



STATISTICAL BRIEF

July 2010

Pediatric Hospital Stays for Cancer, 2008

In 2008, children and adolescents under 18 years of age accounted for 21 percent of the 2.9 million total hospital stays in Texas. Childhood cancers were principally responsible for 5,846 (or 2.7 percent) of all pediatric stays (excluding newborns). The aggregate charges for pediatric cancer hospitalizations were \$369 million, about 6.7 percent of total charges for overall pediatric stays (\$5,512 million).

Table 1 presents the general characteristics of pediatric cancer hospitalizations compared with all pediatric hospital stays. On average, pediatric cancer patients were one year older than the typical pediatric patients (8.5 versus 7.5 years old). While overall pediatric hospital stays were almost equally distributed between males and females (0.96 ratio of male to female), males were more likely than females to be hospitalized with a principal cancer diagnosis (1.13 ratio of male to female). The mean charge per stay for pediatric cancer hospitalizations was about \$3,800 higher than for all pediatric stays (\$63,133 versus \$25,037). The average length of stay for pediatric cancer treatment was 1.7 days longer than for the typical hospital stay (6.9 versus 5.2 days). The high charge of cancer treatment was not solely due to longer hospital stays, but was also a result of more intensive treatment during each day. Relative to all pediatric hospitalizations, stays for cancer care per day were nearly twice as expensive (\$9,213 compared with \$4,848 mean charge per day). Pediatric cancer stays originated in the emergency department (ED) far less frequently than all pediatric stays (11.9 versus 42.9 percent), but resulted in higher in-hospital death rate than for all pediatric stays (1.2 versus 0.3 percent).

Compared with adult cancer stays (Table 2), pediatric cancer stays were, on average, more expensive (\$63,133 versus \$47,233 per stay) even though adult cancer patients averaged about the same amount of time in the hospital (between 6 and 7 days). The average charge per day of each pediatric cancer stay was \$1,700 higher than adult cancer stays, indicating more extensive treatment. A larger portion of adults were admitted from the emergency department (21.4 percent) and the in-hospital death rate in adult cancer stays was much higher than for pediatric cancer stays (3.9 versus 1.2 percent). In addition, among adult patients, males were less likely than females to be hospitalized with a principal cancer diagnosis (0.60 ratio of male to female).

Table 3 provides detailed information about inpatient cancer care for the top 10 most common pediatric cancer conditions that required hospitalization. Among children and adolescents, the most common cancer stays were for leukemias and brain tumors. Collectively, leukemias and brain tumors accounted for 1,027 stays, or nearly 40 percent of all pediatric cancer stays (excluding stays that were principally for maintenance chemotherapy and radiotherapy). Pediatric leukemia and brain tumor patients were about 7 years of age on average and they were younger than the average pediatric cancer patients (8.5 years). Among the top 9 most common conditions, leukemia was the most expensive pediatric cancer to treat (mean charge of \$146,928 per stay) and had the longest average length of stay (14.8 days). Treatment charges for brain tumors were also high at \$107,316 per stay, and patients remained in the hospital, on average, for 11.7 days. About one-third of pediatric stays for leukemias and brain tumors conditions originated in the emergency department, which were much higher than for all pediatric cancer stays (11.9 percent). While the in-hospital death rate in stays with pediatric leukemias (1.7 percent) was comparable with the rate in stays with all cancer conditions (1.2 percent), hospitalizations for cancer of brain tumors resulted in mortalities more frequently (5.1 percent).

Figure 1 compares the distributions between pediatric cancer hospital stays and all pediatric stays by age group. Pediatric cancer patients were, on average, older than the typical pediatric patients. Cancer stays for children were most prevalent in the 1 to 4 year age group and the 10 to 14 age group, representing 27.0 and 25.8 percents of stays, respectively. About one in five pediatric patients were under one year of age, but this youngest age group accounted for only 5.5 percent of cancer stays.

Figure 2 shows the distribution of pediatric cancer hospital stays compared with all pediatric stays by payer. Private insurance and Medicaid were billed for a large portion of inpatient pediatric cancer care: about 48 and 43 percent of stays, respectively. This is in contrast to billing practices for all pediatric hospital stays: Medicaid was billed for more than half of patients (52.0 percent) and private insurance covered for more than one-third (36.7 percent). A small percentage of pediatric cancer hospitalizations were uninsured (5.2 percent), which was comparable with the percentage of all pediatric hospital stays (6.9 percent).

Table 1. Pediatric cancer hospitalizations compared with all pediatric hospital stays, 2008

	Pediatric hospital stays for cancer*	All pediatric hospital stays
Number of hospital stays (percentage of all pediatric stays)	5,846 (2.7%)	220,153 (100%)
Mean age	8.5	7.5
Ratio of male to female	1.13	0.96
Mean length of stay (in days)	6.9	5.2
Mean charge per stay	\$63,133	\$25,037
Mean charge per day	\$9,213	\$4,848
Aggregate charges (in millions)	\$369	\$5,512
Percentage admitted through the emergency department	11.9%	42.9%
Percentage died in the hospital	1.2%	0.3%

* Based on principal diagnosis.

Note: Pediatric stays are defined as hospitalizations for individuals under the age of 18 (excluding newborns).

Source: Texas Hospital Inpatient Discharge Public Use Data File (PUDF), 2008.

Table 2. Pediatric cancer hospitalizations compared with adult hospital stays, 2008

	Pediatric hospital stays for cancer*	Adult hospital stays for cancer
Number of hospital stays (percentage of all stays)	5,846 (2.7%)	114,064 (4.9%)
Ratio of male to female	1.13	0.60
Mean length of stay (in days)	6.9	6.3
Mean charge per stay	\$63,133	\$47,233
Mean charge per day	\$9,213	\$7,490
Aggregate charges (in millions)	\$369	\$5,388
Percentage admitted through the emergency department	11.9%	21.4%
Percentage died in the hospital	1.2%	3.9%

* Based on principal diagnosis.

Note: Pediatric stays are defined as hospitalizations for individuals under the age of 18 (excluding newborns).

Source: Texas Hospital Inpatient Discharge Public Use Data File (PUDF), 2008.

Table 3. Top 10 most common pediatric cancer hospitalizations, 2008*

Principal diagnosis	Total number of stays	Mean length of stay	Mean charge per stay	Percent admitted through the ED	Percent died in the hospital	Mean age
Maintenance chemotherapy, radiotherapy	3,264	4.5	\$36,416	0.9%	0.2%	8.8
Leukemias	696	14.8	\$146,928	34.3%	1.7%	7.0
Cancer of brain and nervous system	331	11.7	\$107,316	31.7%	5.1%	7.4
Neoplasms of unspecified nature or uncertain behavior	200	7.8	\$82,138	23.5%	**	8.8
Cancer of bone and connective tissue	186	7.5	\$70,291	16.1%	3.2%	10.0
Secondary malignancies	151	6.5	\$52,394	15.9%	8.6%	11.1
Cancer, other and unspecified primary	126	10.3	\$104,776	17.5%	**	5.4
Non-Hodgkin's lymphoma	98	12.2	\$140,960	38.8%	5.1%	9.1
Cancer of kidney and renal pelvis	81	10.6	\$105,929	30.9%	**	4.3
Cancer of liver and intrahepatic bile duct	40	17.0	\$198,926	17.5%	**	5.1

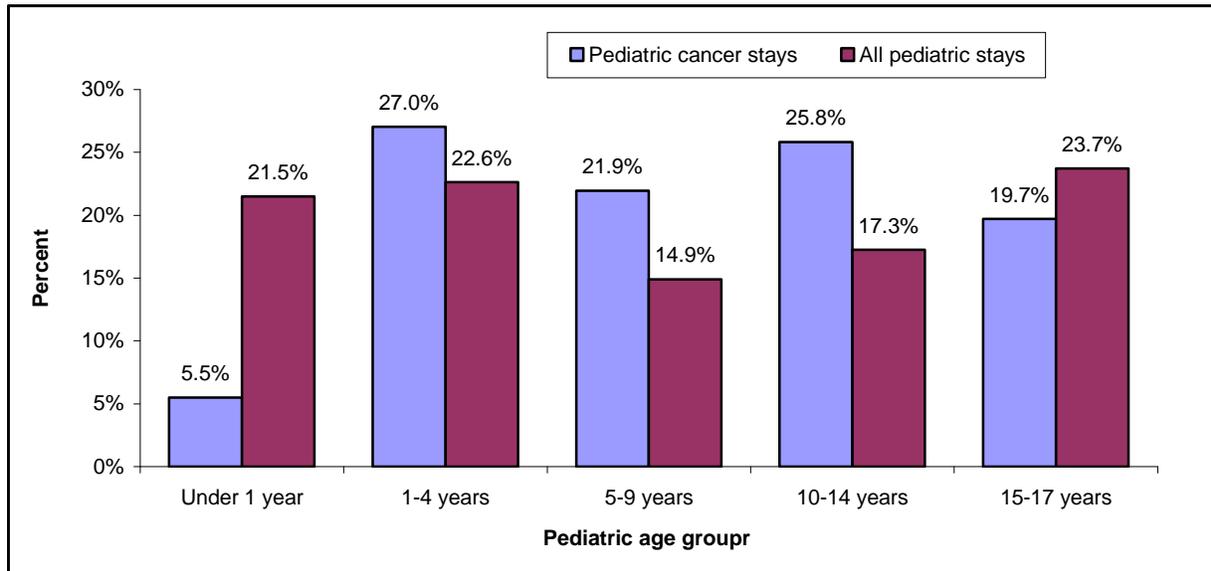
* Based on principal diagnosis for children under the age of 18 (excluding newborns).

** Too few cases (less than 5) to report with statistical reliability.

Note: Miscellaneous cancers that are grouped as "other and unspecified benign neoplasm" (CCS category 47) are excluded from this table.

Source: Texas Hospital Inpatient Discharge Public Use Data File (PUDF), 2008.

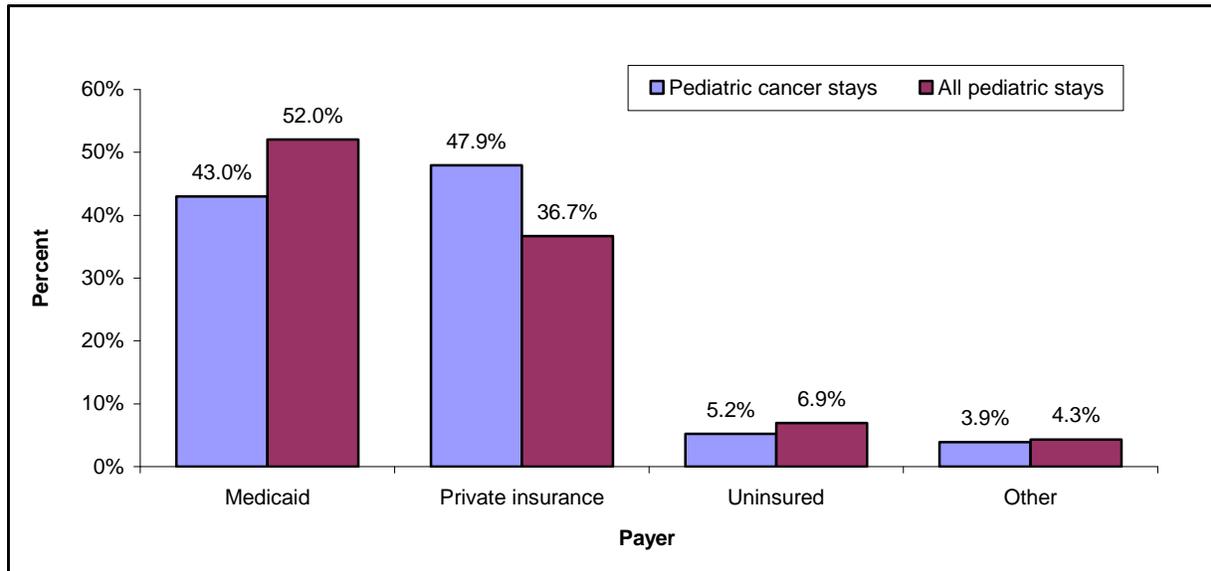
Figure 1. Distribution of pediatric cancer hospital stays compared with all pediatric stays, by age group, 2008*



* Based on principal diagnosis for children under the age of 18 (excluding newborns).

Source: Texas Hospital Inpatient Discharge Public Use Data File (PUDF), 2008.

Figure 2. Distribution of pediatric cancer hospital stays compared with all pediatric stays, by payer, 2008*



* Based on principal diagnosis for children under the age of 18 (excluding newborns).
Source: Texas Hospital Inpatient Discharge Public Use Data File (PUDF), 2008.