

TRENDS IN UNINSURED HOSPITAL STAYS, 1998–2007

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BACKGROUND

- From 1998 to 2007, the number of uninsured individuals in the U.S. increased by about 11 million, to more than 53 million.
- When there is no insurance coverage, hospitals bill patients directly. The resulting burden of payment for uninsured individuals and their families can be substantial, particularly during an economic downturn.
- This study presents:
 - Cross-sectional analysis on the characteristics of uninsured hospitalizations between 1998 and 2007, such as changes in utilization, cost, and payers
 - Demographic characteristics of uninsured hospital stays (such as gender and age groups) compared with the overall picture of hospital care

DATA SOURCE AND METHODS

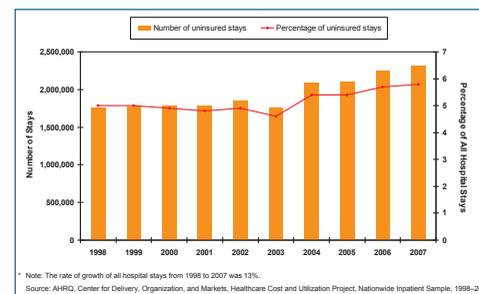
- HCUPnet:
 - A free, online query system that provides users with immediate access to the largest set of publicly available, all-payer national, regional, and state-level hospital care databases from HCUP
- The HCUP Cost-to-Charge Ratio files
 - Hospital-level file designed to convert hospital charges to costs
 - Costs reflect the actual costs of production
 - Charges represented what the hospital billed for the entire hospital stay and do not include professional fees
 - All costs adjusted to 2007 dollars using the overall Consumer Price Index (CPI)
- The Clinical Classifications Software (CCS) procedure categories:
 - Groups ICD-9-CM procedure codes into about 230 clinically meaningful procedure categories
- The U.S. Census Bureau, Population Division (National Population Estimates Characteristics), Claritas
- The Bureau of Labor Statistics, Consumer Price Index Tables
- All differences between estimates are statistically significant at the 0.05 level or better

DATA SOURCE AND METHODS

- The 1998–2007 Healthcare Cost and Utilization Project (HCUP) Nationwide Inpatient Sample (NIS), sponsored by the Agency for Healthcare Research and Quality (AHRQ)
- The NIS:
 - Largest all-payer inpatient care database
 - Sampled from 44 HCUP-participating states
 - In 2007, represents approximately 90% of all hospital discharges in the U.S.
 - Designed to produce national and regional estimates of hospital care in the U.S.

- The number of uninsured hospitalizations increased 31% from 1998 to 2007, from 1.8 million in 1998 to 2.3 million in 2007.

Figure 1. The Percentage of Uninsured Hospital Stays Increased by 31%, 1998–2007*

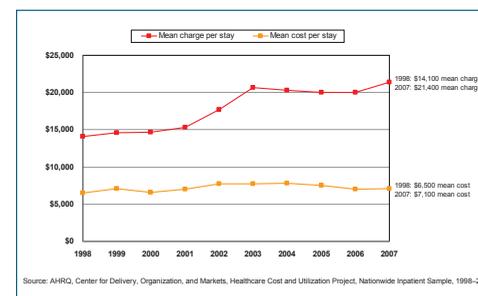


* Note: The rate of growth of all hospital stays from 1998 to 2007 was 13%. Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1998–2007.

- Average hospital charges for the uninsured increased by 88%, from \$11,400 to \$21,400 per stay (inflation-adjusted).
- Estimated hospital costs increased by 37%, from \$5,200 to \$7,100 per stay.
- In 2007, uninsured stays were about \$1,600 less expensive (\$7,100 versus \$8,700 per hospital stay) and shorter (4.0 versus 4.6 days) than a typical hospital stay.
- Increases in hospital charges and costs cannot be attributed to patients staying at the hospital longer; the mean length of uninsured stays over the 10-year period remained consistent at about four days.

RESULTS

Figure 2. The Hospital Bill for Uninsured Stays Increased at a Faster Rate than Estimated Hospital Costs, 1998–2007



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1998–2007.

Table 1. Characteristics of Uninsured Hospital Stays, 1998–2007

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Hospital stays (number and percentage)	1,759,800 (5%)	1,766,700 (5.0%)	1,777,000 (4.9%)	1,779,100 (4.8%)	1,847,800 (6.2%)	1,757,100 (4.9%)	2,081,000 (6.4%)	2,098,000 (6.4%)	2,243,900 (6.7%)	2,310,200 (6.9%)
Mean length of stay, days	3.9	3.9	3.9	3.9	4.0	3.8	3.9	3.9	3.9	4.0
Mean charge per stay, dollars*	\$11,400	\$12,000	\$12,500	\$13,500	\$15,800	\$18,900	\$19,068	\$19,300	\$19,900	\$21,400
Mean cost per stay, dollars*	\$5,200	\$5,800	\$5,700	\$6,200	\$6,900	\$7,000	\$7,300	\$7,300	\$7,000	\$7,100

* 1998–2006 hospital charges and costs were adjusted for inflation and noted in 2007 dollars. Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1998–2007.

- The number of uninsured stays increased by 31% from 1998 to 2007, while the number of all stays grew by 13%.
- The uninsured were also younger, poorer, and four times more likely to leave against medical advice:
 - The mean age of uninsured patients was about 12 years younger than the overall patient population (35 versus 47 years, respectively).
 - Uninsured hospitalization rates in the poorest areas were 1.8 times higher than those living in other communities (10.9 versus 5.9 uninsured stays per 1,000 population, respectively).
 - Uninsured patients were nearly four times more likely to leave against medical advice. They were 3.5 times less likely to be discharged to home healthcare, and slightly less likely to die in the hospital.

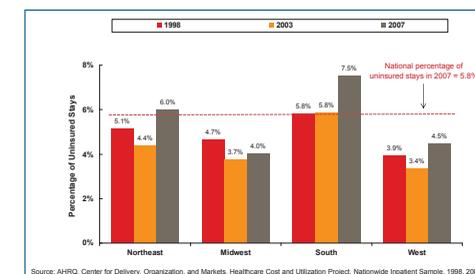
Table 2. Characteristics of Uninsured Hospital Stays Compared with All Hospital Stays, 2007

	Uninsured Stays	All Hospital Stays
Hospital stays (number and percentage)	2,310,200 (5.8%)	39,541,900 (100%)
Growth in stays, 1998–2007 (number and percentage)	550,400 (31.2%)	4,667,900 (13.4%)
Mean patient age	35	47
Male	51.4%	41.0%
Female	48.1%	58.7%
Median community-level income (rate per 1,000)*		
Low income (under \$39,000)	10.9	145.8
Not low income (\$39,000 and above)	5.9	121.5
Admission source and discharge status		
Left against medical advice	3.5%	0.9%
Discharged to home health care	2.6%	9.1%
Died in the hospital	1.3%	1.9%

* Note: About 6% of median community-level income data were missing for uninsured hospital stays and about 2.7% were missing for all hospital stays. Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2007; denominator data for rates were based on Claritas Population Estimates, 2007.

- From 1998 to 2007, uninsured hospitalization rates increased in every region except the Midwest.
- The South consistently had the highest proportion of uninsured stays during this 10-year period.

Figure 3. The Percentage of Uninsured Hospital Stays Increased in the South and Northeast, but Decreased in the Midwest, 1998, 2003, 2007



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1998, 2003, 2007.

- The most common reason for uninsured stays remained newborn birth throughout the 10-year period, accounting for more than 252,000 uninsured stays in 2007 (10.9% of uninsured stays).
- Uninsured hospitalizations principally for skin infections increased sharply from about 31,000 stays to about 73,000 stays.
- Stays principally for alcohol and substance abuse were four times more common in uninsured stays relative to all hospital stays.

Table 3. Top 10 Reasons for Hospital Stays among the Uninsured, 2007

Principal Diagnosis (number and percentage)	Uninsured Stays		All Hospital Stays
	1998	2007	2007
Liveborn	201,900 (11.5%)	252,300 (10.9%)	4,542,700 (11.5%)
Mood disorders (affective disorder)	64,600 (3.7%)	94,300 (4.1%)	774,300 (2.0%)
Nonspecific chest pain	45,200 (2.6%)	77,000 (3.3%)	788,400 (2.0%)
Skin infections	31,000 (1.8%)	73,300 (3.2%)	604,100 (1.5%)
Alcohol-related disorders	55,100 (3.1%)	66,600 (2.9%)	256,800 (0.7%)
Diabetes mellitus with complications	33,400 (1.9%)	54,100 (2.3%)	510,500 (1.3%)
Substance-related disorders	45,200 (2.6%)	52,400 (2.3%)	228,900 (0.6%)
Pneumonia	53,400 (3.0%)	51,300 (2.2%)	1,171,500 (3.0%)
Biliary tract disease	25,500 (1.5%)	41,100 (1.8%)	454,700 (1.2%)
Coronary atherosclerosis and other heart disease	37,800 (2.2%)	39,100 (1.7%)	963,900 (2.4%)

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1998 and 2007.

CONCLUSIONS

- Average hospital charges and costs associated with uninsured stays increased between 1998 and 2007.
- Uninsured hospitalizations in 2007 were, on average, shorter and less expensive relative to all hospital stays. They were also younger, poorer, and four times more likely to leave against medical advice. The numbers of uninsured stays increased in the South, Northeast, and West regions, but not in the Midwest.
- The most common reasons for uninsured hospitalizations included childbirth, skin infections—a potentially preventable event given early intervention—cardiac conditions, and mental health and substance abuse conditions.

REFERENCES

- Medical Expenditure Panel Survey (MEPS), 2007. Agency for Healthcare Research and Quality.
- The Kaiser Family Foundation. *Medicaid and the Uninsured*, Washington, DC, 2009.