

HCUP FACTS AND FIGURES:

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

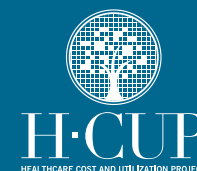


TABLE OF CONTENTS

HIGHLIGHTS	1
FOREWORD	4
HCUP AND ITS DATA PARTNERS	5
INTRODUCTION	6
SECTION 1: OVERVIEW STATISTICS FOR HOSPITALS AND INPATIENT HOSPITAL STAYS	
EXHIBIT 1.1 Number and Characteristics of U.S. Hospitals	8
EXHIBIT 1.2 Inpatient Hospital Stays and Average Length of Stay	10
EXHIBIT 1.3 Reasons for Hospital Stays	11
EXHIBIT 1.4 Admission Source	13
EXHIBIT 1.5 Discharge Status	13
EXHIBIT 1.6 Patient Age	14
EXHIBIT 1.7 Expected Primary Payer	15
SECTION 2: HOSPITAL INPATIENT STAYS BY DIAGNOSIS	
EXHIBIT 2.1 Most Frequent Principal Diagnoses	17
EXHIBIT 2.2 Most Frequent Diagnoses by Age	20
EXHIBIT 2.3 Most Frequent Diagnoses by Gender	23
EXHIBIT 2.4 Average Length of Stay and Average Charges	25
EXHIBIT 2.5 Circulatory Conditions	26
EXHIBIT 2.6 Diabetes	28
EXHIBIT 2.7 Pressure Sores	29
EXHIBIT 2.8 Alcoholism	30
EXHIBIT 2.9 Mental Health	32
EXHIBIT 2.10 Injuries	34
EXHIBIT 2.11 Influenza	36
SECTION 3: HOSPITAL INPATIENT STAYS BY PROCEDURE	
EXHIBIT 3.1 Most Frequent All-listed Procedures	38
EXHIBIT 3.2 Most Frequent All-listed Procedures by Age	40
EXHIBIT 3.3 Childbirth	43
EXHIBIT 3.4 Cardiovascular Procedures	44
EXHIBIT 3.5 Bariatric Surgery	45
EXHIBIT 3.6 Orthopedic Procedures	46
SECTION 4: SPENDING FOR HOSPITAL INPATIENT STAYS	
EXHIBIT 4.1 Costs for the Most Frequent Diagnoses	49
EXHIBIT 4.2 Average Charges for the Most Frequent Conditions	52

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,

mood disorders ranked third, accounting for 364,000 hospital stays in 2005—virtually unchanged since 1997.

- **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.

- 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.

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.

- 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, PTCAs, 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 out-patient 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.

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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

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

Number of U.S. Registered Hospitals and Characteristics of Community Hospitals, 1997, 2004, and 2005

Hospital Categories and Characteristics	1997	2004	2005
Number of U.S. registered hospitals [†]	6,100	5,759	5,756
Number of U.S. community hospitals	5,060	4,919	4,936
Number of non-government not-for-profit hospitals	3,000	2,967	2,958
Number of investor-owned (for-profit) community hospitals	797	865	868
Number of State and local government community hospitals	1,260	1,117	1,110
Community hospitals as a share of registered hospitals	83%	85%	86%
Community hospitals [‡]			
Discharges:			
Total discharges in millions	34.7	38.7	39.2
Discharges per 1,000 population*	127.8	131.7	132.1
Total days of care in millions	168.1	179.1	181.5
Average length of stay in days	4.9	4.6	4.6
Percent of discharges from:			
Metropolitan hospitals	84%	87%	87%
Teaching hospitals	47%	45%	42%
Hospital ownership:			
Non-Federal government hospitals	14%	14%	14%
Private not-for-profit hospitals	73%	73%	72%
Private for-profit hospitals	13%	13%	13%
Population in millions ^{††}	271.4	293.7	296.4

[†] 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.

†† Statistics from the U.S. Bureau of the Census (http://www.census.gov/popest/national/asrh/2005_nat_res.html).

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**.

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

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

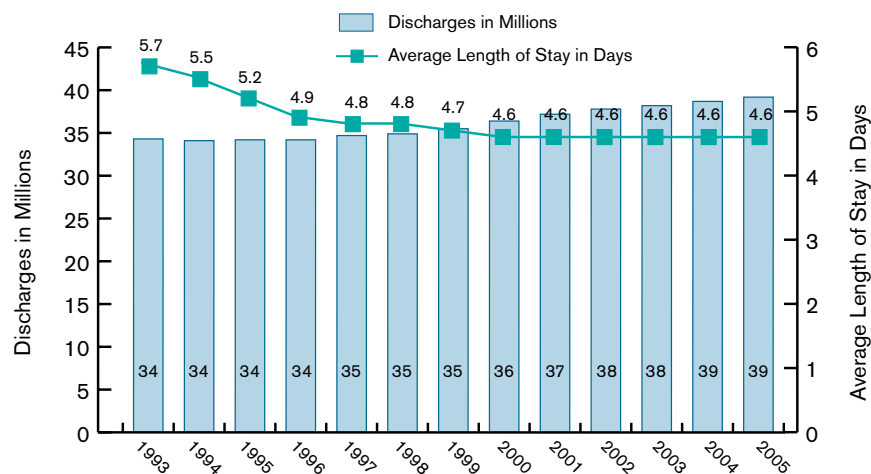
* Charges represent amounts billed by hospitals. These amounts are seldom paid in full by insurers. Costs are calculated from charges using reported cost-to-charge ratios calculated from information on Medicare Cost Reports, reported by hospitals to the Centers for Medicare and Medicaid Services (CMS).

** 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](http://www.bea.gov/national/nipaweb/TableView.asp#Mid,Table%201.1.4.%20Price%20Indexes%20for%20Gross%20Domestic%20Product)).

- 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.

EXHIBIT 1.2 Inpatient Hospital Stays and Average Length of Stay

Number of Inpatient Stays and Average Length of Stay, 1993–2005



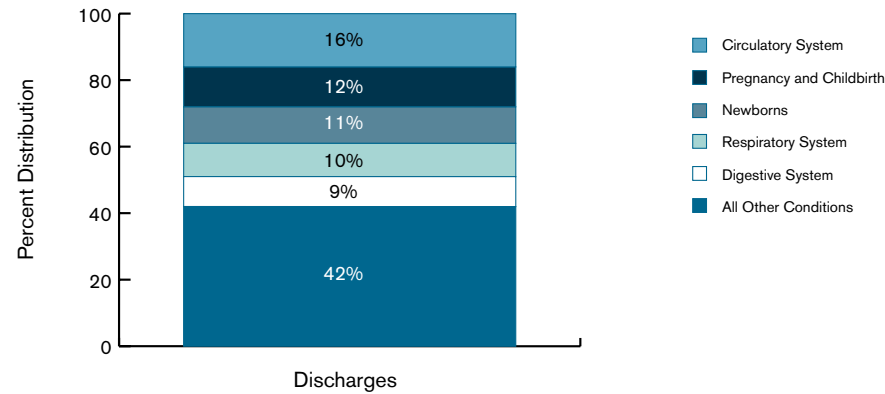
The average **length of stay** in U.S. community hospitals has stabilized since 2000, while the number of hospital stays continued to rise.

- 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).

¹ Forrest S, Goetghebuer M, Hay J. Forces Influencing Inpatient Hospital Costs in the United States. Available at <http://www.bcbs.com/betterknowledge/cost/underlying-drivers.html>.

EXHIBIT 1.3 Reasons for Hospital Stays

Percent Distribution of Discharges by Major Reason* for Hospital Stay, 2005



* Based on principal diagnosis

Circulatory conditions were the most frequent causes of hospital stays.

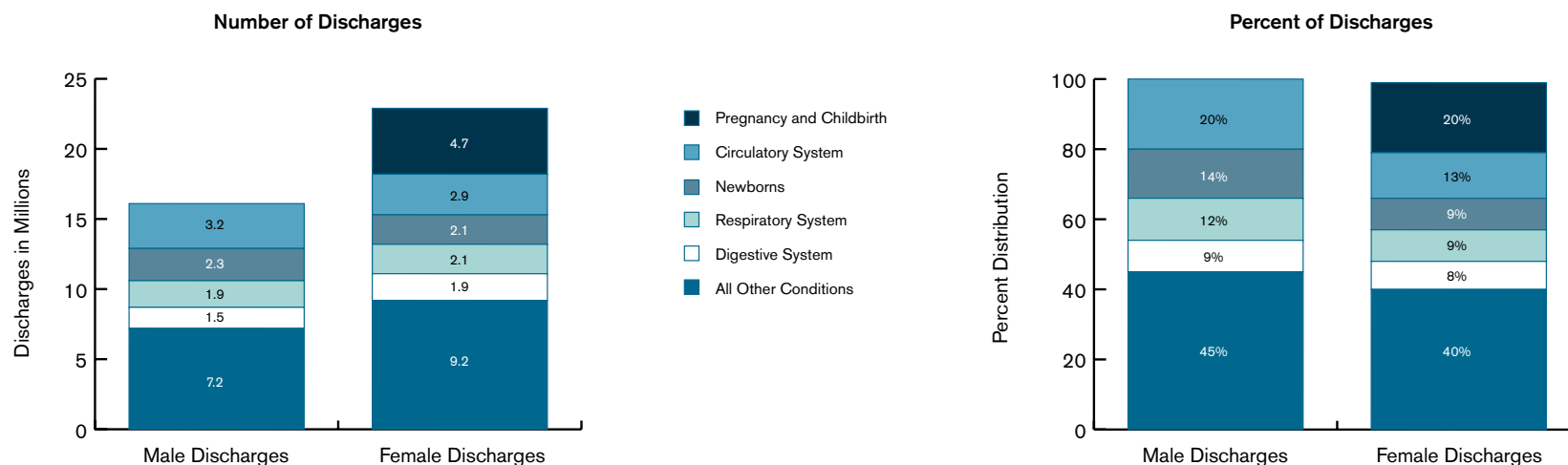
- Circulatory conditions accounted for 16 percent of all hospital stays in 2005. These stays were for diagnoses such as coronary atherosclerosis (coronary artery disease), congestive heart failure, heart attack, and irregular heart beat.
- Pregnancy and childbirth (12 percent) and newborns (11 percent) 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.

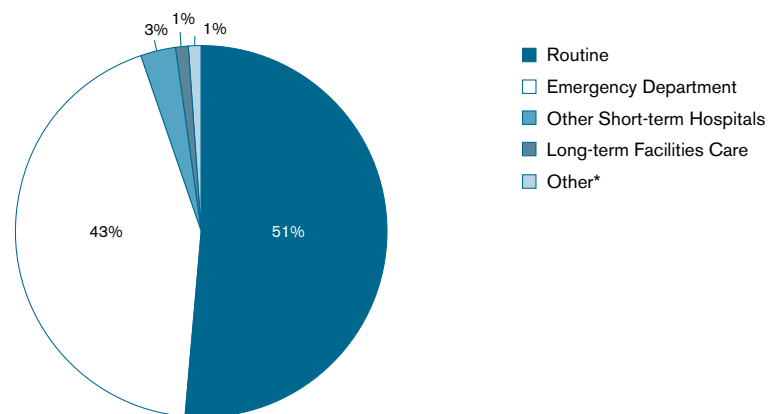
Hospital Stays for Males and Females by Major Reason,* 2005



* Based on principal diagnosis

EXHIBIT 1.4 Admission Source

Distribution of Hospital Inpatient Stays by Admission Source, 2005



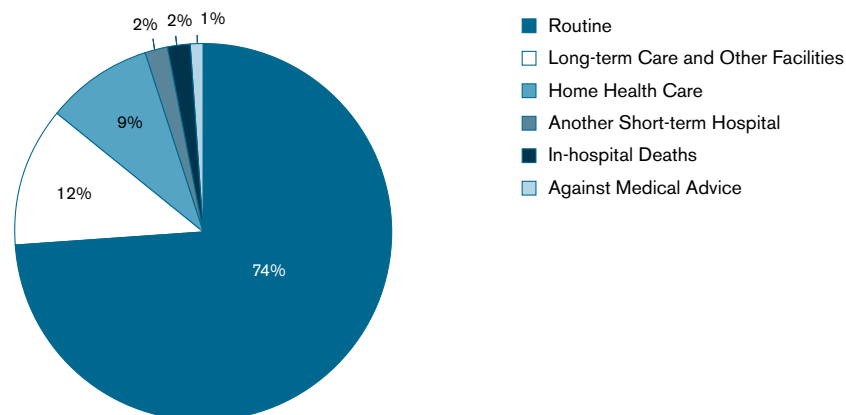
* Includes court and law enforcement admissions.

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

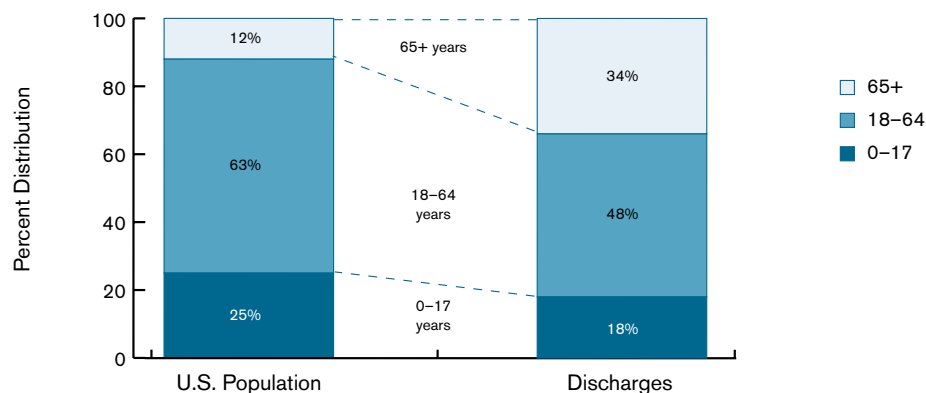


Discharge status indicates where the patient went after discharge from the hospital or the circumstance surrounding the discharge.

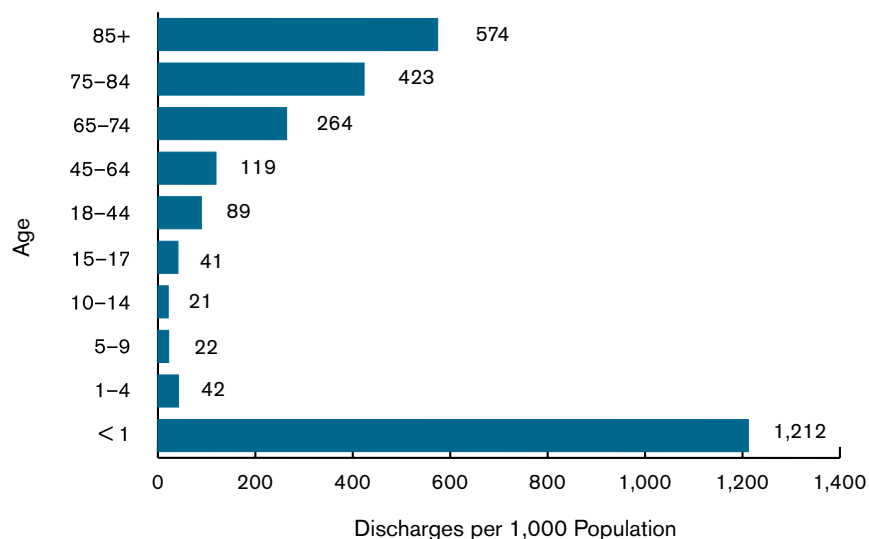
- The most common patient discharge status was routine (74 percent in 2005), with the patient being sent home without closely supervised health care.
- Discharge to a long-term care facility was the second most common type of discharge, accounting for 12 percent of discharges.
- Discharge to the home 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.

EXHIBIT 1.6 Patient Age

Distribution of U.S. Population and Hospital Discharges by Age, 2005



Discharges per 1,000 Population by Age Group, 2005



Older people account for a large share of hospitalizations.

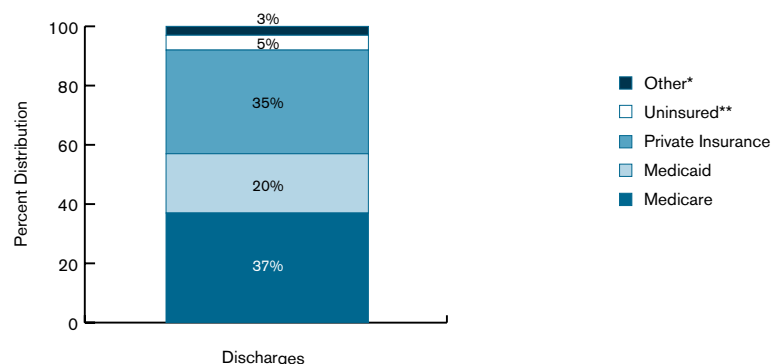
- While those aged 65 and over represented 12 percent of the population in 2005, they comprised 34 percent of the hospitalizations.
- The younger age groups had a lower proportion of hospitalizations relative to their representation in the population.
 - Patients 18–64 years of age, at 63 percent of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

EXHIBIT 1.7 Expected Primary Payer

Percent Distribution of Discharges by Expected Primary Payer, 2005



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

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

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

PRINCIPAL DIAGNOSIS	NUMBER OF DISCHARGES IN THOUSANDS			PERCENT OF DISCHARGES			RANK		
	1997	2004	2005	1997	2004	2005	1997	2004	2005
All discharges	34,679	38,662	39,164	100.0	100.0	100.0			
Pregnancy, childbirth, and infants	8,237	9,175	9,145	23.8	23.7	23.4	1	1	1
Pneumonia (except that caused by tuberculosis or sexually transmitted disease)	1,232	1,213	1,355	3.6	3.1	3.5	3	2	2
Coronary atherosclerosis (coronary artery disease)	1,407	1,192	1,110	4.1	3.1	2.8	2	3	3
Congestive heart failure, nonhypertensive	991	1,104	1,090	2.9	2.9	2.8	4	4	4
Non-specific chest pain	538	846	825	1.6	2.2	2.1	10	5	5
Osteoarthritis (degenerative joint disease)	418	659	738	1.2	1.7	1.9	17	9	6
Mood disorders (depression and bipolar disorders)	641	792	713	1.8	2.0	1.8	6	6	7
Cardiac dysrhythmias (irregular heart beat)	572	694	697	1.7	1.8	1.8	8	8	8
Acute myocardial infarction (heart attack)	732	695	662	2.1	1.8	1.7	5	7	9
Spondylosis, intervertebral disc disorders, other back problems (disorders of intervertebral discs and bones in spinal column)	536	616	647	1.5	1.6	1.7	11	10	10
Chronic obstructive pulmonary disease and bronchiectasis (chronic obstructive lung disease)	551	556	630	1.6	1.4	1.6	9	12	11
Complication of medical device, implant or graft	491	601	616	1.4	1.6	1.6	12	11	12
Skin and subcutaneous tissue infections	330	505	582	1.0	1.3	1.5	24	16	13
Fluid and electrolyte disorders (primarily dehydration or fluid overload)	468	555	574	1.4	1.4	1.5	13	13	14
Septicemia (blood infection, except in labor)	413	452	538	1.2	1.2	1.4	18	21	15

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

PRINCIPAL DIAGNOSIS	NUMBER OF DISCHARGES IN THOUSANDS			PERCENT OF DISCHARGES			RANK		
	1997	2004	2005	1997	2004	2005	1997	2004	2005
All maternal discharges	4,338	4,763	4,716	100.0	100.0	100.0			
Trauma to external female genitals (vulva) and area between anus and vagina (perineum), related to childbirth	713	785	784	16.4	16.5	16.6	1	1	1
Previous C-section	271	456	481	6.3	9.6	10.2	4	2	2
Normal pregnancy and/or delivery	544	338	325	12.5	7.1	6.9	2	3	3
Early or threatened labor	261	255	236	6.0	5.4	5.0	5	4	4
Fetal distress and abnormal forces of labor	420	247	234	9.7	5.2	5.0	3	5	5
Prolonged pregnancy	104	218	234	2.4	4.6	5.0	11	8	6
Hypertension complicating pregnancy, childbirth and the puerperium (high blood pressure during pregnancy)	185	224	220	4.3	4.7	4.7	8	7	7
Umbilical cord complication	259	235	217	6.0	4.9	4.6	6	6	8
Polyhydramnios and other problems of amniotic cavity (excess amniotic fluid and other problems of amniotic cavity)	202	192	191	4.7	4.0	4.1	7	9	9
All infant discharges	3,899	4,411	4,429	100.0	100.0	100.0			
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

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, non-specific 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

AGE GROUP AND PRINCIPAL DIAGNOSIS	NUMBER OF DISCHARGES IN THOUSANDS			PERCENT OF TOTAL DISCHARGES			PERCENT OF AGE-SPECIFIC TOTAL DISCHARGES		
	1997	2004	2005	1997	2004	2005	1997	2004	2005
All ages*	34,679	38,662	39,164						
< 1 year	4,426	4,898	4,978	12.8	12.7	12.7	100.0	100.0	100.0
Liveborn (newborn infant)	3,776	4,244	4,223	10.9	11.0	10.8	85.3	86.7	84.8
Acute bronchitis	108	112	107	0.3	0.3	0.3	2.4	2.3	2.2
Hemolytic jaundice and perinatal jaundice (infant jaundice following birth)	33	47	56	0.1	0.1	0.1	0.7	1.0	1.1
Pneumonia (except that caused by tuberculosis or sexually transmitted disease)	55	39	43	0.2	0.1	0.1	1.3	0.8	0.9
Short gestation, low birth weight, and fetal growth retardation (premature birth and low birth weight)	22	25	31	0.1	0.1	0.1	0.5	0.5	0.6
1–17 years	1,821	1,784	2,059	5.3	4.6	5.3	100.0	100.0	100.0
Pneumonia (except that caused by tuberculosis or sexually transmitted disease)	135	108	142	0.4	0.3	0.4	7.4	6.0	6.9
Asthma	159	133	139	0.5	0.3	0.4	8.7	7.4	6.8
Fluid and electrolyte disorders (primarily dehydration or fluid overload)	64	79	98	0.2	0.2	0.3	3.5	4.4	4.8
Appendicitis and other appendiceal conditions	65	82	90	0.2	0.2	0.2	3.6	4.6	4.3
Mood disorders (depression and bipolar disorders)	64	84	73	0.2	0.2	0.2	3.5	4.7	3.6
18–44 years	9,444	10,323	10,041	27.2	26.7	25.6	100.0	100.0	100.0
Trauma to external female genitals (vulva) and area between anus and vagina (perineum), related to childbirth	676	754	753	1.9	2.0	1.9	7.2	7.3	7.5
Previous C-section	270	453	478	0.8	1.2	1.2	2.9	4.4	4.8
Mood disorders (depression and bipolar disorders)	335	416	364	1.0	1.1	0.9	3.5	4.0	3.6
Normal pregnancy and/or delivery	511	323	312	1.5	0.8	0.8	5.4	3.1	3.1
Fetal distress and abnormal forces of labor	399	238	224	1.2	0.6	0.6	4.2	2.3	2.2

(continued on next page)

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

AGE GROUP AND PRINCIPAL DIAGNOSIS	NUMBER OF DISCHARGES IN THOUSANDS			PERCENT OF TOTAL DISCHARGES			PERCENT OF AGE-SPECIFIC TOTAL DISCHARGES		
	1997	2004	2005	1997	2004	2005	1997	2004	2005
45–64 years	6,496	8,546	8,660	18.7	22.1	22.1	100.0	100.0	100.0
Coronary atherosclerosis (coronary artery disease)	526	492	461	1.5	1.3	1.2	8.1	5.8	5.3
Non-specific chest pain	242	396	388	0.7	1.0	1.0	3.7	4.6	4.5
Osteoarthritis (degenerative joint disease)	105	235	272	0.3	0.6	0.7	1.6	2.7	3.1
Pneumonia (except that caused by tuberculosis or sexually transmitted disease)	199	246	271	0.6	0.6	0.7	3.1	2.9	3.1
Spondylosis, intervertebral disc disorders, other back problems (disorders of intervertebral discs and bones in spinal column)	190	249	266	0.5	0.6	0.7	2.9	2.9	3.1
65+ years	12,482	13,059	13,374	36.0	33.8	34.2	100.0	100.0	100.0
Congestive heart failure, nonhypertensive	783	820	815	2.3	2.1	2.1	6.3	6.3	6.1
Pneumonia (except that caused by tuberculosis or sexually transmitted disease)	711	713	781	2.0	1.8	2.0	5.7	5.5	5.8
Coronary atherosclerosis (coronary artery disease)	810	641	596	2.3	1.7	1.5	6.5	4.9	4.5
Cardiac dysrhythmias (irregular heart beat)	402	477	469	1.2	1.2	1.2	3.2	3.7	3.5
Osteoarthritis (degenerative joint disease)	300	405	419	0.9	1.0	1.1	2.4	2.9	3.1

* 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.
- Among individuals 65 and older, hospital stays for irregular heart beat rose 19 percent between 1997 and 2004, but stabilized between 2004 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

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

* 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.
- Males accounted for 16.1 million hospitalizations in 2005.
- 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.

Inpatient Hospital Stays for Principal Diagnosis: Average Length of Stay and Average Charges, 2005

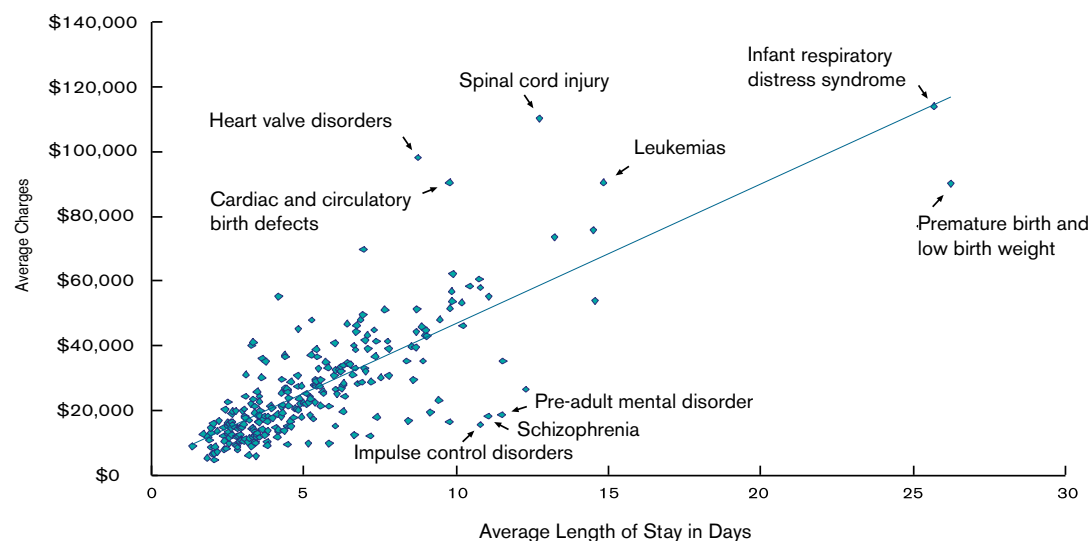


EXHIBIT 2.5 Circulatory Conditions

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

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

* 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

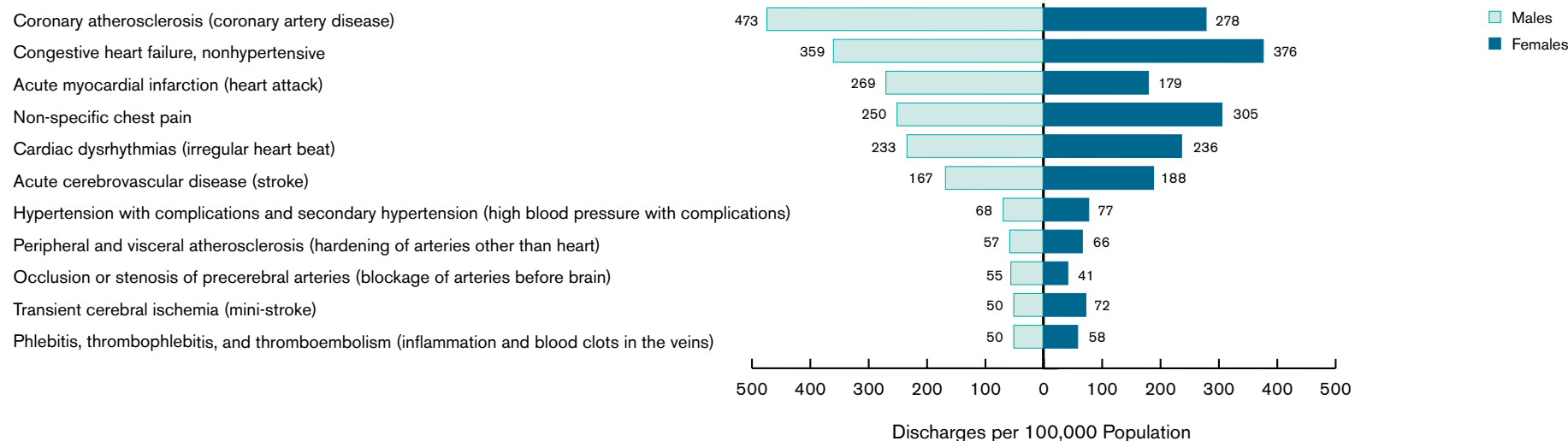


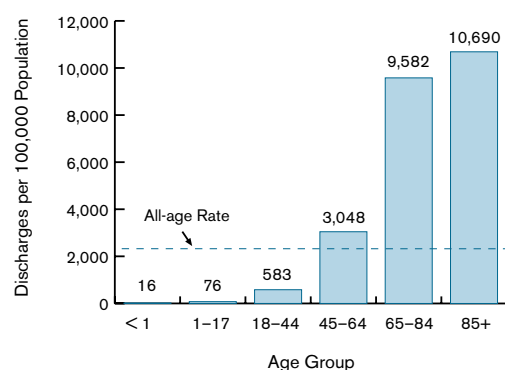
EXHIBIT 2.6 Diabetes

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.

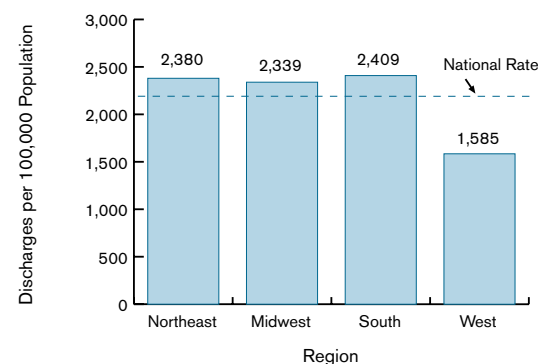
- About 17 percent of all hospitalizations in 2005 involved a diagnosis of diabetes.
 - Among individuals 65 and older, there were three times as many hospital stays with a diagnosis of diabetes compared with those ages 45–64. These older patients had almost five times the number of discharges per 100,000 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.

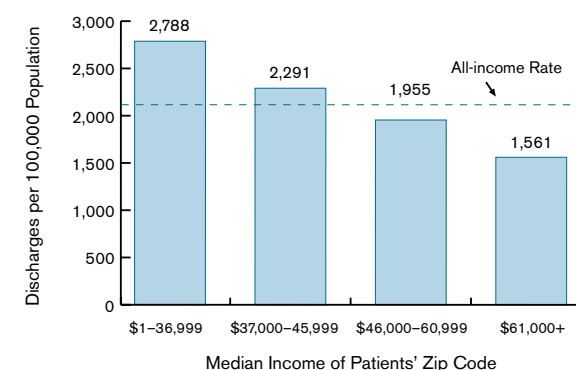
Discharge Prevalence for All-listed Diabetes by Patient Age, 2005



Discharge Prevalence for All-listed Diabetes by Region, 2005



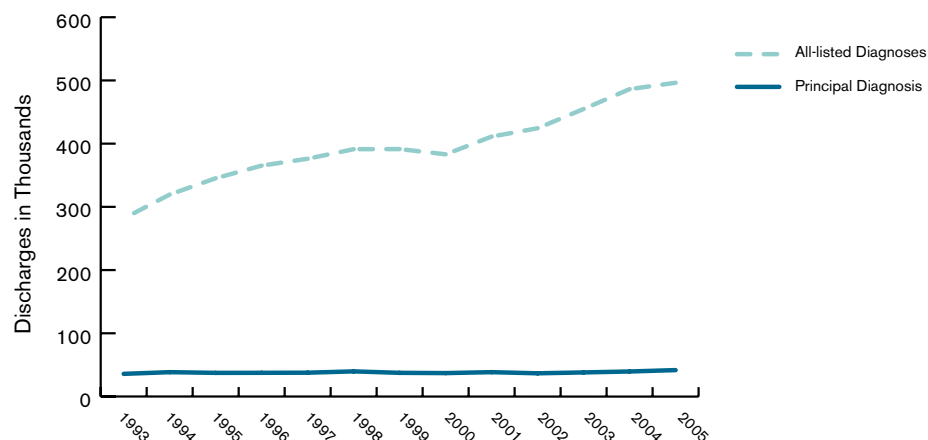
Discharge Prevalence for All-listed Diabetes by Median Income of Patients' Zip Code,* 2005



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

EXHIBIT 2.7 Pressure Sores

Number of Discharges for Pressure Sores, 1993–2005

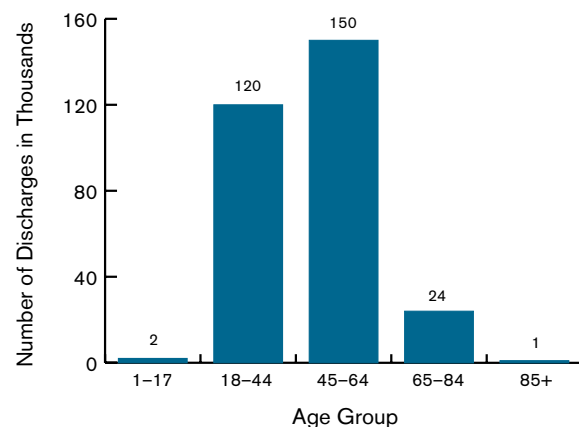


Pressure sores typically result from prolonged periods of uninterrupted pressure on the skin, soft tissue, muscle, and bone. This often occurs in wheelchair- or bedridden-patients whose positions are not changed regularly. The presence of pressure sores for patients in the hospital increases their lengths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

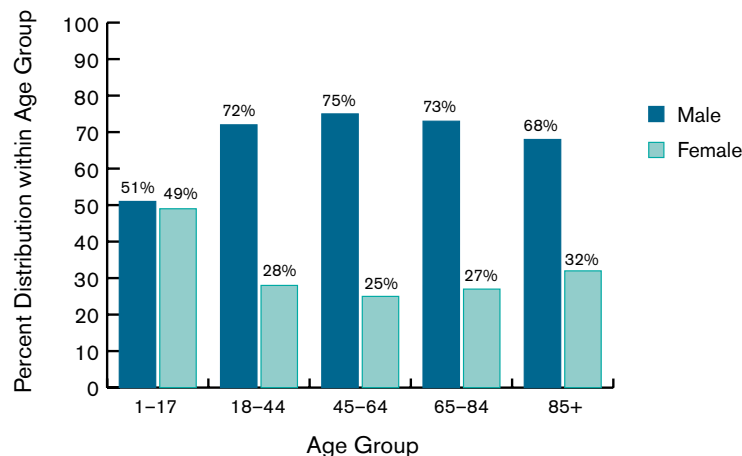
- In 2005, 496,500 hospital stays involved a diagnosis of pressure sores.
- The number of hospital stays during which pressure sores were noted (i.e., all-listed diagnoses) increased by 76 percent from 1993 to 2005.
- The number of hospital stays for which pressure sores were the principal diagnosis changed only slightly during the period—a 17 percent increase from 1993 to 2005, or 1.3 percent annually.

EXHIBIT 2.8 Alcoholism

Number of Discharges with a Principal Diagnosis of Alcoholism by Age, 2005



Distribution of Discharges with a Principal Diagnosis of Alcoholism by Gender and Age, 2005

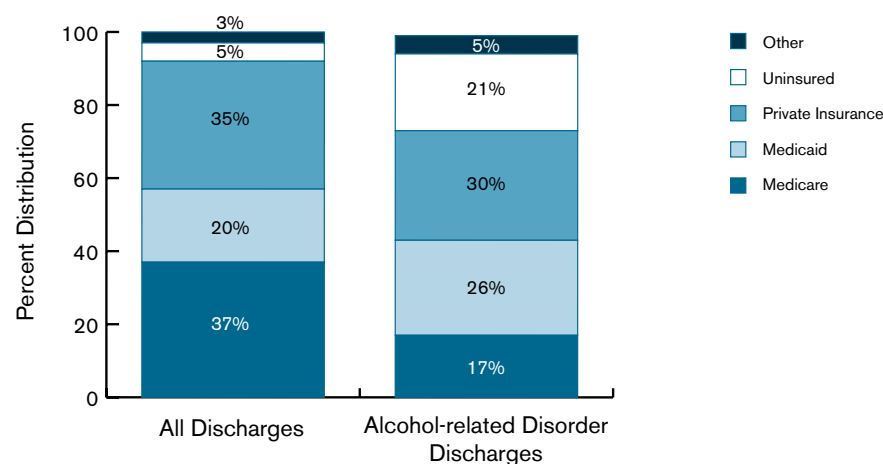


Alcohol abuse and dependence can result in illness, disability, and early death. About 14 million Americans abuse or have a dependency on alcohol. More than half of American adults have a close family member who has suffered from alcoholism.¹

- 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.

¹ U.S. Department of Health and Human Services. National Institute on Alcohol Abuse and Alcoholism. Alcohol Research & Health: Highlights from the Tenth Special Report to Congress—Health Risks and Benefits of Alcohol Consumption (Volume 24, Number 1). Washington, D.C.: U.S. Government Printing Office, 2000. Retrieved April 27, 2006, at <http://pubs.niaaa.nih.gov/publications/arh24-1/05-11.pdf>.

Distribution of Discharges with a Principal Diagnosis of Alcoholism by Expected Payer, 2005



- 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:

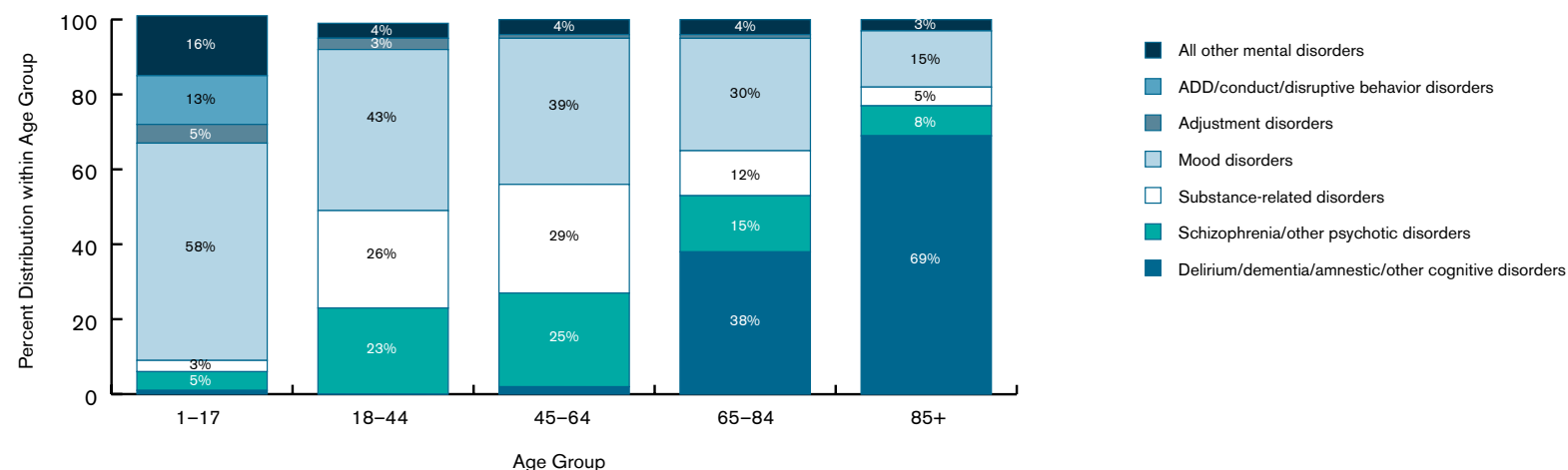
- Mood disorders (depression and bipolar disorders) accounted for 58 percent of mental disorders for which this age group was hospitalized.

- 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:

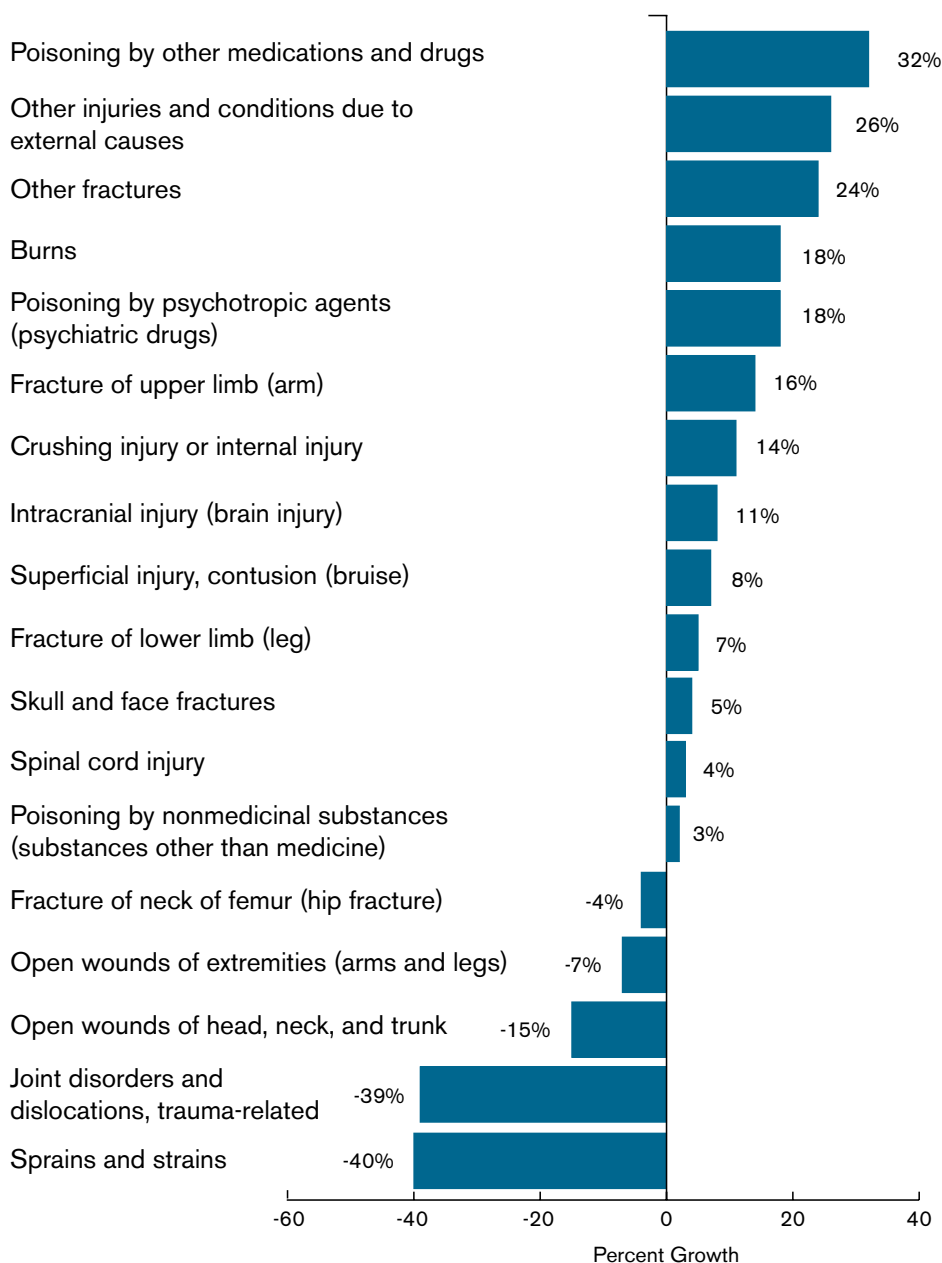
- Delirium, dementia, amnestic, and other cognitive disorders were the most frequent mental health conditions for inpatients ages 65–84 (38 percent) and ages 85 years and older (69 percent).
- Mood disorders were the second most common mental health reason for admission for these age groups: this condition 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

PRINCIPAL DIAGNOSIS	TOTAL NUMBER OF STAYS IN THOUSANDS	AVERAGE COSTS PER STAY	AVERAGE LENGTH OF STAY IN DAYS	IN-HOSPITAL DEATH RATE (PERCENT)
All injuries	1,891	\$10,300	4.6	3.1
Spinal cord injury	12	38,800	12.7	5.9
Crushing injury or internal injury	106	16,900	6.7	3.4
Intracranial injury (brain injury)	171	16,500	6.4	9.1
Burns	41	15,300	7.1	2.4
Fracture of neck of femur (hip fracture)	317	12,300	6.3	2.8
Fracture of lower limb (leg)	267	10,600	4.6	0.5
Other fractures	194	10,100	5.3	1.4
Skull and face fractures	53	9,600	3.4	0.4
Joint disorders and dislocations, trauma-related	33	9,100	3.1	0.3
Fracture of upper limb (arm)	154	8,000	3.2	0.4
Open wounds of extremities (arms and legs)	50	7,100	3.5	0.2
Other injuries and conditions due to external causes	102	7,000	3.5	3.3
Open wounds of head, neck, and trunk	38	6,900	2.6	0.6
Poisoning by nonmedicinal substances (substances other than medicine)	25	6,700	3.1	1.7
Poisoning by other medications and drugs	155	5,500	2.9	1.2
Sprains and strains	45	5,400	2.6	0.2
Superficial injury, contusion (bruise)	53	4,900	3.4	0.6
Poisoning by psychotropic agents (psychiatric drugs)	77	4,800	2.5	0.8

Growth in Number of Discharges with a Principal Diagnosis of Injuries, 1997–2005



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.

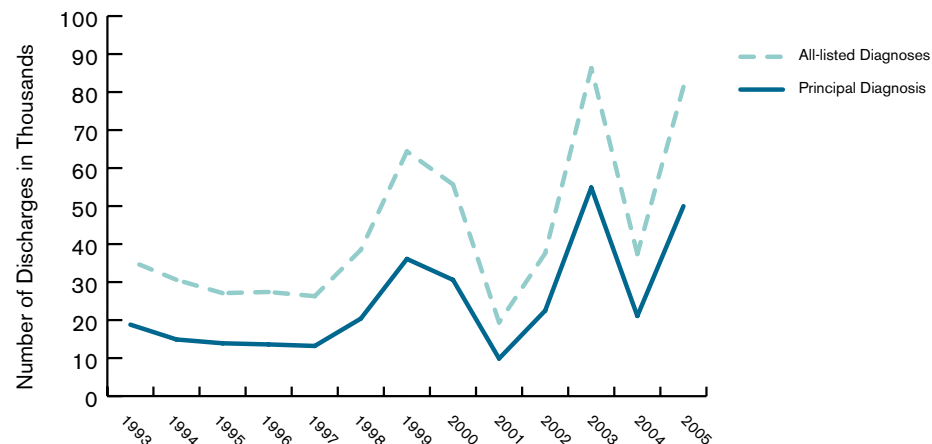
EXHIBIT 2.11 Influenza

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

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

* Newborns account for 11 percent of all hospital discharges.

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



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.² 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.

² Centers for Disease Control and Prevention. Influenza (Flu): Clinical Description and Diagnosis. August 23, 2006. <http://www.cdc.gov/flu/professionals/diagnosis/>

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

ALL-LISTED PROCEDURES	NUMBER OF STAYS WITH THE PROCEDURE IN THOUSANDS			PERCENT OF DISCHARGES WITH THE PROCEDURE			RANK		
	1997	2004	2005	1997	2004	2005	1997	2004	2005
All discharges	34,679	38,662	39,164						
All discharges with procedure	21,187	23,835	24,145	100	100	100			
Blood transfusion	1,098	2,228	2,359	5	9	10	5	1	1
Diagnostic cardiac catheterization, coronary arteriography (diagnostic procedure to explore the functioning of the heart)	1,461	1,611	1,589	7	7	7	1	2	2
Repair of obstetric laceration	1,137	1,342	1,334	5	6	6	3	3	3
Cesarean section (C-section)	800	1,271	1,304	4	5	5	9	4	4
Circumcision	1,164	1,212	1,237	5	5	5	2	7	5
Upper gastrointestinal endoscopy (procedure to view and biopsy the esophagus, stomach, and first portion of intestine through a lighted tube)	1,105	1,267	1,224	5	5	5	4	5	6
Respiratory intubation and mechanical ventilation	919	1,240	1,223	4	5	5	7	6	7
Prophylactic vaccinations and inoculations	567	849	954	3	4	4	14	10	8
Fetal monitoring	1,002	1,047	911	5	4	4	6	8	9
Artificial rupture of membranes to assist delivery	747	866	885	4	4	4	10	9	10

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.

- 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

AGE GROUP AND ALL-LISTED PROCEDURES	NUMBER OF DISCHARGES IN THOUSANDS			PERCENT OF ALL DISCHARGES			PERCENT OF AGE-SPECIFIC DISCHARGES		
	1997	2004	2005	1997	2004	2005	1997	2004	2005
All discharges, all ages [†]	34,679	38,662	39,164	100.0	100.0	100.0			
< 1 year, all discharges	4,426	4,898	4,978	12.8	12.7	12.7	100.0	100.0	100.0
Circumcision	1,159	1,206	1,232	3.3	3.1	3.1	26.2	24.6	24.7
Prophylactic vaccinations and inoculations	549	794	865	1.6	2.1	2.2	12.4	16.2	17.4
Ophthalmologic and otologic diagnosis and treatment (vision and hearing diagnosis and treatment)	*	339	471	*	0.9	1.2	*	6.9	9.5
Respiratory intubation and mechanical ventilation	163	214	196	0.5	0.6	0.5	3.7	4.4	3.9
Diagnostic spinal tap	147	104	125	0.4	0.3	0.3	3.3	2.1	2.5
1–17 years, all discharges	1,821	1,784	2,059	5.3	4.6	5.3	100.0	100.0	100.0
Appendectomy (removal of appendix)	74	87	95	0.2	0.2	0.2	4.1	4.9	4.6
Cancer chemotherapy	43	46	64	0.1	0.1	0.2	2.4	2.6	3.1
Blood transfusion	26	52	59	0.1	0.1	0.2	1.4	2.9	2.9
Repair of obstetric laceration	58	53	54	0.2	0.1	0.1	3.2	3.0	2.6
Diagnostic spinal tap	43	47	49	0.1	0.1	0.1	2.4	2.6	2.4
18–44 years, all discharges	9,444	10,323	10,041	27.2	26.7	25.6	100.0	100.0	100.0
Repair of obstetric laceration	1,079	1,287	1,278	3.1	3.3	3.3	11.4	12.5	12.7
Cesarean section (C-section)	773	1,238	1,270	2.2	3.2	3.2	8.2	12.0	12.6
Fetal monitoring	952	1,005	876	2.7	2.6	2.2	10.1	9.7	8.7
Artificial rupture of membranes to assist delivery	706	830	850	2.0	2.1	2.2	7.5	8.0	8.5
Episiotomy (surgical incision into the perineum and vagina to prevent traumatic tearing during delivery)	813	490	418	2.3	1.3	1.1	8.6	4.7	4.2

(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

AGE GROUP AND ALL-LISTED PROCEDURES	NUMBER OF DISCHARGES IN THOUSANDS			PERCENT OF ALL DISCHARGES			PERCENT OF AGE-SPECIFIC DISCHARGES		
	1997	2004	2005	1997	2004	2005	1997	2004	2005
45–64 years, all discharges	6,496	8,546	8,660	18.7	22.1	22.1	100.0	100.0	100.0
Diagnostic cardiac catheterization, coronary arteriography (diagnostic procedure to explore the functioning of the heart)	578	681	674	1.7	1.8	1.7	8.9	8.0	7.8
Blood transfusion	247	568	601	0.7	1.5	1.5	3.8	6.6	6.9
Upper gastrointestinal endoscopy (procedure to view and biopsy the esophagus, stomach and first portion of intestine through a lighted tube)	275	369	356	0.8	1.0	0.9	4.2	4.3	4.1
PTCA (percutaneous transluminal coronary angioplasty, procedure involving use of a balloon-tipped catheter to enlarge a narrowed artery)	247	344	349	0.7	0.9	0.9	3.8	4.0	4.0
Respiratory intubation and mechanical ventilation	186	312	310	0.5	0.8	0.8	2.9	3.7	3.6
65+ years, all discharges	12,484	13,059	13,374	36.0	33.8	34.2	100.0	100.0	100.0
Blood transfusion	652	1,294	1,377	1.9	3.3	3.5	5.2	9.9	10.3
Diagnostic cardiac catheterization, coronary arteriography (diagnostic procedure to explore the functioning of the heart)	773	805	789	2.2	2.1	2.0	6.2	6.2	5.9
Upper gastrointestinal endoscopy (procedure to view and biopsy the esophagus, stomach and first portion of intestine through a lighted tube)	653	689	666	1.9	1.8	1.7	5.2	5.3	5.0
Respiratory intubation and mechanical ventilation	431	516	524	1.2	1.3	1.3	3.5	4.0	3.9
PTCA (percutaneous transluminal coronary angioplasty, procedure involving use of a balloon-tipped catheter to enlarge a narrowed artery)	299	405	409	0.9	1.0	1.0	2.4	3.1	3.1

* 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.

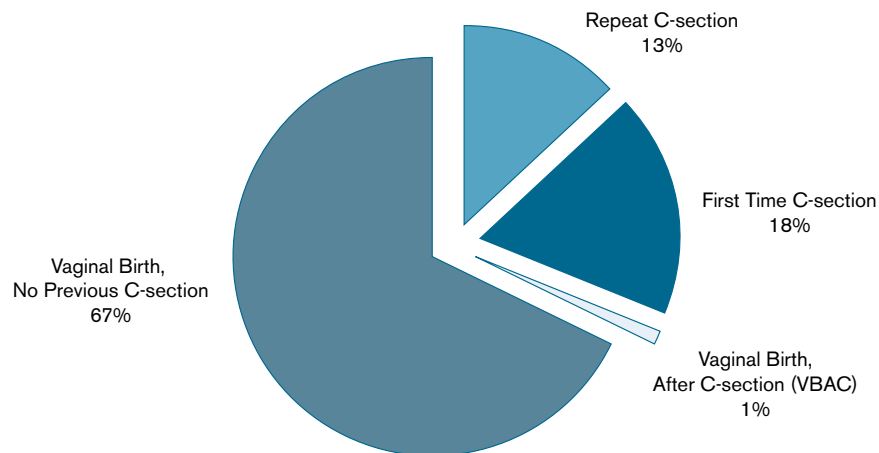
The most frequent procedures usually varied by age group, except for individuals ages 45–64 and ages 65 and above: these two groups had in common the five most frequently performed procedures.

- 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.

EXHIBIT 3.3 Childbirth

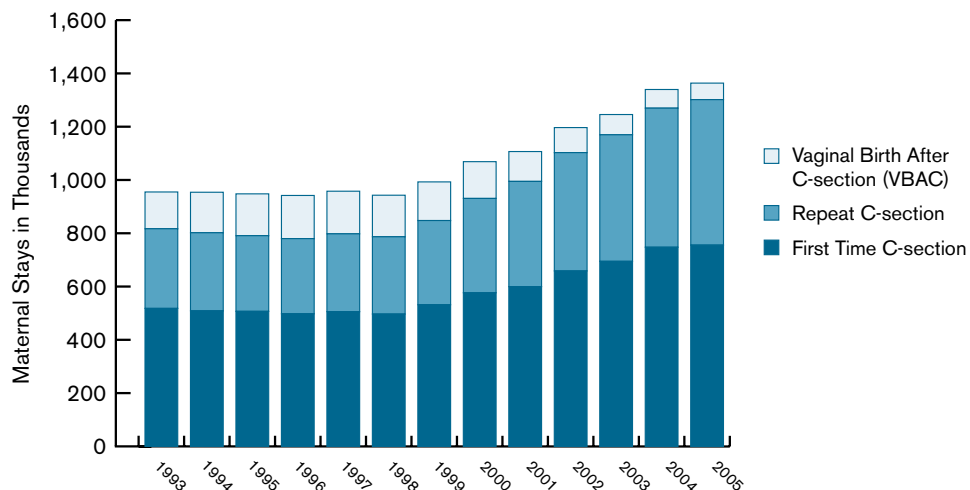
Percent of Childbirth Stays by Birth Type, 2005



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.

Number of Maternal Stays for C-Section and VBAC, 1993–2005



Percent of Maternal Stays with Deliveries by C-section, 1993–2005

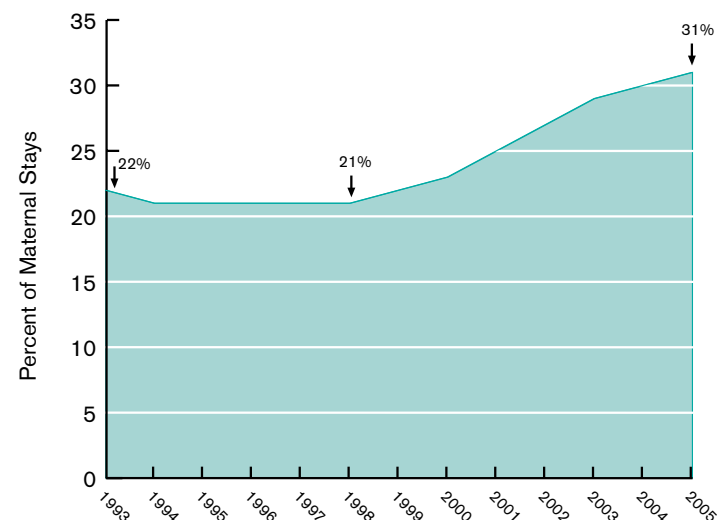
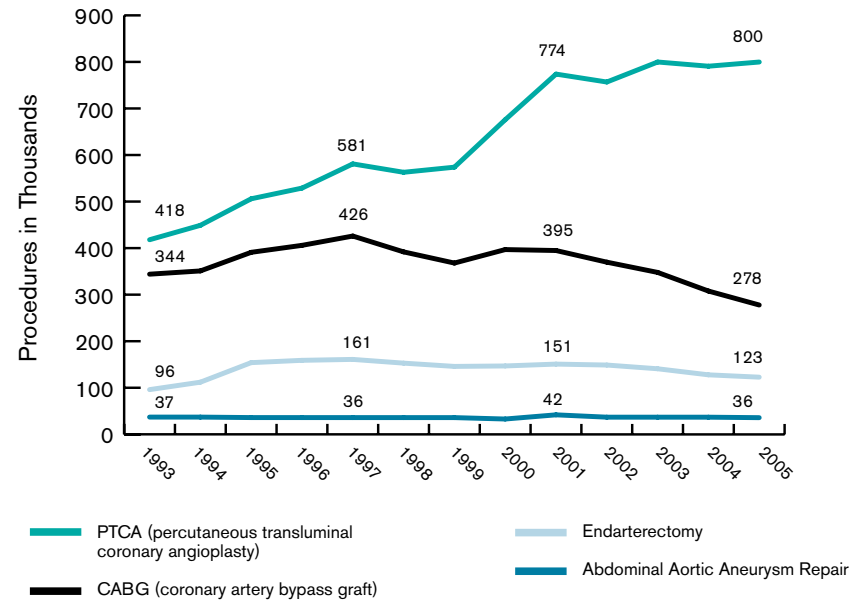


EXHIBIT 3.4 Cardiovascular Procedures

Number of Inpatient Hospital Cardiovascular Procedures, 1993–2005

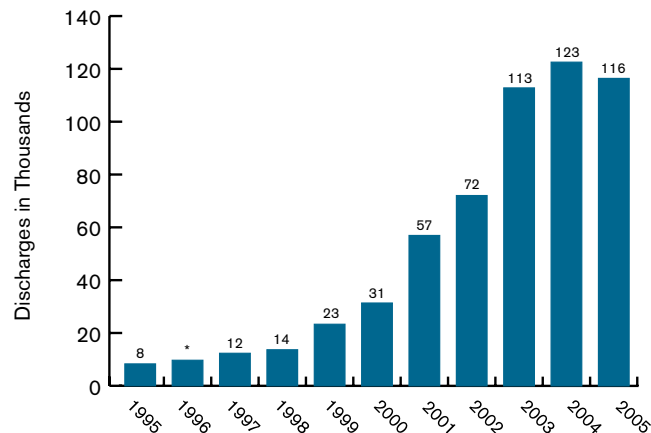


Cardiovascular procedures to treat heart disease and stroke are the most common reasons for admission to the hospital for both men and women, excluding pregnancy and childbirth.

- 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.
- Two other high-volume cardiovascular procedures, endarterectomy for 1995 through 2005 and abdominal aortic aneurysm repair for 1993 through 2005, remained fairly stable.

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.

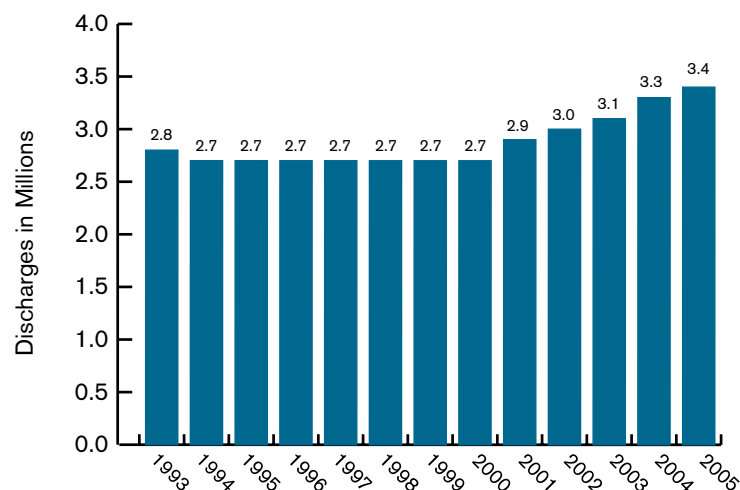
Bariatric surgery reduces the size of the stomach to achieve weight loss for people who are morbidly obese. It may be used to control the effects of serious medical conditions, such as diabetes.

- 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

¹ Bradley DW, Sharma BK. Centers of Excellence in Bariatric Surgery: design, implementation, and one-year outcomes. *Surgery for Obesity and Related Diseases*. 2006 Sep-Oct;2(5):513-7; Nguyen NT, Paya M, Stevens CM, Mavandadi S, Zainabadi K, Wilson SE. The relationship between hospital volume and outcome in bariatric surgery at academic medical centers. *Annals of Surgery*. 2004 Oct;240(4):586-93.

EXHIBIT 3.6 Orthopedic Procedures

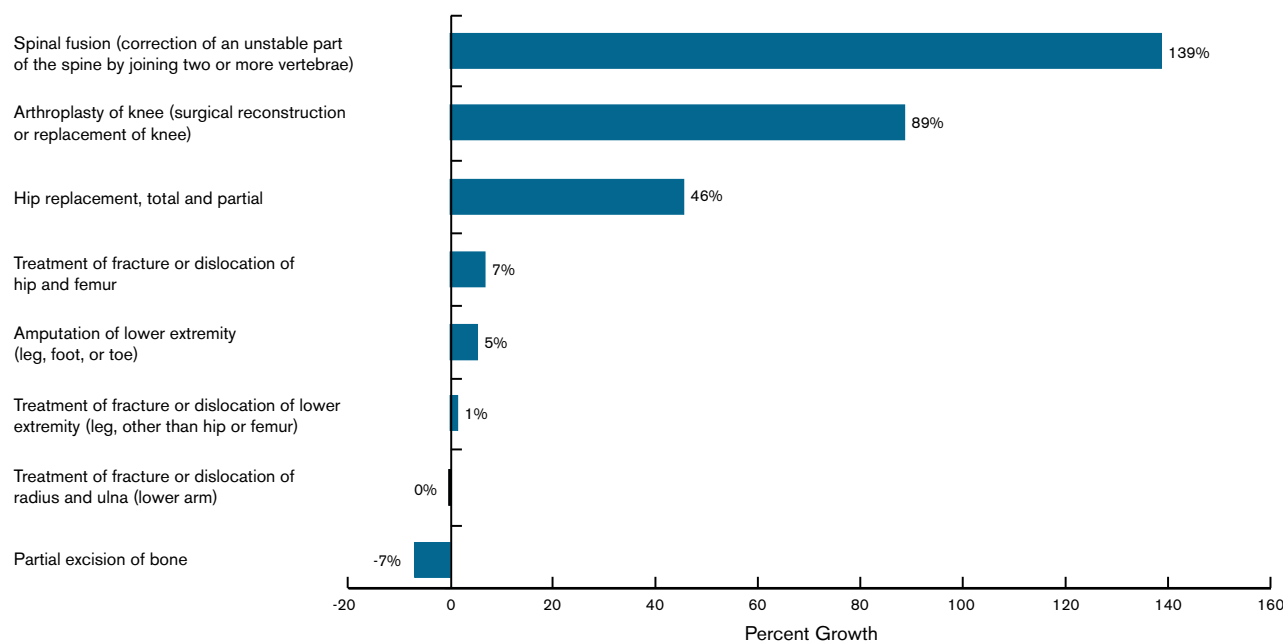
Number of Discharges with Any Musculoskeletal Procedures, 1993–2005



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.

Growth in Discharges with Procedures on the Musculoskeletal System, 1993–2005



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 pre-dominant 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.

- Spinal fusion was the second most common procedure, at 15 percent of orthopedic discharges in this age group.

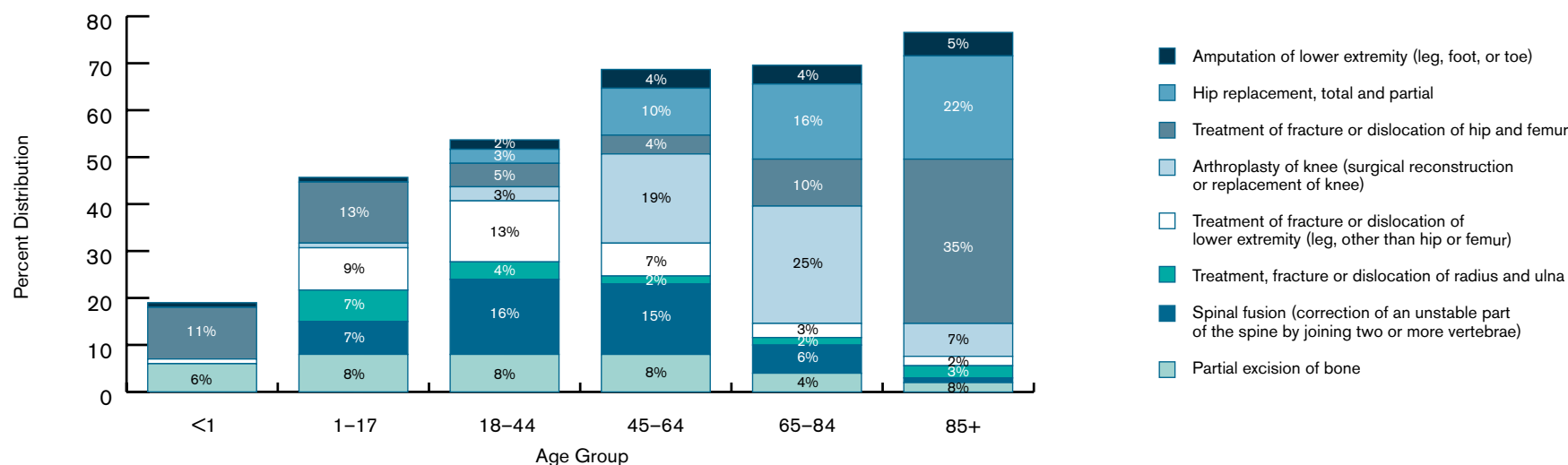
For patients 65–84 years of age:

- Arthroplasty of the knee was the most frequent procedure, accounting for one-quarter of all orthopedic discharges.
- Hip replacement was the second most common orthopedic procedure for this age group, while hip or femur repair ranked third.

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



* 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

Top 20 Inpatient Principal Diagnoses with the Highest Aggregate Costs, 1997, 2004, and 2005, Ordered by Rank for 2005

PRINCIPAL DIAGNOSIS	TOTAL INFLATION-ADJUSTED* HOSPITAL COSTS IN BILLIONS			PERCENT OF TOTAL COSTS			RANK		
	1997	2004	2005	1997	2004	2005	1997	2004	2005
All diagnoses	\$209.2	\$303.5	\$310.9	100	100	100			
Coronary atherosclerosis (coronary artery disease)	14.0	16.3	15.5	7	5	5	1	1	1
Acute myocardial infarction (heart attack)	8.7	11.6	10.9	4	4	4	2	2	2
Pneumonia (except that caused by tuberculosis or sexually transmitted disease)	8.5	10.1	10.7	4	3	3	3	5	3
Congestive heart failure, nonhypertensive	6.4	10.7	10.5	3	4	3	5	3	4
Liveborn (newborn infant)	7.6	10.6	9.8	4	3	3	4	4	5
Osteoarthritis (degenerative joint disease)	4.5	8.7	9.7	2	3	3	8	6	6
Complication of medical device, implant or graft	5.3	8.4	8.9	3	3	3	6	7	7
Septicemia (blood infection)	3.9	6.7	8.4	2	2	3	9	8	8
Spondylosis, intervertebral disc disorders, other back problems (disorders of intervertebral discs and bones on spinal column)	3.3	6.5	7.1	2	2	2	12	9	9
Adult respiratory failure, insufficiency, or arrest	3.2	5.4	7.0	2	2	2	15	12	10
Cardiac dysrhythmias (irregular heart beat)	3.4	6.2	6.0	2	2	2	11	11	11
Acute cerebrovascular disease (stroke)	5.2	6.2	5.9	2	2	2	7	10	12
Rehabilitation care, fitting of prostheses, and adjustment of devices	3.6	5.1	5.1	2	2	2	10	13	13
Complications of surgical procedures or medical care	2.8	4.6	4.7	1	2	2	18	14	14
Chronic obstructive pulmonary disease and bronchiectasis (chronic obstructive lung disease)	3.2	3.8	4.2	2	1	1	14	17	15
Biliary tract disease (gall bladder disease)	3.2	4.1	4.1	2	1	1	13	15	16
Diabetes mellitus with complications	2.6	4.0	3.9	1	1	1	19	16	17
Fracture of neck of femur (hip fracture)	3.0	3.8	3.9	1	1	1	16	18	18
Non-specific chest pain	1.6	3.6	3.5	1	1	1	36	20	19
Mood disorders (depression and bipolar disorders)	3.0	3.6	3.4	1	1	1	17	19	20
Total for top 20 conditions	96.7	140.0	142.9	46	46	46			

* 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.

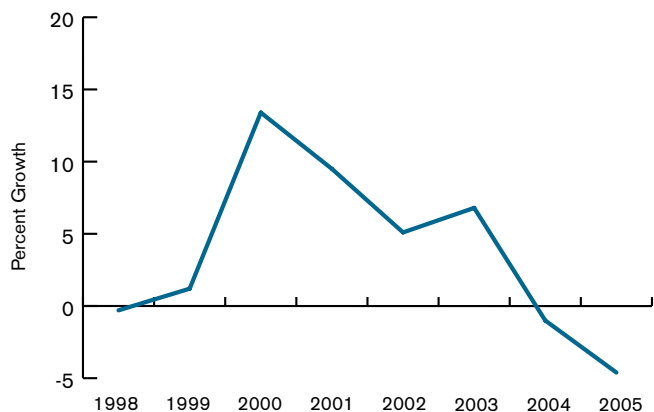
Increasing costs:

- 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.

Growth in Inflation-adjusted Hospitalization Costs for Six of the Most Costly Cardiovascular Conditions,* 1998–2005



*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)

- 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.

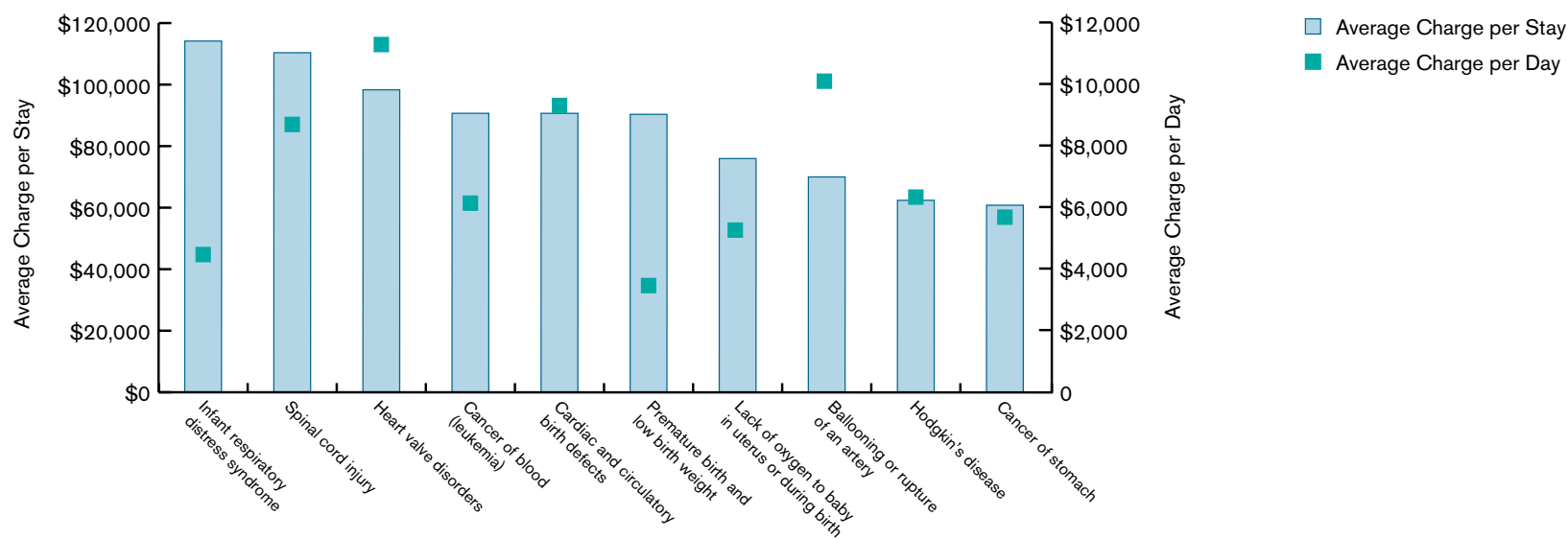
EXHIBIT 4.2 Average Charges for the Most Frequent Conditions

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.

Average Charge per Stay and per Day for the Top 10 Principal Diagnoses with Highest Charges per Stay, 2005



- 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.

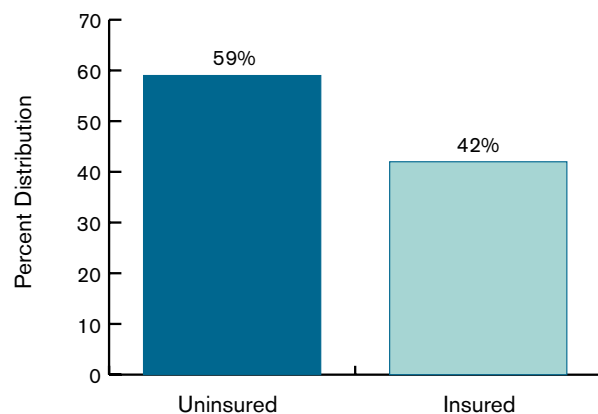
SECTION 5

SPECIAL TOPIC

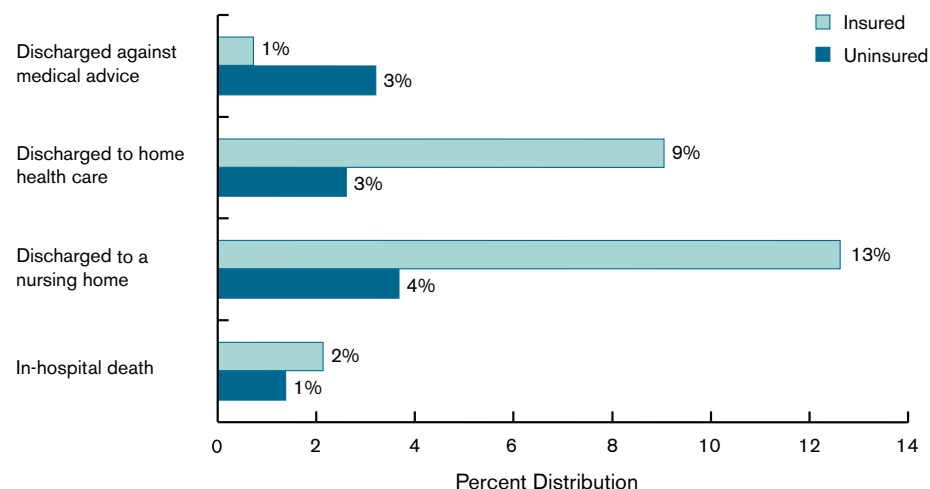
EXHIBIT 5.1 Uninsured Inpatient Hospital Stays: Admission Source and Discharge Status

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

Share of Uninsured and Insured Stays Admitted through the Emergency Department, 2005



Share of Uninsured and Insured Stays by Discharge Status, 2005



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.

SOURCES AND METHODS

Unit of Analysis

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

Coding Diagnoses and Procedures

The diagnoses and procedures associated with an inpatient hospitalization can be defined using several different medical condition classification systems. The following four systems are used within this report to identify specific diagnoses and procedures: International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM), Clinical Classifications Software (CCS), Diagnosis Related Groups (DRGs), and Major Diagnostic Categories (MDCs).

The most detailed system is the ICD-9-CM that contains over 12,000 detailed diagnoses and 3,500 detailed procedures. Each discharge record in the NIS is associated with one or more ICD-9-CM diagnosis code(s) and may contain one or more ICD-9-CM procedure code(s) if a procedure was performed during that hospitalization.

To make the number of ICD-9-CM diagnoses and procedures more manageable, AHRQ has designed the CCS tool that groups ICD-9-CM codes into 260 diagnostic and 231 procedure categories. This software aggregates similar diagnoses or procedures into clinically meaningful categories. More information on CCS can be found online (www.ahrq.gov/data/hcup; <http://www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp>). CCS codes are used extensively in this report to define groups of diagnoses and procedures for analysis. The CCS codes allow the reader to quickly and easily recognize patterns and trends in broad categories of hospital utilization.

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)

- 116 Aortic and peripheral arterial embolism or thrombosis (arterial blood clots)
- 117 Other circulatory disease (other blood vessel disease)
- 119 Varicose veins of lower extremity (varicose veins in leg)
- 120 Hemorrhoids
- 121 Other diseases of veins and lymphatics (lymph system)

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

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 gastropasty
- 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:

<http://www.nlm.nih.gov/medlineplus/mpplusdictionary.html>

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.

FOR MORE INFORMATION

HCUP Background Information

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

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

Design of the HCUP Nationwide Inpatient Sample, 2005. Online. June 13, 2007. U.S. Agency for Healthcare Research and Quality. http://www.hcup-us.ahrq.gov/db/nation/nis/reports/NIS_2005_Design_Report.pdf

Houchens R, Elixhauser A. *Final Report on Calculating Nationwide Inpatient Sample (NIS) Variances, 2001.* HCUP Methods Series Report #2003-2. Online. June 2005 (revised June 6, 2005). U.S. Agency for Healthcare Research and Quality. <http://www.hcup-us.ahrq.gov/reports/CalculatingNISVariances200106092005.pdf>

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

HCUP Statistics and Website

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

Technical Assistance

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