

## STATISTICAL BRIEF #2

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# Reasons for Being Admitted to the Hospital through the Emergency Department, 2003

Anne Elixhauser, PhD and Pamela Owens, PhD

### Introduction

In 2003, over 16 million patients entered the hospital through the emergency department—roughly 44 percent of all hospital stays or 55 percent of hospital stays excluding pregnancy and childbirth. Policymakers and health care professionals are concerned about potential overuse and inappropriate use of emergency rooms (EDs). There is also concern that emergency departments care for patients with chronic conditions who may not be receiving adequate outpatient follow-up to control their conditions.

This Statistical Brief presents data from the Healthcare Cost and Utilization Project (HCUP) on the most common reasons in 2003 for all hospitalizations that began in the ED.

### Findings

#### *Major reasons for admission to the hospital through the ED*

Figure 1 shows the reasons for admission to the hospital through the emergency department, organized by body system, excluding pregnancy and childbirth. Circulatory disorders were the most frequent reason for admission to the hospital through the ED, accounting for 26.3 percent of all admissions through the ED. Respiratory and digestive disorders were the next most common category of conditions, respectively comprising 15.1 percent and 14.1 percent of all admissions through the ED. Injuries constituted 11.4 percent of all hospital admissions through the ED. Three other body systems each accounted for 5–6 percent of all admissions through the ED: mental health and substance abuse disorders (MHSA), endocrine disorders, and genitourinary disorders.

#### *Most frequent specific conditions*

Table 1 contains the top 20 specific conditions admitted to the hospital through the ED. These 20 conditions accounted for over half of all admissions through the ED. Pneumonia was the single most common condition admitted to the hospital through the emergency department, with nearly one million hospital admissions or 5.7 percent of all admissions through the ED. This was followed by four conditions related to the heart—congestive heart failure,

### Highlights

- Circulatory disorders (diseases of the heart and blood vessels) were the most frequent reason for admission to the hospital through the ED, accounting for 26.3 percent of all such admissions; injuries accounted for 11.4 percent.
- The top 20 specific conditions accounted for more than half of all hospital admissions through the ED, with pneumonia as the single most common specific condition at nearly one million (5.7 percent) of all such admissions.
- Complications of procedures, devices, implants, and grafts ranked as the ninth most common reason for admission through the ED and included postoperative infections, mal-function of orthopedic devices, and infection of arteriovenous fistulas used for dialysis.
- The top 20 specific conditions admitted through the ED included several chronic conditions: chronic obstructive lung disease, asthma, diabetes, and mood disorders. Also included were fluid and electrolyte disorders; urinary, skin, and blood infections; gall bladder disease, gastrointestinal bleeding, and appendicitis; and hip fracture.
- While up to 82 percent of the most frequent acute conditions were admitted through the ED, a large percentage of chronic conditions were also admitted through the ED; for example, 72 percent of cases with congestive heart failure, chronic obstructive lung disease, and asthma were such admissions.

chest pain, hardening of the arteries, and heart attack—together accounting for over 15 percent of all admissions through the ED.

Chronic obstructive lung disease ranked sixth, with nearly half a million hospital admissions. This was followed closely by stroke and irregular heartbeat, each with over 400,000 admissions through the ED. Complications of procedures, devices, implants, and grafts ranked as the ninth most common reason for admission through the ED, with over 400,000 cases and included postoperative infections, malfunction of orthopedic devices (e.g., hip replacements that had worn out), and infection of arteriovenous fistulas used for dialysis. Mood disorders were number 10, with nearly 390,000 cases admitted through the ED.

Among the remaining top 20 conditions were asthma and diabetes (both chronic conditions), three infections (urinary, skin, and blood), three gastrointestinal disorders (gallbladder disease, gastrointestinal bleeding, and appendicitis), one injury (hip fracture), and fluid and electrolyte disorders.

#### *Most frequent acute and chronic conditions admitted through the ED*

Chronic conditions are illnesses that generally last longer than one year, have some impact on behavior or lifestyle, and for which a patient is under medical care. The top five most frequent chronic and acute conditions admitted through the ED are shown in table 2. While 65–82 percent of cases with the five most frequent acute conditions were admitted through the ED, a large percentage of chronic conditions were admitted through the ED as well. Most notably, 72 percent of cases with congestive heart failure, chronic obstructive lung disease, and asthma—all chronic conditions that should be controlled on an outpatient basis with good primary care—were admitted through the ED. Almost half of mood disorders (depression and bipolar affective disorders) were admitted through the ED.

#### **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.

##### *Principal diagnosis and Clinical Classifications Software (CCS)*

The principal diagnosis is that condition established after study to be chiefly responsible for occasioning the admission of the patient to the hospital for care. CCS categorizes patient diagnoses into 260 clinically meaningful categories. This "clinical grouper" makes it easier to quickly understand patterns of diagnoses and procedures. For the purposes of this Statistical Brief, the CCS was used in conjunction with the CCS for Mental Health and Substance Abuse Conditions (CCS-MHSA).

##### *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.

#### **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](http://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](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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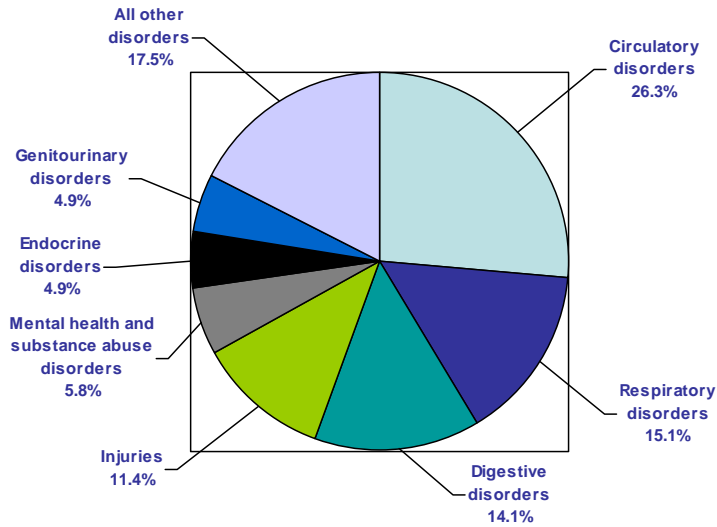
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AHRQ welcomes questions and comments from readers of this publication who are interested in obtaining more information about access, cost, use, financing, and quality of health care in the United States. We also invite you to tell us how you are using 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](mailto: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



**Figure 1. Reasons for hospitalizations admitted through the emergency department, 2003**



Note: All other conditions include nervous system disorders, infections, neoplasms, musculoskeletal disorders, skin disorders, and blood disorders. Admissions for pregnancy, childbirth, and newborns are excluded.

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

**Table 1: Most frequent specific conditions admitted to the hospital through the emergency department, 2003**

Rank	Condition (CCS code)	Number of admissions through the ED	Percentage of all cases admitted through the ED
1	Pneumonia	935,000	5.7
2	Congestive heart failure	807,000	5.0
3	Chest pain	702,400	4.3
4	Hardening of the arteries (coronary atherosclerosis)	521,000	3.2
5	Heart attack (acute myocardial infarction)	485,900	3.0
6	Chronic obstructive lung disease	445,200	2.7
7	Stroke (acute cerebrovascular disease)	436,100	2.7
8	Irregular heartbeat (cardiac dysrhythmias)	425,800	2.6
9	Complications of procedures, devices, implants and grafts	412,700	2.5
10	Mood disorders (depression and bipolar disorder)	387,500	2.4
11	Fluid and electrolyte disorders (primarily dehydration and fluid overload)	375,900	2.3
12	Urinary infections	361,300	2.2
13	Asthma	337,700	2.1
14	Diabetes mellitus with and without complications	325,800	2.0
15	Skin infections	291,000	1.8
16	Infection of blood stream (sepsis)	289,800	1.8
17	Gallbladder disease	273,900	1.7
18	Gastrointestinal bleeding	261,000	1.6
19	Hip fracture	248,200	1.5
20	Appendicitis	235,700	1.4
Total admissions through the ED for the top 20 conditions		8,578,100	52.5

Note: The number of admissions through the ED have been rounded to the nearest hundred.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2003. Admissions for pregnancy, childbirth, and newborns are excluded.

**Table 2. Top five acute and chronic reasons for hospitalizations with at least 20 percent of admissions through the emergency department, 2003**

<b>Acute conditions</b>	<b>Percentage of this condition admitted through ED</b>
Pneumonia	71.2
Chest pain	81.5
Heart attack (acute myocardial infarction)	64.7
Stroke (acute cerebrovascular disease)	77.9
Urinary infections	74.1
<b>Chronic conditions (CCS code)</b>	<b>Percentage of this condition admitted through ED</b>
Hardening of the arteries (coronary atherosclerosis)	41.5
Congestive heart failure	72.1
Mood disorders (depression and bipolar disorders)	49.2
Chronic obstructive lung disease	71.7
Asthma	72.1

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