

STATISTICAL BRIEF #103

December 2010

Hospital Utilization among Oldest Adults, 2008

Lauren Wier, M.P.H., Anne Pfuntner, B.U.E.P., and Claudia Steiner, M.D., M.P.H.

Introduction

Between 2010 and 2030, the U.S. population age 65 and older is projected to grow by 79 percent from 40 million to 72 million, while the total U.S. population will grow by 20 percent.¹ By 2030, about one in five Americans will be over 65, up from one in eight Americans in 2010. Among the elderly, the population 75 and older will increase by 77 percent between 2010 and 2030, accounting for nearly half of the growth in the elderly population.

The growth of the elderly population has many implications for the U.S. health care system, including a higher demand for health services contributing to ever increasing health care costs. Adults 65 and older accounted for about 34 percent of personal health care spending in 2004,² even though they comprised only 12 percent of the population.¹ Health care costs for patients over 65 are three to five times higher than costs for patients under 65. As the elderly population grows, these higher costs are projected to result in a 25 percent increase in the United States' health care spending by 2030.³ This growth has implications for spending through federal programs, such as Medicare, which accounted for \$444 billion, or 23 percent of health care spending in 2008⁴ and 13 percent of the U.S. federal budget.⁵

¹ Calculated using the 2008 National Population Projections from the U.S. Census Bureau. Projected Population by Single Year of Age, Sex, Race, and Hispanic Origin for the U.S.: July 1, 2000 to July 1, 2050. Released 2008. <http://www.census.gov/population/www/projections/downloadablefiles.html>

² National Health Expenditure Accounts. <http://www.cms.gov/NationalHealthExpendData/downloads/2004-age-tables.pdf>

³ Centers for Disease Control and Prevention and The Merck Company Foundation. The State of Aging and Health in America 2007. Whitehouse Station, NJ: The Merck Company Foundation; 2007.

⁴ Medicare Payment Advisory Commission. A Data Book: Healthcare Spending and the Medicare Program. June 2010. <http://www.medpac.gov/documents/Jun10DataBookEntireReport.pdf>

⁵ Calculated using the Budget of the United States Government, Fiscal Year 2008, Table S-7. Budget Summary by Category. Office of Management and Budget, Washington, D.C. 2007. <http://www.gpoaccess.gov/usbudget/fy08/browse.html>

Highlights

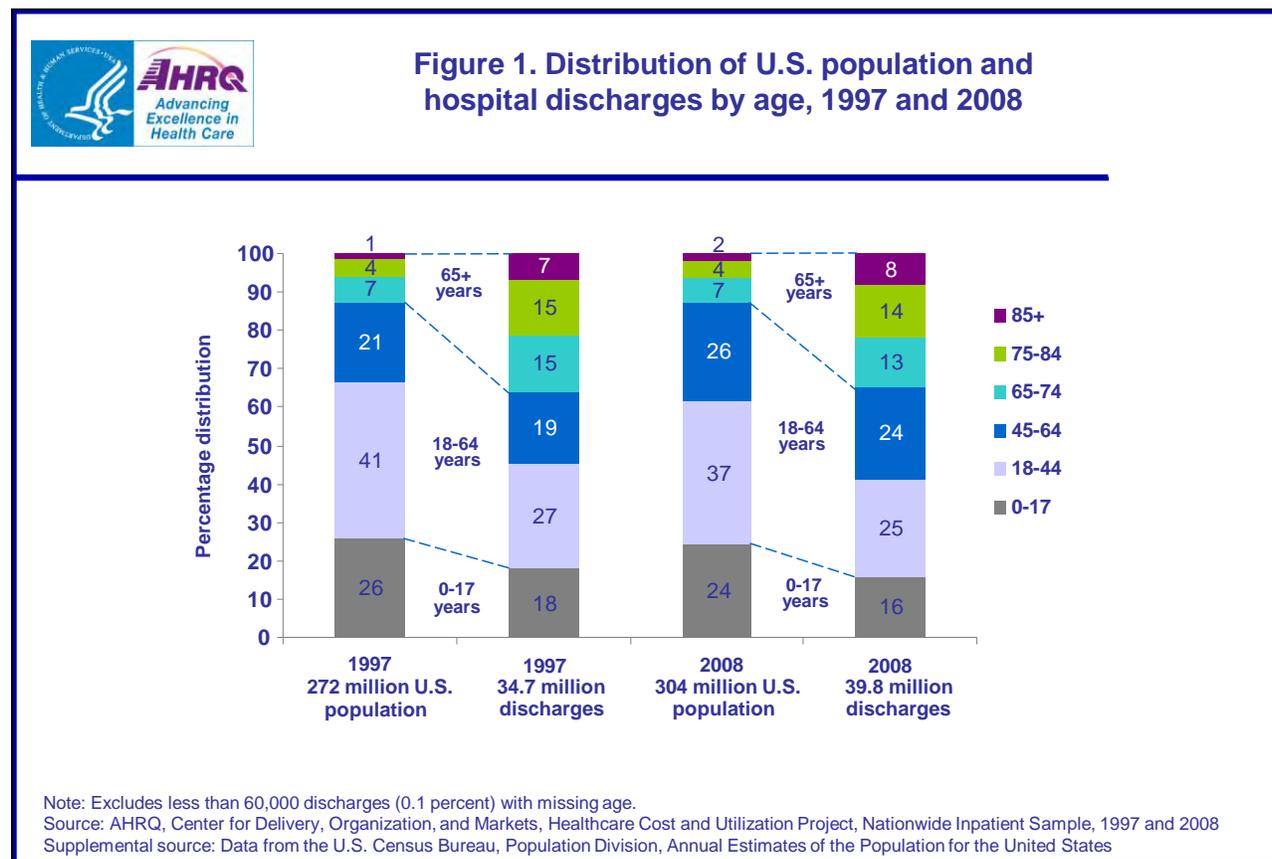
- Oldest adults made up a larger share of hospital discharges relative to their population size. In 2008, adults 85 and older accounted for only 1.8 percent of the population but 8.0 percent of all discharges; 75–84 year olds comprised 4.3 percent of the population but accounted for 13.8 percent of all discharges.
- Adults 85+ accounted for a relatively small share of hospital discharges (8 percent overall), but were more than twice as likely to be hospitalized as 65–74 year olds (577 versus 264 stays per 1,000 population).
- Increasing age was associated with a greater proportion of stays discharged to long-term care facilities, such as nursing homes. Indeed, patients 85 and older were about 2.5 times more likely to be discharged to long-term care than 65–74 year olds.
- Congestive heart failure was the most common reason for hospitalization among 75–84 year olds (23.2 stays per 1,000 population) and those 85+ (44.4 stays per 1,000 population). Other common conditions for those 75 and older were pneumonia, cardiac dysrhythmias, and septicemia.
- Blood transfusion was, by far, the most common procedure performed on any patient age 65 and older. Compared to 65–74 year olds, transfusion rates were 1.7 times higher for 75–84 year olds and 2.4 times higher for those 85+.

This Statistical Brief presents data from the Healthcare Cost and Utilization Project (HCUP) comparing patient characteristics and hospital utilization among the oldest adults, ages 75–84 and 85 plus, to those adults ages 65–74. In addition, this report examines the diagnoses most often associated with elderly hospitalizations and the procedures that are performed most frequently during these stays. All differences between estimates noted in the text are statistically significant at the 0.05 level or better.

Findings

In 2008, there were more than 14 million hospital stays among adults ages 65 years and older. These hospitalizations accounted for more than one-third of all U.S. community hospital stays and about 14 percent (\$157.7 billion) of total hospital costs.

Figure 1 shows the distribution of the U.S. population and hospital discharges by age in 1997 and 2008. In both years, adults 65 and older made up a larger share of hospital discharges (37 and 35 percent, respectively) relative to their population size (12 and 13 percent, respectively). This pattern was more pronounced with increasing age: in 2008, adults 85 and older accounted for only 1.8 percent of the population but 8.0 percent of all discharges—over four times higher. Adults 75–84 years old comprised 4.3 percent of the population but accounted for triple the proportion of all discharges (13.8 percent). In contrast, 65–74 year olds comprised 6.6 percent of the total population but accounted for twice the proportion of all discharges (13.2 percent). Adults 75–84 years old comprised 4.3 percent of the population but accounted for triple the proportion of all discharges (13.8 percent). In contrast, 65–74 year olds comprised 6.6 percent of the total population but accounted for twice the proportion of all discharges (13.2 percent).



Characteristics of hospital stays among the older elderly

Table 1 compares hospital utilization and patient characteristics of the oldest adults 75–84 and 85+ to patients age 65–74, in 2008. Adults 85+ accounted for a relatively small share of hospital discharges (8 percent overall), but were more than twice as likely to be hospitalized as 65–74 year olds (577 versus 264 stays per 1,000 population). Adults 75–84 years old had a 1.5 times higher rate of hospitalization relative to 65–74 year olds (418 versus 264 stays per 1,000 population, respectively).

Stays for patients 75–84 and 85+ were slightly longer (5.6 days) than for 65–74 year olds (5.3 days). The average cost per stay for adults 85+ was about \$3,000 less than the average cost of a stay for 65–74 year olds (\$9,400 versus \$12,400, respectively).

Table 1. Characteristics of hospital stays among patients ages 75–84 and 85+ compared to patients ages 65–74, 2008

	65–74 years	75–84 years	85+ years
Total number of discharges	5,271,200	5,489,500‡	3,195,600
Percentage of all discharges in U.S. community hospitals	13.2%	13.8%	8.0%
Rate of hospitalization per 1,000 population*	264.0	418.2	576.7
Utilization characteristics			
Mean length of stay, days	5.3	5.6	5.6
Mean hospital costs	\$12,400	\$11,400	\$9,400
Aggregate national costs, billions	\$65.2	\$62.3‡	\$30.2
Percentage of aggregate costs	17.9%	17.1%	8.3%
Percentage of elective admissions	28.5%	21.0%	12.5%
Patient characteristics			
Gender (rate per 1,000 population*)			
Male	277.9	442.7	615.1
Female	252.1	401.0	558.7
Community-level income (rate per 1,000 population*)			
Quartile 1 (poorest)	297.7	416.1	529.8
Quartile 2	267.6	407.7	544.0
Quartile 3	243.8	398.0	558.5
Quartile 4 (wealthiest)	221.9	424.3	665.5
Patient residence (rate per 1,000 population*)			
Large urban core	259.0	431.4	610.5
Large urban fringe (suburbs)	230.0	350.4	470.2
Small urban	300.9	440.2	573.5
Non-urban	274.8	404.4	542.9
Region (rate per 1,000 population*)			
Northeast	255.4	428.2	619.3
Midwest	284.7	457.5	608.6
South	283.8	431.3	579.1
West	215.6	342.7	491.3

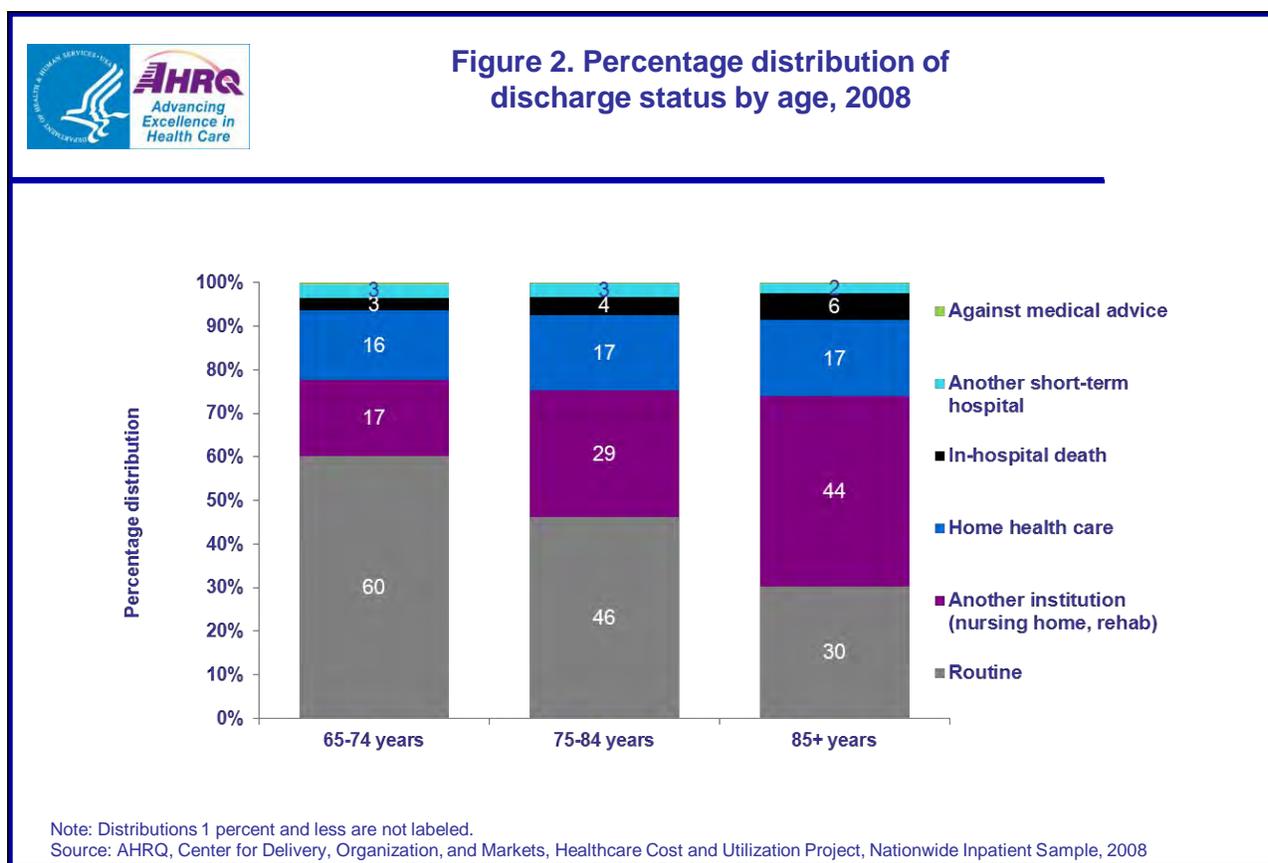
‡ Values are not statistically different from values for 65–74 age group at p<0.05.

* Denominator data for rates were based on Claritas Population Estimates, 2008.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2008

Across all three age groups, the rate of hospitalization was about 10 percent higher for males than females. Hospitalization rates for both genders increased with age. Among patients 75–84 and 85 and older, hospitalization rates were higher in the wealthiest communities (424 and 666 stays per 1,000 population, respectively). Across all three age groups, hospitalization rates were lower in the suburbs and in the western region of the U.S.

As age increased, the percentage of routine discharges decreased and discharges to long term care (e.g., nursing homes and rehab) increased (figure 2). Indeed, patients 85 and older were about 2.5 times more likely and patients 75–84 were about 1.7 times more likely to be discharged to long-term care than 65–74 year olds. In-hospital mortality was higher among patients 85 and older (6.2 percent) and 75–84 years old (4.2 percent) compared to stays for 65–74 year olds (2.9 percent).



Most frequent reasons for hospital stays

Table 2 highlights the 20 most frequent health conditions for which patients 75–84 and 85+ were hospitalized compared with 65–74 year olds.

Table 2. Most common principal diagnoses among hospitalized patients ages 75–84 and 85+ years, 2008

75–84 years			85+ years		
Top 20 principal diagnoses, CCS category	Rate per 1,000 population*	Relative rate**	Top 20 principal diagnoses, CCS category	Rate per 1,000 population*	Relative rate**
Congestive heart failure	23.2	2.2	Congestive heart failure	44.4	4.3
Pneumonia	19.7	2.1	Pneumonia	35.9	3.8
Irregular heart beat (cardiac dysrhythmias)	17.3	1.8	Blood infection (septicemia)	26.8	3.4
Blood infection (septicemia)	15.5	2.0	Urinary tract infections	24.3	6.0
Osteoarthritis	14.7‡	1.0	Irregular heart beat (cardiac dysrhythmias)	22.6	2.4
Chronic obstructive pulmonary disease and bronchiectasis	14.6	1.4	Fracture of hip	22.4	10.2
Coronary atherosclerosis and other heart disease	14.3‡	1.1	Stroke (acute cerebrovascular disease)	19.3	3.4
Stroke (acute cerebrovascular disease)	11.7	2.0	Heart attack (acute myocardial infarction)	16.8	2.4
Urinary tract infections	11.0	2.7	Fluid and electrolyte disorders	15.5	3.9
Heart attack (acute myocardial infarction)	10.9	1.6	Acute and unspecified renal failure	15.0	3.4
Rehabilitation care, fitting of prostheses, and adjustment of devices	9.4	2.0	Chronic obstructive pulmonary disease and bronchiectasis	13.6	1.3
Complication of device; implant or graft	9.2	1.3	Aspiration pneumonia	12.4	8.9
Acute and unspecified renal failure	8.7	2.0	Rehabilitation care, fitting of prostheses, and adjustment of devices	12.2	2.6
Fracture of hip	8.3	3.8	Gastrointestinal hemorrhage	11.7	3.3
Fluid and electrolyte disorders	8.3	2.1	Syncope	9.4	3.8
Respiratory failure	7.7	1.4	Respiratory failure	9.2	1.7
Nonspecific chest pain	7.2	1.2	Coronary atherosclerosis and other heart disease	8.3	0.6
Gastrointestinal hemorrhage	7.0	2.0	Delirium, dementia, and amnesic and other cognitive disorders	8.1	7.2
Back problems (disorders of intervertebral discs and bones in spinal column)	6.2‡	1.0	Intestinal obstruction without hernia	8.1	2.5
Complications of surgical procedures or medical care	5.7	1.2	Skin and subcutaneous tissue infections	8.0	2.3

* Denominator data for rates were based on Claritas Population Estimates, 2008.

** Relative to 65–74 age group.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2008

Congestive heart failure (CHF) was the most common reason for hospitalization among 75–84 year olds (23.2 stays per 1,000 population) and those 85+ (44.4 stays per 1,000 population); these rates of hospitalization were more than double and quadruple the rate of patients 65–74 years old. Of the top 20

diagnoses among patients 75–84 years old, six were cardiovascular conditions: CHF, cardiac dysrhythmias, coronary atherosclerosis, acute cerebrovascular disease, acute myocardial infarction, and nonspecific chest pain. Together these conditions accounted for nearly 100 stays for every 1,000 adults 75–84 years old.

Infections were also common reasons for hospitalization. Pneumonia was the second most common reason for hospitalization among the 75–84 year olds and those over 85, accounting for 19.7 and 35.9 stays per 1,000 population, respectively. Again, these rates were two and four times higher than for patients 65–74 years old. Among 75–84 year olds, blood infection occurred in 15.5 stays per 1,000 population, which was twice the hospitalization rate for 65–74 year olds. For those 85+, the rate of hospitalization was nearly 3.5 times higher than among those 65–74 years old.

Hospitalization for hip fracture was one of the top ten conditions for the 85+ year olds. The hospitalization rate for hip fractures was ten times higher for those 85 and older (22.4 stays per 1,000 population) than for 65–74 year olds. Among patients 85+, delirium and dementia occurred in 8.1 stays per 1,000 population, which was more than seven times the hospitalization rate for 65–74 year olds.

Most frequent procedures performed during hospital stays

Table 3 shows the most frequent procedures performed during hospitalization among 75–84 year olds and patients 85 and older compared to the rates for these procedures with patients age 65–74.

Table 3. Most common all-listed procedures among hospitalized patients ages 75–84 and 85+ years, 2008

75–84 years			85+ years		
Top 20 all-listed procedures, CCS category	Rate per 1,000 population*	Relative rate**	Top 20 all-listed procedures, CCS category	Rate per 1,000 population*	Relative rate**
Blood transfusion	49.1	1.7	Blood transfusion	67.3	2.4
Diagnostic cardiac catheterization, coronary arteriography	22.6	1.2	Upper GI endoscopy	25.8	2.2
Upper GI endoscopy	20.7	1.7	Respiratory intubation and mechanical ventilation	22.1	1.6
Respiratory intubation and mechanical ventilation	20.0	1.5	Diagnostic cardiac catheterization, coronary arteriography	17.4	1.9
Diagnostic ultrasound of heart (echocardiogram)	14.5	1.6	Treatment of fracture or dislocation of hip and femur	16.1	7.4
Hemodialysis	11.3	1.2	Colonoscopy and biopsy	12.8	2.2
Percutaneous transluminal coronary angioplasty (PTCA)	11.2‡	1.1	Diagnostic bronchoscopy and biopsy of bronchus	11.9‡	0.6
Arthroplasty knee	10.6‡	0.9	Insertion, revision, replacement, removal of cardiac pacemaker or cardioverter/defibrillator	11.6	2.6
Colonoscopy and biopsy	10.5	1.8	Hip replacement, total and partial	11.0	2.1
Insertion, revision, replacement, removal of cardiac pacemaker or cardioverter/defibrillator	9.6	2.1	Incision of lining of lungs (pleura), removal of fluid through a needle, chest drainage	9.8	2.2

* Denominator data for rates were based on Claritas Population Estimates, 2008.

** Relative to 65–74 age group.

Table 3. Most common all-listed procedures among hospitalized patients ages 75–84 and 85+ years, 2008 (continued)

75–84 years			85+ years		
Top 20 all-listed procedures, CCS category	Rate per 1,000 population*	Relative rate**	Top 20 all-listed procedures, CCS category	Rate per 1,000 population*	Relative rate**
Hip replacement, total and partial	8.5	1.6	Tube feeding (intravenous or intestinal)	9.8	2.2
Incision of lining of lungs (pleura), removal of fluid through a needle, chest drainage	7.7	1.7	Physical therapy exercises, manipulation, and other procedures	9.5	2.9
Tube feeding (intravenous or intestinal)	7.2	1.6	CT (CAT) scan of head	8.8	3.7
Treatment of fracture or dislocation of hip and femur	6.5	3.0	Hemodialysis	8.1	0.9
Physical therapy exercises, manipulation, and other procedures	6.2	1.9	Indwelling catheter	7.9	3.9
Diagnostic bronchoscopy and biopsy of bronchus	5.7	1.3	Gastronomy, temporary and permanent	7.5	3.3
Arterio- or venogram (not heart and head)	5.7	1.4	Percutaneous transluminal coronary angioplasty (PTCA)	6.0	0.6
Colorectal resection	5.1	1.3	Arterio- or venogram (not heart and head)	4.9†	1.2
CT (CAT) scan of head	4.9	2.1	Conversion of cardiac rhythm	4.6	1.5
Contrast aortogram	4.8	1.4	Colorectal resection	4.3	1.1

* Denominator data for rates were based on Claritas Population Estimates, 2008.

** Relative to 65–74 age group.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2008

Blood transfusion was, by far, the most common procedure performed on any patient 75–84 and 85+ (49.1 and 67.3 procedures per 1,000 population, respectively). Seven of the top twenty most frequent procedures among 75–84 year olds were diagnostic: cardiac catheterization, upper gastrointestinal endoscopy, echocardiogram, colonoscopy and biopsy, bronchoscopy, arteriogram or venogram, and CT (CAT) scan of head. Relative to 65–74 year olds, the rate of head CT scan was more than twice as high among patients 75–84 and was nearly four times higher among patients 85+. The rate of upper GI endoscopy and colonoscopy was about twice as high among patients 75–84 and 85+, compared to 65–74 year olds.

Procedures related to degenerative bone and joint disorders were common among patients 75–84 and 85+. Compared to 65–74 year olds, treatment for fractured or dislocated hip or femur was much more common among patients 75–84 and 85+ (3.0 and 7.4 times higher, respectively). Similarly, hip replacement was more frequently performed on patients 75–84 and 85+. Physical therapy procedures were about two and three times more common among patients 75–84 and 85+, respectively, than among patients 65–74.

Data Source

The estimates in this Statistical Brief are based upon data from the HCUP 2008 NIS. Historical data were drawn from the 1997 NIS. Supplemental sources included population estimates from 2008 Claritas data and from "Table 1: Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2000 to July 1, 2009 (NST-EST2009-01)", Population Division, U.S. Census Bureau, Release date: December 2009 (<http://www.census.gov/popest/states/NST-ann-est.html>).

Definitions

Diagnoses and Procedures, ICD-9-CM, and Clinical Classifications Software (CCS)

The principal diagnosis is that condition established after study to be chiefly responsible for the patient's admission to the hospital. Secondary diagnoses are concomitant conditions that coexist at the time of admission or that develop during the stay.

The principal procedure is the procedure that was performed for definitive treatment rather than 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 was selected as the principal procedure.

ICD-9-CM is the International Classification of Diseases, Ninth Revision, Clinical Modification, which assigns numeric codes to diagnoses and procedures. There are about 14,000 ICD-9-CM diagnosis codes and 3,900 ICD-9-CM procedure codes. CCS categorizes ICD-9-CM diagnosis and procedure codes into a manageable number of clinically meaningful categories.⁶ This "clinical grouper" makes it easier to quickly understand patterns of diagnoses and procedures.

Types of hospitals included in HCUP

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). HCUP data include OB-GYN, ENT, orthopedic, cancer, pediatric, public, and academic medical hospitals. Excluded are long-term care, rehabilitation, psychiatric, and alcoholism and chemical dependency hospitals. Please note, a discharge of this nature will be included in the NIS if it occurred in a community hospital.

Unit of analysis

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

Costs and charges

Total hospital charges were converted to costs using HCUP Cost-to-Charge Ratios based on hospital accounting reports from the Centers for Medicare and Medicaid Services (CMS).⁷ Costs will tend to reflect the actual costs of production, while charges represent what the hospital billed for the case. For each hospital, a hospital-wide cost-to-charge ratio is used because detailed charges are not available across all HCUP States. Hospital charges reflect the amount the hospital charged for the entire hospital stay and does not include professional (physician) fees. For the purposes of this Statistical Brief, costs are reported to the nearest hundreds.

Urban-rural location of patient residence

Urban-rural measurement for patient residence was based on the U.S. Office of Management and Budget (OMB) definitions of Core-Based Statistical Areas. OMB classifies counties into metropolitan and micropolitan areas. For this Statistical Brief, the metropolitan areas were further divided into large and

⁶ HCUP CCS. Healthcare Cost and Utilization Project (HCUP). December 2009. U.S. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp

⁷ HCUP Cost-to-Charge Ratio Files (CCR). Healthcare Cost and Utilization Project (HCUP). 2001–2008. U.S. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/db/state/costtocharge.jsp

small metropolitan areas using the Urban Influence Codes (UIC). Thus, for this report, counties were classified into one of four categories:

- Large urban core includes metropolitan areas with 1 million or more residents.
- Large urban fringe includes metropolitan areas with fewer than 1 million residents.
- Small urban includes non-metropolitan areas having an urban cluster of 10,000 to 49,999 residents.
- Non-urban includes areas that are neither metropolitan nor micropolitan areas, i.e. counties with no town greater than 10,000 residents.

Median community-level income

Median community-level income is the median household income of the patient's ZIP Code of residence. The cut-offs for the quartile designation are determined using ZIP Code demographic data obtained from Claritas. The income quartile is missing for homeless and foreign patients.

Payer

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

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

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

Region

Region is one of the four regions defined by the U.S. Census Bureau:

- Northeast: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania
- Midwest: Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas
- South: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas
- West: Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Alaska, and Hawaii

Discharge status

Discharge status indicates the disposition of the patient at 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, and another type of facility such as a nursing home), home health care, against medical advice (AMA), or died in the hospital.

About HCUP

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 health care data (inpatient, ambulatory surgery, and emergency department) in the United States, beginning in 1988. HCUP is a Federal-State-Industry Partnership that brings together the data collection efforts of many organizations—such as state data organizations, hospital associations, private data organizations, and the federal government—to create a national information resource.

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

Arizona Department of Health Services
Arkansas Department of Health
California Office of Statewide Health Planning and Development
Colorado Hospital Association
Connecticut Hospital Association
Florida Agency for Health Care Administration
Georgia Hospital Association
Hawaii Health Information Corporation
Illinois Department of Public Health
Indiana Hospital Association
Iowa Hospital Association
Kansas Hospital Association
Kentucky Cabinet for Health and Family Services
Louisiana Department of Health and Hospitals
Maine Health Data Organization
Maryland Health Services Cost Review Commission
Massachusetts Division of Health Care Finance and Policy
Michigan Health & Hospital Association
Minnesota Hospital Association
Missouri Hospital Industry Data Institute
Montana MHA—An Association of Montana Health Care Providers
Nebraska Hospital Association
Nevada Department of Health and Human Services
New Hampshire Department of Health & Human Services
New Jersey Department of Health and Senior Services
New Mexico Health Policy Commission
New York State Department of Health
North Carolina Department of Health and Human Services
Ohio Hospital Association
Oklahoma State Department of Health
Oregon Association of Hospitals and Health Systems
Pennsylvania Health Care Cost Containment Council
Rhode Island Department of Health
South Carolina State Budget & Control Board
South Dakota Association of Healthcare Organizations
Tennessee Hospital Association
Texas Department of State Health Services
Utah Department of Health
Vermont Association of Hospitals and Health Systems
Virginia Health Information
Washington State Department of Health
West Virginia Health Care Authority
Wisconsin Department of Health Services
Wyoming Hospital Association

About the NIS

The HCUP Nationwide Inpatient Sample (NIS) is a nationwide database of hospital inpatient stays. The NIS is nationally representative of all community hospitals (i.e., short-term, non-Federal, non-rehabilitation hospitals). The NIS is a sample of hospitals and includes all patients from each hospital, regardless of payer. It is drawn from a sampling frame that contains hospitals comprising about 95 percent of all discharges in the United States. The vast size of the NIS allows the study of topics at both the national and regional levels for specific subgroups of patients. In addition, NIS data are standardized across years to facilitate ease of use.

For More Information

For more information about HCUP, visit www.hcup-us.ahrq.gov.

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

For information on other hospitalizations in the U.S., download *HCUP Facts and Figures: Statistics on Hospital-based Care in the United States in 2008*, located at <http://www.hcup-us.ahrq.gov/reports.jsp>.

For a detailed description of HCUP, more 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.

Introduction to the HCUP Nationwide Inpatient Sample, 2008. Online. May 2010. U.S. Agency for Healthcare Research and Quality. http://hcup-us.ahrq.gov/db/nation/nis/NIS_2008_INTRODUCTION.pdf

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

Suggested Citation

Wier, L.M., (Thomson Reuters), Pfuntner, A. (Thomson Reuters), and Steiner, C. (AHRQ). *Hospital Utilization among Oldest Adults, 2008*. HCUP Statistical Brief #103. December 2010. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb103.pdf>

Acknowledgments

The authors would like to acknowledge Mika Nagamine (Thomson Reuters) and Minya Sheng (Thomson Reuters) for programming assistance.

* * *

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

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