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Hospital Utilization among Near-Elderly Adults, Ages 55 to 64 Years, 2007

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Introduction

The growth in the elderly population and associated increases in healthcare utilization and expenditures have received considerable attention in the United States over the past several years. While it is estimated that from 2010 to 2020 the elderly population will increase by 36 percent, the number of near-elderly persons (55 to 64 years old) is expected to grow by 18 percent during this time period—faster than any other age group younger than 65 years old.¹ Policymakers and providers have concerns about how the increasing demand for health care services by the near-elderly population will be met and financed, and how current access to care will affect the health of this growing population as they reach the age of Medicare eligibility. There is particular interest in characterizing the burden of illness in the near-elderly population and understanding how the use of health care services by this population varies by insurance status.

For individuals 65 and older, Medicare is typically the primary source of health insurance coverage; in contrast, the vast majority of near-elderly individuals are covered by private or public health insurance (i.e., Medicaid and Medicare).² Given that the near-elderly are more likely than their younger counterparts to have serious and chronic conditions, near-elderly adults lacking health insurance coverage may be more vulnerable to high health care costs than uninsured younger adults.² Moreover, evidence suggests that uninsured near-elderly adults, particularly those with cardiovascular disease or diabetes, require more intensive and costlier care than those who had been privately insured prior to receiving Medicare.³ As the availability of retiree coverage continues to decline and

Highlights

- In 2007, there were more than 4.7 million hospital stays among near-elderly adults (55 to 64 years old) totaling \$55.9 billion—16 percent of total hospital costs in the U.S.
- The rate of hospitalization among elderly (65 to 74 years old) and near-elderly adults fell slightly between 1997 and 2007, while rising among middle-aged adults (45 to 54 years old).
- Hospitalizations for near-elderly adults were more similar to those for the elderly in terms of lengths of stay, costs, and percentage of elective stays.
- The vast majority of hospital stays among the near-elderly were covered by private or public insurance and were less likely than hospital stays among middle-aged adults to be uninsured.
- The highest percentages of uninsured and publicly insured stays among the near-elderly occurred in the poorest communities; in contrast, privately insured stays were more common in wealthiest communities.
- The percentage of stays for chest pain, heart attack and stroke was highest among uninsured near-elderly adults, while the percentage of stays for pneumonia, CHF, COPD, diabetes with complications, and dehydration—diseases that might have been avoided with timely and effective ambulatory care—was highest among publicly insured near-elderly adults.
- Procedures that were more likely to be elective, such as knee replacement, back surgery, spinal fusion, and hip replacement, had the highest rates among privately insured near-elderly patients and were lowest among the uninsured.

¹ An Older and More Diverse Nation by Midcentury. August 14, 2008. U.S. Census Bureau, Washington, D.C. <http://www.census.gov/Press-Release/www/releases/archives/population/012496.html>

² Vistnes, J. *Health Insurance Coverage of Near Elderly Individuals, Ages 55–64, 2006*. Statistical Brief #239. March 2009. Agency for Healthcare Research and Quality, Rockville, MD.

http://www.meps.ahrq.gov/mepsweb/data_files/publications/st239/stat239.pdf

³ McWilliams JM, Meara E, Zaslavsky AM, Ayanian JZ. Health of previously uninsured adults after acquiring Medicare coverage. *JAMA*. 2007 Dec 26;298(24):2886–94.

the use of medical underwriting in the individual health insurance market increases, more near-elderly individuals may be at risk of losing their health insurance coverage.⁴ Beyond the impact on health status and quality of life, any delay in receiving care until the near-elderly are covered by Medicare could create a significant financial burden on the Medicare program. In addition, policy discussions about how to cover the uninsured near-elderly could be informed by data on their current use of inpatient services.

This Statistical Brief presents data from the Healthcare Cost and Utilization Project (HCUP) on hospitalizations among the near-elderly (patients 55 to 64 years old) in 2007. Specifically, near-elderly hospital stays are compared with other adult hospitalizations and differences in utilization and patient characteristics are examined by insurance status. Additionally, this report provides information about the types of diagnoses most often associated with near-elderly hospitalizations and specific procedures commonly performed during these stays. All differences between estimates provided in the text are statistically significant at the 0.05 level or better.

Findings

In 2007, there were more than 4.7 million hospital stays among near-elderly adults (55 to 64 years old), or 145.9 stays per 1,000 population (table 1). Near-elderly stays totaled \$55.9 billion in hospital costs—16 percent of total hospital costs in the U.S., a pattern more similar to 65 to 74 year olds than to the younger age group. The total number of hospital discharges among 55 to 64 year olds increased from 3.4 million in 1997 to 4.7 million in 2007 (an average annual growth of 3.4 percent; data not shown). However, when adjusted for population changes, the rate of hospitalization among the near-elderly fell nearly 7 percent between 1997 and 2007, which was similar to the 6 percent decrease experienced by elderly patients 65 to 74 years old (data not shown). Conversely, the hospitalization rate among middle-aged adults 45 to 54 years old rose 8 percent during this time period.

Characteristics of hospital stays among the near-elderly

Table 1 compares the utilization of hospital care among the near-elderly with middle-aged and elderly adults. In 2007, near-elderly hospital stays were longer (5.2 versus 4.8 days) and more costly (\$11,900 versus \$10,400) than stays among adults 45 to 54 years old, but were no different from stays among 65 to 74 year olds.

On average, nearly one-third (29.0 percent) of near-elderly adult hospital stays were elective—higher than 45 to 54 year olds, but the same as older patients. The percentage of stays ending in a discharge to home health or long-term care was 12.1 percent and 10.8 percent, respectively, and in-hospital mortality for near-elderly stays was 2.1 percent. These percentages were higher than those for 45 to 64 year olds but lower than those for 65 to 74 year olds.

Like elderly hospital stays, the rate of hospitalization among the near-elderly was slightly higher in males (151.7 stays per 1,000 near-elderly males versus 140.4 stays per 1,000 near-elderly females). In contrast, the rate of hospitalization among males and females ages 45 to 54 years old was nearly equal.

The hospitalization rate among all three age groups was highest in the poorest communities. Hospitalization rates were highest in non-urban areas for 55 to 64 year olds—similar to older patients—but for 45 to 54 year olds, the rate was highest in large urban core centers. The highest hospitalization rate for 55 to 64 year olds was in the South—similar to the younger age group—but for the elderly, the rate was highest in the Midwest.

Characteristics of hospital stays among the near-elderly, by payer

Figure 1 shows that 51.7 percent of near-elderly hospitalizations were covered by private insurance and 36.9 percent were covered by public insurance (Medicaid and Medicare).⁵ There were fewer uninsured hospital stays among the near-elderly, as compared to younger patients 45 to 54 years (6.0 versus 10.5 percent).

⁴ Health Insurance Coverage of the Near Elderly. August 2004. Kaiser Family Foundation, Washington, D.C. <http://www.kff.org/uninsured/7114.cfm>

⁵ The public insurance group includes patients with Medicaid only, the disabled who are covered by Medicare only, and patients with both Medicare and Medicaid. In 2007, 24 percent of near-elderly stays noted Medicare as the primary payer, while 12 percent noted Medicaid.

Table 2 displays the considerable variation in the utilization of hospital care among the near-elderly by payer. On average, uninsured near-elderly stays were longer than stays covered by private insurance (5.1 versus 4.5 days), but the near-elderly with public insurance had the longest hospitalizations (6.2 days). Insured stays among the near-elderly, private or public, were also more expensive (\$12,000 and \$11,900, respectively) than uninsured stays (\$10,500).

Privately insured near-elderly patients were more than twice as likely to be admitted to the hospital electively than were uninsured patients (37.0 versus 14.3 percent), while about 20 percent of publicly insured near-elderly patients were admitted electively. Uninsured near-elderly patients were less likely to be discharged to home health care (5.1 percent), compared with privately and publicly insured patients (12.3 and 13.3 percent, respectively). On the other hand, discharge to long-term care was most likely for near-elderly patients with public insurance (17.5 percent)—about three times greater than uninsured (5.4 percent) and privately insured patients (6.9 percent). In-hospital death was also more common among uninsured and publicly insured near-elderly patients and those with public insurance (2.5 and 2.6 percent, respectively, versus 1.7 percent among privately insured patients).

Not surprisingly, the highest percentages of uninsured and publicly insured stays among the near-elderly occurred in the poorest communities, and privately insured stays were more common in the wealthiest communities. Finally, over half of uninsured near-elderly stays were for males (53.1 percent), but more publicly insured near-elderly stays were for females (52.3 percent). The gender distribution for privately insured stays was nearly equal.

Most frequent reasons for hospital stays among the near-elderly

Table 3 highlights the 20 most frequent health conditions causing hospitalization among near-elderly patients compared with middle-aged and elderly adults. With the exception of mood disorders, the top 20 inpatient conditions among the near-elderly resulted in significantly higher hospitalization rates than among 45 to 54 year olds. For many conditions, hospitalization rates were at least two times higher among near-elderly patients than among middle-aged patients. Similarly, hospitalization rates were higher by a factor of two or more for 65 to 74 year olds compared to the near-elderly. Specifically, as patients aged, there were dramatic increases in hospitalization rates for coronary atherosclerosis (hardening of the arteries), osteoarthritis, congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), cardiac dysrhythmias, septicemia, stroke, and respiratory failure.

Coronary atherosclerosis was the most common reason for hospitalization among the near-elderly, occurring at a rate of 7.8 stays per 1,000 patients 55 to 64 years old. Osteoarthritis, a degenerative joint disease that progresses with age, was the second most common condition causing hospitalization among the near-elderly and accounted for 6.9 stays per 1,000 population. Cardiovascular conditions accounted for six of the 20 most common reasons for near-elderly hospital stays: coronary atherosclerosis, nonspecific chest pain, CHF, heart attack, cardiac dysrhythmias, and stroke. Six of the top 20 reasons for admission to the hospital were for potentially preventable conditions (conditions for which a hospital stay may be avoided with effective and timely ambulatory care): pneumonia, CHF, COPD, diabetes with complications, skin infections, and dehydration.⁶

Hospital stays for back problems were also very common among the near-elderly (3.9 stays per 1,000 population), as were stays for mood disorders (2.3 stays per 1,000 population). Complications of device, implant or graft and complications of surgery or medical care were also top-ranked conditions in this age group. Septicemia, respiratory failure, biliary tract disease, and metastasis were also in the top 20 most common conditions.

Table 4 shows that there was striking variation by payer in the frequency of hospitalization for these conditions among the near-elderly. For example, the treatment of musculoskeletal conditions such as osteoarthritis and back problems was far less frequent among uninsured and publicly insured near-elderly hospital stays, compared with privately insured stays. Uninsured near-elderly patients had significantly

⁶ Prevention Quality Indicators Overview. AHRQ Quality Indicators. July 2004. Agency for Healthcare Research and Quality, Rockville, MD. http://qualityindicators.ahrq.gov/pqi_overview.htm

fewer hospitalizations for complications of surgery or medical care, perhaps indicating lower rates of medical intervention in this population. The percentage of stays for chest pain, heart attack, and stroke was highest among uninsured near-elderly adults.

The percentage of stays for pneumonia, CHF, COPD, diabetes with complications, and dehydration—diseases that might have been avoided with timely and effective ambulatory care—was highest among publicly insured near-elderly adults. Hospitalizations for acute complications such as complications of device, implant or graft, septicemia, and respiratory failure were also highest among those patients with public insurance. Hospital stays for mood disorders were also more common among publicly insured and uninsured near-elderly adults than among the privately insured.

Most frequent procedures performed during hospital stays among the near-elderly

Table 5 displays the most frequent procedures performed during hospitalizations among near-elderly patients and compares the rates for these procedures to those found in middle-aged and elderly adults. Procedure rates for the near-elderly were significantly higher than for patients 45 to 54 years old. Rates of knee replacement surgery, coronary artery bypass graft (CABG), and the use of a heart-lung machine during surgery were three times higher among the near-elderly, as compared with patients 45 to 54 years old, while the rates for most of the other common procedures were twice as high among the near-elderly.

Among the near-elderly, blood transfusion was the most frequently performed procedure, occurring at a rate of 12.9 procedures per 1,000 patients 55 to 64 years old. In fact, blood transfusion was the most common procedure performed on any patient 45 to 74 years old. Diagnostic cardiac catheterization was the second most frequent procedure performed, occurring at a rate of 11.6 procedures per 1,000 patients 55 to 64 years old. Other common cardiovascular procedures performed on this age group included: percutaneous transluminal coronary angioplasty (PTCA), hemodialysis (for renal failure), echocardiogram, extracorporeal circulation (heart-lung machine) auxiliary to open heart procedures, and CABG.

Procedures related to degenerative bone and joint disorders accounted for four of the most common procedures performed on the near-elderly: knee replacement, back surgery, spinal fusion, and hip replacement. Procedures used to diagnose and/or treat gastrointestinal disorders comprised four of the most common procedures: upper gastrointestinal (GI) endoscopy, colonoscopy and biopsy, gall bladder removal, and colorectal resection.

Table 6 shows considerable variation by payer in the utilization of these procedures among the near-elderly. For example, rates of cardiac catheterization, PTCA, the use of extracorporeal circulation (heart-lung machine), gall bladder removal, and CABG were lower among near-elderly patients with public insurance, as compared with uninsured and privately insured near-elderly patients. Conversely, rates of respiratory intubation, hemodialysis, and the use of a feeding tube were significantly higher among those near-elderly with public insurance. Procedures that were more likely to be elective—such as knee replacement, back surgery, spinal fusion, and hip replacement—had the highest rates among privately insured near-elderly patients, and were lowest among the uninsured.

Data Source

The estimates in this Statistical Brief are based upon data from the HCUP Nationwide Inpatient Sample (NIS) for 2007. Historical data were drawn from the 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, and 2006 NIS. Supplemental source included data on population estimates from 2007 Claritas data and Table 1: Annual Estimates of the Resident Population by Sex and Five-Year Age Groups for the United States: April 1, 2000 to July 1, 2008 (NC-EST2008-01); Population Division, U.S. Census Bureau, Release date: May 14, 2009 (<http://www.census.gov/popest/national/asrh/NC-EST2008/NC-EST2008-01.xls>).

Definitions

Diagnoses, 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 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 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. There are about 13,600 ICD-9-CM diagnosis codes.

CCS categorizes ICD-9-CM diagnoses into a manageable number of clinically meaningful categories.⁷ 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. They exclude long-term care, rehabilitation, psychiatric, and alcoholism and chemical dependency hospitals, but these types of discharges are included if they are from community hospitals.

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).⁸ 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.

Median community income level

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

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 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.

⁷ HCUP CCS. Healthcare Cost and Utilization Project (HCUP). June 2009. U.S. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp

⁸ HCUP Cost-to-Charge Ratio Files (CCR). Healthcare Cost and Utilization Project (HCUP). 2001–2006. U.S. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/db/state/costtocharge.jsp

- 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.

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.
- Private insurance includes Blue Cross, commercial carriers, and private HMOs and PPOs.
- Public insurance includes both Medicare and Medicaid patients.
- 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.

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, transfer to long-term care (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
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
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 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 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 90 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.

About HCUPnet

HCUPnet is an online query system that offers instant access to the largest set of all-payer health care databases that are publicly available. HCUPnet has an easy step-by-step query system, allowing for tables and graphs to be generated on national and regional statistics, as well as trends for community hospitals in the U.S. HCUPnet generates statistics using data from HCUP's Nationwide Inpatient Sample (NIS), the Kids' Inpatient Database (KID), the Nationwide Emergency Department Sample (NEDS), the State Inpatient Databases (SID) and the State Emergency Department Databases (SEDD).

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 2006, 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, 2007. Online. June 16, 2009. U.S. Agency for Healthcare Research and Quality.

http://www.hcup-us.ahrq.gov/db/nation/nis/NIS_2007_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>

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

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

Table 1. Characteristics of hospital stays among near-elderly adults 55 to 64 years old compared to other age groups, 2007

	45–54 years	55–64 years	65–74 years
Total number of discharges	4,421,700	4,713,100	4,972,000
Percentage of all discharges in U.S. community hospitals	11.2%	11.9%	12.6%
Rate of hospitalization per 1,000 population*	101.7	145.9	253.4
Utilization characteristics			
Mean length of stay, days	4.8	5.2	5.4
Mean hospital costs	\$10,400	\$11,900	\$11,900
Aggregate national costs, billions	\$45.7	\$55.9	\$59.1
Percentage of aggregate costs	13.3%	16.3%	17.1%
Percentage of elective admissions	26.9	29.0	29.7
Percent discharged to home health care	8.1	12.1	15.1
Percent discharged to long-term care	7.4	10.8	17.6
Percent died in the hospital	1.4	2.1	2.8
Patient characteristics			
Gender (rate per 1,000 population*)			
Male	100.8	151.7	266.4
Female	101.9	140.4	242.2
Community-level income (rate per 1,000 population*)			
Quartile 1 (poorest)	135.6	178.1	276.9
Quartile 2	103.8	148.0	251.4
Quartile 3	87.6	129.2	233.4
Quartile 4 (wealthiest)	72.0	113.8	221.4
Residence (rate per 1,000 population*)			
Large urban core	110.7	150.1	248.6
Large urban fringe (suburbs)	87.5	129.5	232.1
Small urban	89.9	131.1	230.8
Non-urban	103.6	152.9	268.3
Region (rate per 1,000 population*)			
Northeast	106.8	151.9	260.3
Midwest	103.2	151.7	276.9
South	111.6	156.4	263.7
West	80.4	117.6	204.7

* Denominator data for rates were based on Claritas Population Estimates, 2007.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample (NIS), 2007

Table 2. Utilization characteristics of hospital stays by payer among near-elderly adults 55 to 64 years old, 2007

	Uninsured	Private insurance	Public insurance
Total number of discharges	285,000	2,436,000	1,737,000
Percentage of total discharges	6.0	51.7	36.9
Utilization characteristics			
Mean length of stay, days	5.1	4.5	6.2
Mean hospital costs	\$10,500	\$12,000	\$11,900
Aggregate national costs, billions	\$3.0	\$29.2	\$20.7
Percentage of elective admissions	14.3	37.0	20.2
Percent discharged to home health care	5.1	12.3	13.3
Percent discharged to long-term care	5.4	6.9	17.5
Percent died in the hospital	2.5	1.7	2.6
Patient characteristics			
Gender (percent)			
Male	53.1	50.8	47.7
Female	46.9	49.2	52.3
Community-level income (percent)			
Quartile 1 (poorest)	37.9	19.9	40.5
Quartile 2	24.9	23.1	25.6
Quartile 3	18.5	25.5	18.3
Quartile 4 (wealthiest)	13.2	29.4	11.5

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample (NIS), 2007

Table 3. Most common principal diagnoses among hospitalized near-elderly adults 55 to 64 years old compared to other age groups, 2007

Rank (55–64 years)	Top 20 principal diagnoses, CCS category	45–54 years	55–64 years		65–74 years	
		Rate per 1,000 population*	Rate per 1,000 population*	Relative rate**	Rate per 1,000 population*	Relative rate**
1	Coronary atherosclerosis (hardening of the arteries)	3.5	7.8	2.2	13.6	1.7
2	Osteoarthritis	2.3	6.9	3.0	13.3	1.9
3	Nonspecific chest pain	4.7	5.4	1.1	6.3	1.2
4	Pneumonia	2.6	4.6	1.8	10.1	2.2
5	Congestive heart failure (CHF)	2.0	4.5	2.2	10.7	2.4
6	Acute myocardial infarction (heart attack)	2.2	4.1	1.9	6.7	1.6
7	Complication of medical device, implant or graft	2.3	4.0	1.8	6.7	1.7
8	Back problems	3.3	3.9	1.2	5.5	1.4
9	Chronic obstructive pulmonary disease (COPD)	1.5	3.8	2.5	8.6	2.3
10	Cardiac dysrhythmias (irregular heart beat)	1.6	3.7	2.3	8.6	2.3
11	Septicemia (blood infection)	1.6	3.1	2.0	6.7	2.1
12	Complications of surgical procedures or medical care	1.9	2.8	1.5	4.6	1.6
13	Diabetes mellitus with complications	2.2	2.8	1.2	3.8	1.4
14	Acute cerebrovascular disease (stroke)	1.3	2.7	2.0	5.4	2.0
15	Skin infections	2.5	2.7	1.1	3.3	1.2
16	Mood disorders	3.7	2.3	0.6	1.9	0.8
17	Adult respiratory failure or arrest	1.0	2.2	2.2	4.8	2.2
18	Biliary tract disease	1.7	2.1	1.3	3.4	1.6
19	Dehydration	1.1	2.0	1.8	4.0	2.0
20	Metastasis (spread of cancer or secondary cancer)	1.0	2.0	2.0	3.3	1.7

* Denominator data for rates were based on Claritas Population Estimates, 2007.

**Relative to previous age group.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample (NIS), 2007

Table 4. Most common principal diagnoses among hospitalized near-elderly adults 55 to 64 years old, by payer, 2007

Rank all (55–64 years)	Top 20 principal diagnoses, CCS category	55–64 years									65–74 years		
		Uninsured			Private insurance			Public insurance			Medicare		
		N	%	Rank	N	%	Rank	N	%	Rank	N	%	Rank
1	Coronary atherosclerosis (hardening of the arteries)	14,200	5.0	2	151,100	6.2	2	73,300	4.2	2	222,000	5.3	1
2	Osteoarthritis	2,000	0.7	40	171,500	7.0	1	35,900	2.1	13	221,000	5.3	2
3	Nonspecific chest pain	15,900	5.6	1	86,000	3.5	3	61,600	3.5	5	101,000	2.4	10
4	Pneumonia	9,300	3.3	6	60,000	2.5	7	72,100	4.1	4	170,300	4.1	4
5	Congestive heart failure (CHF)	11,200	3.9	4	45,400	1.9	10	81,900	4.7	1	179,400	4.3	3
6	Acute myocardial infarction (heart attack)	13,500	4.7	3	77,600	3.2	5	35,000	2.0	14	108,500	2.6	9
7	Complication of medical device, implant or graft	2,800	1.0	26	58,900	2.4	8	59,500	3.4	6	112,300	2.7	8
8	Back problems	2,100	0.7	37	83,300	3.4	4	27,500	1.6	20	91,400	2.2	11
9	Chronic obstructive pulmonary disease (COPD)	7,700	2.7	7	35,700	1.5	17	72,700	4.2	3	147,100	3.5	5
10	Cardiac dysrhythmias (irregular heart beat)	7,200	2.5	8	73,200	3.0	6	32,600	1.9	16	141,765	3.4	6
11	Septicemia (blood infection)	4,400	1.5	15	37,900	1.6	16	54,100	3.1	7	113,300	2.7	7
12	Complications of surgical procedures or medical care	3,200	1.1	23	52,400	2.2	9	31,200	1.8	17	76,300	1.8	15
13	Diabetes mellitus with complications	7,200	2.5	9	30,200	1.2	21	48,000	2.8	8	62,400	1.5	19
14	Acute cerebrovascular disease (stroke)	10,000	3.5	5	42,000	1.7	11	30,300	1.7	19	87,600	2.1	12
15	Skin infections	6,700	2.4	11	38,500	1.6	15	36,900	2.1	12	54,400	1.3	22
16	Mood disorders	4,900	1.7	13	25,200	1.0	25	39,500	2.3	10	31,900	0.8	34
17	Adult respiratory failure or arrest	4,000	1.4	17	22,400	0.9	30	42,000	2.4	9	81,000	1.9	14
18	Biliary tract disease	5,300	1.9	12	41,800	1.7	12	17,500	1.0	29	54,900	1.3	21
19	Dehydration	3,400	1.2	21	26,800	1.1	23	33,000	1.9	15	67,300	1.6	17
20	Metastasis (spread of cancer or secondary cancer)	2,800	1.0	27	41,200	1.7	13	17,700	1.0	26	54,000	1.3	23

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample (NIS), 2007

Table 5. Most common procedures among hospitalized near-elderly adults 55 to 64 years old compared to other age groups, 2007

Rank (55–64 years)	Top 20 all-listed procedures, CCS category	45–54 years	55–64 years		65–74 years	
		Rate per 1,000 population*	Rate per 1,000 population*	Relative rate**	Rate per 1,000 population*	Relative rate**
1	Blood transfusion	6.7	12.9	1.9	27.3	2.1
2	Diagnostic cardiac catheterization	6.1	11.6	1.9	19	1.6
3	Respiratory intubation and mechanical ventilation	3.7	6.5	1.8	12.1	1.9
4	Upper GI endoscopy	4.0	6.1	1.5	11.5	1.9
5	Percutaneous transluminal coronary angioplasty (PTCA)	2.9	6.0	2.1	9.9	1.7
6	Knee replacement	1.7	5.3	3.1	10.2	1.9
7	Hemodialysis	3.0	5.3	1.8	9.1	1.7
8	Echocardiogram	2.2	4.3	2.0	7.8	1.8
9	Back surgery	2.7	3.1	1.1	4.1	1.3
10	Colonoscopy and biopsy	1.7	2.9	1.7	5.9	2.0
11	Spinal fusion	2.2	2.5	1.1	2.9	1.2
12	Hip replacement	1.1	2.4	2.2	4.8	2.0
13	Bronchoscopy	1.2	2.3	1.9	4.4	1.9
14	Chest drainage	1.2	2.2	1.8	4.3	2.0
15	Tube feeding (intravenous or intestinal)	1.2	2.2	1.8	4.3	2.0
16	Extracorporeal circulation (heart- lung machine) auxiliary to open heart procedures	0.8	2.1	2.6	4.1	2.0
17	Gall bladder removal	1.6	2.1	1.3	3.3	1.6
18	Colorectal resection	1.2	2.1	1.8	3.8	1.8
19	Coronary artery bypass graft (CABG)	0.7	2.1	3.0	4.1	2.0
20	Cancer chemotherapy	1.2	2.0	1.7	2.5	1.3

* Denominator data for rates were based on Claritas Population Estimates, 2007.

**Relative to previous age group.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample (NIS), 2007

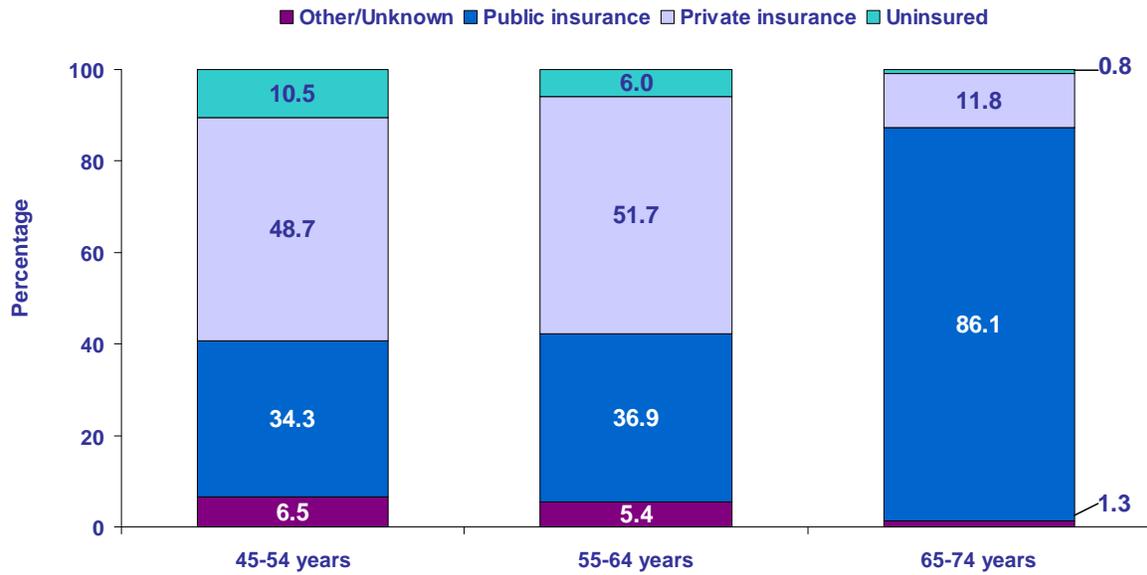
Table 6. Most common procedures among hospitalized near-elderly adults 55 to 64 years old, by payer, 2007

Rank all (55–64 years)	Top 20 all-listed procedures, CCS category	55–64 years									65–74 years		
		Uninsured			Private insurance			Public insurance			Medicare		
		N	%	Rank	N	%	Rank	N	%	Rank	N	%	Rank
1	Blood transfusion	20,600	7.2	2	213,000	8.7	2	160,700	9.3	1	450,900	10.8	1
2	Diagnostic cardiac catheterization	27,000	9.5	1	223,600	9.2	1	103,400	6.0	4	308,400	7.4	2
3	Respiratory intubation and mechanical ventilation	12,900	4.5	4	83,400	3.4	6	104,000	6.0	3	199,800	4.8	3
4	Upper GI endoscopy	13,600	4.8	3	90,900	3.7	5	82,800	4.8	5	191,700	4.6	4
5	Percutaneous transluminal coronary angioplasty (PTCA)	12,400	4.3	5	126,800	5.2	4	44,800	2.6	7	158,900	3.8	6
6	Knee replacement	1,300	0.5	54	129,000	5.3	3	30,100	1.7	9	168,600	4.0	5
7	Hemodialysis	3,900	1.4	16	35,000	1.4	23	128,500	7.4	2	156,100	3.7	7
8	Echocardiogram	10,300	3.6	6	74,200	3.0	7	49,500	2.9	6	126,300	3.0	8
9	Back surgery	1,200	0.4	56	69,400	2.9	8	18,100	1.0	21	67,000	1.6	15
10	Colonoscopy and biopsy	6,100	2.1	8	46,400	1.9	14	36,100	2.1	8	97,400	2.3	9
11	Spinal fusion	1,000	0.4	60	55,300	2.3	10	15,800	0.9	27	48,000	1.1	23
12	Hip replacement	1,400	0.5	52	58,300	2.4	9	14,500	0.8	31	79,800	1.9	10
13	Bronchoscopy	4,200	1.5	13	38,500	1.6	19	29,000	1.7	11	74,000	1.8	12
14	Chest drainage	4,600	1.6	11	38,000	1.6	20	24,600	1.4	13	70,100	1.7	14
15	Tube feeding (intravenous or intestinal)	3,100	1.1	24	35,700	1.5	22	29,000	1.7	10	71,200	1.7	13
16	Extracorporeal circulation (heart-lung machine) auxiliary to open heart procedures	4,200	1.5	14	47,100	1.9	13	13,800	0.8	34	66,500	1.6	16
17	Gall bladder removal	5,000	1.7	9	43,500	1.8	17	16,400	0.9	25	54,200	1.3	21
18	Colorectal resection	3,100	1.1	22	49,100	2.0	11	13,300	0.8	37	62,600	1.5	18
19	Coronary artery bypass graft (CABG)	4,600	1.6	10	45,000	1.8	16	14,200	0.8	32	65,400	1.6	17
20	Cancer chemotherapy	3,500	1.2	18	40,800	1.7	18	16,900	1.0	23	40,500	1.0	28

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample (NIS), 2007



Figure 1. The vast majority of hospital stays among the near-elderly were covered by private or public insurance and less likely than hospital stays among middle-aged adults to be uninsured, 2007



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2007