SECTION 4 COSTS FOR INPATIENT HOSPITAL STAYS

HIGHLIGHTS

- The top three conditions with the highest aggregate costs—septicemia, coronary atherosclerosis, and osteoarthritis —accounted for more than 11 percent of all hospital costs in 2008.
- Three of the twenty most expensive conditions were musculoskeletal: osteoarthritis, spondylosis, intervertebral disc disorders, and other back problems, and fracture of neck of femur (hip).
  - Costs for osteoarthritis and spondylosis grew at more than twice the pace of total hospital costs between 1997 and 2008.
- Between 1997 and 2008, costs for acute renal failure, septicemia, and respiratory failure grew at two to three times the rate of total hospital costs.
- Hospital stays for septicemia cost a total of $14.6 billion and accounted for 791,000 discharges.
- Aggregate costs for stays in community hospitals grew 4.4 percent annually between 1997 and 2008.
- Growth in intensity of services accounted for 71 percent of the growth in aggregate costs, while population growth was responsible for 24 percent and an increased number of discharges per population for only 5 percent of the growth in aggregate costs.
- Non-elderly adult (45 to 64 years) discharges accounted for less than half (48 percent) of the aggregate cost of all inpatient stays, including maternal and neonatal stays.
- Patients 65-84 years accounted for 35 percent of all hospital costs.
- Medicare, the single largest expected payer for hospitalizations in 2008, accounted for 46 percent of aggregate inpatient costs.
- Medicaid stays accounted for 14 percent of in-hospital costs.
- Private insurance was responsible for 32 percent of aggregate costs; the uninsured were responsible for 4 percent.
- Five broad groups of conditions – circulatory, musculoskeletal system and connective tissue, respiratory, digestive, and maternal/neonatal stays accounted for more than half of total hospital costs in 2008.
- Maternal and neonatal stays were responsible for the greatest portion of Medicaid hospitalization costs (27 percent) compared to only 14 percent of private payer costs.
- Stays for musculoskeletal system and connective tissue conditions accounted for larger shares of hospital costs for Medicare (14 percent) and private insurance (15 percent) than for Medicaid (6 percent) and the uninsured (8 percent).

EXHIBIT 4.1 Cost by Principal Diagnosis

Aggregate Costs by Principal Diagnosis, 1997, 2002, and 2008

PRINCIPAL CCS DIAGNOSIS	TOTAL INFLATION-ADJUSTED† HOSPITAL COSTS IN BILLIONS: 2008 DOLLARS			PERCENT OF TOTAL COSTS			AVERAGE ANNUAL GROWTH
	1997	2002	2008	1997	2002	2008	1997-2008
All diagnoses	$227.2	$305.7	$364.7	100.0%	100.0%	100.0%	4.4%
Septicemia	4.2	5.1	14.6	1.9	1.7	4.0	11.9
Coronary atherosclerosis	15.2	17.0‡	14.5	6.7	5.6	4.0	-0.4
Osteoarthritis	4.9	7.4	13.5	2.1	2.4	3.7	9.7
Acute myocardial infarction	9.5	12.5	11.6‡	4.2	4.1	3.2	1.9
Liveborn infant	8.2	10.1	11.5	3.6	3.3	3.1	3.1
Complication of device, implant or graft	5.7	8.4	11.5	2.5	2.8	3.1	6.5
Congestive heart failure	6.9	9.9	10.7‡	3.0	3.2	2.9	4.1
Pneumonia	9.2	11.2	10.5‡	4.1	3.7	2.9	1.1
Spondylosis, intervertebral disc disorders, and other back problems	3.6	6.2	9.5	1.6	2.0	2.6	9.4
Respiratory failure	3.4	4.7	9.1	1.5	1.5	2.5	9.3
Acute cerebrovascular disease	5.6	6.4	7.6	2.5	2.1	2.1	2.8
Cardiac dysrhythmias	3.7	6.6	7.4	1.6	2.2	2.0	6.6
Complication of surgical procedures or medical care	3.0	4.5	6.1	1.3	1.5	1.7	6.7
Chronic obstructive pulmonary disease and bronchiectasis	3.4	4.5	5.4	1.5	1.5	1.5	4.1
Rehabilitation care, fitting of prostheses, and adjustment of devices	3.9	5.1	4.9‡	1.7	1.7	1.3	2.2
Biliary tract disease	3.4	4.5	4.9	1.5	1.5	1.3	3.2
Diabetes mellitus with complications	2.8	4.0	4.6	1.3	1.3	1.3	4.4
Fracture of neck of femur (hip)	3.3	3.8	4.5	1.5	1.3	1.2	2.9
Acute renal failure	1.0	1.8	4.3	0.4	0.6	1.2	14.2
Mood disorders	3.2	4.3	4.2‡	1.4	1.4	1.1	2.4

† Adjusted for inflation using the GDP deflator (http://www.bea.gov/national/nipaweb/SelectTable.asp, Table 1.1.4. Price Indexes for Gross Domestic Product).

‡ Costs are not statistically different from previously reported year shown on table at p<0.05.

Note: Aggregate costs for residual codes and those not elsewhere classified are not shown here. As a result, aggregate costs for all body systems may be larger than the sum of the component parts.

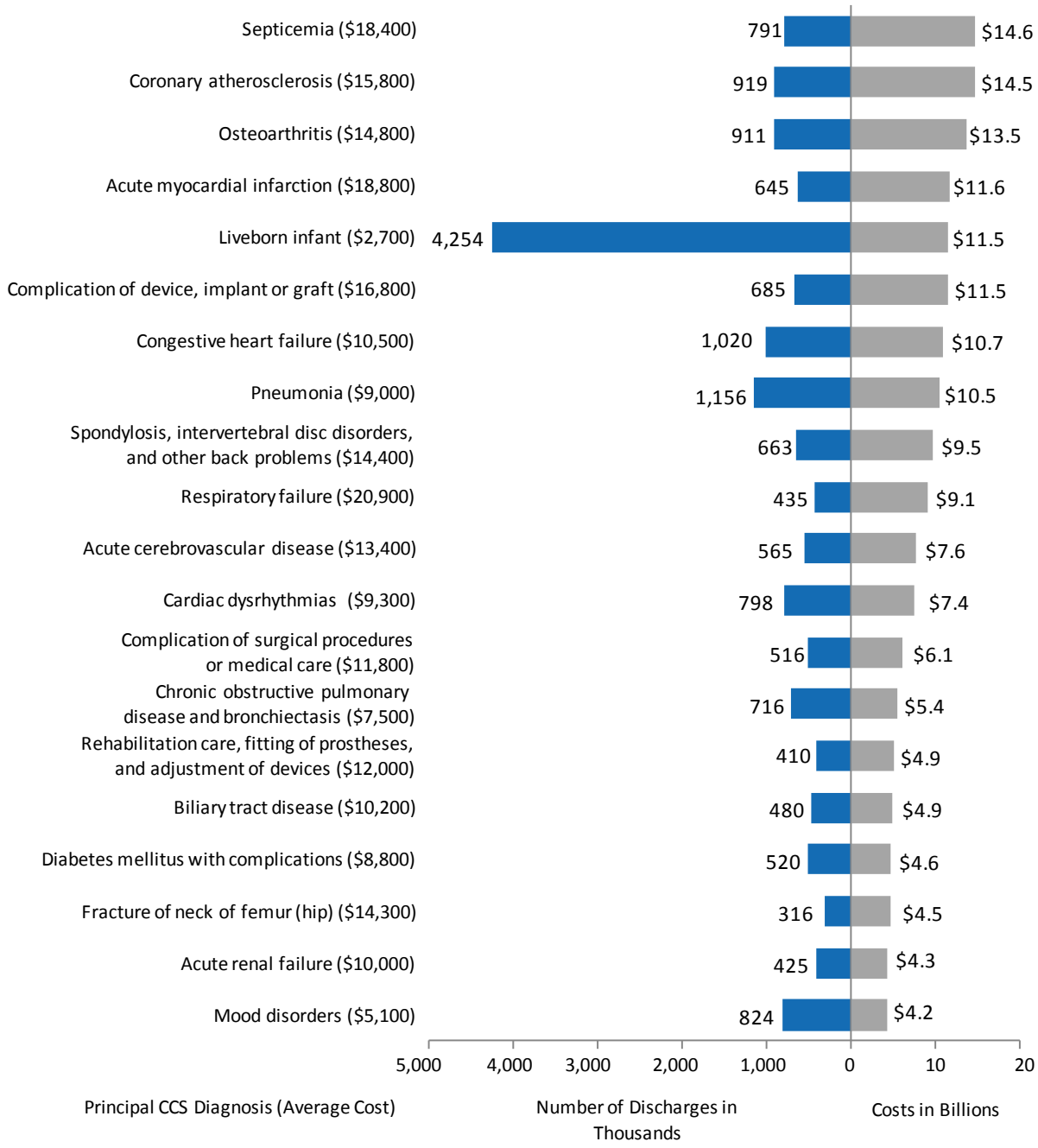
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997, 2002, and 2008.

Inflation-adjusted aggregate costs for community hospital stays rose from $227.2 billion in 1997 to $364.7 billion in 2008.

- The top three conditions with the highest aggregate costs—septicemia, coronary atherosclerosis, and osteoarthritis —accounted for more than 11 percent of all hospital costs in 2008.
- Five of the twenty most expensive conditions were cardiovascular: coronary atherosclerosis, acute myocardial infarction, congestive heart failure, acute cerebrovascular disease, and cardiac dysrhythmias.
  - With the exception of costs of stays for cardiac dysrhythmias, the costs for these cardiovascular diagnoses grew at a slower pace than total hospital costs between 1997 and 2008.
- Three of the twenty most expensive conditions were musculoskeletal: osteoarthritis, spondylosis, intervertebral disc disorders, and other back problems, and fracture of neck of femur (hip).
  - Costs for osteoarthritis and spondylosis grew at more than twice the pace of total hospital costs between 1997 and 2008.

- Between 1997 and 2008, costs for acute renal failure, septicemia, and respiratory failure grew at two to three times the rate of total hospital costs. Costs for pneumonia, acute myocardial infarction, rehabilitation care, fitting of prostheses, and adjustment of devices, and mood disorders grew at a slower pace than overall costs. Costs for coronary atherosclerosis stabilized between 1997 and 2008.

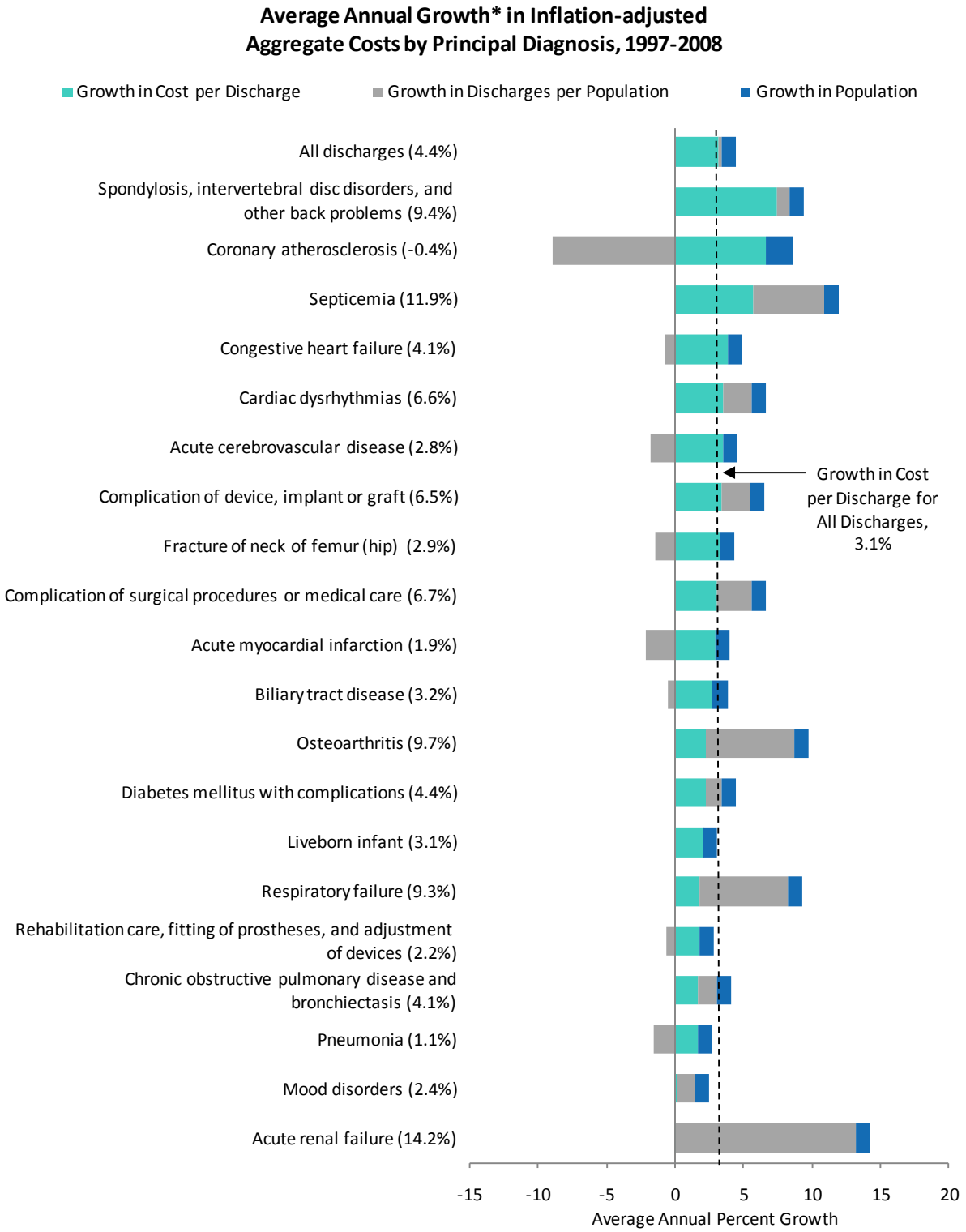
Number of Discharges and Aggregate Costs by Principal Diagnosis, 2008



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2008.

- Hospital stays for septicemia cost a total of $14.6 billion and accounted for 791,000 discharges. The average cost per discharge was $18,400, about twice as much as the average cost for all discharges.
- The greatest number of discharges was for liveborn infants (4.3 million). These stays were responsible for $11.5 billion in hospital costs; each stay cost an average of $2,700.
- Mood disorders cost $4.2 billion and accounted for 824,000 discharges. This diagnosis had the lowest average cost per stay ($5,100) after liveborn infants.

EXHIBIT 4.2 Cost Factors Accounting for Growth by Principal Diagnosis

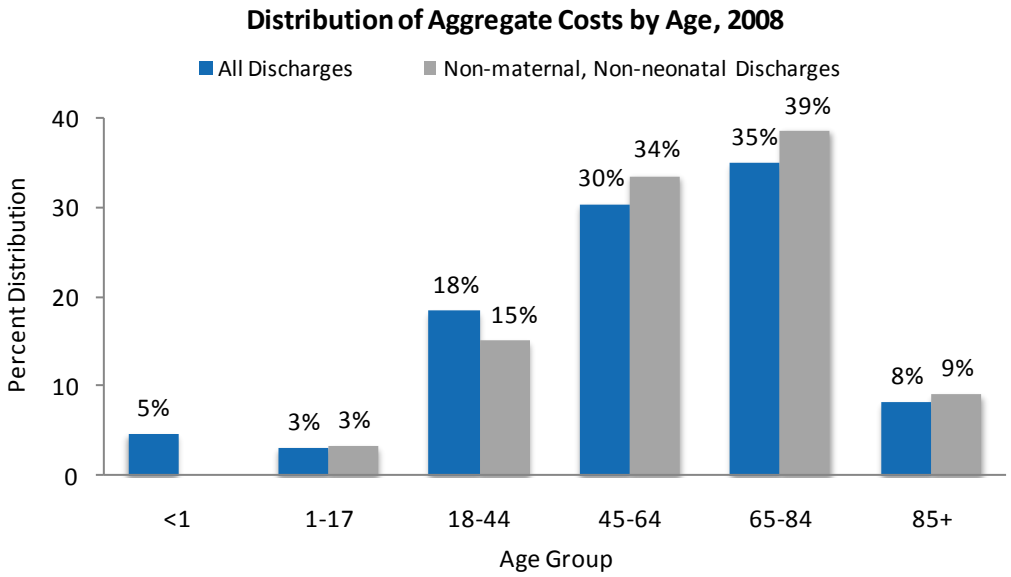


*Bar segments depict the portion of growth attributable to each of the factors listed in the key. The net average annual growth is noted in the axis label.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2008.

- Aggregate costs for stays in community hospitals grew 4.4 percent annually between 1997 and 2008. The factors that comprised this overall growth were:
  - Greater intensity of services (cost per discharge) provided during the hospital stay (averaging 3.1 percent annually),
  - Population growth (up 1.0 percent annually), and
  - Growth in the number of stays per person (only 0.2 percent annually).
- Overall, growth in intensity of services accounted for 71 percent of the growth in aggregate costs, while population growth was responsible for 24 percent and an increased number of discharges per population for only 5 percent of the growth in aggregate costs.
- The growth in costs for most conditions with high aggregate costs was driven predominantly by higher than average growth in cost per discharge, indicating greater intensity of service utilization and more expensive interventions.
- Growth in stays per person made up more than half the growth in costs for discharges for osteoarthritis, respiratory failure, mood disorders, and acute renal failure.
- The increase in number of stays per person was a relatively more important factor in cost growth for discharges with septicemia, cardiac dysrhythmias, complication of surgical procedures or medical care, diabetes mellitus with complications, and chronic obstructive pulmonary disease and bronchiectasis.
- The decline in hospitalizations per population dampened increases in the net cost of hospital stays for coronary atherosclerosis, congestive heart failure, acute cerebrovascular disease, fracture of neck of femur (hip), acute myocardial infarction, rehabilitation care, and pneumonia.

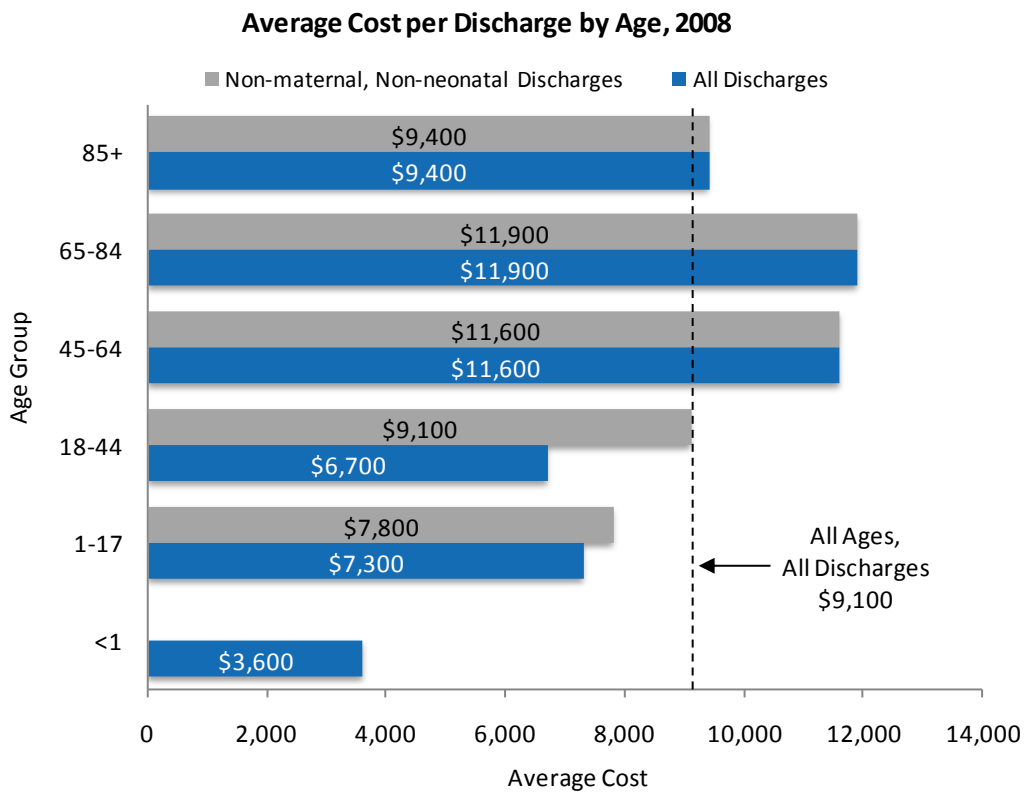
EXHIBIT 4.3 Cost by Age



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2008.

In 2008, the aggregate cost for all hospital stays was $364.7 billion.

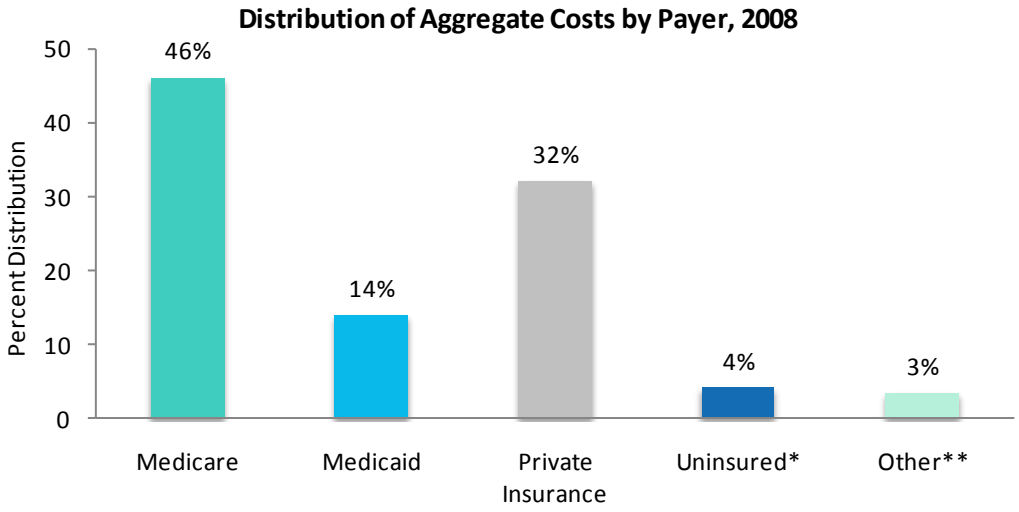
- Non-elderly adult discharges accounted for less than half (48 percent) of the aggregate cost of all inpatient stays, including maternal and neonatal stays.
- Patients 65-84 years accounted for 35 percent of all hospital costs.
- Discharges among patients 45-64 and 65-84 years accounted for larger shares of aggregate non-maternal, non-neonatal costs (34 and 39 percent, respectively) relative to other age groups.



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2008.

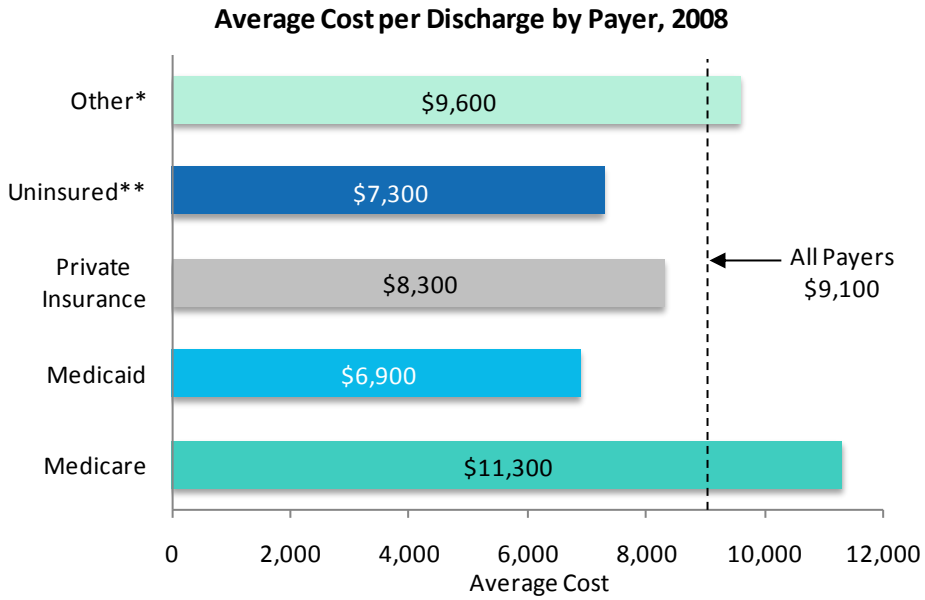
- Stays for patients under one year of age had an average cost of $3,600. The overwhelming majority of these discharges were liveborn infants.
- On average, the cost per discharge for all patients 1-17 years ($7,300) was less than the average cost per discharge across all age groups ($9,100).
- When maternal hospital stays were excluded, the average cost of a discharge for patients 18-44 years changed from $6,700 to $9,100.
- The average cost per discharge for patients 45-64 years and 65-84 years were similar—$11,600 and $11,900, respectively— and were greater than the cost per discharge across all age groups ($9,100).
- The average cost per discharge for patients 85 years and over was $9,400.

EXHIBIT 4.4 Cost by Payer



*Includes discharges classified as self-pay or no charge.
**Includes other payers such as Workers' Compensation, TRICARE, CHAMPUS, CHAMPVA, Title V, and other government programs.
Note: Excludes a small number of discharges (68,000 or 0.2 percent) with missing payer that have a small sum of missing costs ($642 million or 0.2 percent).
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2008.

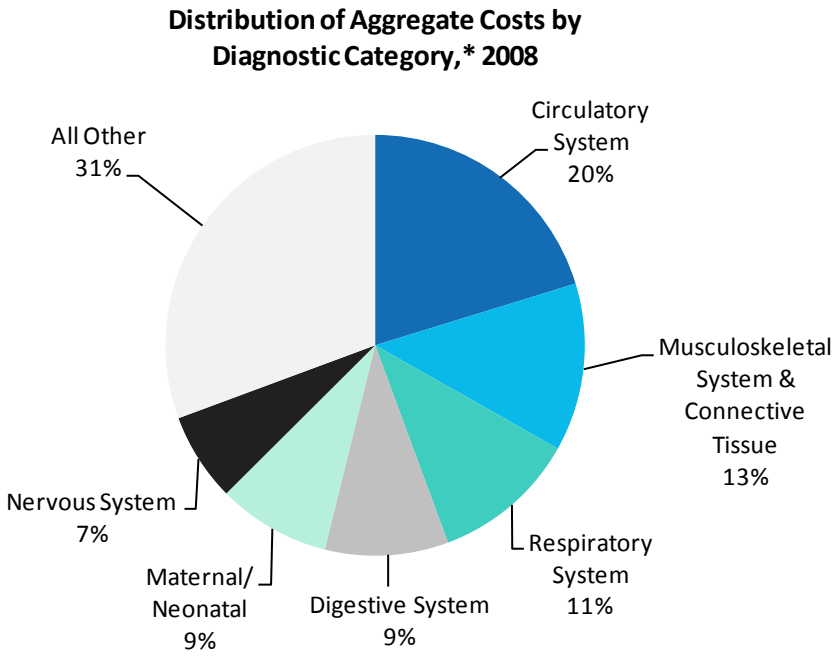
- Medicare, the single largest expected payer for hospitalizations in 2008, accounted for 46 percent of aggregate inpatient costs.
- Medicaid stays accounted for 14 percent of in-hospital costs.
- Private insurance was responsible for 32 percent of aggregate costs; the uninsured were responsible for 4 percent.



*Includes other payers such as Workers' Compensation, TRICARE, CHAMPUS, CHAMPVA, Title V, and other government programs.
**Includes discharges classified as self-pay or no charge.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2008.

- Medicare discharges had the highest average cost per hospital stay ($11,300).
- The average cost per discharge billed to private insurance ($8,300), the uninsured ($7,300), and Medicaid ($6,900) was lower than the all payer average cost per discharge ($9,100).

EXHIBIT 4.5 Cost by Diagnostic Category



* Based on principal diagnosis defined by Major Diagnostic Category (MDC).
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2008.

- Circulatory conditions accounted for the largest share of hospital costs (20 percent) in 2008.
- Additional diagnostic categories responsible for large portions of hospital costs included:
  - Musculoskeletal system and connective tissue conditions (13 percent),
  - Respiratory conditions (11 percent),
  - Digestive conditions and maternal/neonatal stays (each 9 percent), and
  - Nervous system conditions (7 percent).

Aggregate Costs and Percent Distribution for each Payer by Diagnostic Category,† 2008

	MEDICARE		MEDICAID		PRIVATE INSURANCE		UNINSURED*		OTHER**	
	Cost (Billions)	Percent	Cost (Billions)	Percent	Cost (Billions)	Percent	Cost (Billions)	Percent	Cost (Billions)	Percent
Total	$167.9	100.0%	$51.1	100.0%	$117.1	100.0%	$15.5	100.0%	$12.6	100.0%
Circulatory System	43.3	25.8	5.9	11.5	19.8	16.9	2.9	18.5	1.9	14.8
Musculoskeletal System & Connective Tissue	22.8	13.6	3.0	5.8	17.3	14.8	1.2	7.6	2.8	22.5
Respiratory System	24.2	14.4	5.2	10.2	9.0	7.6	1.4	8.9	1.0	8.1
Digestive System	16.6	9.9	3.6	7.1	11.6	9.9	1.6	10.5	1.0	8.2
Maternal/Neonatal	0.2	0.1	13.6	26.7	15.8	13.5	1.1	6.8	0.9	6.8
Nervous System	11.5	6.8	3.4	6.6	7.7	6.6	1.3	8.5	0.9	7.5
All Other	49.3	29.3	16.4	32.1	35.8	30.6	6.1	39.3	4.0	32.0

† Based on principal diagnosis defined by Major Diagnostic Category (MDC).

* Includes discharges classified as self-pay or no charge.

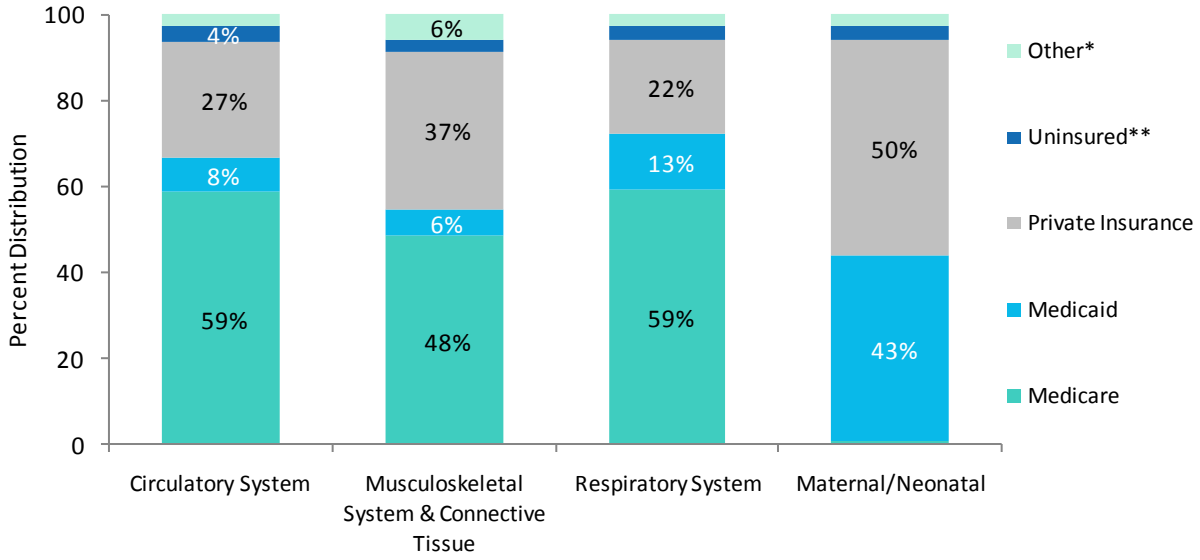
** Includes other payers such as Workers' Compensation, TRICARE, CHAMPUS, CHAMPVA, Title V, and other government programs.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2008.

Costs by diagnostic category varied by payer, as did the distribution of costs.

- Stays for circulatory conditions accounted for the largest share of hospital costs for Medicare (26 percent), private insurance (17 percent), and the uninsured (19 percent).
- Maternal and neonatal stays were responsible for the greatest portion of Medicaid hospitalization costs (27 percent) compared to only 14 percent of private payer costs.
- Stays for musculoskeletal system and connective tissue conditions accounted for larger shares of hospital costs for Medicare (14 percent) and private insurance (15 percent) than for Medicaid (6 percent) and the uninsured (8 percent).

Distribution of Aggregate Costs by Payer for Selected Diagnostic Categories, † 2008



† Based on principal diagnosis defined by Major Diagnostic Category (MDC).
*Includes other payers such as Workers' Compensation, TRICARE, CHAMPUS, CHAMPVA, Title V, and other government programs.
**Includes discharges classified as self-pay or no charge.
Note: Each diagnostic category excludes a small percentage of discharges (0.1 - 0.2 percent) with missing payer that have a small percentage of missing costs (0.1 - 0.2 percent).
Note: Bar segments representing 3 percent or less have not been labeled.
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2008.

- The majority of costs for circulatory conditions (59 percent) were billed to Medicare. Just over one quarter of circulatory system costs (27 percent) were covered by private insurance.
- About half (48 percent) of the costs for musculoskeletal and connective tissue conditions were for discharges with Medicare as primary expected payer. Discharges covered by private insurance accounted for 37 percent of these costs.
- The majority of costs for respiratory conditions (59 percent) were billed to Medicare.
- Discharges covered by private insurance and Medicaid accounted for most of the costs associated with maternal and neonatal hospitalizations (50 and 43 percent, respectively).