HEALTHCARE COST AND UTILIZATION PROJECT

Agency for Healthcare Research and Quality

STATISTICAL BRIEF #1

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Hospital Admissions That Began in the Emergency Department, 2003

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Introduction

In 2003, there were 29.3 million hospitalizations for conditions other than maternal and neonatal conditions in U.S. community hospitals, and 55 percent of those hospitalizations began in the emergency department (ED). The estimated mean cost for these stays was $7,400. There is some concern among policymakers about both the cost and health implications of overuse and inappropriate use of EDs, particularly for persons with limited access to other ambulatory care.

This Statistical Brief presents data from the Healthcare Cost and Utilization Project (HCUP) on utilization and costs for hospital admissions that originated in the ED in 2003 (excluding those related to pregnancy and childbirth). Variations in utilization and costs for these stays are illustrated according to geographic area and expected source of payment. All differences between estimates noted in the text are statistically significant at the 0.05 level or better.

Findings

Differences in hospital admissions through the emergency department, by region

Relative to the populations in each region, there were significant differences in hospital admissions from the ED for two regions (figure 1). Individuals in the Northeast were more likely to enter the hospital through the ED, while individuals in the Western states were less likely. The Northeast accounted for 23.0 percent of hospital admissions that came through the ED, although only 18.7 percent of the U.S. population resided in the Northeast. The West accounted for 17.4 percent of hospital admissions that came through the ED, while 22.9 percent of the U.S. population resided in the West.

Differences in hospital admissions through the emergency department, by payer

Government payers bear the greatest burden of hospital admissions through the ED (figure 2). While 12.4 percent of the U.S. population was covered by Medicaid in 2003, 20.3 percent of hospital admissions through the ED were billed to Medicaid. Similarly, 13.7 percent of the population was covered by

Highlights

- In 2003, 55 percent of 29.3 million hospitalizations (excluding pregnancy and childbirth) began in the ED.
- Relative to the populations in each region, individuals in the Northeast were more likely to enter the hospital through the ED, while individuals in the Western states were less likely.
- Government payers, Medicare and Medicaid, bear the greatest burden of hospital admissions through the ED, covering 66 percent of all admissions through the ED.
- The mean cost for hospitalizations that began in the ED was $7,400.
- The mean costs for hospitalizations that began in the ED were highest in the West ($8,500) compared to all other regions of the country ($7,200 or less).
- The mean costs for hospitalizations that began in the ED were greatest for government payers.
- The mean cost for uninsured stays that began in the ED was less than the cost of stays billed to Medicare and Medicaid but comparable to stays billed to private insurance.

Medicare, but 45.4 percent of hospital admissions through the ED were billed to Medicare. Uninsured hospital stays or those covered by commercial insurance showed the opposite pattern: 68.6 percent of patients had some commercial insurance coverage, but private insurance was billed for only 25.2 percent of hospital admissions through the ED. While 15.6 percent of the U.S. population was uninsured in 2003, only 6.2 percent of admissions through the ED were uninsured.

Costs of hospitalizations from the emergency department, by region and payer

The mean costs for hospitalizations from the ED were greatest in the West and for those stays covered by government payers (figure 3). The mean cost for these stays in the West was $1,300 more than in any other region of the country. The mean cost for stays billed to Medicare was $700 to $1,600 greater than for any other payer, while the mean cost billed to Medicaid was $500 to $900 greater than that billed to private insurance or the uninsured. The mean cost for uninsured stays ($6,300) was less than the cost of stays billed to Medicare ($7,900) and Medicaid ($7,200) but comparable to stays billed to private insurance ($6,700).

Data Source

The estimates on hospitalizations from the ED in this Statistical Brief are based on data from the Healthcare Cost and Utilization Project (HCUP) 2003 Nationwide Inpatient Sample (NIS). Supplemental sources included data from the U.S. Census Bureau, Population Division, Annual Estimates of the Population for the United States, Regions, and Divisions; and U.S. Census Bureau, Current Population Reports, P60-226, Coverage by Type of Health Insurance.

Definitions

Region

– 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

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 for HCUP data 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 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 of production, while charges represent what the hospital billed for the case. For each hospital, a hospital-wide cost-to-charge ratio was 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 do not include professional (MD) fees. For the purposes of this Statistical Brief, costs are reported to the nearest hundreds.

Payer

Up to two payers can be coded for a hospital stay in HCUP data. When this occurs, the following hierarchy was used:
– If either payer is listed as Medicaid, payer is “Medicaid.”
– For non-Medicaid stays, if either payer is listed as Medicare, payer is “Medicare.”
– For stays that are neither Medicaid nor Medicare, if either payer is listed as private insurance, payer is “private insurance.”
– For stays that are not Medicaid, Medicare or private insurance, if either payer is some other third party payer, payer is “other.”
– For stays that have no third party payer and the payer is listed as “self-pay” or “no charge,” payer is “uninsured.”

About the NIS

The HCUP Nationwide Inpatient Sample is a nationwide database of hospital inpatient stays. The NIS is nationally representative of all short-term, non-Federal hospitals. It is sampled from hospitals that comprise 90 percent of all discharges in the United States and includes all patients, regardless of payer. 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 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.

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

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

Arizona Department of Health 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
Indiana Hospital & Health Association
Iowa Hospital Association
Kansas Hospital Association
Kentucky Department for Public Health
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 Center for Health Information Analysis
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
Oregon Office of Oregon Health Policy and Research and the Office of Oregon Health
Pennsylvania Health Care Cost Containment Council
Rhode Island Department of Health
South Carolina State Budget and 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 and Family Services

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

References

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

Steiner, C., Elixhauser, A. and 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, 2003. Online. June 14, 2005. U.S. Agency for Healthcare Research and Quality. http://www.hcup-us.ahrq.gov/db/nation/nis/reports/NIS_2003_Design_Report.jsp

Houchens, R. and 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

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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, PhD, Director
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Agency for Healthcare Research and Quality
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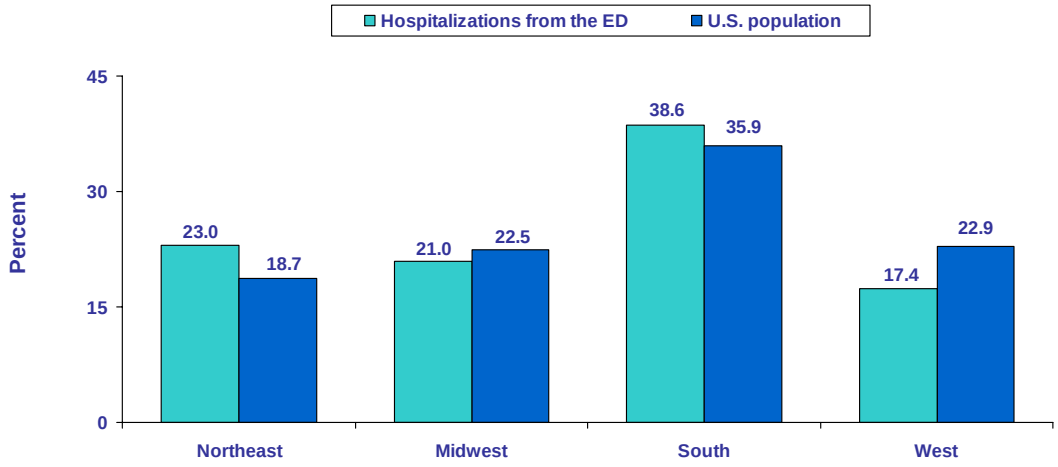
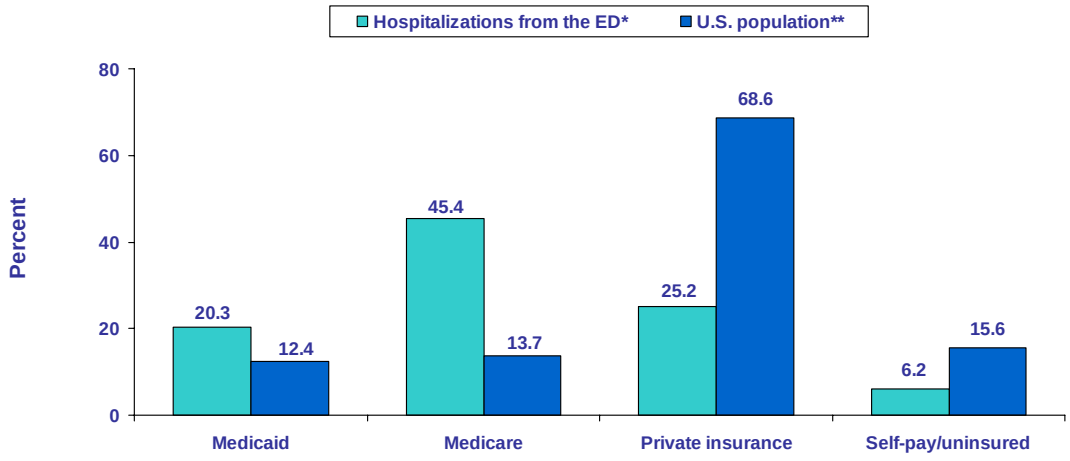
Rockville, MD 20850

Figure 1. Distribution of hospitalizations from the emergency department and U.S. population, by region, 2003



Sources: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2003; U.S. Census Bureau, Population Division, Table 8: Annual Estimates of the Population for the United States, Regions, and Divisions: April 1, 2000 to July 1, 2005 (NST-EST-2005-08), Release Date: December 22, 2005.

Figure 2. Distribution of hospitalizations from the emergency department and health insurance coverage, by payer, 2003

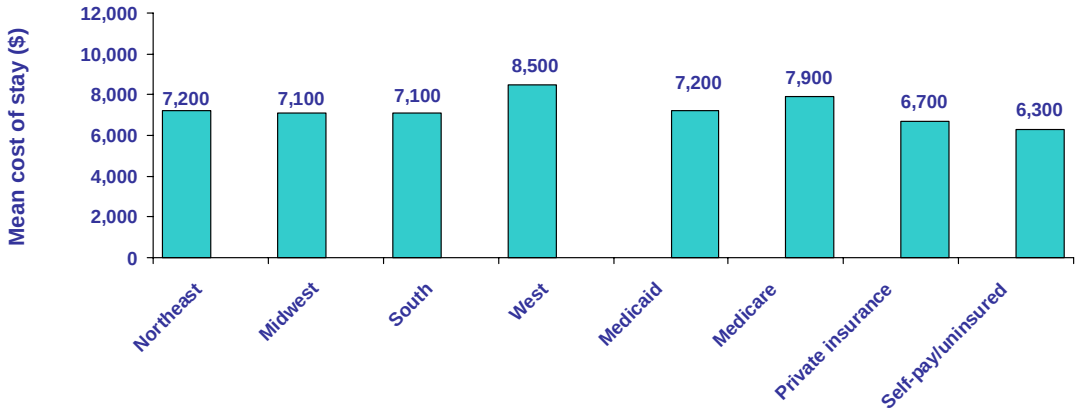


*A small number of cases not represented on the graph were covered by other types of insurance, such as Workers' Compensation, TRICARE, Title V, and other government programs.

**Percentages for the U.S. population total more than 100 percent because individuals can be enrolled in more than one type of insurance.

Sources: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2003; U.S. Census Bureau, Current Population Reports, P60-226, Figure 5, Coverage by Type of Health Insurance; *Income, Poverty, and Health Insurance Coverage in the United States: 2003,* U.S. Government Printing Office, Washington, D.C. 2004.

Figure 3. Costs of hospitalizations from the emergency department, by region and payer, 2003



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