OF STAYS IN THOUSANDS		STAYS PER 10,000 POPULATION	
	MALES	FEMALES	MALES	FEMALES
All stays*	13,240	19,814	1,168	1,663 ‡
Female rates higher than male rates				
Pneumonia	473	532	42	45 ‡
Osteoarthritis	363	555	32	47 ‡
Mood disorders	346	439	31	37 ‡
Chronic obstructive pulmonary disease and bronchiectasis	322	407	28	34 ‡
Non-specific chest pain	318	380	28	32 ‡
Urinary tract infections	152	392	13	33 ‡
Complication of surgical procedures or medical care	228	265	20	22 ‡
Biliary tract disease	168	298	15	25 ‡
Male rates higher than female rates				
Coronary atherosclerosis	520	311	46	26 ‡
Complication of device, implant or graft	331	315	29	26 ‡
Acute myocardial infarction	383	250	34	21 ‡
Skin and subcutaneous tissue infections	296	266	26	22 ‡
Diabetes mellitus with complications	265	237	23	20 ‡
Female rates not statistically different from male rates				
Septicemia	389	426	34	36
Cardiac dysrhythmias	397	405	35	34
Congestive heart failure	508	514	45	43
Spondylosis, intervertebral disc disorders, and other back problems	311	337	27	28
Acute cerebrovascular disease	262	287	23	24
Female-specific diagnoses				
Trauma to vulva and perineum due to childbirth	-	721	-	60
Maternal stay with previous C-section	-	539	-	45

* Excludes a small number of stays (111,000 or 0.3 percent) with missing sex.

‡ Female stays per 10,000 population are statistically different from male stays per 10,000 population at $p<0.05$.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

This table focuses on the top 20 most common conditions treated in U.S. hospitals. Diagnoses related to childbirth, including trauma to vulva and perineum due to childbirth and maternal stay with previous C-section, occurred more frequently than other diagnoses. If childbirth is excluded, most diagnoses were common to both males and females, although there were some differences by sex.

Females had a higher rate of stays than males for several conditions:

- Urinary tract infections were about 2.5 times greater for females than males.
- Biliary tract disease occurred at a 67-percent higher rate in females than males.
- Osteoarthritis occurred at a 47-percent higher rate in females than males.
- Chronic obstructive pulmonary disease occurred at a 21-percent higher rate in females than males.
- Mood disorders occurred at a 19-percent higher rate in females than males.
- Non-specific chest pain occurred at a 14-percent higher rate in females than males.

- Complication of surgical procedures or medical care occurred at a 10-percent higher rate in females than males.

Males had a higher rate of stays than females for the following conditions:

- Coronary atherosclerosis occurred at a 77-percent higher rate among males than females.
- Acute myocardial infarction occurred at a 62-percent higher rate among males than females.
- Skin and subcutaneous tissue infections occurred at an 18-percent higher rate among males than females.
- Diabetes mellitus with complications occurred at a 15-percent higher rate among males than females.
- Complication of device, implant, or graft occurred at a 12-percent higher rate among males than females.

Females and males had a similar rate of stays for several conditions:

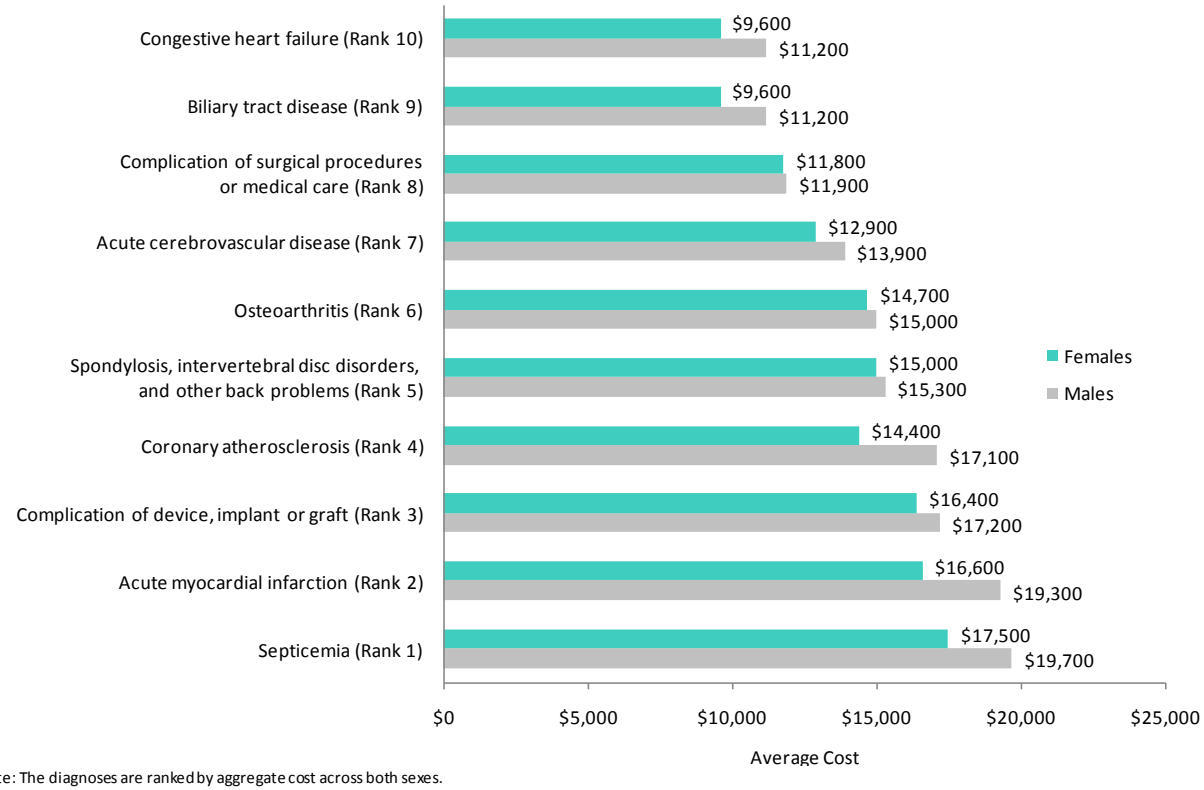
- Septicemia (36 and 34 stays per 10,000 female and male population, respectively).
- Congestive heart failure (43 and 45 stays per 10,000 female and male population, respectively).
- Cardiac dysrhythmias (34 and 35 stays per 10,000 female and male population, respectively).

Five heart-related diagnoses were among the twenty most common principal inpatient diagnoses for both males and females:

- Congestive heart failure, coronary atherosclerosis, cardiac dysrhythmias, non-specific chest pain, and acute myocardial infarction.

Infections such as septicemia, skin and subcutaneous tissue infections, and urinary tract infections were common reasons for hospital stays among both males and females in 2009.

Average Cost per Stay for the Most Frequent Principal Diagnoses for Adults 18 Years and Older by Sex, 2009

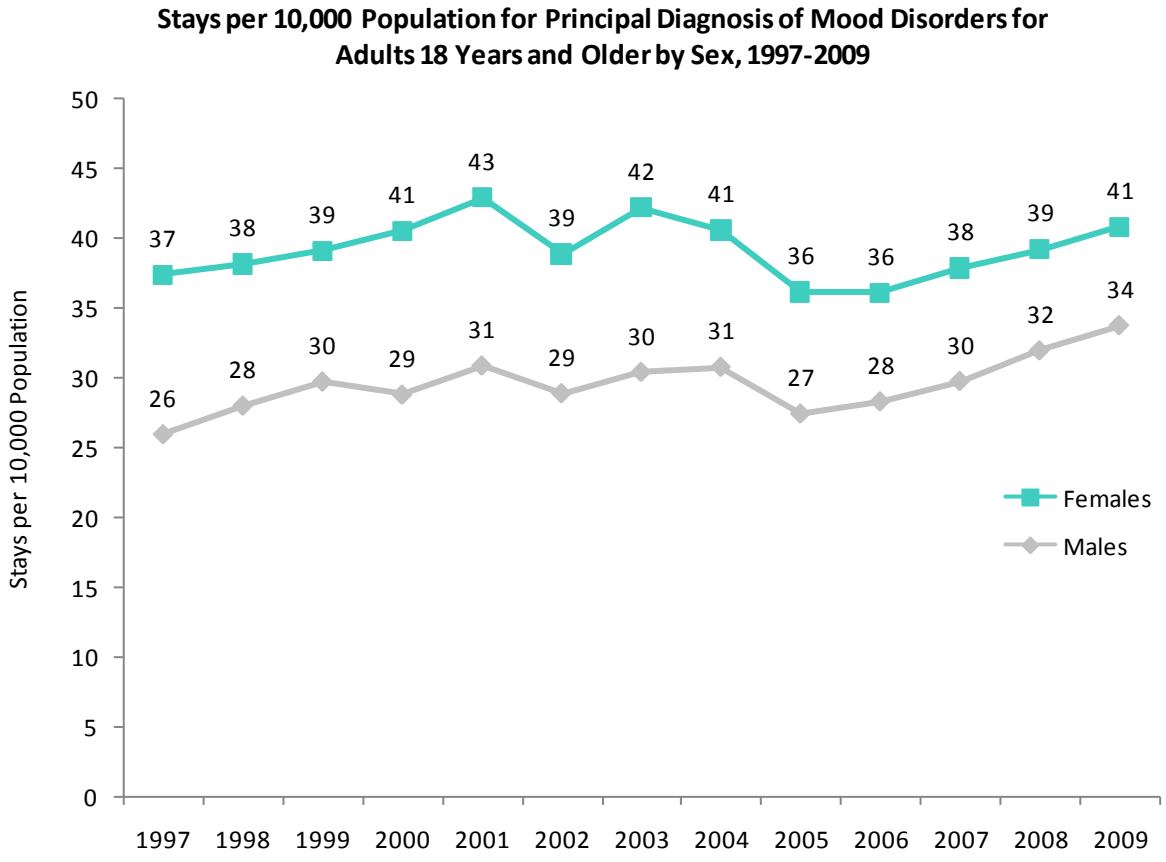


Note: The diagnoses are ranked by aggregate cost across both sexes.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

Average costs per stay for the most frequent principal diagnoses were either lower for females or were similar for males and females.

- Hospital stays for four cardiovascular conditions—congestive heart failure, acute cerebrovascular disease, coronary atherosclerosis, and acute myocardial infarction—cost less for females than for males.
- Stays for septicemia and biliary tract disease were also less expensive for females than for males.
- Average costs were similar for females and males for stays involving complication of device, implant or graft; osteoarthritis; spondylosis; and complication of surgical procedures or medical care.

EXHIBIT 5.3 Mood Disorders

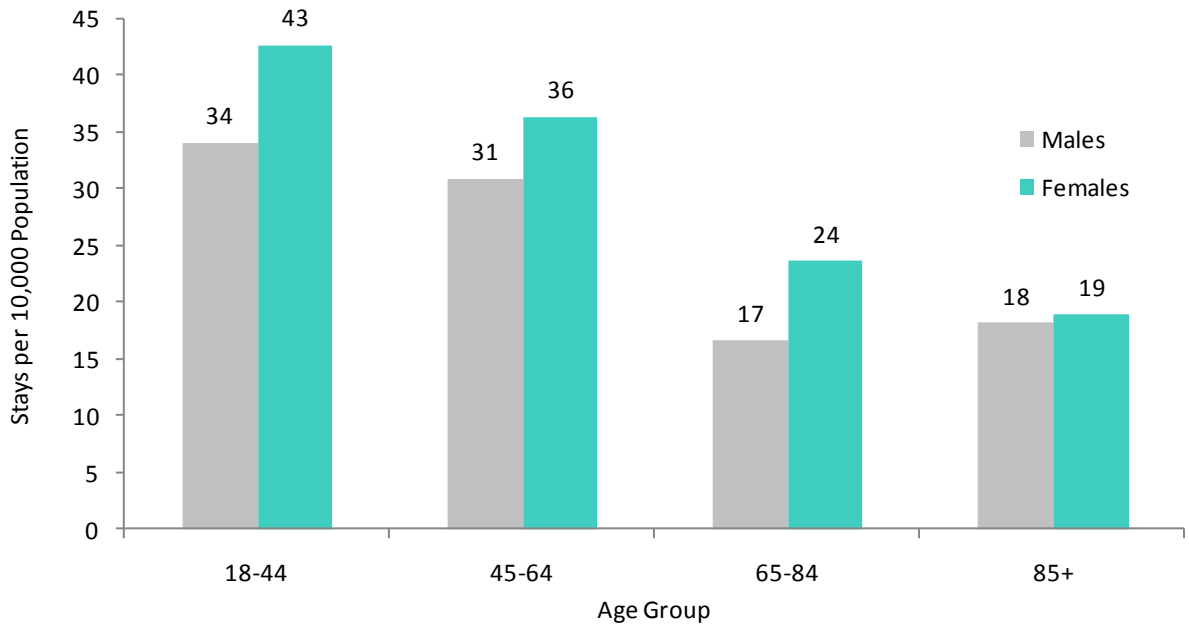


Note: Mood disorders does not include post-menopausal syndrome, premenstrual dysphoric disorder, or postpartum depression.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997-2009.

The rate of mood disorders has been greater for females compared with males over the 12-year period from 1997 to 2009.

- Females had a 42-percent higher rate of hospitalization for mood disorders than males in 1997, a difference that narrowed to 21 percent in 2009.
- In 1997 there were 37 stays per 10,000 female population and 26 stays per 10,000 male population.
- From 1997 to 2001 the rate of hospital stays for mood disorders increased for both males and females.
- The rate of stays for mood disorders significantly declined to 36 stays per 10,000 population for females in 2005 but remained stable for males from 2001 to 2005.
- From 2005 to 2009, the rate of hospital stays for mood disorders increased significantly to 34 stays per 10,000 population for males but remained stable for females.

Stays per 10,000 Population for Principal Diagnosis of Mood Disorders by Age and Sex, 2009

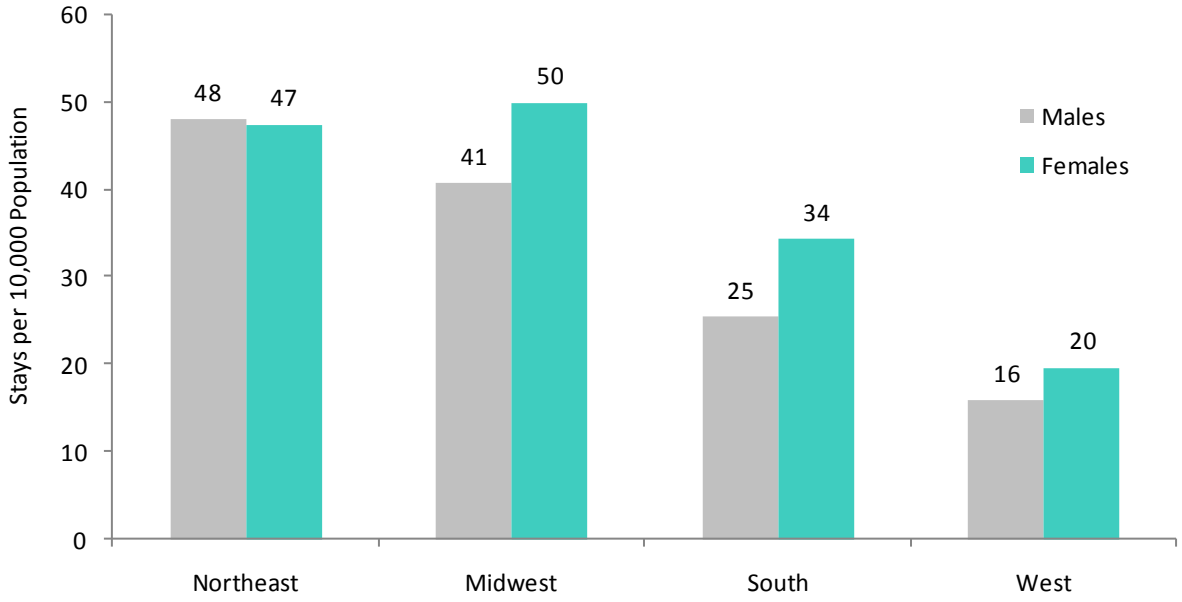


Note: Mood disorders does not include post-menopausal syndrome, premenstrual dysphoric disorder, or postpartum depression.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

The rate of stays for mood disorders generally decreased with age.

- Among females age 18 to 44 years, the rate of mood disorders was 43 stays per 10,000 population. This rate was 26 percent higher than the rate among males of the same age group (34 stays per 10,000 population).
- The rate of stays for mood disorders was consistently higher among females than males across all age groups in 2009, with the exception of adults age 85 and older. Among 65 to 84 year olds, the rate of mood disorders for females was 24 stays per 10,000 population, while males had only 17 stays per 10,000 population.

Stays per 10,000 Population for Principal Diagnosis of Mood Disorders for Adults 18 Years and Older by Region and Sex, 2009



Note: Mood disorders does not include post-menopausal syndrome, premenstrual dysphoric disorder, or postpartum depression.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

The rate of mood disorders by sex varied by region.

- The highest rate of mood disorder hospitalizations among females was in the Midwest (50 stays per 10,000 population) – 2.5 times higher than the lowest rate in the West (20 stays per 10,000 population).
- The highest rate for males was in the Northeast with 48 stays per 10,000 population for mood disorders – three times higher than for males in the West (16 stays per 10,000 population).
- The largest male-to-female difference in hospitalizations for mood disorders was in the South, where the hospitalization rate for females (34 per 10,000 population) was 36 percent higher than for males (25 per 10,000 population).
- The West had the lowest rate of inpatient hospital stays with a principal diagnosis of mood disorders, regardless of sex.

EXHIBIT 5.4 Procedures

Number of Stays and Stays per 10,000 Population for the Most Frequent All-listed Procedures for Hospital Stays, Adults 18 Years and Older by Sex, 2009

	NUMBER OF STAYS IN THOUSANDS		STAYS PER 10,000 POPULATION WITH THE PROCEDURE	
ALL-LISTED CCS PROCEDURES	MALES	FEMALES	MALES	FEMALES
All stays with a procedure*	18,529	27,598	1,635	2,316 §
Female rates higher than male rates				
Blood transfusion	1,185	1,555	105	130 §
Upper gastrointestinal endoscopy	558	665	49	56 §
Knee arthroplasty	257	425	23	36 §
Colonoscopy and biopsy	232	324	21	27 §
Cholecystectomy and common duct exploration	161	288	14	24 §
Hip replacement	178	259	16	22 §
Male rates higher than female rates				
Diagnostic cardiac catheterization, coronary arteriography	888	581	78	49 §
Respiratory intubation and mechanical ventilation	680	608	60	51 §
Hemodialysis	440	395	39	33 §
Percutaneous transluminal coronary angioplasty (PTCA)	457	236	40	20 §
Incision of pleura, thoracentesis, chest drainage	243	213	21	18 §
Female rates not statistically different from male rates				
Echocardiogram	424	368	37	31
Laminectomy, excision intervertebral disc	249	247	22	21
Spinal fusion	205	233	18	20
Enteral and parenteral nutrition	210	220	19	18
Female-specific procedures				
Cesarean section	-	1,352	-	113
Repair of obstetric laceration	-	1,290	-	108
Artificial rupture of membranes to assist delivery	-	900	-	76
Fetal monitoring	-	830	-	70
Hysterectomy	-	481	-	40

* Excludes a small number of stays (111,000 or 0.3 percent) with missing sex.

§ Female stays per 10,000 population are statistically different from male stays per 10,000 population at $p<0.05$.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

Blood transfusion was the most common procedure for both sexes when childbirth and liveborn infant procedures are excluded.

Females had a higher rate of stays with the following procedures than males:

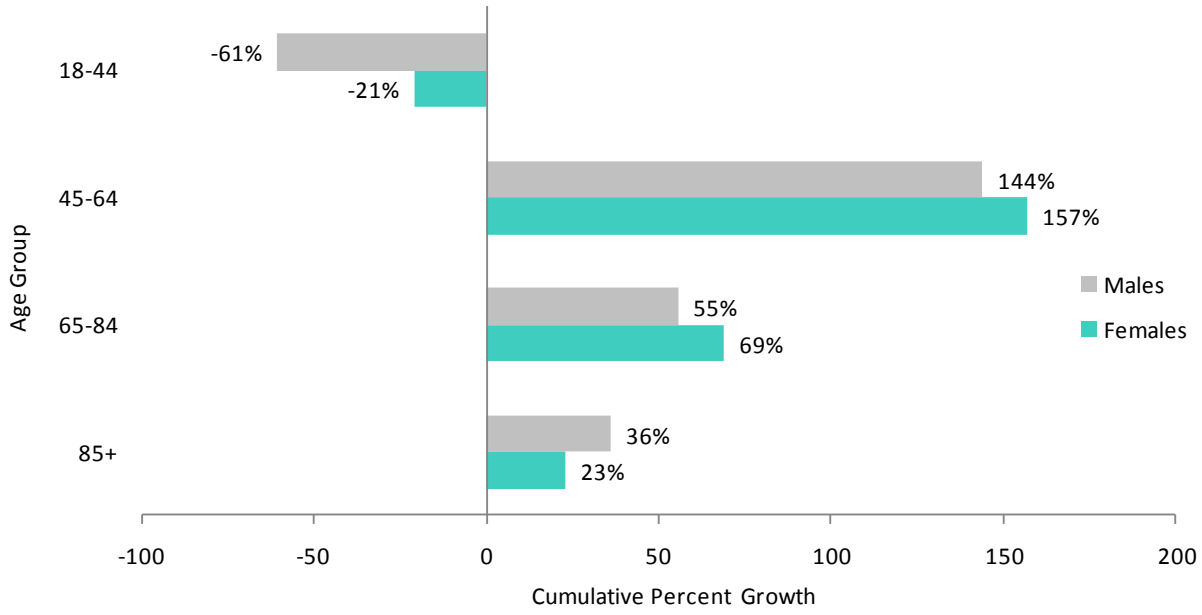
- The rate of stays with cholecystectomy and common duct exploration was 71 percent higher among females than males.
- The rate of stays with knee arthroplasty was 57 percent higher for females than males.
- Females had a 38-percent higher rate of stays for hip replacement than males.
- Colonoscopy and biopsy had a 29-percent higher rate of stays among females than males.
- The rate of stays with blood transfusion was 24 percent higher among females than males.
- The rate of stays with upper gastrointestinal endoscopy was 14 percent higher for females than males.

The rate of stays with the following procedures was higher for males than females:

- Two heart-related procedures—diagnostic cardiac catheterization and PTCAs —were performed more often for males than females.
  - PTCAs were performed at twice the rate for males as females.
  - Diagnostic cardiac catheterization was performed in 59 percent more stays for males than females.
- The male rates of stay with respiratory intubation and mechanical ventilation or hemodialysis were 18 percent higher than the female rates of stay.
- The rate of hospital stays that involved incision of the pleura was 17 percent higher for males than females.

For all other top ranking procedures (echocardiogram, laminectomy, spinal fusion, and enteral and parenteral nutrition), there was little difference between males and females in the rate of procedures performed.

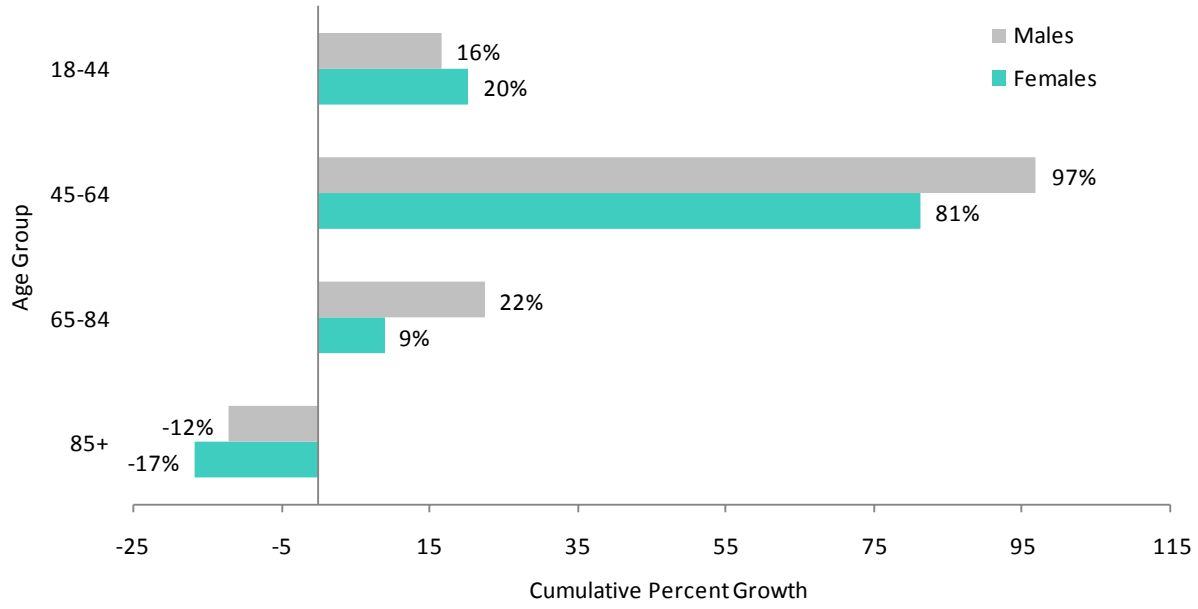
Growth in Stays per 10,000 Population for Knee Arthroplasty by Age and Sex, 1997-2009



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2009.

- The rate of knee arthroplasty for males and females 45-64 years old was about 2.5 times higher in 2009 than in 1997. The male rate increased 144 percent from 11 stays per 10,000 persons in 1997 to 28 in 2009, while it increased 157 percent from 16 stays per 10,000 persons in 1997 to 42 in 2009 for females.
- The rate of knee arthroplasty increased by 69 percent for females 65 to 84 years old (from 72 stays per 10,000 population in 1997 to 122 stays per 10,000 population in 2009), while it increased by only 55 percent for males (from 58 stays per 10,000 population in 1997 to 90 stays per 10,000 population in 2009).

Growth in Stays per 10,000 Population for Hip Replacement by Age and Sex, 1997-2009



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2009.

- The rate of hip replacements decreased by 17 percent for females 85 years and older from 1997 to 2009 (from 139 stays per 10,000 population in 1997 to 116 stays per 10,000 population in 2009). The rate of hip replacements for males 85 years and older decreased by 12 percent over the same period (from 100 stays per 10,000 population in 1997 to 88 stays per 10,000 population in 2009).
- Hip replacements for females age 45 to 64 years old increased by 81 percent from 10 per 10,000 population in 1997 to 17 per 10,000 population in 2009. The rate for males in this period nearly doubled, from 10 per 10,000 population in 1997 to 19 per 10,000 population in 2009.

EXHIBIT 5.5 Children

Number of Stays and Stays per 10,000 Population for the Most Frequent Principal Diagnoses for Hospital Stays, Children 0-17 Years by Sex, 2009

AGE GROUP AND PRINCIPAL CCS DIAGNOSIS	NUMBER OF STAYS IN THOUSANDS		STAYS PER 10,000 POPULATION	
	MALES	FEMALES	MALES	FEMALES
All stays*	3,196	3,065	838	842
<1 year				
Liveborn (newborn infant)	2,123	2,029	9,744	9,739
Acute bronchitis	51	34	235	165 ‡
Hemolytic jaundice and perinatal jaundice	25	18	115	88 ‡
Short gestation, low birth weight, and fetal growth retardation	11	9	52	46
Urinary tract infections	8	11	37	52 ‡
1-2 years				
Pneumonia	28	23	64	54
Asthma	25	13	56	32 ‡
Fluid and electrolyte disorders	16	14	35	34
Acute bronchitis	17	13	38	30
Skin and subcutaneous tissue infections	10	11	22	27
3-5 years				
Pneumonia	16	14	26	22
Asthma	19	11	30	18 ‡
Fluid and electrolyte disorders	7	7	11	11
Epilepsy, convulsions	4	4	7	6
Skin and subcutaneous tissue infections	4	3	6	5
6-9 years				
Asthma	19	11	23	14 ‡
Pneumonia	12	11	15	13
Appendicitis and other appendiceal conditions	11	7	13	9 ‡
Fluid and electrolyte disorders	5	4	6	6
Epilepsy, convulsions	5	4	6	5
10-14 years				
Mood disorders	14	17	14	18
Appendicitis and other appendiceal conditions	19	12	19	12 ‡
Asthma	12	7	11	8
Pneumonia	7	6	7	6
Skin and subcutaneous tissue infections	6	4	5	4 ‡
15-17 years				
Mood disorders	18	28	27	46 ‡
Trauma to vulva and perineum due to childbirth	-	28	-	45
Appendicitis and other appendiceal conditions	12	8	19	14 ‡
Prolonged pregnancy	-	10	-	16
Normal pregnancy and/or delivery	-	10	-	15
Skin and subcutaneous tissue infections	5	4	8	6 ‡
Fracture of lower limb	5	2	8	3 ‡
Intracranial injury	5	2	8	3 ‡

* Excludes a small number of stays (35,000 or 0.6 percent) with missing age or sex.

‡ Female stays per 10,000 population are statistically different from male stays per 10,000 population at p<0.05.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

While some of the most common conditions varied by age group, some conditions were common across several age groups.

- Acute bronchitis was a top five condition among infants less than 1 year old and children 1 to 2 years old. Male infants less than 1 year old had a 42-percent higher rate of stays for acute bronchitis compared to female infants (235 male stays versus 165 female stays per 10,000 population, respectively). There was no male-to-female difference for acute bronchitis among 1-2 year olds.
- Fluid and electrolyte disorders were a common condition among children 1 to 2 years old, 3 to 5 years old, and 6 to 9 years old. Males and females had a similar rate of stays for this condition across all age groups.
- Pneumonia was a common condition in four age groups (1 to 2 years, 3 to 5 years, 6 to 9 years, and 10 to 14 years old). The rate of stays for pneumonia between sexes was similar across all age groups.
- Asthma was also a common condition in four age groups (1 to 2 years, 3 to 5 years, 6 to 9 years, and 10 to 14 years old). Among 1 to 9 year olds, males had 64- to 75-percent higher rates of stays for asthma compared to females.
- Epilepsy was common among children 3 to 5 years old and 6 to 9 years old. The rate of stays for epilepsy between sexes was similar.
- Mood disorders was common among 10 to 14 and 15 to 17 year olds. While there was no male-to-female difference for 10 to 14 year olds, females 15 to 17 years old had a 70-percent higher rate of hospitalization for mood disorders in 2009 than males (46 female stays per 10,000 population versus 27 male stays per 10,000 population).
- Appendicitis was also common among three age groups (6 to 9 years, 10 to 14 years, and 15 to 17 years old). In these age groups, males had 36- to 58-percent higher rates of stays for appendicitis compared to females.

For infants:

- The most common condition was liveborn (newborn infant), which was similar for males and females (9,744 male stays and 9,739 female stays per 10,000 population).
- Acute bronchitis, hemolytic jaundice, short gestation, and urinary tract infections were other top conditions among infants. Except for short gestation and urinary tract infections, these conditions occurred more frequently in males.

For children 1-2 years:

- Pneumonia was a top condition among 1 to 2 year olds, but the rate of stays were similar for males and females.
- Other common conditions that were similar between sexes were fluid and electrolyte disorders, acute bronchitis, and skin and subcutaneous tissue infections, for which there were no male-to-female differences.

For children 3-5 years:

- Pneumonia was the most common condition, but the hospitalization rate was similar between sexes.
- Skin infections were another common condition among children 3 to 5 years old. The rate of stays for skin infections between males and females were similar.

For children 6-9 years:

- Among children 6 to 9 years old, asthma was the most common condition and was 64 percent higher for males than females.
- Only appendicitis differed between males and females, while rates for pneumonia and fluid and electrolyte disorders were similar between sexes.

For children 10-14 years:

- Among 10 to 14 year olds, mood disorders was the most common condition and the rate of stays was similar for males and females.
- Skin infections were another common condition among children 10 to 14 year olds. Males had a 25-percent higher rate of stays for skin infections than females (5 male stays and 4 female stays per 10,000 population).

For children 15-17 years:

- Mood disorders was the most common condition in children 15 to 17 years old. Females had a 70-percent higher rate of stays for mood disorders compared to males (46 female stays and 27 male stays per 10,000 population).
- Conditions related to pregnancy and childbirth (trauma to vulva and perineum due to childbirth, prolonged pregnancy, and normal pregnancy) were common among females in this age group.
- Injury-related stays were more frequent among males than females in this age group. Hospitalization rates for fracture of lower limb and intracranial injury were more than twice as high for males as for females.
- Males had a 33-percent higher rate of stays for skin infections than females.

Number of Stays and Stays per 10,000 Population for the Most Frequent All-listed Hospital Procedures for Hospital Stays, Children 0-17 Years by Sex, 2009

AGE GROUP AND ALL-LISTED CCS PROCEDURES	NUMBER OF STAYS IN THOUSANDS		STAYS PER 10,000 POPULATION WITH THE PROCEDURE	
	MALES	FEMALES	MALES	FEMALES
All stays*	2,081	1,427	546	392 ‡
<1 year				
Prophylactic vaccinations and inoculations	400	653	1,836	3,136 ‡
Circumcision	1,012	-	4,644	-
Ophthalmologic and otologic diagnosis and treatment	62	119	283	572 ‡
Respiratory intubation and mechanical ventilation	59	50	273	240
Diagnostic spinal tap	34	29	157	138
1-2 years				
Incision and drainage, skin and subcutaneous tissue	5	6	11	15 ‡
Respiratory intubation and mechanical ventilation	3	3	7	6
Diagnostic spinal tap	3	3	7	6
Tonsillectomy and/or adenoidectomy	3	1	6	3 ‡
Cancer chemotherapy	2	2	5	4
3-5 years				
Appendectomy	3	2	4	3
Cancer chemotherapy	3	2	4	3
Respiratory intubation and mechanical ventilation	2	1	3	2
Tonsillectomy and/or adenoidectomy	2	1	3	2
Blood transfusion	1	1	2	2
6-9 years				
Appendectomy	11	7	13	9 ‡
Cancer chemotherapy	3	2	3	2
Diagnostic spinal tap	2	2	3	2 ‡
Respiratory intubation and mechanical ventilation	2	1	2	2
Blood transfusion	2	1	2	1 ‡
10-14 years				
Appendectomy	19	12	18	12 ‡
Cancer chemotherapy	4	4	4	4
Treatment, fracture or dislocation of hip and femur	3	2	3	2 ‡
Diagnostic spinal tap	2	2	2	2
Spinal fusion	1	3	1	3 ‡
15-17 years				
Cesarean section	-	27	-	44
Repair of obstetric laceration	-	24	-	39
Appendectomy	12	9	19	14 ‡
Episiotomy	-	10	-	17
Forceps, vacuum, and breech delivery	-	8	-	13
Treatment, fracture or dislocation of lower extremity (other than hip or femur)	3	1	5	2 ‡
Cancer chemotherapy	3	3	5	5
Respiratory intubation and mechanical ventilation	3	2	4	3 ‡

* Excludes a small number of stays (22,000 or 0.6 percent) with missing age or sex.

‡ Female stays per 10,000 population are statistically different from male stays per 10,000 population at p<0.05.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009.

Although some of the most frequent procedures varied by age group, some procedures were common across several age groups.

- Diagnostic spinal tap was a top five procedure in four age groups (less than 1 year, 1 to 2 years, 6 to 9 years, and 10 to 14 years old). Among 6 to 9 year olds, males had a higher rate of diagnostic spinal tap in the hospital than females (3 male stays versus 2 female stays per 10,000 population). For all other age groups, the rate of diagnostic spinal tap was similar between males and females.
- Cancer chemotherapy was a common procedure in children age 1 to 2, 3 to 5, 6 to 9, 10 to 14, and 15 to 17 years old. The rate of hospital stays for cancer chemotherapy was similar between the sexes for all of these age groups.
- Appendectomy was frequently performed in children 3 to 5, 6 to 9, 10 to 14, and 15 to 17 years old. With the exception of children 3 to 5 years, males had 36- to 50-percent higher rates of appendectomy than females.
- Blood transfusion was commonly performed among children 3 to 5 and 6 to 9 years old. Males 6 to 9 years old had higher rates of blood transfusion compared to females (2 male stays versus 1 female stay per 10,000 population).

For infants:

- The most common procedure performed on infants was vaccinations and inoculations. Females had almost twice the rate of these procedures compared to males (3,136 performed in female stays versus 1,836 performed in male stays per 10,000 population).
- Circumcision was also a common procedure performed among male infants.

For children 1-2 years:

- Incision and drainage of the skin was the most common procedure among children 1 to 2 years old. Females experienced a 36-percent higher rate of stays for incision and drainage of the skin compared to males (15 female stays versus 11 male stays per 10,000 population).
- Among children 1 to 2 years old, males had twice the rate of tonsillectomies as females (6 male stays versus 3 female stays per 10,000 population).
- Other common procedures among 1 to 2 year olds were respiratory intubation and diagnostic spinal tap.

For children 3-5 years:

- Appendectomy was one of the top procedures performed among 3 to 5 year olds and the rate of hospitalizations was similar between males and females.
- Children 3 to 5 years old also had cancer chemotherapy, respiratory intubation, and tonsillectomies frequently performed, at a similar rate among males and females.

For children 6-9 years:

- Appendectomy was the most frequently performed procedure in children 6 to 9 years old. Males underwent appendectomy at a 44-percent higher rate than females (13 male stays versus 9 female stays per 10,000 population).
- Other common procedures performed in children 6 to 9 years old included blood transfusion and respiratory intubation. The rate of male stays for blood transfusion was double the rate for females (2 male stays versus 1 female stay per 10,000 population).

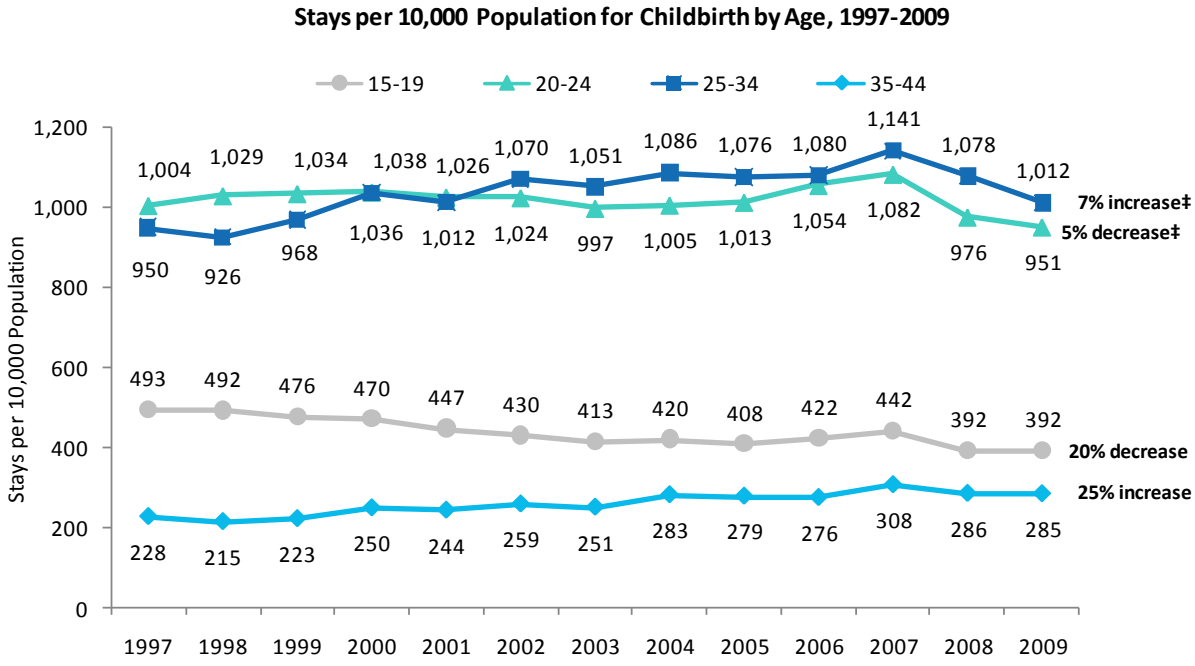
For children 10-14 years:

- Appendectomy was also the most common procedure performed among 10 to 14 year olds, accounting for a 50-percent higher rate among males than females (18 male stays and 12 female stays per 10,000 population).
- Among children 10 to 14 years old, females had three times the rate of spinal fusion as males (3 female stays versus 1 male stay per 10,000 population).
- Cancer chemotherapy; treatment, fracture or dislocation of hip or femur; and diagnostic spinal tap were other common procedures in this age group. Of these procedures, males had a 50-percent higher rate of stays for treatment, fracture or dislocation of hip or femur than females (3 male stays versus 2 female stays per 10,000 population).

For children 15-17 years:

- Among females 15 to 17 years old, procedures related to pregnancy and childbirth were four of the most commonly performed (Cesarean section, repair of obstetric laceration, episiotomy, and forceps, vacuum, and breech delivery).
- Among stays not related to pregnancy and childbirth, males had higher rates of procedures than females:
  - Appendectomy was performed at a 36-percent higher rate for males than females (19 male stays versus 14 female stays per 10,000 population).
  - Males underwent treatment for fracture or dislocation of lower extremity (other than hip or femur) at over twice the rate as females (5 male stays versus 2 female stays per 10,000 population).
  - The rate of male stays with respiratory intubation and mechanical ventilation was 33 percent higher than for females (4 male stays versus 3 female stays per 10,000 population).

EXHIBIT 5.6 Childbirth



‡ 2009 stays per 10,000 population are not statistically different from 1997 stays per 10,000 population at p<0.05.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997-2009.

- The highest rate of hospital stays for childbirth was among 20 to 24 and 25 to 34 year olds. Between 1997 and 2009, the rate of births was similar for these age groups.
  - The birthrate among 20 to 24 year olds remained stable between 1997 and 2007 and then declined 14 percent to 951 births per 10,000 females in 2009.
  - The birthrate among 25 to 34 year olds increased 20 percent from 950 births per 10,000 females in 1997 to 1,141 births per 10,000 females in 2007, and then decreased 13 percent to 1,012 births per 10,000 females in 2009.
- Among 15 to 19 year olds, the rate of births decreased from 493 stays per 10,000 females in 1997 to 392 stays per 10,000 females in 2009, a 20-percent decrease over the time period.
- For those aged 35 to 44 years, the birthrate increased by 25 percent between 1997 and 2009. There were 228 births per 10,000 females in 1997 and 285 births per 10,000 females in 2009.

Number of Stays and Stays per 1,000 Maternal Stays for the Most Frequent Principal Diagnoses for Maternal Hospital Stays, 1997 and 2009

PRINCIPAL CCS DIAGNOSIS	NUMBER OF STAYS IN THOUSANDS		STAYS PER 1,000 MATERNAL STAYS	
	1997	2009	1997	2009
All maternal stays†	4,333	4,568	1,000	1,000
Trauma to vulva and perineum due to childbirth	710	748	164	164
Maternal stay with previous C-section	271	540	63	118 §
Prolonged pregnancy	104	275	24	60 §
Normal pregnancy and/or delivery	536	261	124	57 §
Hypertension complicating pregnancy, childbirth and the puerperium	184	235	42	51 §
Fetal distress and abnormal forces of labor	418	219	97	48 §
Early or threatened labor	260	197	60	43 §
Umbilical cord complication	258	194	60	42 §
Polyhydramnios and other problems of amniotic cavity	201	179	47	39 §
Malposition, malpresentation	161	160	37	35

† Includes additional maternal CCS diagnoses not shown on this table but listed in the Sources and Methods of this report.

§ 2009 stays per 1,000 maternal stays are statistically different from 1997 stays per 1,000 maternal stays at $p<0.05$.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2009.

- There were 4.6 million maternal stays in 2009.
  - Trauma to vulva and perineum due to childbirth was the most common condition in both 1997 and 2009 and the rate of this condition was similar between years.
- The following maternal conditions increased from 1997 to 2009:
  - Maternal stay with previous C-section
  - Prolonged pregnancy
  - Hypertension complication pregnancy, childbirth and the puerperium
- The following maternal conditions decreased from 1997 to 2009:
  - Normal pregnancy and/or delivery
  - Fetal distress and abnormal forces of labor
  - Early or threatened labor
  - Umbilical cord complication
  - Polyhydramnios and other problems of amniotic cavity
- Maternal stay with previous C-section rose in rank from fourth in 1997 to second in 2009.
- The number of stays for normal pregnancy decreased from 124 per 1,000 maternal stays in 1997 to 57 per 1,000 maternal stays in 2009. Normal pregnancies are defined as vaginal births with no complicating conditions.

Number of Stays and Stays per 1,000 Maternal Stays for the Most Frequent All-listed Procedures for Maternal Hospital Stays, 1997 and 2009

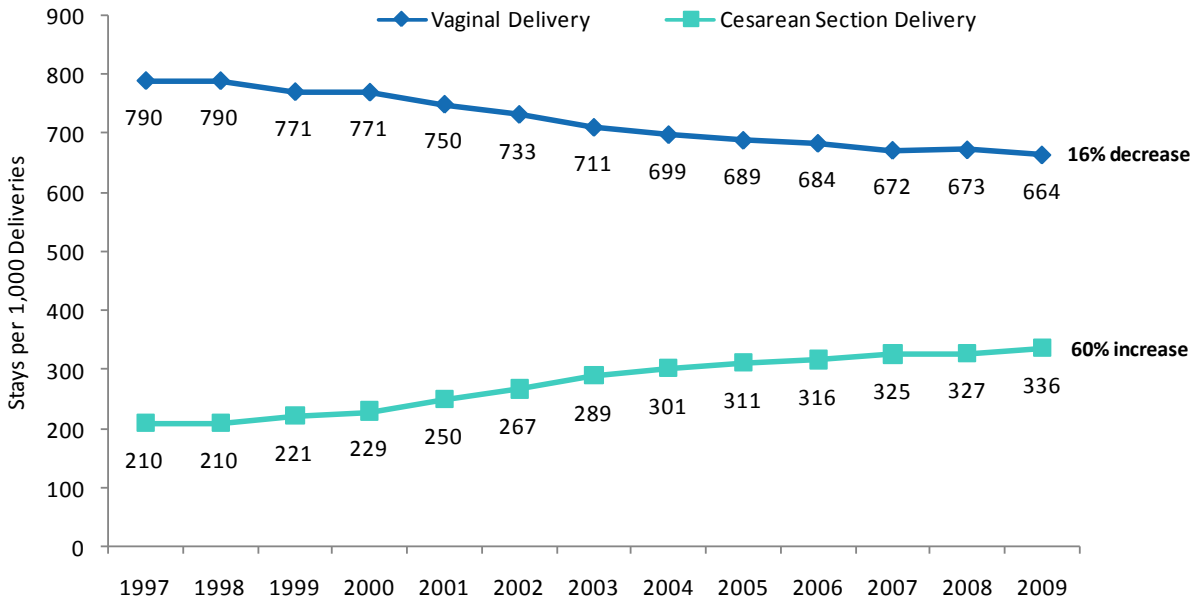
ALL-LISTED CCS PROCEDURES	NUMBER OF STAYS WITH THE PROCEDURE IN THOUSANDS		PROCEDURES PER 1,000 MATERNAL STAYS	
	1997	2009	1997	2009
All maternal stays (with procedures)	3,965	4,266	915	934
Cesarean section	797	1,375	184	301 §
Repair of obstetric laceration	1,133	1,339	261	293 §
Artificial rupture of membranes to assist delivery	850	929	196	203
Fetal monitoring	997	855	230	187
Episiotomy	863	315	199	69 §
Ligation or occlusion of fallopian tubes	304	287	70	63
Forceps, vacuum, and breech delivery	426	276	98	60 §
Insertion of catheter or spinal stimulator and injection into spinal canal	124	190	29	42
Prophylactic vaccinations and inoculations	14	77	3	17 §
Blood transfusion	18	58	4	13 §

§ 2009 stays per 1,000 maternal stays are statistically different from 1997 stays per 1,000 maternal stays at $p<0.05$.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2009.

- Repair of obstetric laceration and C-section were the most common maternal procedures in 1997 and 2009.
  - There were 261 procedures for repair of obstetric laceration per 1,000 maternal stays in 1997 and 293 procedures per 1,000 maternal stays in 2009.
  - C-section, which was the fifth ranked maternal procedure in 1997, rose to the first ranked in 2009, occurring at a rate of 301 procedures per 1,000 maternal stays in 2009.
- The rate of episiotomies decreased 65 percent from 199 procedures per 1,000 maternal stays in 1997 to 69 procedures per 1,000 maternal stays in 2009.

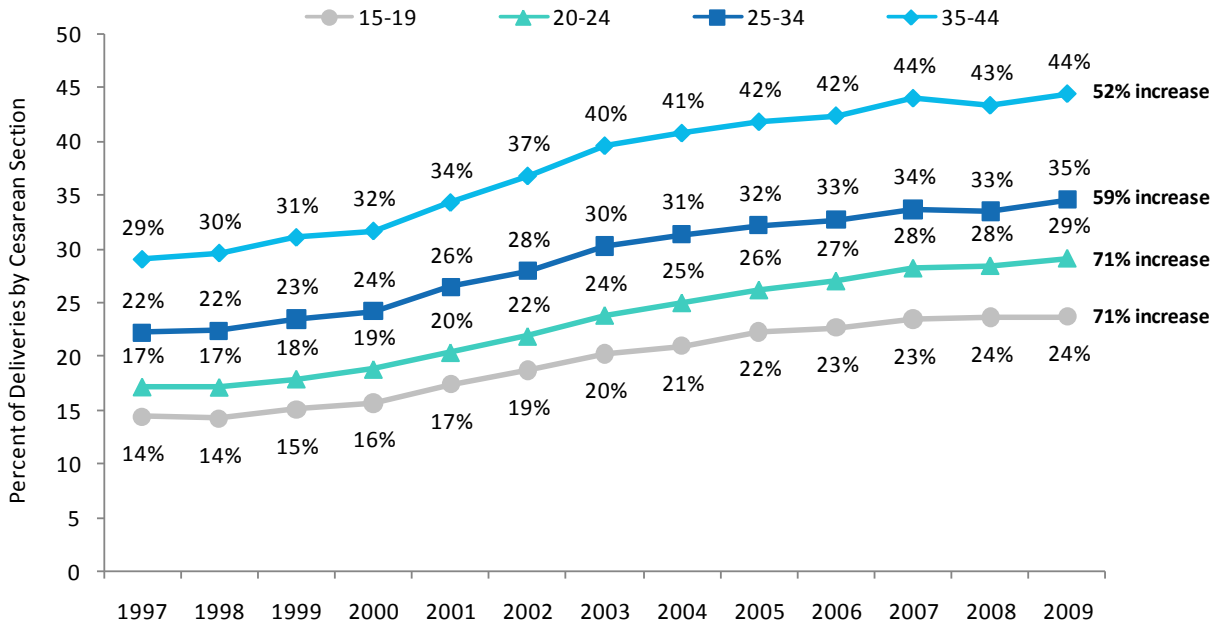
Stays for All-listed Vaginal Delivery and Cesarean Section per 1,000 Deliveries, 1997-2009



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997-2009.

- The rate of vaginal deliveries decreased by 16 percent, from 790 stays per 1,000 deliveries in 1997 to 664 stays per 1,000 deliveries in 2009.
- The rate of C-sections increased by 60 percent between 1997 and 2009. There were 210 C-sections performed per 1,000 deliveries in 1997 and 336 per 1,000 deliveries in 2009.

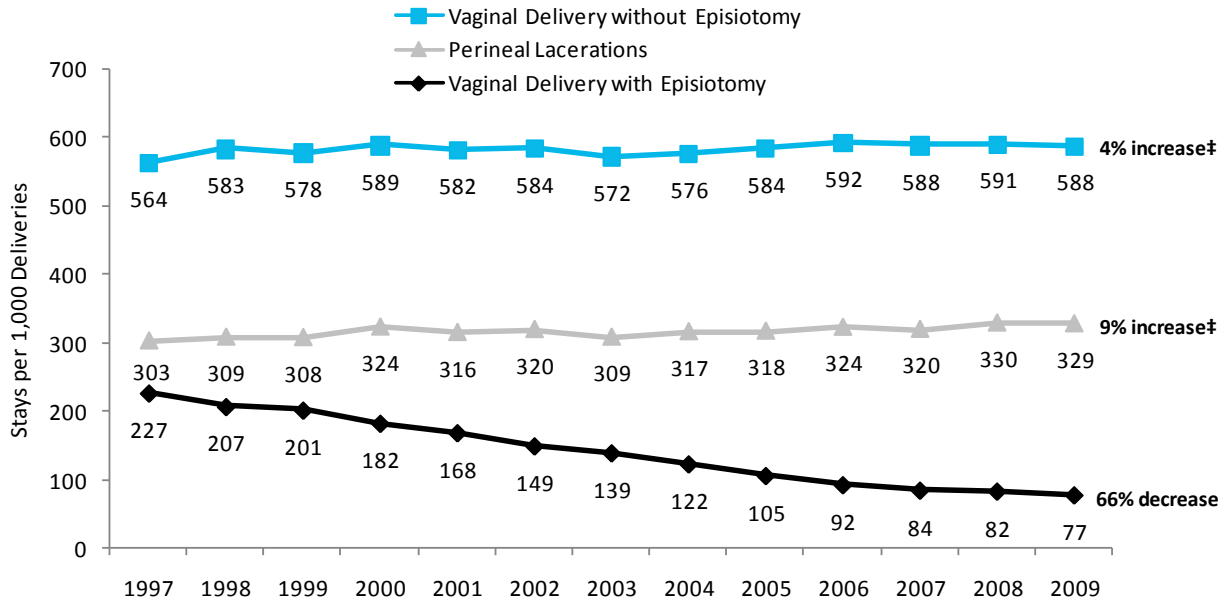
Percent of Maternal Stays with All-listed Cesarean Section Procedures by Age, 1997-2009



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997-2009.

- In 2009, the percent of deliveries via C-section was highest among 35 to 44 year olds (44 percent). This represents a 52-percent increase from 1997.
- Among 25 to 34 year olds, the percent of maternal deliveries with a C-section grew to 35 percent in 2009 from 22 percent in 1997, a 59-percent increase since 1997.
- The largest increases were seen in the youngest age groups (15 to 19 and 20 to 24 year olds) for whom the C-section rate grew by 71 percent between 1997 and 2009.

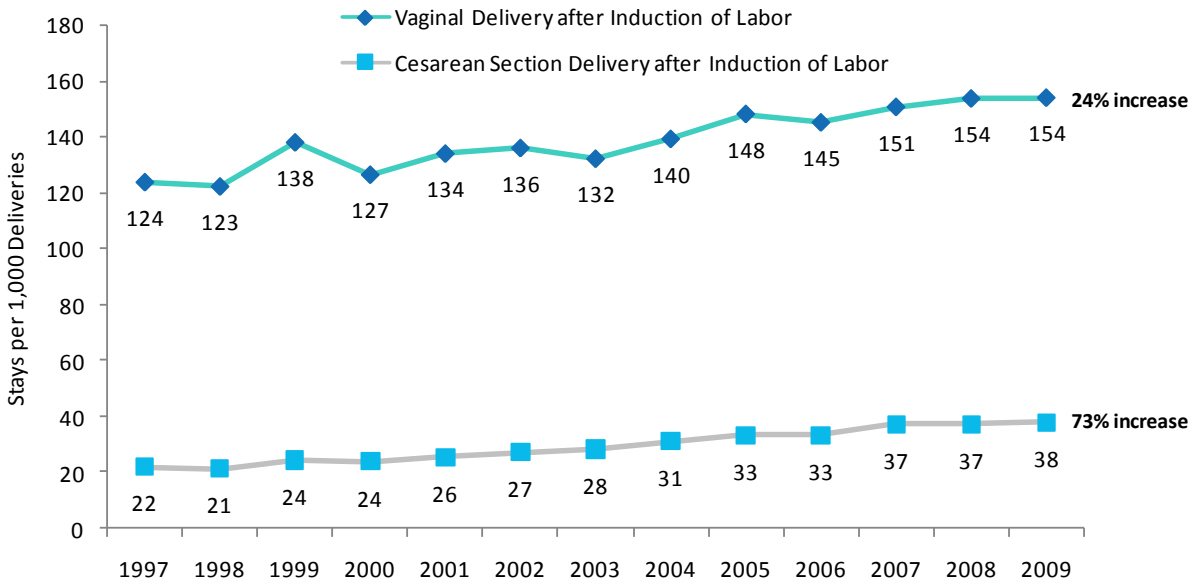
Stays for All-listed Vaginal Deliveries with and without Episiotomy and Perineal Lacerations per 1,000 Deliveries, 1997-2009



‡ 2009 stays per 1,000 deliveries are not statistically different from 1997 stays per 1,000 deliveries at p<0.05.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997-2009.

- The rate of vaginal delivery without episiotomy remained relatively stable from 1997 to 2009.
- From 1997 to 2009, the rate of perineal lacerations also remained stable.
- The rate of vaginal delivery with episiotomy decreased 66 percent – from 227 stays per 1,000 deliveries in 1997 to 77 stays per 1,000 deliveries in 2009.

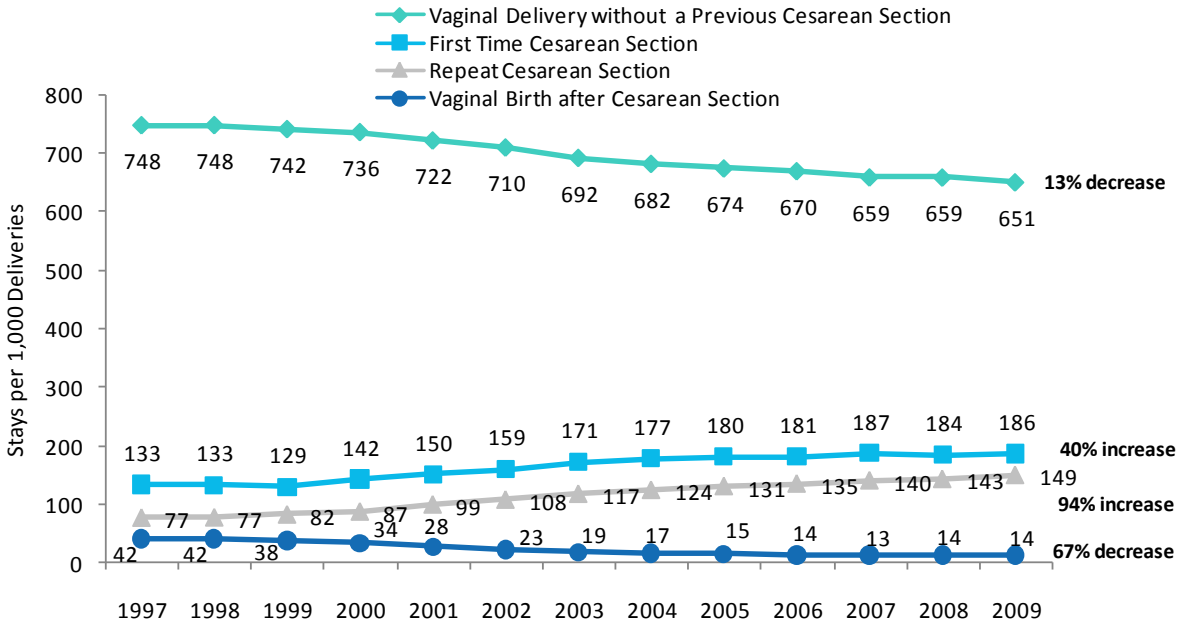
Stays for Vaginal and Cesarean Section Deliveries after Induction of Labor per 1,000 Deliveries, 1997-2009



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997-2009.

- The rate of vaginal deliveries after induction of labor increased by 24 percent from 124 per 1,000 deliveries in 1997 to 154 in 2009.
- From 1997 to 2009, the rate of C-sections after induction of labor increased by 73 percent from 22 to 38 per 1,000 deliveries.

Stays for Vaginal Delivery without a Previous Cesarean Section, First Time Cesarean Section, Repeat Cesarean Section, and Vaginal Birth after Cesarean Section per 1,000 Deliveries, 1997-2009



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997-2009.

- The rate of vaginal delivery without a previous C-section decreased by 13 percent from 748 per 1,000 deliveries in 1997 to 651 per 1,000 deliveries in 2009.
- Between 1997 and 2009, first time C-section rates increased by 40 percent from 133 procedures per 1,000 deliveries in 1997 to 186 procedures per 1,000 deliveries in 2009.
- Between 1997 and 2009, the rate of repeat C-sections grew by 94 percent from 77 previous C-sections per 1,000 deliveries in 1997 to 149 per 1,000 deliveries in 2009.
- Vaginal births after C-sections declined 67 percent between 1997 and 2009 from 42 stays per 1,000 deliveries to 14 stays per 1,000 deliveries.

SOURCES AND METHODS

Unit of Analysis

The unit of analysis is the hospital stay rather than the patient. All stays have been weighted to produce national estimates.

Coding Diagnoses and Procedures

Diagnoses and procedures associated with an inpatient hospitalization can be defined using several different medical condition classification systems. The Clinical Classifications Software (CCS) was used predominantly within this report to identify specific diagnoses and procedures. CCS is based on the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM), a uniform and standardized coding system containing over 13,600 diagnosis codes and 3,700 procedure codes. Each discharge record in the NIS is associated with one or more ICD-9-CM diagnosis code(s) and may contain one or more ICD-9-CM procedure code(s) if a procedure was performed during that hospitalization. Each hospital stay can have multiple CCS diagnoses and multiple CCS procedures.

In the CCS, ICD-9-CM codes are clustered into a smaller number of clinically meaningful categories that are sometimes more useful for presenting descriptive statistics than are individual ICD-9-CM codes. CCS codes are used extensively in this report to define groups of diagnoses and procedures for analysis. The CCS codes allow the reader to quickly and easily recognize patterns and trends in broad categories of hospital utilization. More information on CCS can be found online (http://www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp). Specific CCS conditions or diagnoses can also be summarized into CCS body system or condition categories, which are broad groups of CCS conditions, such as Neoplasms, Mental Disorders, and Diseases of the Circulatory System.

Exhibit Diagnoses and Procedures

Throughout this report, combinations of diagnostic and procedure codes are used to isolate specific conditions or procedures. These codes are defined below by exhibit number.

SECTION 2—INPATIENT HOSPITAL STAYS BY DIAGNOSIS

EXHIBIT 2.1

Reasons for hospital stays are based on principal diagnosis defined by the following Major Diagnostic Categories (MDC):

MDC	CATEGORY DESCRIPTION
0	Principal diagnosis cannot be assigned to MDC (invalid or pre-MDC)
1	Diseases and disorders of the nervous system
2	Diseases and disorders of the eye
3	Diseases and disorders of the ear, nose, mouth and throat
4	Diseases and disorders of the respiratory system
5	Diseases and disorders of the circulatory system
6	Diseases and disorders of the digestive system
7	Diseases and disorders of the hepatobiliary system and pancreas
8	Diseases and disorders of the musculoskeletal system and connective tissue
9	Diseases and disorders of the skin, subcutaneous tissue and breast
10	Endocrine, nutritional and metabolic diseases and disorders
11	Diseases and disorders of the kidney and urinary tract
12	Diseases and disorders of the male reproductive system
13	Diseases and disorders of the female reproductive system

14	Pregnancy, childbirth and the puerperium
15	Newborns and other neonates with conditions originating in the perinatal period
16	Diseases and disorders of blood, blood forming organs, immunological disorders
17	Myeloproliferative diseases and disorders, poorly differentiated neoplasm
18	Infectious and parasitic diseases, systemic or unspecified sites
19	Mental diseases and disorders
20	Alcohol/drug use and alcohol/drug induced organic mental disorders
21	Injuries, poisonings and toxic effects of drugs
22	Burns
23	Factors influencing health status and other contacts with health services
24	Multiple significant trauma
25	Human Immunodeficiency Virus infections

SECTION 4—COSTS FOR INPATIENT HOSPITAL STAYS

EXHIBIT 4.5

See definition for MDCs under Exhibit 2.1.

SECTION 5—WOMEN'S HEALTH

Maternal stays and stays for childbirth in this section occurred among females ages 15-44. Non-maternal female stays are hospital stays for females of all ages who are not pregnant or did not give birth.

EXHIBIT 5.1 and 5.6

Childbirth stays were defined using the following Diagnosis Related Groups (DRG) for 1997-2007:

DRG	PROCEDURE DESCRIPTION
370	Cesarean section with complications and comorbidities
371	Cesarean section without complications and comorbidities
372	Vaginal delivery with complicating diagnoses
373	Vaginal delivery without complicating diagnoses
374	Vaginal delivery with sterilization and/or dilation and curettage
375	Vaginal delivery with operating room procedure except sterilization and/or dilation and curettage

Childbirth stays were defined using the following DRGs for 2008-2009:

DRG	PROCEDURE DESCRIPTION
765	Cesarean section with complications and comorbidities/major complications and comorbidities
766	Cesarean section without complications and comorbidities/major complications and comorbidities
767	Vaginal delivery with sterilization and/or dilation and curettage
768	Vaginal delivery with operating room procedure except sterilization and/or dilation and curettage
774	Vaginal delivery with complicating diagnoses
775	Vaginal delivery without complicating diagnoses

Maternal stays were defined using the above listed DRG codes or the following CCS diagnosis codes:

CCS	DIAGNOSIS DESCRIPTION
177	Spontaneous abortion

178	Induced abortion
179	Postabortion complications
180	Ectopic pregnancy
181	Other complications of pregnancy
182	Hemorrhage during pregnancy, abruptio placenta, placenta previa
183	Hypertension complicating pregnancy, childbirth and the puerperium
184	Early or threatened labor
185	Prolonged pregnancy
186	Diabetes or abnormal glucose tolerance complicating pregnancy, childbirth, or the puerperium
187	Malposition, malpresentation
188	Fetopelvic disproportion, obstruction
189	Previous C-section
190	Fetal distress and abnormal forces of labor
191	Polyhydramnios and other problems of amniotic cavity
192	Umbilical cord complication
193	OB-related trauma to perineum and vulva
194	Forceps delivery
195	Other complications of birth, puerperium affecting management of the mother

Average cost per day was calculated by taking the average of the cost per day for each stay.

EXHIBIT 5.2

See definition for MDCs under Exhibit 2.1.

EXHIBIT 5.6

Childbirth and maternal stays were defined by the DRGs and CCS codes for 1997-2009 listed under Exhibit 5.1.

Perineal lacerations

Stays for vaginal deliveries with perineal lacerations were defined using DRGs 372-375 for 1997-2007 and DRGs 767, 768, 774, and 775 for 2008-2009, with the following ICD-9 diagnosis codes:

ICD-9-CM	DIAGNOSIS DESCRIPTION
664.0	First-degree perineal laceration
664.1	Second-degree perineal laceration
664.2	Third-degree perineal laceration
664.3	Fourth-degree perineal laceration
664.4	Unspecified perineal laceration

Vaginal delivery with and without episiotomy

Stays for vaginal delivery with episiotomy were defined using DRGs 372-375 for 1997-2007 and DRGs 767, 768, 774, and 775 for 2008-2009, with the following CCS procedure code:

CCS	PROCEDURE DESCRIPTION
133	Episiotomy

Stays for vaginal delivery without episiotomy were defined using the above DRGs, but excluded CCS procedure code 133 (Episiotomy).

Vaginal delivery after induction of labor

Stays for vaginal delivery after induction of labor were defined using DRGs 372-375 for 1997-2007 and DRGs 767, 768, 774, and 775 for 2008-2009, with the following ICD-9 procedure codes:

ICD-9-CM	PROCEDURE DESCRIPTION
73.01	Induction of labor by artificial rupture of membranes
73.1	Other surgical induction of labor
73.4	Medical induction of labor

Cesarean section delivery after induction of labor

Stays for Cesarean section delivery after induction of labor were defined using DRGs 370 and 371 for 1997-2007 and DRGs 765 and 766 for 2008-2009, with the following ICD-9 procedure codes:

ICD-9-CM	PROCEDURE DESCRIPTION
73.01	Induction of labor by artificial rupture of membranes
73.1	Other surgical induction of labor
73.4	Medical induction of labor

Vaginal delivery without a previous Cesarean section

Stays for vaginal delivery without a previous Cesarean section were defined using DRGs 372-375 for 1997-2007 and DRGs 767, 768, 774, and 775 for 2008-2009, and excluded the following CCS diagnosis code:

CCS	DIAGNOSIS DESCRIPTION
189	Previous C-section

First time Cesarean section

Stays for first time Cesarean section were defined using DRGs 370 and 371 for 1997-2007 and DRGs 765 and 766 for 2008-2009, or the following ICD-9 diagnosis codes:

ICD-9-CM	DIAGNOSIS DESCRIPTION
669.70	Cesarean delivery, without mention of indication; unspecified as to episode of care or not applicable
669.71	Cesarean delivery, without mention of indication; delivered, with or without mention of antepartum condition
763. 4	Cesarean delivery

And excluded the following ICD-9 diagnosis codes:

ICD-9-CM	DIAGNOSIS DESCRIPTION
654.20	Previous cesarean delivery; unspecified as to episode of care or not applicable
654.21	Previous cesarean delivery; delivered, with or without mention of antepartum condition
654.23	Previous cesarean delivery; antepartum condition or complication

Repeat Cesarean section

Stays for repeat Cesarean section were defined using DRGs 370 and 371 for 1997-2007 and DRGs 765 and 766 for 2008-2009, with the following ICD-9 diagnosis codes:

ICD-9-CM	DIAGNOSIS DESCRIPTION
654.20	Previous cesarean delivery; unspecified as to episode of care or not applicable
654.21	Previous cesarean delivery; delivered, with or without mention of antepartum condition
654.23	Previous cesarean delivery; antepartum condition or complication

Vaginal birth after Cesarean section

Stays for vaginal birth after Cesarean section were defined using DRGs 372-375 for 1997-2007 and DRGs 767, 768, 774, and 775 for 2008-2009, with CCS diagnosis code 189 (Previous C-section).

DEFINITIONS

For definitions of medical terms, refer to http://www.nlm.nih.gov/medlineplus/mplusdictionary.html.

Adjusted for general inflation
Costs can be adjusted for economy-wide inflation by removing increases that reflect the effect of changing average prices for the same goods and services. In this report, the U.S. Bureau of Economic Analysis Gross Domestic Product Price Index is used to remove economy-wide inflation. Additional inflation that is specific to the hospital sector is not removed in this calculation.

Aggregate costs
Aggregate costs are the sum of all costs for all hospital stays.

Charges
Hospital charges reflect the amount the hospital billed for the entire hospital stay and do not include professional (physician) fees. The charge is generally more than the amount paid to the hospital by payers for the hospitalization and is also generally far more than what it costs hospitals to provide care.

Community hospitals
HCUP is based on data from community hospitals, defined as short-term, non-Federal, general and other hospitals, excluding hospital units of other institutions (e.g., prisons). Community hospitals (and HCUP data) include OB-GYN, ENT, orthopedic, cancer, pediatric, public, and academic medical hospitals. They exclude hospitals whose main focus is long-term care, psychiatric, and alcoholism and chemical dependency treatment, although discharges from these types of units that are part of community hospitals are included.

Costs
Costs are derived from total hospital charges using cost-to-charge ratios based on hospital accounting reports from the Centers for Medicare and Medicaid Services (CMS). Costs will tend to reflect the actual costs to produce hospital services, while charges represent what the hospital billed for the care. For each hospital, a hospital-wide cost-to-charge ratio is used to transform charges into costs.

Diagnoses

Principal diagnoses: The conditions established after study to be chiefly responsible for the patient's admission to the hospital.
All-listed diagnoses: The principal diagnosis plus secondary conditions.
Secondary diagnoses: The concomitant conditions that coexist at the time of admission or that develop during the stay.

Discharge status
Discharge status indicates the disposition of the patient at the time of discharge from the hospital, and includes the following six categories: routine (to home), transfer to another short-term hospital, other transfers (including skilled nursing facility, intermediate care, rehabilitation care, swing bed, and another type of facility such as a nursing home), home health care, against medical advice (AMA), or died in the hospital.

In-hospital deaths
In-hospital deaths refer to hospitalizations in which the patient died during his or her hospital stay.

Length of stay
Length of stay is the number of nights the patient remained in the hospital for his or her stay. A patient admitted and discharged on the same day has a length of stay equal to 0.

Maternal female stays
Maternal female stays are hospital stays for females ages 15-44 who are pregnant or gave birth.

Median income
Median income is the median household income of the patient's ZIP Code of residence. Median income is a proxy measure of a patient's socioeconomic status.

Poorest communities are identified as having a median household income of less than $40,000.
All other communities are identified as having a median household income greater than or equal to $40,000.

Metropolitan location
Metropolitan location indicates that the hospital is in a metropolitan area ("urban") rather than a non-metropolitan area ("rural"), as defined by the American Hospital Association (AHA) Annual Survey, using the 1993 U.S. Office of Management and Budget definition.

Non-maternal female stays
Non-maternal female stays are hospital stays for females of all ages who are not pregnant or did not give birth.

Ownership/control
Ownership/control was obtained from the American Hospital Association (AHA) Annual Survey Database and includes categories for government non-Federal (public), private not-for-profit (voluntary), and private investor-owned (proprietary) hospitals. These various types of hospitals tend to have different missions and different responses to government regulations and policies.

Patient age
Patient age in years, calculated based on the patient's date of birth and admission date to the hospital.

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

Medicare includes fee-for-service and managed care Medicare patients.
Medicaid includes fee-for-service and managed care Medicaid patients. Patients covered by the State Children's Health Insurance Program (SCHIP) may be included here. Because most state data do not identify SCHIP patients specifically, it is not possible to present this information separately.
Private insurance includes Blue Cross, commercial carriers, and private HMOs and PPOs.
Other includes Workers' Compensation, TRICARE/CHAMPUS, CHAMPVA, Title V, and other government programs.
Uninsured includes an insurance status of "self-pay" and "no charge."

When more than one payer is listed for a hospital discharge, the first-listed payer is used.

Procedures

Principal procedure is the procedure that was performed for definitive treatment rather than one performed for diagnostic or exploratory purposes (i.e., the procedure that was necessary to take care of a complication). If two procedures appear to meet this definition, the procedure most related to the principal diagnosis is selected as the principal procedure.
All-listed procedures include all procedures performed during the hospital stay.

Stays
The unit of analysis for HCUP data is the hospital stay (i.e., the hospital discharge), not a person or patient. This

means that a person who is admitted to the hospital multiple times in one year will be counted each time as a separate "discharge" from the hospital.

Stays per population
Stays per population is the hospital stay rate of a particular procedure, diagnosis, or event per number of individuals. This measure indicates the prevalence of hospitalizations, procedures or diagnoses within the population.

FOR MORE INFORMATION

HCUP Background Information

For a detailed description of HCUP, information on the design of the NIS, and methods to calculate estimates, please refer to the following publications:

Steiner C, Elixhauser A, Schnaier J. The Healthcare Cost and Utilization Project: An Overview. *Effective Clinical Practice* 5(3):143–51, 2002.

2009 Introduction to the NIS. Healthcare Cost and Utilization Project (HCUP). May 2011. Agency for Healthcare Research and Quality, Rockville, MD (http://www.hcup-us.ahrq.gov/db/nation/nis/NIS_2009_INTRODUCTION.pdf).

Houchens R, Elixhauser A. *Final Report on Calculating Nationwide Inpatient Sample (NIS) Variances, 2001.* HCUP Methods Series Report #2003-2. Online. June 2005 (revised June 6, 2005). Agency for Healthcare Research and Quality (http://www.hcup-us.ahrq.gov/reports/CalculatingNISVariances 200106092005.pdf).

Houchens RL, Elixhauser A. *Using the HCUP Nationwide Inpatient Sample to Estimate Trends. (Updated for 1988-2004)*. HCUP Methods Series Report #2006-05. Online. August 18, 2006. Agency for Healthcare Research and Quality (http://www.hcup-us.ahrq.gov/reports/methods/2006_05_NISTrendsReport_1988-2004.pdf).

HCUP Statistics and Website

Many of the statistics presented here were taken directly from HCUPnet, HCUP's interactive query system. For additional HCUP statistics, visit HCUPnet at http://hcupnet.ahrq.gov.

Technical Assistance

For Technical Assistance with HCUP Products:
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RECOMMENDED CITATION

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