

STATISTICAL BRIEF #3

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Hospitalizations Related to Pressure Sores, 2003

C. Allison Russo, MPH and Anne Elixhauser, PhD

Introduction

Pressure sores typically result from prolonged periods of un-interrupted pressure on the skin, soft tissue, muscle, and bone. Vulnerable patients include the elderly, stroke victims, patients with diabetes, those with dementia, and people who use wheelchairs or who are bedridden—any patient with impaired mobility or sensation. These individuals are particularly susceptible to pressure sores unless they regularly change position or use other preventive measures, such as pressure-reducing mattresses.

This Statistical Brief presents data from the Healthcare Cost and Utilization Project (HCUP) on patterns of utilization and expense for hospital stays involving the treatment of pressure sores in 2003. Variations in utilization and hospital billing for these stays are illustrated according to patient age, expected source of payment, and related conditions. Unless otherwise noted, estimates are based on all-listed diagnoses. All differences between estimates noted in the text are statistically significant at the 0.05 level or better.

Findings

Pressure sores, or decubitus ulcers, are increasingly common in U.S. hospitalizations. In 2003, there were 455,000 hospital stays during which pressure sores were noted—a 63 percent increase from 1993 when there were about 280,000 hospital stays during which pressure sores were noted. During this same time period, the total number of hospitalizations increased by only 11 percent and the number of stays for patients 65 and older increased by only 14 percent. The mean length of stay for hospitalizations specifically for pressure sores was 13 days, and the average charge was nearly \$37,800.*

Differences in hospital stays related to pressure sores, by age

While 72.3 percent of patients with pressure sores were 65 years of age or older, nearly 28 percent were younger than 65 (figure 1). Most of the individuals in the under-65 group were 45–64 years of age, representing 19.3 percent of all hospitalizations with pressure sores.

* Based on principal diagnosis.

Highlights

- In 2003, there were 455,000 hospital stays during which pressure sores were noted—a 63 percent increase from 11 years earlier.
- Patients 65 years and older accounted for 72.3 percent of all hospitalizations during which pressure sores were noted, and those between 45 and 64 accounted for 19.3 percent.
- On average, hospitalizations primarily for the treatment of pressure sores lasted nearly 13 days, but length of stay varied by patient age; stays were longest for patients 18-44 years (14 days) and shortest for patients 85 years and older (10 days).*
- In 2003, government payers were billed for nearly 90 percent of hospitalizations during which pressure sores were noted.
- The mean charge for hospital stays principally for pressure sores was \$37,800, but charges varied by payer; e.g., the average charge billed to Medicaid was \$39,100 while an average charge of \$25,600 was billed to the uninsured.*
- More than 90 percent of all hospital stays involving the treatment of pressure sores were for other conditions chiefly responsible for the patient's admission to the hospital. The five most common principal conditions were septicemia, pneumonia, urinary tract infection, aspiration pneumonia, and congestive heart failure.
- Among hospital stays that were principally for pressure sores, common concomitant conditions included paralysis, spinal cord injury, substance abuse, malnutrition, multiple sclerosis, stroke, and senility.*

Length of stay varied substantially by age (figure 2). Hospitalizations principally for pressure sores were significantly longer for younger age groups. For example, the average length of stay for patients 18–44 years old was 14.1 days, compared with 12.4 days for patients ages 65–84 and 10.2 days for patients 85 and older.* The average length of stay for all hospitalizations in 2003 was 4.6 days, down from 5.7 days in 1993.

Differences in hospital stays related to pressure sores, by payer

Government payers bear the greatest burden of hospitalizations related to pressure sores (figure 1). In 2003, 65.9 percent of the stays related to pressure sores were covered by Medicare, and 23.4 percent were covered by Medicaid. One percent of patients were uninsured.

The mean charge for hospital stays principally for pressure sores was about \$37,800 in 2003, but charges varied by payer (figure 3). The average charge billed to the uninsured was lower than those billed to Medicaid, Medicare, and private insurance.*

Most common reasons for hospitalizations related to pressure sores

More than 90 percent of all hospital stays involving the treatment of pressure sores were for other conditions chiefly responsible for the patient's admission to the hospital. Table 1 shows the most common principal reasons for hospitalizations during which pressure sores were also noted. These principal conditions included septicemia (where 11.8 percent of all cases also had pressure sores), pneumonia (2.7 percent also had pressure sores), urinary tract infection (5.5 percent), aspiration pneumonitis (11.7 percent), and congestive heart failure (1.7 percent).

Among hospital stays that were principally for pressure sores, other concomitant conditions included diabetes (29.4 percent), paralysis (27.4 percent), senility (22.7 percent), malnutrition (17.8 percent), spinal cord injury (9.2 percent), and substance abuse disorders (8.1 percent).* However, common concomitant diagnoses and their distribution varied by age (figure 4). Paralysis, spinal cord injury, and substance abuse were prominent among younger patients, while malnutrition, stroke, and senility were more often seen among patients 65 and older. (Because patients can have more than one concomitant, or secondary condition, figures do not sum to 100 percent.)

Data Source

The estimates in this Statistical Brief are based on data from the HCUP 2003 Nationwide Inpatient Sample (NIS).

Definitions

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.

Diagnoses, 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 conditions that coexist at the time of admission or that develop during the stay. All-listed diagnoses include the principal diagnosis plus these additional secondary conditions.

ICD-9-CM is the International Classification of Diseases, Ninth Revision, Clinical Modification, which assigns numeric codes to diagnoses. There are about 12,000 ICD-9-CM diagnosis codes.

CCS categorizes ICD-9-CM diagnoses into 260 clinically meaningful categories. This "clinical grouper" makes it easier to quickly understand patterns of diagnoses and procedures.

The ICD-9-CM code defining pressure sore is 707.0, Decubitus Ulcer.

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.

Charges

Charges represent what the hospital billed for the case. 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, charges are rounded to the nearest hundred dollars.

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>

Suggested Citation

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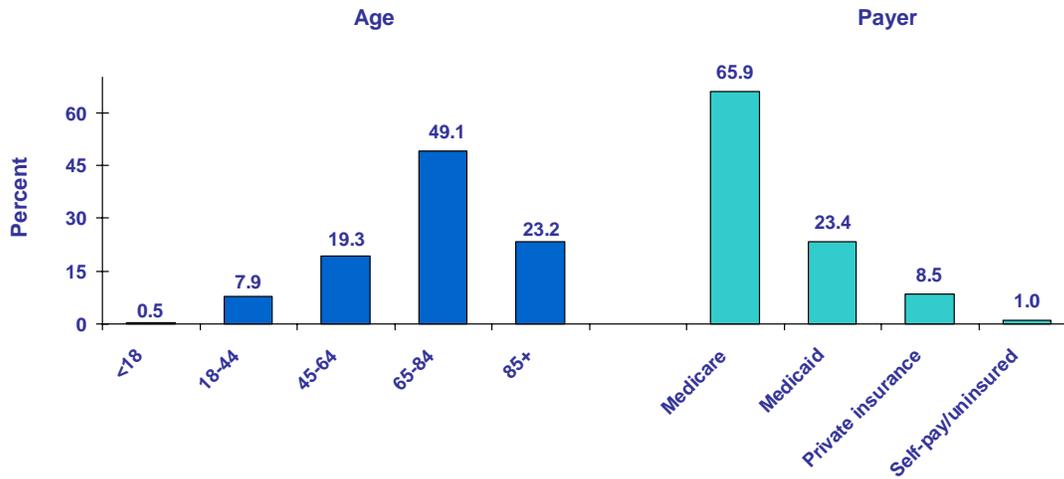
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AHRQ welcomes questions and comments from readers of this publication who are interested in obtaining more information about access, cost, use, financing, and quality of health care in the United States. We also invite you to tell us how you are using 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
Center for Delivery, Organization, and Markets
Agency for Healthcare Research and Quality
540 Gaither Road
Rockville, MD 20850



Figure 1. Distribution of hospitalizations for pressure sores*, by age and payer, 2003



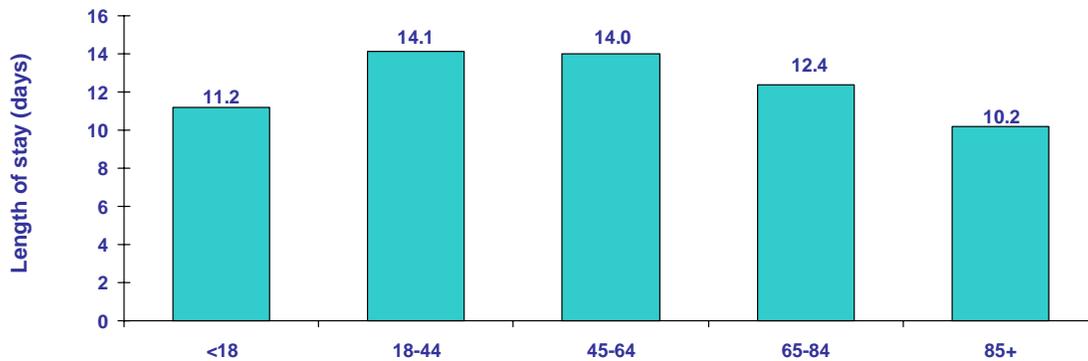
*Based on all-listed diagnoses.

Note: 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.

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



Figure 2. Distribution of mean length of stay for hospitalizations related to pressure sores,* by age, 2003

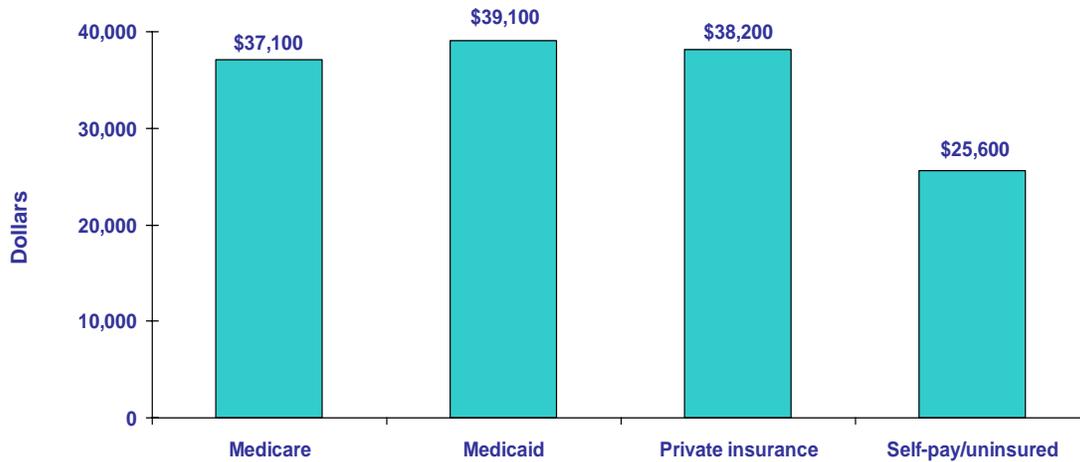


*Based on principal diagnosis.

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



Figure 3. Distribution of mean hospital bill for hospitalizations related to pressure sores,* by payer, 2003



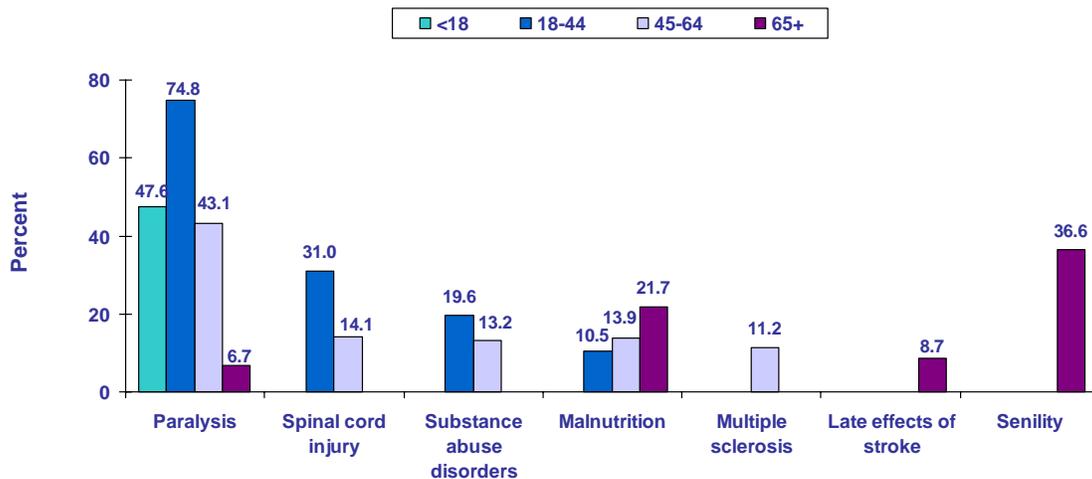
*Based on principal diagnosis.

Note: 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.

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



Figure 4. Distribution of common conditions associated with hospitalizations principally for pressure sores,* by age, 2003



*Based on principal diagnosis.

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

Table 1. Top 10 most common principal reasons for hospitalizations during which pressure sores were also present,* 2003

Rank	Principal condition (CCS)	Number of hospitalizations related to pressure sores	Percentage of hospital stays for this condition that also include pressure sores*
1	Septicemia (except in labor)	45,900	11.8
2	Pneumonia (except that caused by tuberculosis and sexually transmitted diseases)	35,500	2.7
3	Urinary tract infections	27,000	5.5
4	Aspiration pneumonitis, food/vomitus	22,800	11.7
5	Congestive heart failure, nonhypertensive	18,900	1.7
6	Rehabilitation care, fitting of prostheses, adjustment of devices	17,500	3.8
7	Fluid and electrolyte disorders	14,400	2.5
8	Complication of device, implant, graft	13,800	2.3
9	Respiratory failure, insufficiency, arrest (adult)	11,600	4.8
10	Diabetes mellitus with complications	10,700	2.2
Total hospitalizations for top 10 principal conditions		218,100	3.7

* As secondary diagnoses.

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