HCUP FACTS AND FIGURES:

STATISTICS ON HOSPITAL-BASED CARE IN THE UNITED STATES, 2005
# TABLE OF CONTENTS

**HIGHLIGHTS** .................................................................................................................................................. 1  
**FOREWORD** .............................................................................................................................................. 4  
**HCUP AND ITS DATA PARTNERS** ........................................................................................................... 5  
**INTRODUCTION** ....................................................................................................................................... 6  

## SECTION 1: OVERVIEW STATISTICS FOR HOSPITALS AND INPATIENT HOSPITAL STAYS

<table>
<thead>
<tr>
<th>Exhibit</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Number and Characteristics of U.S. Hospitals</td>
<td>8</td>
</tr>
<tr>
<td>1.2</td>
<td>Inpatient Hospital Stays and Average Length of Stay</td>
<td>10</td>
</tr>
<tr>
<td>1.3</td>
<td>Reasons for Hospital Stays</td>
<td>11</td>
</tr>
<tr>
<td>1.4</td>
<td>Admission Source</td>
<td>13</td>
</tr>
<tr>
<td>1.5</td>
<td>Discharge Status</td>
<td>13</td>
</tr>
<tr>
<td>1.6</td>
<td>Patient Age</td>
<td>14</td>
</tr>
<tr>
<td>1.7</td>
<td>Expected Primary Payer</td>
<td>15</td>
</tr>
</tbody>
</table>

## SECTION 2: HOSPITAL INPATIENT STAYS BY DIAGNOSIS

<table>
<thead>
<tr>
<th>Exhibit</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Most Frequent Principal Diagnoses</td>
<td>17</td>
</tr>
<tr>
<td>2.2</td>
<td>Most Frequent Diagnoses by Age</td>
<td>20</td>
</tr>
<tr>
<td>2.3</td>
<td>Most Frequent Diagnoses by Gender</td>
<td>23</td>
</tr>
<tr>
<td>2.4</td>
<td>Average Length of Stay and Average Charges</td>
<td>25</td>
</tr>
<tr>
<td>2.5</td>
<td>Circulatory Conditions</td>
<td>26</td>
</tr>
<tr>
<td>2.6</td>
<td>Diabetes</td>
<td>28</td>
</tr>
<tr>
<td>2.7</td>
<td>Pressure Sores</td>
<td>29</td>
</tr>
<tr>
<td>2.8</td>
<td>Alcoholism</td>
<td>30</td>
</tr>
<tr>
<td>2.9</td>
<td>Mental Health</td>
<td>32</td>
</tr>
<tr>
<td>2.10</td>
<td>Injuries</td>
<td>34</td>
</tr>
<tr>
<td>2.11</td>
<td>Influenza</td>
<td>36</td>
</tr>
</tbody>
</table>

## SECTION 3: HOSPITAL INPATIENT STAYS BY PROCEDURE

<table>
<thead>
<tr>
<th>Exhibit</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Most Frequent All-listed Procedures</td>
<td>38</td>
</tr>
<tr>
<td>3.2</td>
<td>Most Frequent All-listed Procedures by Age</td>
<td>40</td>
</tr>
<tr>
<td>3.3</td>
<td>Childbirth</td>
<td>43</td>
</tr>
<tr>
<td>3.4</td>
<td>Cardiovascular Procedures</td>
<td>44</td>
</tr>
<tr>
<td>3.5</td>
<td>Bariatric Surgery</td>
<td>45</td>
</tr>
<tr>
<td>3.6</td>
<td>Orthopedic Procedures</td>
<td>46</td>
</tr>
</tbody>
</table>

## SECTION 4: SPENDING FOR HOSPITAL INPATIENT STAYS

<table>
<thead>
<tr>
<th>Exhibit</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Costs for the Most Frequent Diagnoses</td>
<td>49</td>
</tr>
<tr>
<td>4.2</td>
<td>Average Charges for the Most Frequent Conditions</td>
<td>52</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS

**SECTION 5: SPECIAL TOPIC**

**EXHIBIT 5.1** Uninsured Inpatient Hospital Stays: Admission Source and Discharge Status ........................................... 55

**SOURCES AND METHODS** ......................................................................................................................................................... 56

**DEFINITIONS** ........................................................................................................................................................................ 62

**FOR MORE INFORMATION** ............................................................................................................................................. 65

**ACKNOWLEDGMENTS** ......................................................................................................................................................... 66

**RECOMMENDED CITATION** ................................................................................................................................................. 66
HIGHLIGHTS

HCUP Facts and Figures: Statistics on Hospital-based Care in the United States in 2005 presents information derived from the 2005 HCUP Nationwide Inpatient Sample (NIS) with trend information as far back as 1993. This report includes information from the most recent database containing discharge records for all patients treated in a sample of approximately 1,000 hospitals in 2005. These discharges are weighted to represent all inpatient stays in community hospitals across the nation. Community hospitals include all non-federal, short-term acute care hospitals and exclude psychiatric and substance abuse facilities.

Overall hospital statistics

- From 1997 to 2005, the number of community hospitals declined from 5,060 hospitals to 4,936 hospitals. Despite this decline, the volume of hospital stays grew by 4.5 million. Hospitals were able to accommodate this increase in discharges primarily because of a 4 percent reduction in the average length of stay.

- The average cost per hospital inpatient stay in 2005 was $7,900, up an average of 5.7 percent annually since 1997.

- After adjusting for inflation, the aggregate costs for all stays in community hospitals increased at a 5.1-percent average annual rate from 1997 to 2005. Population growth accounted for 1.1 percentage points of this growth, increases in the number of admissions per capita accounted for 0.4 percentage point, and 3.5 percentage points were attributable in part to increased service intensity resulting from new technology.

- Medicare and Medicaid together assumed primary financial responsibility for over half (57 percent) of all hospital stays in 2005. Medicaid paid for 1 out of 5 hospital stays.

- Six out of ten hospital stays had procedures associated with them, a proportion that has changed little since 1997.

Childbirth and newborns

- Among the most frequent reasons for hospitalizations were childbirth and newborns, which together accounted for nearly 1 out of 4 (23 percent) of all hospitalizations in 2005.

- C-section deliveries comprised 31 percent of all maternal discharges in 2005, up from a 21-percent rate that persisted from 1994 to 1998. The number of C-sections (first time and repeat) grew significantly (67 percent) between 1996 and 2005. The number of vaginal births after C-section fell 61 percent over the same period.

- The number of stays for prolonged pregnancy more than doubled from 104,000 in 1997 to 234,000 in 2005.

- In general, longer lengths of stay were associated with higher average charges. The two conditions with the longest hospital stays for all patients regardless of age were related to infants (infant respiratory distress syndrome; premature birth and low birth weight), with average stays 11 days longer than for the next longest stay diagnosis. Infant respiratory distress syndrome was also the condition with the highest average charge per stay ($114,200) overall.

Children

- For 1–17 year olds, hospitalizations with a principal diagnosis of asthma remained statistically unchanged (159,000 in 1997 and 139,000 in 2005).

- Mood disorders (depression and bipolar disorders) were the fifth most common reason for stays in acute care hospitals among children and adolescents.

Young adults and middle age

- Childbirth-related conditions were the most common reasons for hospitalizations among 18–44 year olds; however,

- **Cardiovascular conditions** were the most common reasons for hospitalization among 45–64 year olds.

---

**Elderly**

- While people ages 65 and over represented 12 percent of the population in 2005, they comprised 34 percent of the hospitalizations.
- In 2005, there were 574 hospitalizations for every 1,000 adults ages 85 and older.

---

**Specific diagnoses and procedures**

- The number of hospital stays during which pressure sores were noted continued to increase in 2005. During the 12 year period since 1993, there was a 76 percent increase in pressure sore hospitalizations.
- Three out of four admissions for alcohol-related conditions in the 18–84 age group were for men. Uninsured patients accounted for 21 percent of all alcohol-related hospital stays, although only 5 percent of all stays were uninsured.
- Hospital stays for influenza varied widely by year. 1999, 2003 and 2005 were peak years for influenza hospitalizations.
- Of the top 20 costliest inpatient diagnoses, those for adult respiratory failure and/or arrest showed the most dramatic increase in inflation-adjusted cost from 2004 to 2005, growing at 12 times the rate for all diagnoses.
- The number of hospital stays for septicemia, or sepsis, increased 30 percent from 1997 to 2005. The inflation-adjusted cost of hospitalizations for septicemia increased at twice the rate for all diagnoses over this period.

---

**Cardiovascular conditions and procedures**

- Circulatory conditions accounted for 16 percent of all hospital stays in 2005. These stays were for diagnoses that included coronary artery disease, congestive heart failure, heart attack, and irregular heart beat.
- Six of the 20 most costly conditions associated with hospitalization were related to the heart. These six conditions (coronary artery disease, heart attack, congestive heart failure, irregular heart beat, stroke, and non-specific chest pain) together accounted for 17 percent of all community hospital costs in 2005.
- From 1997 to 2000, combined inflation-adjusted hospitalization costs for the most expensive cardiovascular conditions (coronary artery disease, heart attack, congestive heart failure, irregular heart beat, stroke, and non-specific chest pain) grew at progressively faster rates. Growth peaked in 2000 and then gradually slowed. In 2005, the combined inflation-adjusted costs for these conditions ($52 billion) were not statistically different from the costs in 2001 through 2004.

---

Conditions treated with expensive technology or requiring intensive care—including spinal cord injuries, heart valve disorders, and leukemia—had mean charges significantly higher than expected based on their average length of stay.

- **Aggregate inpatient hospital costs** adjusted for inflation increased 2.4 percent between 2004 and 2005. However, costs for half of the top 20 most costly conditions (mood disorders, newborn infants, stroke, heart attack, coronary artery disease, irregular heart beat, non-specific chest pain, congestive heart failure, diabetes with complications, and rehabilitation care) did not increase.

- **Blood transfusions** were the most common procedure performed during a hospitalization in 2005, occurring in 6 percent of all discharges.
The number of hospitalizations for congestive heart failure, non-specific chest pain, and irregular heart beat increased by 24 percent from 1997 to 2005. However, the volume of discharges with diagnoses of coronary artery disease and heart attack dropped by 17 percent over this period.

Discharges for circulatory disease overall were essentially equally split between males and females, but differed for specific conditions. Four heart-related diagnoses—coronary artery disease, congestive heart failure, non-specific chest pain, and irregular heart beat—were among the ten most common principal diagnoses for both males and females. Heart attacks ranked as the fifth most common diagnosis among males, but only the twentieth most common among females.

Diagnostic cardiac catheterization and arteriography (procedure to explore the functioning of the heart) was the second most frequently performed procedure overall for 2005.

From 1993 to 2005, the volume of percutaneous transluminal coronary angioplasties (PTCA) nearly doubled. From 1993 to 1997, the number of coronary artery bypass grafts (CABG) increased, but from 1997 to 2005 the number of procedures fell by a third.

Heart-related procedures—diagnostic cardiac catheterization and arteriography, PTCA’s, and echocardiograms—were performed 50 percent more often on males than females.

Two heart-related procedures—PTCA and cardiac catheterization and arteriography—were among the five most common procedures for individuals ages 45 and above.

Bariatric surgery

From 1995 to 2004, the total number of bariatric surgeries increased 15-fold. These surgeries escalated rapidly beginning in 1998.

However, in 2005, the number of bariatric surgeries performed did not continue to grow, after increasing from 8,000 in 1995 to 123,000 in 2004. An increase in surgeries performed in outpatient settings, increased insurer selectivity of approved providers, and removal of this procedure from insurance coverage were among the potential reasons for this change in trend.

Injuries

Discharges with a diagnosis of poisoning by nonpsychiatric medications and drugs rose by 32 percent from 1997 through 2005, reflecting in part the increased use of pharmaceuticals.

Hip fractures were the most common injury-related reason for hospitalization. They accounted for 317,000 hospital stays, involved a mean length of stay of 6.3 days, and resulted in an average hospital cost per stay of $12,300.

Musculoskeletal conditions and orthopedic procedures

While the number of stays with any orthopedic procedure remained relatively constant between 1993 and 2000, the number of stays rose by 24 percent from 2000 to 2005.

Of the most frequently performed orthopedic procedures, spinal fusion grew the most rapidly—nearly 140 percent over the 12-year period from 1993 to 2005. Arthroplasty of the knee and hip replacement were the second and third fastest growing reasons for hospitalizations related to orthopedic treatments, respectively. Knee arthroplasties grew 89 percent, and hip replacements grew 46 percent during this period.

Diabetes

Diabetes-related hospitalizations occurred at a higher rate in lower income communities. There were almost 80 percent more diabetes admissions per 100,000 population among people residing in the lowest income communities (with incomes of $1–36,999) than in the highest income communities (with incomes of $61,000 and above).
FOREWORD

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 mission, AHRQ develops a number of databases, including the powerful Healthcare Cost and Utilization Project (HCUP). HCUP is a Federal-State-Industry partnership designed to build a standardized, multi-State health data system. HCUP features databases, software tools, and statistical reports to inform policymakers, health system leaders, researchers, and the public.

For data to be useful, they must be disseminated in a timely, accessible manner. To meet this objective, AHRQ launched HCUPnet, an interactive, Internet-based tool for identifying, tracking, analyzing, and comparing statistics on hospital utilization, outcomes, and charges (http://hcupnet.ahrq.gov/). The HCUPnet user-friendly interface guides users in tailoring specific queries about hospital care online; with a click of a button, users receive answers within seconds.

To make HCUP data even more accessible, AHRQ disseminates HCUP Fact Books and online Statistical Briefs to present statistics about hospital care in easy-to-use and accessible formats (http://www.hcup-us.ahrq.gov/reports.jsp). Fact Books provide information on broad aspects of hospital care. The most recent editions cover topics of mental health and substance abuse disorders, procedures performed in hospitals, ambulatory surgeries, and safety-net hospitals. Statistical Briefs provide information on more focused health care topics. The most recent editions address issues of methicillin-resistant Staphylococcus aureus (MRSA) infections, musculoskeletal procedures, emergency department admissions for children and adolescents, childbirth-related hospitalizations among adolescent girls, and prostate cancer.

The most recent addition to HCUP information sources is HCUP Facts and Figures, designed to showcase the wealth of statistics available from HCUP. This edition of HCUP Facts and Figures presents an overview of the information accessible through HCUP and illustrates the types of analyses that HCUP can address. This report also provides updates on many topics presented in previously published Fact Books and Statistical Briefs. New to this report are downloadable tables and graphs to make this information even more readily available.

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

Irene Fraser, Ph.D.
Director
Center for Delivery, Organization, and Markets
Agency for Healthcare Research and Quality
540 Gaither Road
Rockville, MD 20850
HCUP AND ITS DATA PARTNERS

HCUP is a family of powerful health care databases, software tools, and products for advancing research. Sponsored by the Agency for Healthcare Research and Quality (AHRQ), HCUP includes the largest all-payer encounter-level collection of longitudinal hospital inpatient, ambulatory surgery, and emergency department data in the United States. The HCUP Federal-State-Industry Partnership brings together the data collection efforts of many organizations—State data organizations, hospital associations, private data organizations, and the Federal government—to create this national information resource. The HCUP Partnership has grown from 8 states in 1988 to 38 in 2007.

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

- Arizona Department of Health Services
- Arkansas Department of Health & Human Services
- California Office of Statewide Health Planning & Development
- Colorado Health & Hospital Association
- Connecticut Integrated Health Information (Chime, Inc.)
- Florida Agency for Health Care Administration
- Georgia GHA: An Association of Hospitals & Health Systems
- Hawaii Health Information Corporation
- Illinois Health Care Cost Containment Council and Department of Public Health
- Indiana Hospital & Health Association
- Iowa Hospital Association
- Kansas Hospital Association
- Kentucky Department for Public Health
- 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
- Nebraska Hospital Association
- Nevada Division of Health Care Financing and Policy, Department of Human Resources
- New Hampshire Department of Health & Human Services
- New Jersey Department of Health & Senior Services
- 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
- 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 & Family Services

Source: Healthcare Cost and Utilization Project (HCUP), Agency for Healthcare Research and Quality
INTRODUCTION

Accurate and reliable hospital information is of vital importance—for a researcher investigating treatment outcomes, for a newly-diagnosed patient seeking information on the frequency with which procedures are performed, or for hospital executives researching medical trends to support purchasing decisions. The Healthcare Cost and Utilization Project (HCUP) can provide comprehensive information to help fulfill these and other needs.

Sponsored by the Agency for Healthcare Research and Quality (AHRQ), HCUP is a family of health care databases and related software tools and products developed through a Federal-State-Industry partnership, creating a national information resource of patient-level discharge health care data.

HCUP is only possible through the collective efforts of State and private data organizations, hospital associations, and the Federal government to create the single largest all-payer discharge record resource from all hospitals in the U.S.—representing more than 4,900 community, non-Federal, short-term (acute care) general and specialty hospitals. Data on conditions treated in the hospital, as well as information on medical and surgical procedures are included. HCUP data are ideal for analyzing treatment use and diagnostic trends, examining patient characteristics, conducting cost and charge studies, and investigating quality of care.

The most popular HCUP database is the Nationwide Inpatient Sample (NIS), the largest all-payer database in the U.S. The NIS contains all discharge records from approximately 1,000 hospitals in HCUP-participating states. This broad-based collection of data provides information on patient and hospital demographics, diagnoses, procedures, charges, estimated costs, payers, source of admission and discharge destinations.

HCUP Facts and Figures highlights the rich potential of HCUP by providing targeted analysis of important trends organized around high-interest topics—hospital and discharge characteristics, diagnoses, procedures, costs and charges, and the uninsured. This report was designed to illustrate the range of information available from the HCUP NIS and its capacity to track the evolution of hospital use over time.

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. Downloadable tables, charts, and links to definitions are available online by clicking on links throughout the report.

HCUP has been a leader in hospital data and products and continues to be on the forefront of health care research in the 21st century. For more information, please visit the HCUP website at http://www.hcup-us.ahrq.gov.
SECTION 1

OVERVIEW STATISTICS FOR HOSPITALS AND INPATIENT HOSPITAL STAYS

EXHIBIT 1.1 Number and Characteristics of U.S. Hospitals
EXHIBIT 1.2 Inpatient Hospital Stays and Average Length of Stay
EXHIBIT 1.3 Reasons for Hospital Stays
EXHIBIT 1.4 Admission Source
EXHIBIT 1.5 Discharge Status
EXHIBIT 1.6 Patient Age
EXHIBIT 1.7 Expected Primary Payer
EXHIBIT 1.1  Number and Characteristics of U.S. Hospitals


<table>
<thead>
<tr>
<th>Hospital Categories and Characteristics</th>
<th>1997</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of U.S. registered hospitals†</td>
<td>6,100</td>
<td>5,759</td>
<td>5,756</td>
</tr>
<tr>
<td>Number of U.S. community hospitals</td>
<td>5,060</td>
<td>4,919</td>
<td>4,936</td>
</tr>
<tr>
<td>Number of non-government not-for-profit hospitals</td>
<td>3,000</td>
<td>2,967</td>
<td>2,958</td>
</tr>
<tr>
<td>Number of investor-owned (for-profit) community hospitals</td>
<td>797</td>
<td>865</td>
<td>868</td>
</tr>
<tr>
<td>Number of State and local government community hospitals</td>
<td>1,260</td>
<td>1,117</td>
<td>1,110</td>
</tr>
<tr>
<td>Community hospitals as a share of registered hospitals</td>
<td>83%</td>
<td>85%</td>
<td>86%</td>
</tr>
</tbody>
</table>

Community hospitals‡

<table>
<thead>
<tr>
<th>Discharges:</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total discharges in millions</td>
<td>34.7</td>
<td>38.7</td>
<td>39.2</td>
</tr>
<tr>
<td>Discharges per 1,000 population*</td>
<td>127.8</td>
<td>131.7</td>
<td>132.1</td>
</tr>
<tr>
<td>Total days of care in millions</td>
<td>168.1</td>
<td>179.1</td>
<td>181.5</td>
</tr>
<tr>
<td>Average length of stay in days</td>
<td>4.9</td>
<td>4.6</td>
<td>4.6</td>
</tr>
</tbody>
</table>

Percent of discharges from:

<table>
<thead>
<tr>
<th></th>
<th>1997</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metropolitan hospitals</td>
<td>84%</td>
<td>87%</td>
<td>87%</td>
</tr>
<tr>
<td>Teaching hospitals</td>
<td>47%</td>
<td>45%</td>
<td>42%</td>
</tr>
</tbody>
</table>

Hospital ownership:

<table>
<thead>
<tr>
<th></th>
<th>1997</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Federal government hospitals</td>
<td>14%</td>
<td>14%</td>
<td>14%</td>
</tr>
<tr>
<td>Private not-for-profit hospitals</td>
<td>73%</td>
<td>73%</td>
<td>72%</td>
</tr>
<tr>
<td>Private for-profit hospitals</td>
<td>13%</td>
<td>13%</td>
<td>13%</td>
</tr>
</tbody>
</table>

Population in millions ‡‡

<table>
<thead>
<tr>
<th></th>
<th>1997</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>271.4</td>
<td>293.7</td>
<td>296.4</td>
</tr>
</tbody>
</table>

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

- Of the 5,756 registered hospitals in the U.S. in 2005, 86 percent were community hospitals, a proportion that has changed little over time.

- However, the actual number of community hospitals declined from 5,060 in 1997 to 4,936 in 2005.

- Despite the decline in the number of community hospitals, discharges from those hospitals grew from 34.7 million in 1997 to 39.2 million in 2005, an average annual increase of 1.5 percent per year.

- The percent of community hospital discharges has changed little in terms of location, teaching status, and type of ownership.

† Statistics from the American Hospital Association’s Annual Survey of Hospitals.
‡ Statistics from the Healthcare Cost and Utilization Project (HCUP).
* Calculated using population from the U.S. Bureau of the Census.
The average charge on the typical bill from a U.S. community hospital rose from $11,300 in 1997 to $22,300 in 2005, an increase of 8.9 percent per year in actual dollars. Few patients or insurers paid those amounts because of discounts negotiated by insurers with hospitals.

The aggregate cost for stays in community hospitals rose significantly between 1997 and 2005, from $177.1 billion to $310.9 billion, reflecting an average annual increase of 7.3 percent. On a per-stay basis, cost increases averaged 5.7 percent annually, resulting in an average cost per stay of $7,900 in 2005.

After adjusting for inflation, the total cost for hospital stays nationwide rose 5.1 percent per year over the 8 years.

Of this increase, population growth accounted for 1.1 percentage points, increases in the number of admissions per population accounted for 0.4 percentage point (a possible effect of the gradual aging of the population), and the remainder—3.5 percentage points—was attributable, in part, to costs associated with increased service intensity from the expanded use of new technology.

### Charges and Costs for Community Hospital Stays, 1997, 2004, and 2005

<table>
<thead>
<tr>
<th>Hospital Categories and Characteristics</th>
<th>1997</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charges and costs*</td>
<td>$11,300</td>
<td>$20,400</td>
<td>$22,300</td>
</tr>
<tr>
<td>Average charges per stay</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Costs</td>
<td>$5,100</td>
<td>$7,600</td>
<td>$7,900</td>
</tr>
<tr>
<td>Total aggregate costs in billions</td>
<td>$177.1</td>
<td>$294.6</td>
<td>$310.9</td>
</tr>
<tr>
<td>Average costs per stay</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation-adjusted costs in 2005 dollars**</td>
<td>$209.2</td>
<td>$303.5</td>
<td>$310.9</td>
</tr>
<tr>
<td>Total aggregate costs in billions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average costs per stay</td>
<td>$6,000</td>
<td>$7,900</td>
<td>$7,900</td>
</tr>
</tbody>
</table>

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

** Adjusted for inflation using the GDP deflator (http://www.bea.gov/national/nipaweb/TableView.asp#Mid, Table 1.1.4. Price Indexes for Gross Domestic Product).
The average length of stay in U.S. community hospitals has stabilized since 2000, while the number of hospital stays continued to rise.

- The average length of stay (ALOS) in 2005 was 4.6 days—almost 20 percent shorter than in 1993, when the ALOS was 5.7 days. The ALOS declined throughout most of the 1990s and has stabilized in the current decade.
- The number of discharges has increased over the past 12 years, from 34.3 million discharges in 1993 to 39.2 million in 2005.
- From 1993 to 1998, the number of discharges grew very slowly, increasing by only 0.6 million.
  - Growth in the number of discharges (an average of 0.3 percent annually) did not keep pace with the growth in population (1.2 percent annually).
  - It is likely that the rapid growth in managed care plans slowed growth in hospital utilization.
- From 1998 through 2005, the number of discharges rose by 4.3 million.
  - Growth in the number of discharges (an average of 1.7 percent annually) exceeded population growth (1.1 percent annually).
  - From 1998 to 2001, low unemployment and the need for employers to attract and retain workers through generous health benefits produced a loosening of care management by insurance plans.¹
  - Since 2001, growth in the number of discharges has slowed to rates that are only slightly faster than population growth (1.1 to 1.3 percent annually).

Circulatory conditions were the most frequent causes of hospital stays.

- Circulatory conditions accounted for 16 percent of all hospital stays in 2005. These stays were for diagnoses such as coronary atherosclerosis (coronary artery disease), congestive heart failure, heart attack, and irregular heart beat.

- Pregnancy and childbirth (12 percent) and newborns (11 percent) ranked second and third among reasons for hospitalizations. Stays related to giving birth or being born accounted for 23 percent of discharges—nearly one in four hospital stays.

- Together with respiratory conditions (10 percent of all discharges) and digestive conditions (9 percent of all discharges), the top five conditions accounted for 58 percent of all discharges.
Circulatory conditions represented a higher percentage of stays for males (20 percent) than females (13 percent).

- Males accounted for 16.1 million stays in 2005, or 41 percent of all hospitalizations.
  - Of these stays, 20 percent were for circulatory conditions, 14 percent were for newborns, 12 percent were for respiratory conditions, and 9 percent involved conditions of the digestive system.
  - These four conditions together amounted to 55 percent of all hospitalizations for males in 2005.

- Females accounted for 23.0 million stays, or 59 percent of all hospital stays in 2005.
  - Twenty percent of the stays for females were related to pregnancy and childbirth and 9 percent were for female newborns.
  - Compared to the stays for males, stays for circulatory conditions (13 percent of all stays) were a smaller percentage of all female stays.
  - Other major reasons for female hospitalizations included respiratory conditions (9 percent) and digestive system conditions (8 percent).
  - These five conditions together accounted for almost 60 percent of all female hospitalizations in 2005.
**EXHIBIT 1.4 Admission Source**

Distribution of Hospital Inpatient Stays by Admission Source, 2005

- **Routine**: 51%
- **Emergency Department**: 43%
- **Other Short-term Hospitals**: 3%
- **Long-term Facilities Care**: 1%
- **Other***: 1%

* Includes court and law enforcement admissions.

**Admission source** in HCUP indicates routine admission and other specific settings from which the patient might enter the hospital.

- About half (51 percent) of all admissions to hospitals in 2005 were routine admissions referred by health professionals.
- Emergency departments accounted for the second largest source of admissions (43 percent).
- Two other settings accounted for a small proportion of admissions: Other short-term hospitals (3 percent) and long-term care facilities (1 percent).
- The remainder of admissions came from court/law enforcement sources or other unknown sources.

**EXHIBIT 1.5 Discharge Status**

Distribution of Hospital Inpatient Stays by Discharge Status, 2005

- **Routine**: 74%
- **Long-term Care and Other Facilities**: 12%
- **Home Health Care**: 9%
- **Another Short-term Hospital**: 2%
- **In-hospital Deaths**: 2%
- **Against Medical Advice**: 1%

**Discharge status** indicates where the patient went after discharge from the hospital or the circumstance surrounding the discharge.

- The most common patient discharge status was routine (74 percent in 2005), with the patient being sent home without closely supervised health care.
- Discharge to a long-term care facility was the second most common type of discharge, accounting for 12 percent of discharges.
- Discharge to the home with home health care supervision accounted for 9 percent of discharges.
- Remaining discharge circumstances (to another short-term hospital, death in the hospital, or when the patient leaves against medical advice) each accounted for 2 percent or less of discharges.
Older people account for a large share of hospitalizations.

- While those aged 65 and over represented 12 percent of the population in 2005, they comprised 34 percent of the hospitalizations.
- The younger age groups had a lower proportion of hospitalizations relative to their representation in the population.
  - Patients 18–64 years of age, at 63 percent of the population, accounted for 48 percent of hospitalizations.
  - Those under age 18, at 25 percent of the population, accounted for 18 percent of hospitalizations.

Discharges for an age group divided by the number of people in that age group (discharges per 1,000 population) shows that increased age is often associated with a greater chance of hospitalization.

- While there were only 42 hospital stays for every 1,000 children ages 1 to 4 in 2005, there were 574 stays for every 1,000 adults ages 85 and over.
- The one exception to the pattern of increasing hospitalizations with increasing age was for neonates less than 1 year of age. This group experienced 1,212 hospitalizations per 1,000 neonates, because nearly all births occur in the hospital and some infants require additional hospitalization in the first year of life.

Source: Healthcare Cost and Utilization Project (HCUP), Agency for Healthcare Research and Quality
The expected primary payer bears the major financial responsibility for the hospital stay. However, other payers, including the patients themselves, may also bear part of the cost of hospitalization.

- Medicare and Medicaid together assumed primary financial responsibility for over half of all hospital stays in 2005.
  - Medicare was the expected primary payer for 37 percent of all inpatient hospital discharges (14.6 million hospital stays). Medicare patients are 65 and older or disabled.
  - Medicaid was the expected primary payer for 1 out of every 5 hospital stays (7.6 million discharges) in 2005. These may include stays for patients covered by the State Children’s Health Insurance Program (SCHIP), depending on the state in which the hospital was located.

- Private insurance was the expected primary payer for 35 percent of all discharges (13.7 million hospital stays). These stays were primarily for employed persons and their families who receive health insurance coverage through their employers.

- Approximately 5 percent of all stays (2.1 million discharges) were listed as uninsured.

- Other payers accounted for 3 percent of all stays in 2005.
SECTION 2

HOSPITAL INPATIENT STAYS BY DIAGNOSIS

EXHIBIT 2.1 Most Frequent Principal Diagnoses
EXHIBIT 2.2 Most Frequent Diagnoses by Age
EXHIBIT 2.3 Most Frequent Diagnoses by Gender
EXHIBIT 2.4 Average Length of Stay and Average Charges
EXHIBIT 2.5 Circulatory Conditions
EXHIBIT 2.6 Diabetes
EXHIBIT 2.7 Pressure Sores
EXHIBIT 2.8 Alcoholism
EXHIBIT 2.9 Mental Health
EXHIBIT 2.10 Injuries
EXHIBIT 2.11 Influenza
### EXHIBIT 2.1  Most Frequent Principal Diagnoses

Number of Discharges, Percent Distribution, and Rank of Most Frequent Principal Diagnoses for Inpatient Hospital Stays, 1997, 2004, and 2005

<table>
<thead>
<tr>
<th>PRINCIPAL DIAGNOSIS</th>
<th>NUMBER OF DISCHARGES IN THOUSANDS</th>
<th>PERCENT OF DISCHARGES</th>
<th>RANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>All discharges</td>
<td>34,679</td>
<td>38,662</td>
<td>39,164</td>
</tr>
<tr>
<td>Pregnancy, childbirth, and infants</td>
<td>8,237</td>
<td>9,175</td>
<td>9,145</td>
</tr>
<tr>
<td>Pneumonia (except that caused by tuberculosis or sexually transmitted disease)</td>
<td>1,232</td>
<td>1,213</td>
<td>1,355</td>
</tr>
<tr>
<td>Coronary atherosclerosis (coronary artery disease)</td>
<td>1,407</td>
<td>1,192</td>
<td>1,110</td>
</tr>
<tr>
<td>Congestive heart failure, nonhypertensive</td>
<td>991</td>
<td>1,104</td>
<td>1,090</td>
</tr>
<tr>
<td>Non-specific chest pain</td>
<td>538</td>
<td>846</td>
<td>825</td>
</tr>
<tr>
<td>Osteoarthritis (degenerative joint disease)</td>
<td>418</td>
<td>659</td>
<td>738</td>
</tr>
<tr>
<td>Mood disorders (depression and bipolar disorders)</td>
<td>641</td>
<td>792</td>
<td>713</td>
</tr>
<tr>
<td>Cardiac dysrhythmias (irregular heart beat)</td>
<td>572</td>
<td>694</td>
<td>697</td>
</tr>
<tr>
<td>Acute myocardial infarction (heart attack)</td>
<td>732</td>
<td>695</td>
<td>662</td>
</tr>
<tr>
<td>Spondylosis, intervertebral disc disorders, other back problems (disorders of intervertebral discs and bones in spinal column)</td>
<td>536</td>
<td>616</td>
<td>647</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease and bronchiectasis (chronic obstructive lung disease)</td>
<td>551</td>
<td>556</td>
<td>630</td>
</tr>
<tr>
<td>Complication of medical device, implant or graft</td>
<td>491</td>
<td>601</td>
<td>616</td>
</tr>
<tr>
<td>Skin and subcutaneous tissue infections</td>
<td>330</td>
<td>505</td>
<td>582</td>
</tr>
<tr>
<td>Fluid and electrolyte disorders (primarily dehydration or fluid overload)</td>
<td>468</td>
<td>555</td>
<td>574</td>
</tr>
<tr>
<td>Septicemia (blood infection, except in labor)</td>
<td>413</td>
<td>452</td>
<td>538</td>
</tr>
</tbody>
</table>

(continued on next page)
### Number of Discharges, Percent Distribution, and Rank of Most Frequent Principal Diagnoses for Inpatient Hospital Stays, 1997, 2004, and 2005—continued

<table>
<thead>
<tr>
<th>PRINCIPAL DIAGNOSIS</th>
<th>NUMBER OF DISCHARGES IN THOUSANDS</th>
<th>PERCENT OF DISCHARGES</th>
<th>RANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>All maternal discharges</td>
<td>4,338</td>
<td>4,763</td>
<td>4,716</td>
</tr>
<tr>
<td>Trauma to external female genitals (vulva) and area between anus and vagina (perineum), related to childbirth</td>
<td>713</td>
<td>785</td>
<td>784</td>
</tr>
<tr>
<td>Previous C-section</td>
<td>271</td>
<td>456</td>
<td>481</td>
</tr>
<tr>
<td>Normal pregnancy and/or delivery</td>
<td>544</td>
<td>338</td>
<td>325</td>
</tr>
<tr>
<td>Early or threatened labor</td>
<td>261</td>
<td>255</td>
<td>236</td>
</tr>
<tr>
<td>Fetal distress and abnormal forces of labor</td>
<td>420</td>
<td>247</td>
<td>234</td>
</tr>
<tr>
<td>Prolonged pregnancy</td>
<td>104</td>
<td>218</td>
<td>234</td>
</tr>
<tr>
<td>Hypertension complicating pregnancy, childbirth and the puerperium (high blood pressure during pregnancy)</td>
<td>185</td>
<td>224</td>
<td>220</td>
</tr>
<tr>
<td>Umbilical cord complication</td>
<td>259</td>
<td>235</td>
<td>217</td>
</tr>
<tr>
<td>Polyhydramnios and other problems of amniotic cavity (excess amniotic fluid and other problems of amniotic cavity)</td>
<td>202</td>
<td>192</td>
<td>191</td>
</tr>
</tbody>
</table>

| All infant discharges                                                             | 3,899                            | 4,411                 | 4,429  | 100.0   | 100.0   | 100.0   | 1       | 1       | 1       |
| Liveborn (newborn infant)                                                         | 3,777                            | 4,249                 | 4,228  | 96.9    | 96.3    | 95.5    | 1       | 1       | 1       |
| Other perinatal conditions (other conditions occurring around the time of birth)  | 56                               | 72                    | 94     | 1.4     | 1.6     | 2.1     | 2       | 2       | 2       |
| Hemolytic jaundice and perinatal jaundice (infant jaundice following birth)       | 33                               | 47                    | 57     | 0.8     | 1.1     | 1.3     | 3       | 3       | 3       |
| Short gestation, low birth weight, and fetal growth retardation (premature birth and low birth weight) | 22                               | 25                    | 31     | 0.6     | 0.6     | 0.7     | 4       | 4       | 4       |
| Infant respiratory distress syndrome                                               | 8                                | 16                    | 16     | 0.2     | 0.4     | 0.4     | 5       | 5       | 5       |
| Birth trauma                                                                      | 1                                | 1                     | 1      | 0.0     | 0.0     | 0.0     | 7       | 6       | 6       |
| Intrauterine hypoxia and birth asphyxia (lack of oxygen to baby in uterus or during birth) | 1                                | 1                     | 1      | 0.0     | 0.0     | 0.0     | 6       | 7       | 7       |

Source: Healthcare Cost and Utilization Project (HCUP), Agency for Healthcare Research and Quality
The top 15 most frequently occurring principal diagnoses accounted for half of all discharges in 2005. While 12 of the 15 most frequent principal diagnoses in 2005 were among the most frequent diagnoses in 1997, there were notable changes within the rankings.

Among all discharges:
- Conditions related to pregnancy, childbirth, and infants were by far the most frequent reason for hospitalizations, at 23 percent of discharges in 2005, and were unchanged in rank across the years.
- Pneumonia was the second most common principal diagnosis, at 3.5 percent of discharges in 2005.
- Circulatory diseases accounted for 5 of the top 10 most frequent principal diagnoses in 2005, as they did in 1997 and 2004.
  - The volume of stays for congestive heart failure, nonspecific chest pain, and irregular heart beat increased over this period.
  - However, the volume of stays for coronary artery disease (coronary atherosclerosis) and for heart attack (acute myocardial infarction) dropped noticeably between 1997 and 2005.
  - Heart attack stays dropped in rank from fifth in 1997 to ninth in 2005.
- Diagnosis of degenerative joint disease (osteoarthritis) grew by over 75 percent in volume between 1997 and 2005, and thus moved from seventeenth to sixth among the most common principal diagnoses.
- Skin and subcutaneous tissue infections moved from the twenty-fourth most frequent diagnosis in 1997 to the thirteenth in 2005. Hospitalizations for these infections grew from 330,000 to 582,000, a 76 percent increase over that time period.

Among maternal and infant discharges:
- Stays for normal pregnancy and/or delivery and for fetal distress and abnormal forces of labor both declined by more than 40 percent from 1997 to 2005, and, in turn, fell in rank.
- The volume of prolonged pregnancies doubled from 1997 through 2005 and moved up in the ranking of all causes for maternal discharges from 11th to 6th.
- High blood pressure during pregnancy, umbilical cord complication, and excess amniotic fluid and other problems of the amniotic cavity accounted for about 14 percent of principal diagnoses of all maternal discharges in 1997, 2004, and 2005.
- About 95 percent of all infant discharges in 2005 had a principal diagnosis of “newborn infant,” while conditions such as infant jaundice, premature birth and low birth weight, and respiratory distress syndrome accounted for the remaining 5 percent of these discharges.
### EXHIBIT 2.2  Most Frequent Diagnoses by Age

#### Number of Discharges and Percent Distribution of the Most Frequent Principal Diagnoses by Age, 1997, 2004, and 2005

<table>
<thead>
<tr>
<th>AGE GROUP AND PRINCIPAL DIAGNOSIS</th>
<th>NUMBER OF DISCHARGES IN THOUSANDS</th>
<th>PERCENT OF TOTAL DISCHARGES</th>
<th>PERCENT OF AGE-SPECIFIC TOTAL DISCHARGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ages*</td>
<td>34,679</td>
<td>38,662</td>
<td>39,164</td>
</tr>
<tr>
<td>&lt; 1 year</td>
<td>4,426</td>
<td>4,898</td>
<td>4,978</td>
</tr>
<tr>
<td>Liveborn (newborn infant)</td>
<td>3,776</td>
<td>4,244</td>
<td>4,223</td>
</tr>
<tr>
<td>Acute bronchitis</td>
<td>108</td>
<td>112</td>
<td>107</td>
</tr>
<tr>
<td>Hemolytic jaundice and perinatal jaundice (infant jaundice following birth)</td>
<td>33</td>
<td>47</td>
<td>56</td>
</tr>
<tr>
<td>Pneumonia (except that caused by tuberculosis or sexually transmitted disease)</td>
<td>55</td>
<td>47</td>
<td>56</td>
</tr>
<tr>
<td>Short gestation, low birth weight, and fetal growth retardation (premature birth and low birth weight)</td>
<td>22</td>
<td>25</td>
<td>31</td>
</tr>
<tr>
<td>1–17 years</td>
<td>1,821</td>
<td>1,784</td>
<td>2,059</td>
</tr>
<tr>
<td>Pneumonia (except that caused by tuberculosis or sexually transmitted disease)</td>
<td>135</td>
<td>108</td>
<td>142</td>
</tr>
<tr>
<td>Asthma</td>
<td>159</td>
<td>133</td>
<td>139</td>
</tr>
<tr>
<td>Fluid and electrolyte disorders (primarily dehydration or fluid overload)</td>
<td>64</td>
<td>79</td>
<td>98</td>
</tr>
<tr>
<td>Appendicitis and other appendiceal conditions</td>
<td>65</td>
<td>82</td>
<td>90</td>
</tr>
<tr>
<td>Mood disorders (depression and bipolar disorders)</td>
<td>64</td>
<td>84</td>
<td>73</td>
</tr>
<tr>
<td>18–44 years</td>
<td>9,444</td>
<td>10,323</td>
<td>10,041</td>
</tr>
<tr>
<td>Trauma to external female genitals (vulva) and area between anus and vagina (perineum), related to childbirth</td>
<td>676</td>
<td>754</td>
<td>753</td>
</tr>
<tr>
<td>Previous C-section</td>
<td>270</td>
<td>453</td>
<td>478</td>
</tr>
<tr>
<td>Mood disorders (depression and bipolar disorders)</td>
<td>335</td>
<td>416</td>
<td>364</td>
</tr>
<tr>
<td>Normal pregnancy and/or delivery</td>
<td>511</td>
<td>323</td>
<td>312</td>
</tr>
<tr>
<td>Fetal distress and abnormal forces of labor</td>
<td>399</td>
<td>238</td>
<td>224</td>
</tr>
</tbody>
</table>

(continued on next page)

Source: Healthcare Cost and Utilization Project (HCUP), Agency for Healthcare Research and Quality
## Number of Discharges and Percent Distribution of the Most Frequent Principal Diagnoses by Age, 1997, 2004, and 2005—continued

<table>
<thead>
<tr>
<th>AGE GROUP AND PRINCIPAL DIAGNOSIS</th>
<th>NUMBER OF DISCHARGES IN THOUSANDS</th>
<th>PERCENT OF TOTAL DISCHARGES</th>
<th>PERCENT OF AGE-SPECIFIC TOTAL DISCHARGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>45–64 years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coronary atherosclerosis (coronary artery disease)</td>
<td>6,496</td>
<td>8,546</td>
<td>8,660</td>
</tr>
<tr>
<td>Non-specific chest pain</td>
<td>526</td>
<td>492</td>
<td>461</td>
</tr>
<tr>
<td>Osteoarthritis (degenerative joint disease)</td>
<td>242</td>
<td>396</td>
<td>388</td>
</tr>
<tr>
<td>Pneumonia (except that caused by tuberculosis or sexually transmitted disease)</td>
<td>105</td>
<td>235</td>
<td>272</td>
</tr>
<tr>
<td>Spondylosis, intervertebral disc disorders, other back problems (disorders of intervertebral discs and bones in spinal column)</td>
<td>199</td>
<td>246</td>
<td>271</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65+ years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Congestive heart failure, nonhypertensive</td>
<td>12,482</td>
<td>13,059</td>
<td>13,374</td>
</tr>
<tr>
<td>Pneumonia (except that caused by tuberculosis or sexually transmitted disease)</td>
<td>783</td>
<td>820</td>
<td>815</td>
</tr>
<tr>
<td>Coronary atherosclerosis (coronary artery disease)</td>
<td>711</td>
<td>713</td>
<td>781</td>
</tr>
<tr>
<td>Cardiac dysrhythmias (irregular heart beat)</td>
<td>810</td>
<td>641</td>
<td>596</td>
</tr>
<tr>
<td>Osteoarthritis (degenerative joint disease)</td>
<td>402</td>
<td>477</td>
<td>469</td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>405</td>
<td>419</td>
</tr>
</tbody>
</table>

* Includes a small number of discharges (less than 55,000 or 0.1 percent) with missing age.

The principal diagnoses for hospitalizations generally varied by age. Older patients were more frequently admitted with cardiovascular and musculoskeletal conditions and younger patients were more frequently admitted with pregnancy- and childbirth-related conditions.

- Pneumonia was a top five condition for four out of the five age groups in 2005—children under 1 year of age, children ages 1–17, adults ages 45–64, and adults 65 and above.
- Asthma was the second most common reason for hospital admission among children ages 1–17.
- Mood disorders (depression and bipolar disorders) were the fifth and third most common diagnoses among children ages 1–17 and adults ages 18–44, respectively. For the 18–44 age group, this was the only non-childbirth diagnosis to rank among the top five diagnoses.
- Cardiovascular conditions were the most common diagnoses for adults ages 45 and above. However, specific diagnoses differed somewhat between age groups for older adults:
  - Coronary atherosclerosis (coronary artery disease) and non-specific chest pain were the most frequent cardiac conditions for adults ages 45–64.
- Congestive heart failure, coronary atherosclerosis, and irregular heart beat were the most common cardiac conditions for adults 65 years and older.

- For patients ages 45 and older, the number of discharges with a principal diagnosis of coronary atherosclerosis dropped over time, but remained among the top 3 reasons for hospitalization.

- For individuals ages 45–64, hospital stays for coronary atherosclerosis dropped by 12 percent—from 526,000 in 1997 to 461,000 in 2005.

- For those 65 years and older, hospital stays for coronary atherosclerosis declined by 26 percent—from 810,000 in 1997 to 596,000 in 2005.

- Among 45–64 year olds, discharges with a principal diagnosis of non-specific chest pain rose by 60 percent from 1997 to 2005.

- Among individuals 65 and older, hospital stays for congestive heart failure exhibited very little change between 1997 and 2005.

### EXHIBIT 2.3  Most Frequent Diagnoses by Gender

**Number of Discharges,* Percent Distribution, and Rank of Most Frequent Principal Diagnoses for Inpatient Hospital Stays by Gender, 2005**

<table>
<thead>
<tr>
<th>PRINCIPAL DIAGNOSIS</th>
<th>NUMBER OF DISCHARGES IN THOUSANDS</th>
<th>PERCENT OF MALE DISCHARGES</th>
<th>RANK</th>
<th>NUMBER OF DISCHARGES IN THOUSANDS</th>
<th>PERCENT OF FEMALE DISCHARGES</th>
<th>RANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>All diagnoses</td>
<td>16,053</td>
<td>100.0</td>
<td></td>
<td>22,980</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Pregnancy and childbirth</td>
<td>–</td>
<td>–</td>
<td></td>
<td>4,705</td>
<td>20.5</td>
<td>1</td>
</tr>
<tr>
<td>Liveborn (newborn infant)</td>
<td>2,160</td>
<td>13.5</td>
<td>1</td>
<td>2,058</td>
<td>9.0</td>
<td>2</td>
</tr>
<tr>
<td>Coronary atherosclerosis (coronary artery disease)</td>
<td>691</td>
<td>4.3</td>
<td>2</td>
<td>418</td>
<td>1.8</td>
<td>7</td>
</tr>
<tr>
<td>Pneumonia (except that caused by tuberculosis or sexually transmitted disease)</td>
<td>645</td>
<td>4.0</td>
<td>3</td>
<td>708</td>
<td>3.1</td>
<td>3</td>
</tr>
<tr>
<td>Congestive heart failure, nonhypertensive</td>
<td>524</td>
<td>3.3</td>
<td>4</td>
<td>566</td>
<td>2.5</td>
<td>4</td>
</tr>
<tr>
<td>Acute myocardial infarction (heart attack)</td>
<td>392</td>
<td>2.4</td>
<td>5</td>
<td>270</td>
<td>1.2</td>
<td>20</td>
</tr>
<tr>
<td>Non-specific chest pain</td>
<td>365</td>
<td>2.3</td>
<td>6</td>
<td>459</td>
<td>2.0</td>
<td>5</td>
</tr>
<tr>
<td>Cardiac dysrhythmias (irregular heart beat)</td>
<td>341</td>
<td>2.1</td>
<td>7</td>
<td>355</td>
<td>1.5</td>
<td>10</td>
</tr>
<tr>
<td>Complication of medical device, implant or graft</td>
<td>316</td>
<td>2.0</td>
<td>8</td>
<td>298</td>
<td>1.3</td>
<td>15</td>
</tr>
<tr>
<td>Skin and subcutaneous tissue infections</td>
<td>307</td>
<td>1.9</td>
<td>9</td>
<td>273</td>
<td>1.2</td>
<td>19</td>
</tr>
<tr>
<td>Spondylosis, intervertebral disc disorders, other back problems</td>
<td>304</td>
<td>1.9</td>
<td>10</td>
<td>339</td>
<td>1.5</td>
<td>13</td>
</tr>
<tr>
<td>(disorders of intervertebral discs and bones in spinal column)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mood disorders (depression and bipolar disorders)</td>
<td>296</td>
<td>1.8</td>
<td>11</td>
<td>414</td>
<td>1.8</td>
<td>8</td>
</tr>
<tr>
<td>Osteoarthritis (degenerative joint disease)</td>
<td>280</td>
<td>1.7</td>
<td>12</td>
<td>455</td>
<td>2.0</td>
<td>6</td>
</tr>
<tr>
<td>Urinary tract infections</td>
<td>151</td>
<td>0.9</td>
<td>27</td>
<td>377</td>
<td>1.6</td>
<td>9</td>
</tr>
</tbody>
</table>

* Excludes a small number of discharges (less than 135,000 or 0.3 percent) with missing gender.
Most diagnoses are common to both males and females if those related to childbirth are excluded. However, some diagnoses were more frequent in one gender, in part because of differences between males and females in health-seeking behaviors and attitudes.

- Females accounted for 6 out of every 10 hospital stays—23.0 million stays in 2005. About 20 percent of all female hospitalizations were related to pregnancy and childbirth.


- Four heart-related diagnoses—coronary atherosclerosis, congestive heart failure, non-specific chest pain, and cardiac dysrhythmias—were among the ten most common principal diagnoses for both male and female hospitalizations.

- Heart attacks (acute myocardial infarctions) ranked as the fifth most common diagnosis among males, but only the twentieth most common among females. Males accounted for 59 percent of all discharges with heart attack as the principal diagnosis.

- Complications of medical device, skin and subcutaneous tissue infections, and back problems were common diagnoses among both males and females.

  - Though these conditions were three of the ten most frequent diagnoses for men, these diagnoses were outranked by other diagnoses for women—namely, mood disorders (depression and bipolar disorders), degenerative joint disease (osteoarthritis), and urinary tract infections—which were all less common among males.
EXHIBIT 2.4  Average Length of Stay and Average Charges

In general, longer lengths of stay are associated with higher average charges. While full charges are seldom paid because of negotiated discounts, they can be used as a benchmark for comparing the costliness of different types of hospital stays.

- The two conditions with the longest hospital stays for all patients regardless of age were related to infants—infant respiratory distress syndrome and premature birth and low birth weight.
  - These diagnoses averaged stays of 26 days, which is 11 days longer than for the next longest stay diagnosis—leukemia.
  - Infant respiratory distress syndrome also had the highest average charge for all conditions. The average charge for premature birth and low birth weight ranked sixth in 2005.

- Conditions treated with expensive technology or requiring intensive care—including spinal cord injuries, heart valve disorders, cardiac and circulatory disorders, and leukemia—had mean charges significantly higher than expected based on their average length of stay (represented by the solid line in the graph).

- Even though long lengths of stay can be costly, 3 of the 14 conditions with the longest lengths of stay had average charges that were lower than the average for all diagnoses in 2005. These were all mental health conditions—impulse control disorders, schizophrenia, and pre-adult mental disorders—that typically do not require expensive procedures as part of the hospitalization.
EXHIBIT 2.5  Circulatory Conditions

Although the share of all discharges for circulatory disease was essentially equal between male (51 percent) and female (49 percent) in 2005, the gender share differed according to conditions.

Males made up the majority of discharges with a diagnosis of coronary atherosclerosis (62 percent of the diagnosis-specific discharges), acute myocardial infarction (59 percent), and stenosis of precerebral arteries (57 percent).

Females accounted for a larger share of discharges for transient cerebral ischemia (60 percent of diagnosis-specific discharges), non-specific chest pain (56 percent), phlebitis, thrombophlebitis, and thromboembolism (55 percent), stroke (55 percent), high blood pressure (54 percent), peripheral atherosclerosis (54 percent), and congestive heart failure (52 percent).

Discharges with a diagnosis of irregular heart beat (cardiac dysrhythmias) were as likely to be for males as for females.

Number of Discharges, Percent Distribution, and Rank for the Most Frequent Principal Diagnoses of Circulatory Conditions by Gender, 2005

<table>
<thead>
<tr>
<th>PRINCIPAL DIAGNOSIS</th>
<th>TOTAL* DISCHARGES IN THOUSANDS</th>
<th>PERCENT MALE</th>
<th>RANK FOR MALES</th>
<th>PERCENT FEMALE</th>
<th>RANK FOR FEMALES</th>
</tr>
</thead>
<tbody>
<tr>
<td>All circulatory disease discharges</td>
<td>6,627</td>
<td>51</td>
<td></td>
<td>49</td>
<td></td>
</tr>
<tr>
<td>Coronary atherosclerosis (coronary artery disease)</td>
<td>1,110</td>
<td>62</td>
<td>1</td>
<td>38</td>
<td>3</td>
</tr>
<tr>
<td>Congestive heart failure, nonhypertensive</td>
<td>1,090</td>
<td>48</td>
<td>2</td>
<td>52</td>
<td>1</td>
</tr>
<tr>
<td>Acute myocardial infarction (heart attack)</td>
<td>662</td>
<td>59</td>
<td>3</td>
<td>41</td>
<td>6</td>
</tr>
<tr>
<td>Non-specific chest pain</td>
<td>825</td>
<td>44</td>
<td>4</td>
<td>56</td>
<td>2</td>
</tr>
<tr>
<td>Cardiac dysrhythmias (irregular heart beat)</td>
<td>697</td>
<td>49</td>
<td>5</td>
<td>51</td>
<td>4</td>
</tr>
<tr>
<td>Acute cerebrovascular disease (stroke)</td>
<td>526</td>
<td>46</td>
<td>6</td>
<td>54</td>
<td>5</td>
</tr>
<tr>
<td>Hypertension with complications and secondary hypertension (high blood pressure with complications)</td>
<td>215</td>
<td>46</td>
<td>7</td>
<td>54</td>
<td>7</td>
</tr>
<tr>
<td>Peripheral and visceral atherosclerosis (hardening of arteries other than heart)</td>
<td>183</td>
<td>46</td>
<td>8</td>
<td>54</td>
<td>9</td>
</tr>
<tr>
<td>Occlusion or stenosis of precerebral arteries (blockage of arteries before brain)</td>
<td>141</td>
<td>57</td>
<td>9</td>
<td>43</td>
<td>13</td>
</tr>
<tr>
<td>Transient cerebral ischemia (mini-stroke)</td>
<td>183</td>
<td>40</td>
<td>10</td>
<td>60</td>
<td>8</td>
</tr>
<tr>
<td>Phlebitis, thrombophlebitis, and thromboembolism (inflammation and blood clots in the veins)</td>
<td>161</td>
<td>45</td>
<td>11</td>
<td>55</td>
<td>10</td>
</tr>
</tbody>
</table>

* Includes a small number of discharges (less than 5,500 or 0.1 percent) with missing gender.
In 2005, 473 out of every 100,000 men experienced a hospitalization for coronary artery disease. This was the most prevalent reason among men for a hospitalization for a circulatory condition.

Men were more likely to be hospitalized for:
- coronary artery disease
- heart attack
- occlusion of precerebral arteries

For women, 376 out every 100,000 women were hospitalized for congestive heart failure. This was the most prevalent reason among women for a hospitalization for a circulatory condition.

Women were more likely to be hospitalized for:
- congestive heart failure
- non-specific chest pain
- stroke and mini-stroke
- high blood pressure
- peripheral atherosclerosis
- phlebitis

Discharges per 100,000 Population for the Most Frequent Principal Diagnoses of Circulatory Conditions by Gender, 2005

<table>
<thead>
<tr>
<th>Condition</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coronary atherosclerosis (coronary artery disease)</td>
<td>473</td>
<td>376</td>
</tr>
<tr>
<td>Congestive heart failure, nonhypertensive</td>
<td>359</td>
<td>269</td>
</tr>
<tr>
<td>Acute myocardial infarction (heart attack)</td>
<td>269</td>
<td>179</td>
</tr>
<tr>
<td>Non-specific chest pain</td>
<td>250</td>
<td>188</td>
</tr>
<tr>
<td>Cardiac dysrhythmias (irregular heart beat)</td>
<td>233</td>
<td>236</td>
</tr>
<tr>
<td>Acute cerebrovascular disease (stroke)</td>
<td>167</td>
<td>188</td>
</tr>
<tr>
<td>Hypertension with complications and secondary hypertension (high blood pressure with complications)</td>
<td>68</td>
<td>68</td>
</tr>
<tr>
<td>Peripheral and visceral atherosclerosis (hardening of arteries other than heart)</td>
<td>57</td>
<td>57</td>
</tr>
<tr>
<td>Occlusion or stenosis of precerebral arteries (blockage of arteries before brain)</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>Transient cerebral ischemia (mini-stroke)</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Phlebitis, thrombophlebitis, and thromboembolism (inflammation and blood clots in the veins)</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>
EXHIBIT 2.6  Diabetes

Diabetes is a chronic condition characterized by high levels of blood glucose that can lead to serious complications, including lower limb amputations and premature death. There were 2,200 diabetes-related hospitalizations per 100,000 people in the U.S. The prevalence of diabetes discharges, however, varied across age, region, and income.

■ About 17 percent of all hospitalizations in 2005 involved a diagnosis of diabetes.

- Among individuals 65 and older, there were three times as many hospital stays with a diagnosis of diabetes compared with those ages 45–64. These older patients had almost five times the number of discharges per 100,000 population as the national average.

- In the West region, there were only 1,585 hospital stays for diabetes per 100,000 population compared to more than 2,300 per 100,000 population in each of the other three regions.

- Individuals residing in the lowest income communities were more likely to be hospitalized for diabetes. There were nearly 80 percent more diabetes admissions per 100,000 population for residents of the lowest income communities compared with the highest income communities.

Discharge Prevalence for All-listed Diabetes by Patient Age, 2005

Discharge Prevalence for All-listed Diabetes by Region, 2005

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

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

Pressure sores typically result from prolonged periods of uninterrupted pressure on the skin, soft tissue, muscle, and bone. This often occurs in wheelchair- or bedridden-patients whose positions are not changed regularly. The presence of pressure sores for patients in the hospital increases their lengths of stay and total costs.

- In 2005, 496,500 hospital stays involved a diagnosis of pressure sores.
- The number of hospital stays during which pressure sores were noted (i.e., all-listed diagnoses) increased by 76 percent from 1993 to 2005.
- The number of hospital stays for which pressure sores were the principal diagnosis changed only slightly during the period—a 17 percent increase from 1993 to 2005, or 1.3 percent annually.
Alcohol abuse and dependence can result in illness, disability, and early death. About 14 million Americans abuse or have a dependency on alcohol. More than half of American adults have a close family member who has suffered from alcoholism.¹

- In 2005, there were 298,000 discharges with a principal diagnosis of alcoholism.
- For children younger than 18 years of age, there was little gender difference in the percent of hospitalizations that involved alcoholism in 2005. This youngest age group accounted for less than one percent of all discharges with a principal diagnosis of alcoholism.
- Among adults, however, males accounted for most of the discharges in which alcoholism was the principal diagnosis in 2005.
  - Three out of four admissions for an alcohol-related principal diagnosis in the 18–44, 45–64, and 65–84 age groups were for men.
  - Although the proportion of alcohol-related stays attributable to males was lower for adults age 85 and older as compared to younger adults, the predominance of male hospitalizations for alcoholism within this oldest age group remained pronounced: Males accounted for more than two out of three hospital stays for alcohol abuse among the oldest patients.

The expected primary payer for alcohol-related stays was different than the expected payer for the typical hospital stay.

- Private insurance was the expected payer for 30 percent of discharges with a principal diagnosis of alcoholism, the highest share for any major payer. Nevertheless, this was lower than for all conditions (35 percent).

- Although Medicaid paid for 20 percent of all stays, it was the expected payer for 26 percent of these alcohol-related stays. Medicaid was the second most common payer for alcohol-related stays.

- Medicare was less likely to be the expected payer for alcoholism-related stays than for other conditions. This may be attributable, in part, to older, alcohol-dependent patients often having other complications, such as circulatory disease and diabetes, which may be listed as the principal reason for admission. In addition, Medicare patients are also more likely to be female and females tend to have a lower rate of alcoholism hospitalizations.

- Uninsured patients accounted for 21 percent of alcohol-related stays, but only 5 percent of hospitalizations in general.
EXHIBIT 2.9  Mental Health

The data for this report exclude discharges from mental health and substance abuse facilities. Nevertheless, mood disorders were the seventh most frequent reason for hospital admission in 2005 (see Exhibit 2.1). Mood disorders represented only one of many mental health conditions for which people were hospitalized in that year. These conditions generally differed with age.

- In 2005, there were 1.8 million community hospital stays with a principal diagnosis of mental illness or substance abuse.

Youth less than 18 years of age:
- Mood disorders (depression and bipolar disorders) accounted for 58 percent of mental disorders for which this age group was hospitalized.

- Attention deficit disorder (ADD), conduct, and disruptive behavior disorders accounted for 13 percent of all mental health discharges for this age group.

Patients 18–44 years of age:
- Mood disorders were the most common mental disorder for which adults ages 18–44 were admitted to the hospital, though mood disorders constituted a smaller share (43 percent) of admissions in this age group than among younger patients.
- The other common mental health conditions for this age group were substance-related disorders (26 percent) and schizophrenia and other psychotic disorders (23 percent), which were much more common in this age group than among youth.

Distribution* of Discharges by Age for Stays with a Principal Diagnosis of a Mental Health Condition, 2005

*Unmarked bar segments equal two percent or less.
Patients 45–64 years of age:

- Mood disorders were also the most common mental disorder for this age group, representing 39 percent of all mental health stays for patients ages 45–64.
- Substance-related disorders (29 percent) were the second most common mental health condition for this group, while schizophrenia and other psychotic disorders (25 percent) were third.

Patients ages 65–84 years and ages 85 years and older:

- Delirium, dementia, amnestic, and other cognitive disorders were the most frequent mental health conditions for inpatients ages 65–84 (38 percent) and ages 85 years and older (69 percent).
- Mood disorders were the second most common mental health reason for admission for these age groups: this condition accounted for 30 percent of mental health discharges for patients 65–84 years old and 15 percent for patients ages 85 years and older.
### EXHIBIT 2.10 Injuries

#### Number of Stays, Average Cost per Stay, Average Length of Stay, and In-hospital Death Rate for Discharges with an Injury Diagnosis, 2005

<table>
<thead>
<tr>
<th>Principal Diagnosis</th>
<th>Total Number of Stays in Thousands</th>
<th>Average Costs per Stay</th>
<th>Average Length of Stay in Days</th>
<th>In-hospital Death Rate (Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All injuries</td>
<td>1,891</td>
<td>$10,300</td>
<td>4.6</td>
<td>3.1</td>
</tr>
<tr>
<td>Spinal cord injury</td>
<td>12</td>
<td>38,800</td>
<td>12.7</td>
<td>5.9</td>
</tr>
<tr>
<td>Crushing injury or internal injury</td>
<td>106</td>
<td>16,900</td>
<td>6.7</td>
<td>3.4</td>
</tr>
<tr>
<td>Intracranial injury (brain injury)</td>
<td>171</td>
<td>16,500</td>
<td>6.4</td>
<td>9.1</td>
</tr>
<tr>
<td>Burns</td>
<td>41</td>
<td>15,300</td>
<td>7.1</td>
<td>2.4</td>
</tr>
<tr>
<td>Fracture of neck of femur (hip fracture)</td>
<td>317</td>
<td>12,300</td>
<td>6.3</td>
<td>2.8</td>
</tr>
<tr>
<td>Fracture of lower limb (leg)</td>
<td>267</td>
<td>10,600</td>
<td>4.6</td>
<td>0.5</td>
</tr>
<tr>
<td>Other fractures</td>
<td>194</td>
<td>10,100</td>
<td>5.3</td>
<td>1.4</td>
</tr>
<tr>
<td>Skull and face fractures</td>
<td>53</td>
<td>9,600</td>
<td>3.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Joint disorders and dislocations, trauma-related</td>
<td>33</td>
<td>9,100</td>
<td>3.1</td>
<td>0.3</td>
</tr>
<tr>
<td>Fracture of upper limb (arm)</td>
<td>154</td>
<td>8,000</td>
<td>3.2</td>
<td>0.4</td>
</tr>
<tr>
<td>Open wounds of extremities (arms and legs)</td>
<td>50</td>
<td>7,100</td>
<td>3.5</td>
<td>0.2</td>
</tr>
<tr>
<td>Other injuries and conditions due to external causes</td>
<td>102</td>
<td>7,000</td>
<td>3.5</td>
<td>3.3</td>
</tr>
<tr>
<td>Open wounds of head, neck, and trunk</td>
<td>38</td>
<td>6,900</td>
<td>2.6</td>
<td>0.6</td>
</tr>
<tr>
<td>Poisoning by nonmedicinal substances (substances other than medicine)</td>
<td>25</td>
<td>6,700</td>
<td>3.1</td>
<td>1.7</td>
</tr>
<tr>
<td>Poisoning by other medications and drugs</td>
<td>155</td>
<td>5,500</td>
<td>2.9</td>
<td>1.2</td>
</tr>
<tr>
<td>Sprains and strains</td>
<td>45</td>
<td>5,400</td>
<td>2.6</td>
<td>0.2</td>
</tr>
<tr>
<td>Superficial injury, contusion (bruise)</td>
<td>53</td>
<td>4,900</td>
<td>3.4</td>
<td>0.6</td>
</tr>
<tr>
<td>Poisoning by psychotropic agents (psychiatric drugs)</td>
<td>77</td>
<td>4,800</td>
<td>2.5</td>
<td>0.8</td>
</tr>
</tbody>
</table>

Source: Healthcare Cost and Utilization Project (HCUP), Agency for Healthcare Research and Quality
In 2005, nearly 5 percent of all hospital stays—about 1.9 million hospitalizations—were for treatment of an injury. Costs, lengths of stay, and hospital death rates differed according to the type of injury.

- The most common injury-related reason for hospitalization was hip fracture (317,000 stays), followed by leg fracture (267,000 stays), other fractures (194,000 stays), brain injury (171,000 stays) and poisoning by nonpsychiatric drugs (155,000 stays).

- The highest in-hospital death rates were for brain injury (9.1 percent) and spinal cord injury (5.9 percent).

- Spinal cord injury was the most expensive type of injury, with an average hospital cost per stay of $38,800 and a mean length of stay of 12.7 days. However, these hospitalizations accounted for less than 1 percent of all injury-related hospital stays.

Over time, the number of hospitalizations associated with each injury has changed.

- Admissions for poisoning by nonpsychiatric medications and drugs rose by 32 percent from 1997 to 2005, perhaps reflecting in part the increased use of pharmaceuticals.

- Hospitalizations for burns increased 18 percent from 1997 to 2005, as did poisonings by psychiatric drugs.

- Admissions for joint disorders and dislocations due to trauma, as well as sprains and strains, dropped by 39 and 40 percent, respectively, from 1997 to 2005, probably reflecting more outpatient treatment.
EXHIBIT 2.11  Influenza

Influenza (flu) is a contagious respiratory viral disease. In 2005, there were over 50,000 hospital stays principally for influenza, resulting in about $272 million in aggregate costs.

- Hospital stays for influenza in 2005, compared to all hospitalizations, were slightly shorter (4.1 versus 4.6 days) and somewhat less costly ($5,400 versus $7,900).

- Hospital admissions for influenza originated more often from the emergency department (68 percent of the time) than other conditions (43 percent of the time).

- The percent of patients admitted for influenza who died in the hospital was lower (1.6 percent) than the in-hospital death rate for all patients admitted (2.1 percent).

- Hospitalizations for influenza vary widely by year, whether counted by principal diagnosis or all-listed diagnoses. The variation by year is related to outbreaks of strains of influenza which occur in cycles. Like 1999 and 2003, 2005 was a peak year for influenza hospitalization.

- The elderly, young children, and individuals with certain health conditions are especially vulnerable to more severe symptoms of influenza and are more likely to require hospitalization.

Influenza

Influenza is a contagious respiratory viral disease.

## Characteristics of All Hospital Stays and Stays with a Principal Diagnosis of Influenza, 2005

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>ALL HOSPITAL STAYS</th>
<th>HOSPITAL STAYS FOR INFLUENZA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of discharges in thousands</td>
<td>39,164</td>
<td>50</td>
</tr>
<tr>
<td>Mean length of stay in days</td>
<td>4.6</td>
<td>4.1</td>
</tr>
<tr>
<td>Mean cost of hospitalization</td>
<td>$7,900</td>
<td>$5,400</td>
</tr>
<tr>
<td>Mean hospital cost per day</td>
<td>$1,700</td>
<td>$1,300</td>
</tr>
<tr>
<td>Aggregate costs for U.S. in millions</td>
<td>$310,916.2</td>
<td>$272.0</td>
</tr>
<tr>
<td>Percent of admissions through the emergency department</td>
<td>43%</td>
<td>68%</td>
</tr>
<tr>
<td>Percent died in hospital</td>
<td>2.1%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Percent &lt;1 year (excluding newborns*)</td>
<td>2%</td>
<td>11%</td>
</tr>
<tr>
<td>Percent 1–64 years</td>
<td>53%</td>
<td>38%</td>
</tr>
<tr>
<td>Percent 65 years and above</td>
<td>34%</td>
<td>51%</td>
</tr>
</tbody>
</table>

* Newborns account for 11 percent of all hospital discharges.

Number of Discharges with a Diagnosis of Influenza, 1993–2005

The number of discharges with a diagnosis of influenza varied widely by year, whether counted by principal diagnosis or all-listed diagnoses.
SECTION 3

HOSPITAL INPATIENT STAYS BY PROCEDURE

EXHIBIT 3.1 Most Frequent All-listed Procedures
EXHIBIT 3.2 Most Frequent All-listed Procedures by Age
EXHIBIT 3.3 Childbirth
EXHIBIT 3.4 Cardiovascular Procedures
EXHIBIT 3.5 Bariatric Surgery
EXHIBIT 3.6 Orthopedic Procedures
EXHIBIT 3.1  Most Frequent All-listed Procedures

Number, Percent Distribution, and Rank of Discharges for the Most Frequent All-listed Inpatient Hospital Procedures, 1997, 2004, and 2005

<table>
<thead>
<tr>
<th>ALL-LISTED PROCEDURES</th>
<th>NUMBER OF STAYS WITH THE PROCEDURE IN THOUSANDS</th>
<th>PERCENT OF DISCHARGES WITH THE PROCEDURE</th>
<th>RANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>All discharges</td>
<td>34,679</td>
<td>38,662</td>
<td>39,164</td>
</tr>
<tr>
<td>All discharges with procedure</td>
<td>21,187</td>
<td>23,835</td>
<td>24,145</td>
</tr>
<tr>
<td>Blood transfusion</td>
<td>1,098</td>
<td>2,228</td>
<td>2,359</td>
</tr>
<tr>
<td>Diagnostic cardiac catheterization, coronary arteriography (diagnostic procedure to explore the functioning of the heart)</td>
<td>1,461</td>
<td>1,611</td>
<td>1,589</td>
</tr>
<tr>
<td>Repair of obstetric laceration</td>
<td>1,137</td>
<td>1,342</td>
<td>1,334</td>
</tr>
<tr>
<td>Cesarean section (C-section)</td>
<td>800</td>
<td>1,271</td>
<td>1,304</td>
</tr>
<tr>
<td>Circumcision</td>
<td>1,164</td>
<td>1,212</td>
<td>1,237</td>
</tr>
<tr>
<td>Upper gastrointestinal endoscopy (procedure to view and biopsy the esophagus, stomach, and first portion of intestine through a lighted tube)</td>
<td>1,105</td>
<td>1,267</td>
<td>1,224</td>
</tr>
<tr>
<td>Respiratory intubation and mechanical ventilation</td>
<td>919</td>
<td>1,240</td>
<td>1,223</td>
</tr>
<tr>
<td>Prophylactic vaccinations and inoculations</td>
<td>567</td>
<td>849</td>
<td>954</td>
</tr>
<tr>
<td>Fetal monitoring</td>
<td>1,002</td>
<td>1,047</td>
<td>911</td>
</tr>
<tr>
<td>Artificial rupture of membranes to assist delivery</td>
<td>747</td>
<td>866</td>
<td>885</td>
</tr>
</tbody>
</table>

Rankings of the top 10 most frequently performed procedures were based on all-listed procedures.

- Six out of ten hospital stays had a procedure associated with them, and this proportion changed little since 1997.
- With few exceptions, there was little change in the list of the top 10 procedures performed in U.S. hospitals since 1997.
- Blood transfusions were the most common procedure performed during a hospitalization in 2005. Six percent of all discharges (or ten percent of all discharges with a procedure) involved blood transfusions in 2005, up from 3 percent in 1997.
- Another procedure that increased over this time period was vaccinations, which rose from 3 percent in 1997 to 4 percent in 2005.
- Diagnostic cardiac catheterization and coronary arteriography (a procedure to explore the functioning of the heart) was the second most frequent procedure in 2004 and 2005.

Source: Healthcare Cost and Utilization Project (HCUP), Agency for Healthcare Research and Quality
Several of the most common procedures were performed during pregnancy- and childbirth-related hospitalizations. These procedures included repair of obstetric laceration, Cesarean section (C-section), circumcision, fetal monitoring, and artificial rupture of membranes to assist delivery. Together, discharges with these procedures accounted for 23 percent of all hospitalizations with a procedure in 2005.

Upper gastrointestinal endoscopy (a procedure to view and biopsy the upper digestive tract) was the sixth most common procedure among all hospital stays with a procedure.

Respiratory intubation and mechanical ventilation (placing patients on a mechanical breathing machine) was also among the 10 most frequent procedures during hospitalization.
## EXHIBIT 3.2 Most Frequent All-listed Procedures by Age

### Number and Percent Distribution of Discharges for the Most Frequent All-listed Inpatient Hospital Procedures by Age Group, 1997, 2004, and 2005

<table>
<thead>
<tr>
<th>AGE GROUP AND ALL-LISTED PROCEDURES</th>
<th>NUMBER OF DISCHARGES IN THOUSANDS</th>
<th>PERCENT OF ALL DISCHARGES</th>
<th>PERCENT OF AGE-SPECIFIC DISCHARGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>All discharges, all ages</td>
<td>34,679</td>
<td>38,662</td>
<td>39,164</td>
</tr>
<tr>
<td>&lt; 1 year, all discharges</td>
<td>4,426</td>
<td>4,898</td>
<td>4,978</td>
</tr>
<tr>
<td>Circumcision</td>
<td>1,159</td>
<td>1,206</td>
<td>1,232</td>
</tr>
<tr>
<td>Prophylactic vaccinations and inoculations</td>
<td>549</td>
<td>794</td>
<td>865</td>
</tr>
<tr>
<td>Ophthalmologic and otologic diagnosis and treatment (vision and hearing diagnosis and treatment)</td>
<td>*</td>
<td>339</td>
<td>471</td>
</tr>
<tr>
<td>Respiratory intubation and mechanical ventilation</td>
<td>163</td>
<td>214</td>
<td>196</td>
</tr>
<tr>
<td>Diagnostic spinal tap</td>
<td>147</td>
<td>104</td>
<td>125</td>
</tr>
<tr>
<td>1–17 years, all discharges</td>
<td>1,821</td>
<td>1,784</td>
<td>2,059</td>
</tr>
<tr>
<td>Appendectomy (removal of appendix)</td>
<td>74</td>
<td>87</td>
<td>95</td>
</tr>
<tr>
<td>Cancer chemotherapy</td>
<td>43</td>
<td>46</td>
<td>64</td>
</tr>
<tr>
<td>Blood transfusion</td>
<td>26</td>
<td>52</td>
<td>59</td>
</tr>
<tr>
<td>Repair of obstetric laceration</td>
<td>58</td>
<td>53</td>
<td>54</td>
</tr>
<tr>
<td>Diagnostic spinal tap</td>
<td>43</td>
<td>47</td>
<td>49</td>
</tr>
<tr>
<td>18–44 years, all discharges</td>
<td>9,444</td>
<td>10,323</td>
<td>10,041</td>
</tr>
<tr>
<td>Repair of obstetric laceration</td>
<td>1,079</td>
<td>1,287</td>
<td>1,278</td>
</tr>
<tr>
<td>Cesarean section (C-section)</td>
<td>773</td>
<td>1,238</td>
<td>1,270</td>
</tr>
<tr>
<td>Fetal monitoring</td>
<td>952</td>
<td>1,005</td>
<td>876</td>
</tr>
<tr>
<td>Artificial rupture of membranes to assist delivery</td>
<td>706</td>
<td>830</td>
<td>850</td>
</tr>
<tr>
<td>Episiotomy (surgical incision into the perineum and vagina to prevent traumatic tearing during delivery)</td>
<td>813</td>
<td>490</td>
<td>418</td>
</tr>
</tbody>
</table>

(continued on next page)
### Number and Percent Distribution of Discharges for the Most Frequent All-listed Inpatient Hospital Procedures by Age Group, 1997, 2004, and 2005—continued

<table>
<thead>
<tr>
<th>AGE GROUP AND ALL-LISTED PROCEDURES</th>
<th>NUMBER OF DISCHARGES IN THOUSANDS</th>
<th>PERCENT OF ALL DISCHARGES</th>
<th>PERCENT OF AGE-SPECIFIC DISCHARGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>45–64 years, all discharges</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnostic cardiac catheterization, coronary arteriography (diagnostic procedure to explore the functioning of the heart)</td>
<td>578</td>
<td>681</td>
<td>674</td>
</tr>
<tr>
<td>Blood transfusion</td>
<td>247</td>
<td>568</td>
<td>601</td>
</tr>
<tr>
<td>Upper gastrointestinal endoscopy (procedure to view and biopsy the esophagus, stomach and first portion of intestine through a lighted tube)</td>
<td>275</td>
<td>369</td>
<td>356</td>
</tr>
<tr>
<td>PTCA (percutaneous transluminal coronary angioplasty, procedure involving use of a balloon-tipped catheter to enlarge a narrowed artery)</td>
<td>247</td>
<td>344</td>
<td>349</td>
</tr>
<tr>
<td>Respiratory intubation and mechanical ventilation</td>
<td>186</td>
<td>312</td>
<td>310</td>
</tr>
<tr>
<td>65+ years, all discharges</td>
<td>12,484</td>
<td>13,059</td>
<td>13,374</td>
</tr>
<tr>
<td>Blood transfusion</td>
<td>652</td>
<td>1,294</td>
<td>1,377</td>
</tr>
<tr>
<td>Diagnostic cardiac catheterization, coronary arteriography (diagnostic procedure to explore the functioning of the heart)</td>
<td>773</td>
<td>805</td>
<td>789</td>
</tr>
<tr>
<td>Upper gastrointestinal endoscopy (procedure to view and biopsy the esophagus, stomach and first portion of intestine through a lighted tube)</td>
<td>653</td>
<td>689</td>
<td>666</td>
</tr>
<tr>
<td>Respiratory intubation and mechanical ventilation</td>
<td>431</td>
<td>516</td>
<td>524</td>
</tr>
<tr>
<td>PTCA (percutaneous transluminal coronary angioplasty, procedure involving use of a balloon-tipped catheter to enlarge a narrowed artery)</td>
<td>299</td>
<td>405</td>
<td>409</td>
</tr>
</tbody>
</table>

* Statistics based on estimates with a relative standard error (standard error/weighted estimate) greater than 0.30 or with standard error = 0 in the nationwide statistics are not reliable.† Includes a small number of discharges (less than 55,000 or 0.1 percent) with missing age.
The most frequent procedures usually varied by age group, except for individuals ages 45–64 and ages 65 and above: these two groups had in common the five most frequently performed procedures.

- The most common procedures performed on infants are those associated with birth.
  - Circumcision was the most common procedure for children under 1 year of age during the period 1997 to 2005. In 2005, more than 1.2 million circumcisions were performed in the hospital.
  - Vaccinations, the second most common procedure, increased by 40 percent, from 12.4 percent of all discharges for children under 1 year of age in 1997 to 17.4 percent in 2005.

- Appendectomy was the most common procedure for children ages 1–17. Other top procedures included cancer chemotherapy, blood transfusion, repair of obstetric laceration in adolescent deliveries, and diagnostic spinal tap.

- Blood transfusions were among the top 5 procedures in three age groups: 1–17 years, 45–64 years and 65 years and older. The number of hospital stays involving a transfusion more than doubled from 1997 to 2005 for each of these age groups.

- Pregnancy- and childbirth-related procedures accounted for the five most common procedures for individuals ages 18–44. Among these procedures, C-sections increased in frequency from 1997 to 2005. Episiotomy, a surgical incision to prevent traumatic tearing during vaginal delivery, decreased in frequency for this age group between 1997 and 2005.

- Heart-related procedures—diagnostic procedures to explore the functioning of the heart and PTCAs—were two of the five most common procedures for individuals ages 45–64, as well as for those 65 and above.

- Upper gastrointestinal endoscopy and respiratory intubation and mechanical ventilation were two of the five most common procedures for individuals ages 45–64 as well as for individuals 65 and above during the 1997 to 2005 period.
Pregnancy and childbirth is the second most common reason for admission to the hospital (see Exhibit 1.3). The types of procedures used for childbirth have changed over time.

- Vaginal births with no previous Cesarean section (C-section) accounted for the majority of the 4.2 million childbirth-related stays in 2005, at 67 percent.
- However, the number of C-sections (first time and repeat) grew significantly between 1998 and 2005. At the same time, the number of vaginal births after C-section (VBAC) fell noticeably, from 156,000 in 1998 to 62,000 in 2005.
- Overall, C-section deliveries made up 31 percent of all maternal discharges in 2005, up from the 21 percent that persisted from 1994 to 1998.
Cardiovascular procedures to treat heart disease and stroke are the most common reasons for admission to the hospital for both men and women, excluding pregnancy and childbirth.

- The volume of percutaneous transluminal coronary angioplasty (PTCA) procedures grew rapidly, nearly doubling from 418,000 in 1993 to 800,000 in 2005.
- Prior to 1997, the number of coronary artery bypass grafts increased, but after 1997 they began to decline. In 1997, 426,000 of these procedures were performed; by 2005, the figure had dropped to 278,000.
Bariatric surgery reduces the size of the stomach to achieve weight loss for people who are morbidly obese. It may be used to control the effects of serious medical conditions, such as diabetes.

- From 1995 to 2004, the total number of bariatric surgeries increased from 8,000 to 123,000—a 15-fold increase over nine years. The most rapid increase began in 1998.

- In 2005, the number of bariatric surgeries performed in an inpatient hospital setting did not continue to grow. There were several potential reasons for this stagnation in growth.

- One reason for this decline may be that more surgeries are being performed in outpatient settings. A second reason may be that insurers are responding to the rapidly increasing use of the procedures by removing bariatric surgeries from the list of covered procedures or by being more selective in approving providers.\(^1\)

---

**EXHIBIT 3.5  Bariatric Surgery**

Number of Bariatric Surgery Discharges, 1995–2005

* Statistic has a relative standard error greater than .30 and is not considered reliable.

---


EXHIBIT 3.6 Orthopedic Procedures

Number of Discharges with Any Musculoskeletal Procedures, 1993–2005

Hospital stays for musculoskeletal treatments often involve repair of fractures and joint procedures to relieve pain.

- While the volume of musculoskeletal procedures was relatively constant between 1993 and 2000, discharges with musculoskeletal procedures rose from 2.7 million to 3.4 million (a 24-percent increase) from 2000 to 2005.
- Of the most frequently performed musculoskeletal procedures, spinal fusion grew the most rapidly—nearly 140 percent over the 12-year period.
- Arthroplasty of the knee and hip replacement were the second and third fastest growing reasons for hospitalizations related to orthopedic treatments. Arthroplasty of the knee grew 89 percent and hip replacements grew 46 percent from 1993 to 2005.
Taken together, the most frequent musculoskeletal (or orthopedic) procedures increased with age, but the distribution of specific treatments differed by age group in 2005.

For patients less than 18 years of age:
- Repair of leg or hip fractures and dislocations was the predominant orthopedic procedure for the very young.

For patients 18–44 years of age:
- Spinal fusion was the most frequent orthopedic procedure.
- Repair of leg fractures and dislocations below the thigh was the second most common orthopedic procedure for this group.

For patients 45–64 years of age:
- Arthroplasty of the knee also was the most common procedure, accounting for one in five musculoskeletal-related discharges.

For patients 65–84 years of age:
- Spinal fusion was the second most common procedure, at 15 percent of orthopedic discharges in this age group.

For patients 85 years of age and older:
- Hip and femur fracture repair was the most common musculoskeletal procedure for this age group, representing one in three of all orthopedic procedures.
- Hip replacements, the second most common procedure, accounted for one in five of all orthopedic procedures for these patients.

Percent Distribution* of the Most Frequent Musculoskeletal All-listed Procedures within Age Groups, 2005

![Percent Distribution Diagram]

* Unmarked bar segments equal one percent or less. Remaining percentages (not shown) represent miscellaneous and low frequency procedures.
SECTION 4

SPENDING FOR HOSPITAL INPATIENT STAYS

EXHIBIT 4.1 Costs for the Most Frequent Diagnoses
EXHIBIT 4.2 Average Charges for the Most Frequent Conditions
### EXHIBIT 4.1 Costs for the Most Frequent Diagnoses


<table>
<thead>
<tr>
<th>PRINCIPAL DIAGNOSIS</th>
<th>TOTAL INFLATION-ADJUSTED* HOSPITAL COSTS IN BILLIONS</th>
<th>PERCENT OF TOTAL COSTS</th>
<th>RANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>All diagnoses</td>
<td>$209.2</td>
<td>$303.5</td>
<td>$310.9</td>
</tr>
<tr>
<td>Coronary atherosclerosis (coronary artery disease)</td>
<td>14.0</td>
<td>16.3</td>
<td>15.5</td>
</tr>
<tr>
<td>Acute myocardial infarction (heart attack)</td>
<td>8.7</td>
<td>11.6</td>
<td>10.9</td>
</tr>
<tr>
<td>Pneumonia (except that caused by tuberculosis or sexually transmitted disease)</td>
<td>8.5</td>
<td>10.1</td>
<td>10.7</td>
</tr>
<tr>
<td>Congestive heart failure, nonhypertensive</td>
<td>6.4</td>
<td>10.7</td>
<td>10.5</td>
</tr>
<tr>
<td>Liveborn (newborn infant)</td>
<td>7.6</td>
<td>10.6</td>
<td>9.8</td>
</tr>
<tr>
<td>Osteoarthritis (degenerative joint disease)</td>
<td>4.5</td>
<td>8.7</td>
<td>9.7</td>
</tr>
<tr>
<td>Complication of medical device, implant or graft</td>
<td>5.3</td>
<td>8.4</td>
<td>8.9</td>
</tr>
<tr>
<td>Septicemia (blood infection)</td>
<td>3.9</td>
<td>6.7</td>
<td>8.4</td>
</tr>
<tr>
<td>Spondylosis, intervertebral disc disorders, other back problems (disorders of intervertebral discs and bones on spinal column)</td>
<td>3.3</td>
<td>6.5</td>
<td>7.1</td>
</tr>
<tr>
<td>Adult respiratory failure, insufficiency, or arrest</td>
<td>3.2</td>
<td>5.4</td>
<td>7.0</td>
</tr>
<tr>
<td>Cardiac dysrhythmias (irregular heart beat)</td>
<td>3.4</td>
<td>6.2</td>
<td>6.0</td>
</tr>
<tr>
<td>Acute cerebrovascular disease (stroke)</td>
<td>5.2</td>
<td>6.2</td>
<td>5.9</td>
</tr>
<tr>
<td>Rehabilitation care, fitting of prostheses, and adjustment of devices</td>
<td>3.6</td>
<td>5.1</td>
<td>5.1</td>
</tr>
<tr>
<td>Complications of surgical procedures or medical care</td>
<td>2.8</td>
<td>4.6</td>
<td>4.7</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease and bronchiectasis (chronic obstructive lung disease)</td>
<td>3.2</td>
<td>3.8</td>
<td>4.2</td>
</tr>
<tr>
<td>Biliary tract disease (gall bladder disease)</td>
<td>3.2</td>
<td>4.1</td>
<td>4.1</td>
</tr>
<tr>
<td>Diabetes mellitus with complications</td>
<td>2.6</td>
<td>4.0</td>
<td>3.9</td>
</tr>
<tr>
<td>Fracture of neck of femur (hip fracture)</td>
<td>3.0</td>
<td>3.8</td>
<td>3.9</td>
</tr>
<tr>
<td>Non-specific chest pain</td>
<td>1.6</td>
<td>3.6</td>
<td>3.5</td>
</tr>
<tr>
<td>Mood disorders (depression and bipolar disorders)</td>
<td>3.0</td>
<td>3.6</td>
<td>3.4</td>
</tr>
<tr>
<td><strong>Total for top 20 conditions</strong></td>
<td><strong>96.7</strong></td>
<td><strong>140.0</strong></td>
<td><strong>142.9</strong></td>
</tr>
</tbody>
</table>

* Adjusted for inflation using the GDP deflator (http://www.bea.gov/national/nipaweb/TableView.asp#Mid, Table 1.1.4. Price Indexes for Gross Domestic Product)
The top 20 principal diagnoses with the highest aggregate inpatient hospital costs represented 46 percent of the $310.9 billion total cost for all stays in U.S. community hospitals in 2005, the same share as in 1997 and 2004.

The most costly diagnoses:

- The two most costly conditions treated in U.S. hospitals in 2005 were heart-related conditions. Six of the 20 most costly conditions were cardiac diseases and these six conditions together accounted for 17 percent of all community hospital costs.
- The three most costly inpatient diagnoses unrelated to heart disease were pneumonia, newborn infant (because of the number of discharges), and osteoarthritis.
- At least two of the top 20 most costly inpatient conditions were related to complications of medical care—complication of medical device, implant, or graft and complications of surgical procedures or medical care.
- Blood infections (septicemia), another costly condition, also may represent a complication of treatment for some patients.

Increasing costs:

- Of the top 20 costliest inpatient diagnoses, inflation-adjusted costs for adult respiratory failure or arrest showed the most dramatic increase from 2004 to 2005, growing by 29.9 percent. Respiratory failure grew at 12 times the average annual growth in inpatient costs for all diagnoses for the same time period.
- The total inflation-adjusted cost of hospitalizations for septicemia increased by 25.1 percent from 2004 to 2005, after averaging annual increases of 8.1 percent from 1997 to 2004.
- In inflation-adjusted terms, hospital stays for osteoarthritis increased in cost by 10.8 percent from 2004 to 2005, similar to an average annual increase of 10.0 percent from 1997 to 2004.
- The rate of growth in inflation-adjusted costs of hospitalizations for pneumonia doubled to 5.8 percent from 2004 to 2005, compared to an average annual increase in cost of 2.5 percent from 1997 to 2004.

Stable or decreasing costs:

- Aggregate inpatient hospital costs adjusted for inflation increased 2.4 percent between 2004 and 2005. However, costs for half of the top 20 most costly conditions (mood disorders, newborn infants, stroke, heart attack, coronary artery disease, irregular heart beat, non-specific chest pain, congestive heart failure, diabetes with complications, and rehabilitation care) did not increase.
As a matter of fact, for these cardiovascular conditions (coronary artery disease, heart attack, irregular heart beat, stroke, and non-specific chest pain), the combined inflation-adjusted costs grew at a faster rate and then slowed.

- From 1997 to 2000, combined inflation-adjusted hospitalization costs for these most expensive cardiovascular conditions grew at progressively faster rates.
- Growth peaked in 2000 and then gradually slowed.
- In 2005, the combined inflation-adjusted costs for these conditions ($52 million) were not statistically different from the costs in 2001 through 2004.

*Includes coronary artery disease, heart attacks, congestive heart failure, irregular heart beat, stroke and non-specific chest pain.

**Adjusted for inflation using the GDP deflator (http://www.bea.gov/national/nipaweb/TableView.asp#Mid, Table 1.1.4. Price Indexes for Gross Domestic Product)
EXHIBIT 4.2  Average Charges for the Most Frequent Conditions

Hospital charges are the amounts usually seen by a patient when they receive their hospital bill. However, charges seldom represent what is actually paid for hospital stays because of negotiated discounts, but they do offer a useful benchmark for comparing the relative costliness of conditions.

- Diagnoses related to newborns and infants comprised four of the top ten diagnoses with the highest charges per hospital stay in 2005.

- The highest average charge per hospital stay is not always associated with the highest average charge per day, particularly if the type of stay is long and complicated.

- For example, hospitalizations for infant respiratory distress syndrome had the highest mean charge per stay at $114,200, more than five times the average charge per stay for all diagnoses ($22,300) in 2005.

- The average length of stay for infant respiratory distress syndrome was 25.7 days, more than five times the average length of stay for all diagnoses (4.7 days) in 2005.

Source: Healthcare Cost and Utilization Project (HCUP), Agency for Healthcare Research and Quality
Similarly, hospitalizations for premature birth and low birth weight had the lowest average per day charges ($3,400) among this high charge-per-stay group of diagnoses because the length of stay was long.

By contrast, two diagnoses related to the cardiovascular system, heart valve disorders ($98,300 per stay) and aneurysm (ballooning or rupture of an artery) ($70,000 per stay), were among the top ten high charge-per-stay principal diagnoses with the highest charges per day in 2005. This occurred because their lengths of stay were among the shortest of the high charge-per-stay diagnoses and because their treatments involve expensive invasive procedures.

Three cancers, leukemia (cancer of the blood), Hodgkin’s disease (cancer of the lymphatic system), and stomach cancer, were among the top ten principal diagnoses with the highest charges per stay.

At $60,800, the charges per hospital stay for cancer of the stomach ranked tenth among those diagnoses with the highest per stay charges.
SECTION 5

SPECIAL TOPIC

EXHIBIT 5.1  Uninsured Inpatient Hospital Stays: Admission Source and Discharge Status
Five percent (nearly 2.1 million) of the 39.2 million U.S. community hospital discharges in 2005 were considered uninsured because they were not covered by private insurance or public programs.

Admission Source:
- A greater percentage of uninsured admissions (59 percent) than insured admissions (42 percent) originated in the emergency department.

Discharge Status:
- Hospital patients who were uninsured were 3 times more likely to leave against medical advice than insured patients.
  - Three percent of all uninsured stays, but only 1 percent of insured stays, resulted in a discharge against medical advice.
  - Twenty percent of all discharges who left the hospital against medical advice were uninsured.
- Uninsured patients were about one-third as likely as those with insurance to be referred to other health resources, such as home health care or nursing home care. Lack of referral following an uninsured stay can often be associated with lack of patient resources as well as lack of need because of the relative youth of the uninsured patient.
- Once admitted to the hospital, uninsured patients were half as likely to die in the hospital as those insured because uninsured patients tend to be younger.
In addition, diagnoses can also be grouped into DRGs. DRGs comprise a classification system that categorizes patients into groups that are clinically coherent and homogeneous with respect to resource use. DRGs group patients according to diagnosis, type of treatment (procedures), age, and other relevant criteria. Each hospital stay has one DRG assigned to it. The Centers for Medicare and Medicaid Services (CMS) uses this classification system as a basis for Medicare payments for inpatient hospital stays.

DRGs, in turn, can be summarized into MDCs, which are broad groups of DRGs such as Diseases and Disorders of the Nervous System or Diseases and Disorders of the Eye. Each hospital stay has one DRG and one MDC assigned to it.

**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—DIAGNOSES**

**EXHIBIT 2.1**

Maternal CCS categories:

183  Hypertension complicating pregnancy, childbirth, and the puerperium (high blood pressure during pregnancy)

184  Early or threatened labor

185  Prolonged pregnancy

189  Previous C-section

190  Fetal distress and abnormal forces of labor

191  Polyhydramnios and other problems of amniotic cavity (excess amniotic fluid and other problems of amniotic cavity)

192  Umbilical cord complication

193  Trauma to external female genitals (vulva) and area between anus and vagina (perineum)

196  Normal pregnancy and/or delivery
Other maternal CCS categories:
176 Contraceptive and procreative management (birth control or helping with conception)
177 Spontaneous abortion
178 Induced abortion
179 Postabortion complications (complications following abortion)
180 Ectopic pregnancy (abdominal or tubal pregnancy)
181 Other complications of pregnancy
182 Hemorrhage during pregnancy, abruptio placenta, placenta previa (bleeding and placenta disorders during pregnancy)
186 Diabetes or abnormal glucose tolerance complicating pregnancy, childbirth, or the puerperium (diabetes or high blood glucose during pregnancy)
187 Malposition, malpresentation (breech birth and other disorders of baby's position during birth)
188 Obstructed labor or fetopelvic disproportion
194 Forceps delivery
195 Other maternal complications of birth, puerperium affecting management of mother (other maternal complications of birth and period after childbirth)

Infant CCS categories:
218 Liveborn (newborn infant)
219 Short gestation, low birth weight, and fetal growth retardation (premature birth and low birth weight)
220 Intrauterine hypoxia and birth asphyxia (lack of oxygen to baby in uterus or during birth)
221 Infant respiratory distress syndrome
222 Hemolytic jaundice and perinatal jaundice (infant jaundice following birth)
223 Birth trauma
224 Other perinatal conditions (other conditions occurring around the time of birth)

EXHIBIT 2.5
Circulatory CCS categories:
99 Hypertension with complications and secondary hypertension (high blood pressure with complications)
100 Acute myocardial infarction (heart attack)
101 Coronary atherosclerosis (coronary artery disease)
102 Non-specific chest pain
106 Cardiac dysrhythmias (irregular heart beat)
108 Congestive heart failure, nonhypertensive
109 Acute cerebrovascular disease (stroke)
110 Occlusion or stenosis of precerebral arteries (blockage of arteries before brain)
112 Transient cerebral ischemia (mini-stroke)
114 Peripheral and visceral atherosclerosis (hardening of arteries outside heart)
118 Phlebitis, thrombophlebitis, and thromboembolism (inflammation and blood clots in the veins)

Other circulatory CCS categories:
96 Heart valve disorders
97 Peri-, endo-, and myocarditis, cardiomyopathy (disorders of heart muscle and surrounding tissue, except that caused by tuberculosis or sexually transmitted disease)
98 Essential hypertension (high blood pressure)
103 Pulmonary heart disease (heart disease due to lung disorders)
104 Other and ill-defined heart disease
105 Conduction disorders (disturbance of electrical activity of heart)
107 Cardiac arrest and ventricular fibrillation (uncoordinated contraction of heart)
111 Other and ill-defined cerebrovascular disease (other blockage of brain blood supply)
113 Late effects of cerebrovascular disease (late effects of stroke)
115 Aortic, peripheral, and visceral artery aneurysms (ballooning or rupture of an artery)
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>116</td>
<td>Aortic and peripheral arterial embolism or thrombosis (arterial blood clots)</td>
</tr>
<tr>
<td>117</td>
<td>Other circulatory disease (other blood vessel disease)</td>
</tr>
<tr>
<td>119</td>
<td>Varicose veins of lower extremity (varicose veins in leg)</td>
</tr>
<tr>
<td>120</td>
<td>Hemorrhoids</td>
</tr>
<tr>
<td>121</td>
<td>Other diseases of veins and lymphatics (lymph system)</td>
</tr>
</tbody>
</table>

**EXHIBIT 2.6**

Diabetes CCS categories:

- 49  Diabetes mellitus without complication
- 50  Diabetes mellitus with complications

**EXHIBIT 2.7**

Pressure sore ICD-9-CM codes:

- 707.0  Decubitus ulcer
- 707.00  Decubitus ulcer, unspecified site
- 707.01  Decubitus ulcer, elbow
- 707.02  Decubitus ulcer, upper back
- 707.03  Decubitus ulcer, lower back
- 707.04  Decubitus ulcer, hip
- 707.05  Decubitus ulcer, buttock
- 707.06  Decubitus ulcer, ankle
- 707.07  Decubitus ulcer, heel
- 707.09  Decubitus ulcer, other site

**EXHIBIT 2.8**

Alcoholism and alcohol abuse ICD-9-CM codes:

- 291.0  Alcohol withdrawal delirium
- 291.1  Alcohol-induced persisting amnestic disorder
- 291.2  Alcohol-induced persisting dementia
- 291.3  Alcohol-induced psychotic disorder with hallucinations
- 291.4  Idiosyncratic alcohol intoxication
- 291.5  Alcohol-induced psychotic disorder with delusions
- 291.8  Other specified alcohol-induced mental disorders
- 291.81  Alcohol withdrawal
- 291.82  Alcohol-induced sleep disorders
- 291.89  Other
- 291.9  Unspecified alcohol-induced mental disorders
- 303.00  Acute alcoholic intoxication, unspecified
- 303.01  Acute alcoholic intoxication, continuous
- 303.02  Acute alcoholic intoxication, episodic
- 303.03  Acute alcoholic intoxication, in remission
- 303.90  Other and unspecified alcohol dependence, unspecified
- 303.91  Other and unspecified alcohol dependence, continuous
- 303.92  Other and unspecified alcohol dependence, episodic
- 303.93  Other and unspecified alcohol dependence, in remission
- 305.00  Alcohol abuse, unspecified
- 305.01  Alcohol abuse, continuous
- 305.02  Alcohol abuse, episodic
- 305.03  Alcohol abuse, in remission
- 357.5  Alcoholic polyneuropathy
- 425.5  Alcoholic cardiomyopathy
- 535.3  Alcoholic gastritis
- 535.31  Alcoholic gastritis, with hemorrhage
- 571.0  Alcoholic fatty liver
- 571.1  Acute alcoholic hepatitis
- 571.2  Alcoholic cirrhosis of liver
- 571.3  Alcoholic liver damage, unspecified
- 760.71  Noxious influences affecting fetus or newborn via placenta or breast milk, alcohol
- 790.3  Excessive blood level of alcohol
- V11.3  Personal history of mental disorder, alcoholism
- V79.1  Special screening for mental disorders and developmental handicaps, alcoholism

Source: Healthcare Cost and Utilization Project (HCUP), Agency for Healthcare Research and Quality
EXHIBIT 2.9
Mental health CCS categories:
650 Adjustment disorders
652 Attention-deficit, conduct, and disruptive behavior disorders
653 Delirium, dementia, and amnestic and other cognitive disorders
657 Mood disorders
659 Schizophrenia and other psychotic disorders
660 Substance-related disorders

Other mental health CCS categories:
651 Anxiety disorders
654 Developmental disorders
655 Disorders usually diagnosed in infancy, childhood, or adolescence
656 Impulse control disorders, not elsewhere classified
658 Personality disorders
661 Miscellaneous mental disorders

EXHIBIT 2.10
Injury CCS categories:
225 Joint disorders and dislocations, trauma-related
226 Fracture of neck of femur (hip fracture)
227 Spinal cord injury
228 Skull and face fractures
229 Fracture of upper limb (arm)
230 Fracture of lower limb (leg)
231 Other fractures
232 Sprains and strains
233 Intracranial injury (brain injury)
234 Crushing injury or internal injury
235 Open wounds of head, neck, and trunk
236 Open wounds of extremities (arms and legs)
239 Superficial injury, contusion (bruise)
240 Burns
241 Poisoning by psychotropic agents (psychiatric drugs)
242 Poisoning by other medications and drugs
243 Poisoning by nonmedicinal substances (substances other than medicine)
244 Other injuries and conditions due to external causes

EXHIBIT 2.11
Influenza CCS category:
123 Influenza

SECTION 3—PROCEDURES
Because the NIS is limited to inpatient hospital data, conditions treated or procedures performed in outpatient settings are not reflected here.

EXHIBIT 3.4
Childbirth DRG categories:
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

Within DRG 370-371 and 372-375, all-listed diagnoses were also subsetted using the following CCS diagnosis category:
189 Previous C-section

EXHIBIT 3.5
Cardiovascular CCS categories:
44 CABG (coronary artery bypass graft, procedure to restore blood supply to the heart muscle)
45 PTCA (percutaneous transluminal coronary angioplasty, procedure involving use of a balloon-tipped catheter to enlarge a narrowed artery)
51 Endarterectomy (surgical removal of an obstructing clot from the arteries of the neck and head)

In addition, abdominal aortic aneurysm repair was defined using the following ICD-9-CM procedures and diagnoses:
- Any one of the following ICD-9-CM procedures:
  - 38.34 Resection of aorta with anastomosis
  - 38.44 Resection of abdominal aorta with replacement
  - 38.64 Other excision of aorta
  - 39.71 Endovascular implantation of graft in abdominal aorta

AND
- Any one of the following ICD-9-CM diagnoses:
  - 441.3 Abdominal aneurysm, ruptured
  - 441.4 Abdominal aneurysm without mention of rupture

**EXHIBIT 3.6**
Bariatric surgery procedures were identified using these steps:
1) Identify likely bariatric procedures using ICD-9-CM procedure codes; 2) Identify additional likely stays for bariatric surgeries using a combination of DRG and ICD-9-CM categories; 3) Remove stays where the procedures were performed because of cancer; and 4) Eliminate cases where an obesity diagnosis was not present.

1) Bariatric procedures using ICD-9-CM procedure codes:
- 44.31 High gastric bypass
- 44.38 Laparoscopic gastroenterostomy
- 44.39 Other gastroenterostomy
- 44.68 Laparoscopic gastroplasty
- 44.69 Other
- 44.95 Laparoscopic gastric restrictive procedure
- 44.96 Laparoscopic revision of gastric restrictive procedure
- 44.97 Laparoscopic removal of gastric restrictive device(s)
- 44.98 (Laparoscopic) adjustment of size of adjustable gastric restrictive device

2) Additional likely stays for bariatric surgeries. If the DRG was equal to 288 (O.R. procedures for obesity), additional bariatric surgery procedures were defined using the following ICD-9-CM categories:
- 44.5 Revision of gastric anastomosis
- 44.99 Other operations on the stomach
- 45.91 Small-to-small intestinal anastomosis

3) For all cases above, exclude cancer cases defined by the following ICD-9-CM diagnosis categories:
- 150.0-159.9 Malignant neoplasm of digestive organs and peritoneum
- 230.1-230.9 Carcinoma in situ of digestive organs

4) Exclude cases without one of the following ICD-9-CM diagnostic codes for obesity:
- 278.0 Obesity
- 278.00 Obesity, unspecified
- 278.01 Morbid obesity
- V77.8 Obesity

**EXHIBIT 3.7**
Orthopedic procedure CCS categories:
- 142 Partial excision of bone
- 145 Treatment of fracture or dislocation of radius and ulna (lower arm)
- 146 Treatment of fracture or dislocation of hip and femur
- 147 Treatment of fracture or dislocation of lower extremity (leg, other than hip or femur)
- 152 Arthroplasty of knee (surgical reconstruction or replacement of knee)
- 153 Hip replacement, total and partial
- 157 Amputation of lower extremity (leg, foot, or toe)
- 158 Spinal fusion (correction of an unstable part of the spine by joining two or more vertebrae)
Other orthopedic procedure CCS categories:
143 Bunionectomy (repair of toe deformities)
144 Treatment of facial fracture or dislocation
148 Other fracture and dislocation procedure
149 Arthroscopy (procedure to view the inside of a joint through a lighted tube and to diagnose and treat problems)
150 Division of joint capsule, ligament or cartilage
151 Excision of semilunar cartilage of knee
154 Arthroplasty other than hip or knee (surgical reconstruction or replacement of other joints)
155 Arthrocentesis (procedure that involves introducing a needle into a joint to remove joint fluid)
156 Injections and aspirations of muscles, tendons, bursa, joints, and soft tissue
159 Other diagnostic procedures on musculoskeletal system
160 Other therapeutic procedures on muscles and tendons
161 Other operating room therapeutic procedures on bone
162 Other operating room therapeutic procedures on joints
163 Other non-operating room therapeutic procedures on musculoskeletal system
164 Other operating room therapeutic procedures on musculoskeletal system
DEFINITIONS

For definitions of medical terms, refer to:

Admission source
Admission source indicates where the patient was located prior to admission to the hospital.

Routine admission: Patient was admitted to the hospital from home, via physician or clinic referral, or due to birth (i.e., newborns). It does not include patients who were admitted from the emergency department or any other health care facility.

Emergency department admission: Patient was admitted to the hospital through the emergency department.

Long-term health care facility admission: Patient was admitted to the hospital from a long-term health care facility.

Other hospital admission: Patient was admitted to the hospital from another hospital.

Other admissions: Patient was admitted through court/law enforcement or other admission sources.

Adjusted for inflation
Cost can be adjusted for economy-wide inflation by removing increases that reflect the effect of changing average prices for all 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. Data in Exhibit 1.1 and 4.1 are adjusted for economy-wide inflation.

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 more than the hospital’s costs of 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 case. For each hospital, a hospital-wide cost-to-charge ratio is used to transform charges into costs. Cost-to-charge ratios for 2005 will not be available until later this year. These ratios were estimated by multiplying the 2004 ratio for each hospital by .96, which represents the average annual change exhibited in the charge-to-cost ratios over the past few years.
Diagnoses

Principal diagnosis: The condition established after study to be chiefly responsible for the patient's admission to the hospital.

All-listed diagnoses: The principal diagnosis plus secondary conditions.

Discharge
Discharge refers to the hospital stay. The unit of analysis for HCUP data is 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.

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.

Discharge per population
Discharge per population is the hospital discharge rate of a particular procedure, diagnosis, or event per 100,000 individuals. This measure indicates the prevalence of hospitalizations, procedures or diagnoses within the population.

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

Infant discharges
Infant discharges are hospital stays during which a child is born.

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 discharges
Maternal discharges are hospital stays for females who are pregnant or gave birth.

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

Morbid obesity
Morbid obesity is defined as at least twice a person’s ideal weight, 100 pounds overweight, or a body mass index (BMI) that is greater than 39.

Neonates
Neonates are newborns and infants 30 days of age or less.

Ownership/control
Ownership/control was obtained from the American Hospital Association (AHA) Annual Survey of Hospitals and includes categories for government non-Federal (public), private not-for-profit (voluntary), and private investor-owned (proprietary). These 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 Worker’s 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.

Region
Region is one of the four regions defined by the U.S. Bureau of the Census: Northeast, Midwest, South, and West.

**Northeast** is defined as Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.

**Midwest** is defined as Illinois, Indiana, Iowa, Kansas, Minnesota, Missouri, Michigan, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

**South** is defined as Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Maryland, Mississippi, Louisiana, Tennessee, North Carolina, Oklahoma, South Carolina, Texas, Virginia, and West Virginia.

**West** is defined as Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

Not all states participate in HCUP, so not all states will be present in HCUP data. However, the statistics have been weighted to represent the entire U.S.

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.
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:


HCUP Statistics and Website
For additional HCUP statistics, visit HCUPnet, our interactive query system at www.hcup.ahrq.gov.

Technical Assistance
For Technical Assistance with HCUP Products:
E-mail: hcup@ahrq.gov
Phone: 1-866-290-HCUP
ACKNOWLEDGMENTS

Thanks to Eva Witt and Nils Nordstrand at Thomson Healthcare for their programming support; Laurel Holmquist and Anne Pfuntner at Thomson Healthcare for their assistance in the preparation of tables and text; Gail Eisen, also at Thomson Healthcare, for her editorial assistance; Roxanne Andrews, Pamela Owens, and Claudia Steiner of AHRQ for contributions to early content decisions; and The Madison Design Group for their assistance in design and layout of the report. Special thanks to Chaya Merrill of Thomson Healthcare and Megan Hambrick of AHRQ for their helpful comments on drafts. This document draws from and updates previously published HCUP Fact Books and Statistical Briefs, which can be found at http://www.hcup-us.ahrq.gov/reports.jsp and http://www.hcup-us.ahrq.gov/reports/statbriefs.jsp.

RECOMMENDED CITATION