

## STATISTICAL BRIEF #63

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### Hospital Stays for Lung Cancer, 2006

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#### Introduction

Cancer was the second-leading cause of death in the United States in 2006, and among all cancers, lung cancer had the highest mortality rate—more than colon, breast, and prostate cancers combined.<sup>1</sup> Smoking is considered a main cause of lung cancer, yet an estimated 10–15 percent of cases each year occur in non-smokers.<sup>2</sup> The disease can also result from a number of other behavioral, environmental, and hereditary factors, including exposure to hazardous substances such as asbestos and radon, pollution, second-hand smoke, or a genetic predisposition to, or family history of lung cancer.<sup>3,4</sup>

This Statistical Brief presents data from the Healthcare Cost and Utilization Project (HCUP) on characteristics of hospital stays related to the treatment of lung cancer in 2006. Characteristics of stays for lung cancer are compared to all non-maternal, non-neonatal hospitalizations. Differences by age, gender, payer, and region are also investigated for principal and secondary lung cancer diagnoses. Additionally, common principal diagnoses and procedures associated with lung cancer-related stays are outlined. All differences between estimates noted in the text are statistically significant at the 0.05 level or better.

#### Findings

In 2006, there were over half a million (535,700) hospitalizations citing a diagnosis of lung cancer—a rate of 179.3 stays per 100,000 population. Nearly 28.0 percent of lung cancer-related hospitalizations (149,900 stays) were principally for lung cancer and totaled \$2.1 billion in hospital costs. In addition, there were approximately 386,000 stays with lung cancer as a secondary diagnosis.

<sup>1</sup> Zeller J.L., Lynn C., Glass R.M. *Lung Cancer*. JAMA. 2007; 297(9): 1022. <http://jama.ama-assn.org/> (accessed October 8, 2008).

<sup>2</sup> Lung Cancer Fact Sheet. American Lung Association. October 2007. <http://www.lungusa.org/> (accessed October 8, 2008).

<sup>3</sup> Lung Cancer. *Medline Plus*. U.S. National Library of Medicine, National Institutes of Health, 2008. <http://www.nlm.nih.gov/medlineplus/lungcancer.html> (accessed October 8, 2008).

<sup>4</sup> Q&A: Lung Cancer in Non-Smokers. *CancerWise*. University of Texas M.D. Anderson Cancer Center. November 2007. <http://www.cancerwise.org/> (accessed October 8, 2008).

#### Highlights

- There were over half a million hospitalizations related to lung cancer in 2006.
- Aggregate costs for all hospitalizations related to lung cancer totaled over 6 billion dollars.
- Between 1995 and 2006, the number of stays principally for lung cancer remained relatively stable, while increasing about 15 percent as a secondary diagnosis.
- The South had the highest rate of lung cancer hospitalizations as a principal diagnosis, but the Northeast had the highest rate of lung cancer stays overall (including stays for which lung cancer was a secondary diagnosis).
- The rates of lung cancer-related hospitalizations were highest in males 65 years and older.
- Approximately 40 percent of all hospitalizations related to lung cancer had some form of cancer or maintenance therapy as a principal diagnosis, including lung cancer, secondary malignancies, maintenance radiology or chemotherapy, and other cancers.
- A diagnostic bronchoscopy and biopsy of the bronchus was performed in nearly half of stays principally for lung cancer, while almost one-third cited a lobectomy or pneumonectomy.

As shown in figure 1, the number of stays principally for lung cancer has remained relatively stable since 1995, while hospitalizations with lung cancer as secondary diagnosis increased 15 percent during this time. Overall, the total number of lung cancer-related hospitalizations has increased 10 percent since 1995, ranging from 475,600 stays in 1999 to a high of 542,200 stays in 2005 (not shown).

#### *General characteristics*

Table 1 presents the general characteristics of hospital stays involving lung cancer. Although stays principally for lung cancer were over two days longer than the average non-maternal, non-neonatal hospitalization (7.5 days versus 5.1 days, respectively), the average cost per day was the same (\$1,900 per day). Compared to the average hospitalization, stays with a secondary diagnosis of lung cancer had a slightly longer length of stay (5.9 days versus 5.1 days), yet the mean cost per day was slightly lower (\$1,800 versus \$1,900), indicating lower intensity of care for patients with a secondary diagnosis of lung cancer.

Patients hospitalized principally for lung cancer were less likely to be admitted through the emergency department (ED) than the average hospitalization (41.3 percent versus 55.7 percent). Patients with a secondary diagnosis of lung cancer were admitted through the ED even more often (60.2 percent).

In-hospital deaths were substantially higher for stays involving lung cancer than the average non-maternal, non-neonatal hospitalization. In 2006, 13.0 percent of stays principally for lung cancer and 8.6 percent of hospitalization with lung cancer as a secondary diagnosis resulted in an in-hospital death—five times and three times higher than the average non-maternal, non-neonatal hospital stay (2.6 percent).

#### *Lung cancer hospitalizations, by age and gender*

As shown in table 1, the average age of patients hospitalized with a lung cancer diagnosis was 10 to 11 years older than the average non-maternal, non-neonatal hospitalized patient. In fact, the rate of hospitalization for lung cancer increases sharply with age (table 1 and figure 2). Patients under the age of 45 were rare—patients 44 years and younger accounted for only 2.4 percent of stays principally for lung cancer (3.5 stays per 100,000 population) and 1.8 percent of stays with a secondary lung cancer diagnosis (6.7 stays per 100,000 population). About two-thirds of lung cancer-related stays occurred among patients 65 years and older—a rate of 253.3 stays per 100,000 population for principal lung cancer and a rate of 708.8 stays per 100,000 population for stays with it as a secondary diagnosis. More than twice as many hospital stays for patients 45 years and older involved a secondary diagnosis of lung cancer, potentially indicating follow-up hospitalizations for sequelae of lung cancer.

Overall, males were hospitalized more frequently than females for lung cancer. Males accounted for 53.6 percent of stays principally for lung cancer and 52.8 percent of stays with a secondary lung cancer diagnosis (table 1). However, figure 3 indicates that females 18 to 44 years old had a slightly higher rate of hospitalization than males in the same age group (4.7 stays per 100,000 population versus 4.1 stays per 100,000 population for stays principally for lung cancer, and 9.6 stays per 100,000 population versus 7.5 stays per 100,000 population for secondary lung cancer diagnoses, respectively). Yet for ages 45 years and older, males had a much higher rate of hospitalization. In fact, males over the age of 65 had the highest rates of hospitalization for all lung cancer patients, with 327.6 stays per 100,000 population for principal lung cancer hospitalizations (64 percent higher than females) and 896.7 stays per 100,000 population for stays with a secondary lung cancer diagnosis (57 percent higher than females).

#### *Lung cancer hospitalizations, by primary payer*

Analyses by expected primary payer showed a similar distribution for both principal and secondary lung cancer diagnoses (figure 4). Medicare was the most common primary payer for hospitalizations involving lung cancer, accounting for 60.0 percent of stays principally for lung cancer and 68.5 percent of hospitalizations with a secondary diagnosis of lung cancer.

Private insurance was the second most common primary payer for both principal and secondary stays, at 25.7 and 20.5 percent, respectively. Medicaid covered about 7.0 percent of lung cancer-related hospitalizations. The uninsured accounted for 3.6 percent of principal lung cancer stays and 1.8 percent of stays with a secondary diagnosis of lung cancer—both less than the average non-maternal, non-neonatal hospitalization (5.8 percent).

### *Lung cancer hospitalizations, by region*

As shown in figure 5, the Northeast had the highest rates of lung cancer-related hospitalizations (207.7 stays per 100,000 population), while the West had the lowest rates (115.3 stays per 100,000 population). However, rates of hospitalization by region varied by the type of lung cancer diagnosis. As a principal diagnosis, lung cancer was most prevalent in the South (88.8 stays per 100,000 population) and lowest in the Northeast (24.9 stays per 100,000 population). As a secondary diagnosis, the Northeast had the highest rate—178.1 stays per 100,000 population. The West had the lowest rate of secondary diagnoses, with 81.2 stays per 100,000 population.

### *Principal diagnoses for lung cancer hospitalizations*

Over 70 percent of hospitalizations citing lung cancer had the disease listed as a secondary diagnosis. Table 2 lists the top principal diagnoses for stays where lung cancer was present as any diagnosis. Fifteen of the top 20 diagnoses were cancer, respiratory disease, or circulatory disease. Approximately 40 percent of all hospitalizations related to lung cancer had some form of cancer or cancer therapy as a principal diagnosis, including lung cancer (28.0 percent), secondary malignancies (9.8 percent), radiotherapy or chemotherapy (1.4 percent), and other cancers (1.1 percent)—colon, bladder, kidney, and other forms.

Respiratory diagnoses were also common principal reasons for hospital stays involving lung cancer. Pneumonia accounted for approximately 8.2 percent of lung cancer-related stays, followed by chronic obstructive pulmonary disease, respiratory failure, pulmonary heart disease, and pleurisy, pneumothorax, and pulmonary collapse. Circulatory diseases were also important principal diagnoses and included congestive heart failure, cardiac dysrhythmias, stroke, acute myocardial infarction, coronary atherosclerosis, and phlebitis and thromboembolism.

### *Common procedures associated with lung cancer-related hospitalizations*

Table 3 compares the frequency of the ten most common procedures performed during stays principally for lung cancer with the frequency of these procedures among hospitalization noting a secondary diagnosis of lung cancer. Nearly half (49.4 percent) of stays principally for lung cancer had a diagnostic bronchoscopy and biopsy of the bronchus, and almost one-third (31.0 percent) cited a lobectomy or pneumonectomy. In comparison, less than 8 percent (7.8 percent) of stays with a secondary lung cancer diagnosis noted diagnostic bronchoscopy and biopsy of the bronchus, while less than 1 percent (0.4 percent) noted a lobectomy or pneumonectomy.

However, other procedures directly related to the diagnosis or treatment of the lung cancer itself, as opposed to other diagnoses, were common in all lung cancer-related hospitalizations. These procedures included chest drainage, respiratory intubation and mechanical ventilation, therapeutic radiology, and cancer chemotherapy. Upper gastrointestinal endoscopies and biopsies, procedures likely used to diagnose secondary malignancies, were performed in 2.6 and 4.0 percent, respectively, of stays principally for lung cancer and stays with a secondary diagnosis of lung cancer.

Blood transfusions were the most common procedure performed during hospitalizations with a secondary diagnosis of lung cancer, accounting for 14.7 percent of these stays. It was also common among stays principally for lung cancer (11.3 percent).

## **Data Source**

The estimates in this Statistical Brief are based upon data from the HCUP 2006 Nationwide Inpatient Sample (NIS). Historical data were drawn from the 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, and 2005 NIS. Supplemental source included data on regional population estimates from Table 8: Annual Estimates of the Population for the United States, Regions, and Divisions: April 1, 2000 to July 1, 2007 (NST-EST2007-01), Population Division, U.S. Census Bureau, release date: December 27, 2007. (<http://www.census.gov/popest/states/tables/NST-EST2007-01.xls>).

## Definitions

### *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 concomitant conditions that coexist at the time of admission or that develop during the stay.

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.<sup>5</sup> This "clinical grouper" makes it easier to quickly understand patterns of diagnoses and procedures.

### *Case Definition*

For this report, Lung Cancer was defined as CCS diagnosis 19: Cancer of the bronchus, lung.

### *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).<sup>6</sup> 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 hundred.

### *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 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.

<sup>5</sup>HCUP CCS. Healthcare Cost and Utilization Project (HCUP). August 2006. U.S. Agency for Healthcare Research and Quality, Rockville, MD. [www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp](http://www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp)

<sup>6</sup>HCUP Cost-to-Charge Ratio Files (CCR). Healthcare Cost and Utilization Project (HCUP). 2001–2005. U.S. Agency for Healthcare Research and Quality, Rockville, MD. [www.hcup-us.ahrq.gov/db/state/costtocharge.jsp](http://www.hcup-us.ahrq.gov/db/state/costtocharge.jsp).

### *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

### *Admission source*

Admission source indicates where the patient was located prior to admission to the hospital. Emergency admission indicates the patient was admitted to the hospital through the emergency department.

Admission from another hospital indicates the patient was admitted to this hospital from another short-term, acute-care hospital. This usually signifies that the patient required the transfer in order to obtain more specialized services that the originating hospital could not provide. Admission from long-term care facility indicates the patient was admitted from a long-term facility such as a nursing home.

### *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  
**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 and Family Services

## 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.

## For More Information

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

For additional HCUP statistics, visit HCUPnet, our interactive query system, at [www.hcup.ahrq.gov](http://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, 2006*. Online. May 14, 2008. U.S. Agency for Healthcare Research and Quality.  
[http://www.hcup-us.ahrq.gov/db/nation/nis/2006NIS\\_INTRODUCTION.pdf](http://www.hcup-us.ahrq.gov/db/nation/nis/2006NIS_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 R.L., 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](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](mailto:hcup@ahrq.gov) or send a letter to the address below:

Irene Fraser, Ph.D., Director  
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Agency for Healthcare Research and Quality  
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**Table 1. Characteristics of hospitalizations related to lung cancer compared to hospitalizations for all conditions, 2006**

	<b>Hospital stays principally for lung cancer</b>	<b>Hospital stays with a secondary diagnosis of lung cancer</b>	<b>Hospital stays for all conditions*</b>
Total number of hospitalizations	149,900	385,800	30,142,300
<b>Utilization characteristics</b>			
Mean length of stay, days	7.5	5.9	5.1
Mean cost per hospitalization	\$14,200	\$10,400	\$9,900
Mean cost per day	\$1,900	\$1,800	\$1,900
Aggregate costs	\$2.1 billion	\$4.0 billion	\$297.6 billion
Percentage admitted through the Emergency Department	41.3%	60.2%	55.7%
Percentage died in hospital	13.0%	8.6%	2.6%
<b>Patient characteristics</b>			
Mean age, years	67.7	69.3	58.1
Percentage by age group:			
18 to 44 years	2.4%	1.8%	18.5%
45 to 64 years	34.6%	29.7%	30.2%
65 years and older	63.0%	68.4%	44.7%
Percentage of patients male	53.6%	52.8%	46.4%

\*Stays for neonates and maternal conditions have been excluded.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2006.



**Table 2. Top 20 principal diagnoses among lung cancer-related hospitalizations, 2006**

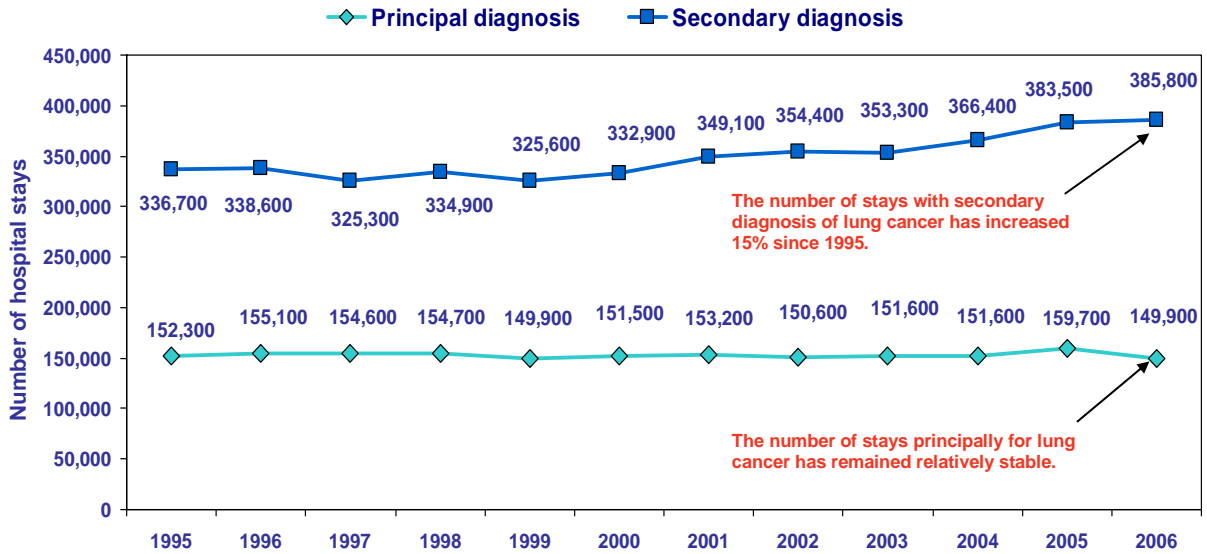
<b>Rank</b>	<b>Principal Diagnosis</b>	<b>Number of stays</b>	<b>Percentage of all lung cancer hospitalizations</b>
1	Cancer of bronchus, lung	150,000	28.0
2	Secondary malignancies	52,300	9.8
3	Pneumonia	43,900	8.2
4	Chronic obstructive pulmonary disease and bronchiectasis	23,500	4.4
5	Respiratory failure, insufficiency, arrest (adult)	15,100	2.8
6	Fluid and electrolyte disorders	12,800	2.4
7	Septicemia (except in labor)	12,600	2.3
8	Congestive heart failure, nonhypertensive	11,100	2.1
9	Cardiac dysrhythmias	9,800	1.8
10	Complications of surgical procedures or medical care	7,900	1.5
11	Maintenance chemotherapy, radiotherapy	7,300	1.4
12	Pulmonary heart disease	7,200	1.4
13	Pleurisy, pneumothorax, pulmonary collapse	7,100	1.3
14	Rehabilitation care, fitting of prostheses, and adjustment of devices	6,500	1.2
15	Acute cerebrovascular disease (stroke)	6,100	1.1
16	Acute myocardial infarction (MI)	6,000	1.1
17	Anemia	5,800	1.1
18	Other cancer diagnoses	5,800	1.1
19	Coronary atherosclerosis	5,500	1.0
20	Phlebitis, thrombophlebitis and thromboembolism	5,000	1.0

**Table 3. Top 10 all-listed procedures for principal lung cancer stays compared to stays with a secondary lung cancer diagnosis, 2006**

<b>All-Listed Procedure</b>	<b>Rank</b>	<b>Percentage of principal lung cancer stays (n=149,900)</b>	<b>Rank</b>	<b>Percentage of stays with a secondary diagnosis of lung cancer (n=385,800)</b>
Diagnostic bronchoscopy and biopsy of bronchus	1	49.4%	4	7.8%
Lobectomy or pneumonectomy	2	31.0%	43	0.4%
Incision of pleura, thoracentesis, chest drainage	3	15.7%	3	9.2%
Blood transfusion	4	11.3%	1	14.7%
Respiratory intubation and mechanical ventilation	5	10.5%	2	10.2%
Therapeutic radiology	6	6.6%	6	4.5%
Cancer chemotherapy	7	5.9%	8	3.3%
Insertion of catheter or spinal stimulator and injection into spinal canal	8	3.2%	30	0.6%
CT scan chest	9	3.1%	12	1.7%
Upper gastrointestinal endoscopy, biopsy	10	2.6%	7	4.0%



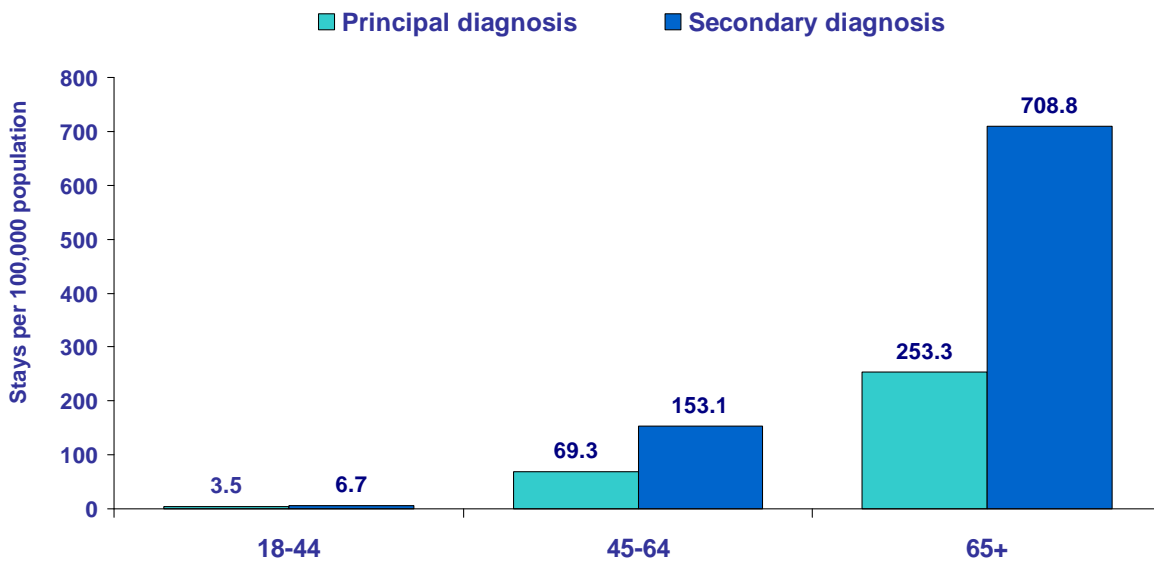
**Figure 1. Between 1995 and 2006, the number of hospitalizations with secondary lung cancer increased by 15 percent, while stays principally for lung cancer remained stable**



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, HCUPnet, Nationwide Inpatient Sample, 2006.



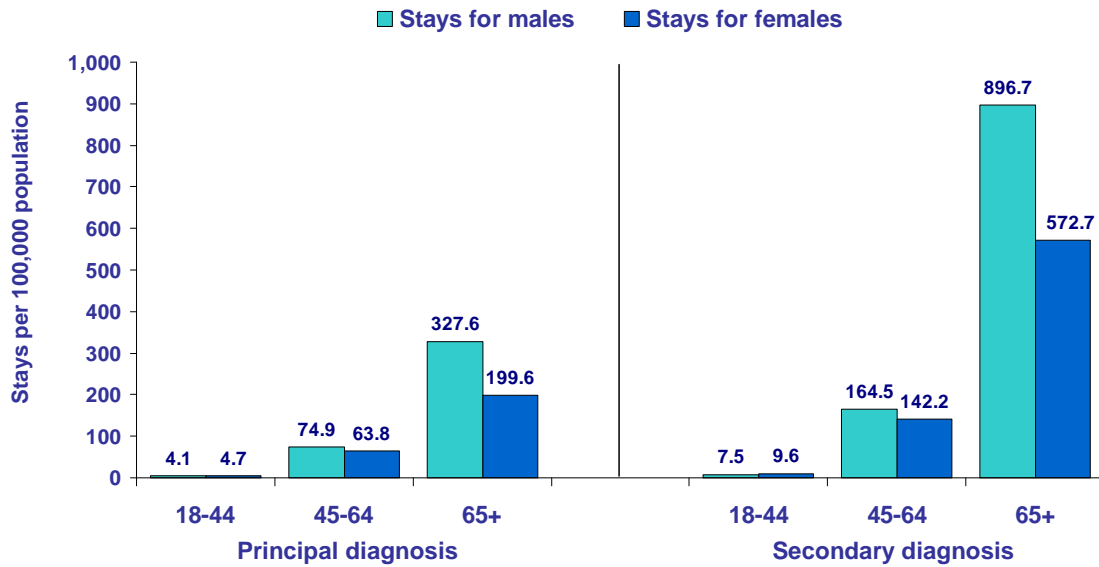
**Figure 2. The rate of lung cancer-related hospitalizations was higher for older patients and older patients were more likely to be hospitalized with a secondary diagnosis of lung cancer, 2006**



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, HCUPnet, Nationwide Inpatient Sample, 2006.



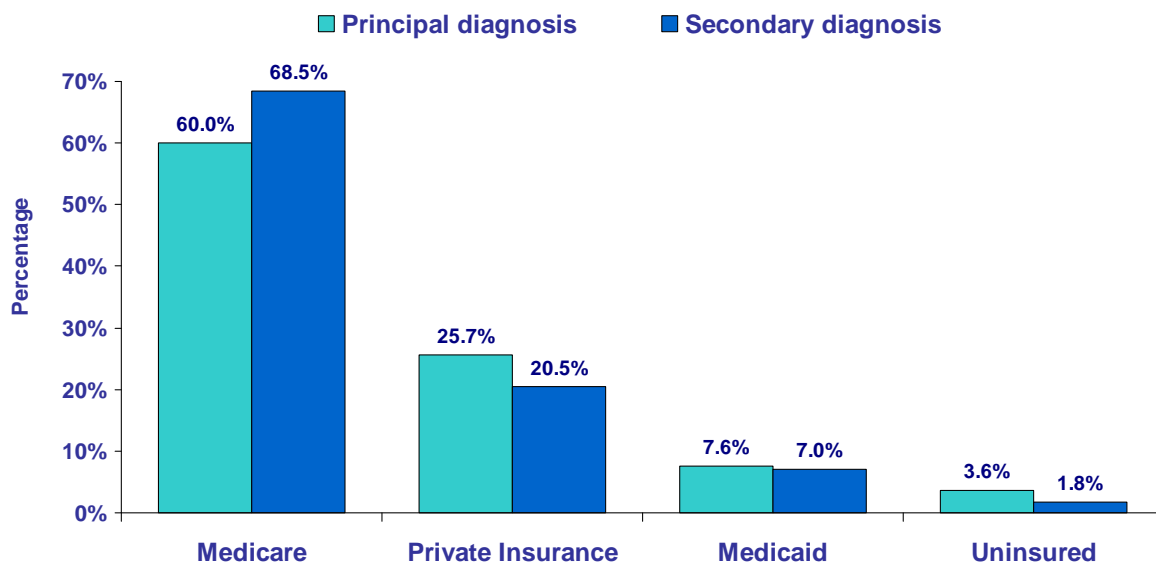
**Figure 3. The rate of lung cancer-related hospitalizations was higher among men 45 years and older, 2006**



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, HCUPnet, Nationwide Inpatient Sample, 2006.



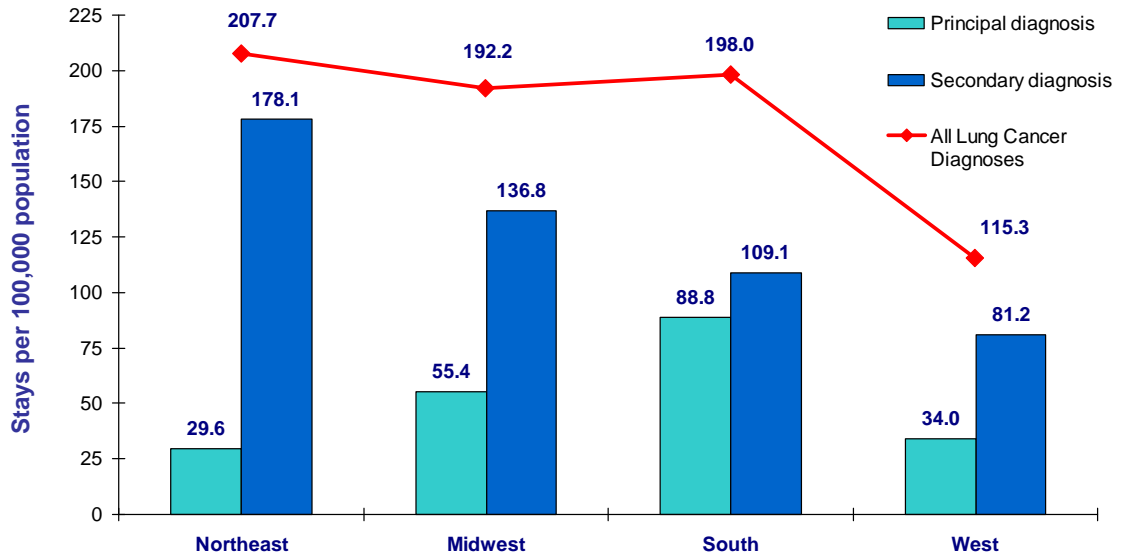
**Figure 4. Medicare was the primary payer for about two-thirds of all lung cancer-related hospitalizations, 2006**



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, HCUPnet, Nationwide Inpatient Sample, 2006.



**Figure 5. The rate of hospitalization was highest in the South for stays principally for lung cancer and in the Northeast for stays with a secondary lung cancer diagnosis, 2006**



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, HCUPnet, Nationwide Inpatient Sample, 2006.