Hospital Discharge Data, 2002

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Tennessee Inpatient Discharges, 2002

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This report summarizes hospital inpatient discharge data for patients treated in Tennessee's non-federal short-stay hospitals in 2002. Many of the patients were severely affected by acute illnesses and injuries and were also expensive to treat. The analysis presented in this report focuses on the discharge and utilization patterns of leading acute and chronic conditions that require hospitalization. The results are useful for gauging the health status of the general population and the delivery of hospital services to a state that is facing major health and health care challenges.

Method. Tennessee law (Tennessee Code Annotated (TCA), Section 68-1-108) requires that every licensed hospital report all claims data found on the BU-92 Form to the Tennessee Department of Health. The Division of Health Statistics in the Office of Policy Planning and Assessment of the Department of Health has established a Hospital Discharge Data System (HDDS) to collect, compile, and disseminate patient-level discharge information since 1997.[1] The data presented in this report are excerpts from the 2002 HDDS dataset.

The analysis includes inpatient discharge data from all short-stay community hospitals including general medical and surgical hospitals, women's or OB/GYN hospitals, and pediatric hospitals.[2] Excluded are long-term care hospitals, psychiatric hospitals, rehabilitation hospitals, and other specialty hospitals. The data cover the period from January 1, 2002, through December 31, 2002.

The analysis uses data on patients' gender and racial/ethnic characteristics and principal diagnosis code (PDC). Diagnoses are coded in the *International Classification of Diseases*, 9th Revision, Clinical Modification (ICD-9-CM), and are grouped in accordance with published national hospital discharge data.[3] Population-based utilization rates for leading PDC groups are computed using 2000 Census data for Tennessee.[4] Comparative rates for the U.S. for 2002 are provided by the Centers for Disease Control and Prevention.[3]

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Results. In 2002, the 135 short-stay community hospitals in Tennessee reported a total of 843,882 inpatient discharges and 4,061,799 of total inpatient days. The average length of stay (LOS) was 4.8 days, a rate comparable to the U.S. average of 4.9 days (Table 1).

Female patients were responsible for 504,982 or 59.8% of the total inpatient discharges, while males accounted for the remaining 338,881 or 40.2%. Male patients' average LOS was slightly higher than that of female patients in Tennessee as well as in the United States. The data in Table 1 include 19 patient records with missing gender information. Forty-four (44) cases were excluded from the total count of inpatient discharges because of a reported long LOS of greater than 365 days.

Table 1 - Tennessee Inpatient Discharges, 2002

	No. of Discharges	Percent	Average LOS	
			Tennessee	U.S.
All	843,882	100.0%	4.8	4.9
Sex				
Female	504,982	59.8%	4.6	4.6
Male	338,881	40.2%	5.1	5.3
Unknown	19	0.0%	9.4	

The inpatient discharge rate per 10,000 population was 1,495, a rate that was significantly higher (27%) than the discharge rate for the United States (Table 2). Following the national pattern, heart diseases were the most common principal diagnosis code (PDC), followed by deliveries of infants. For both PDCs, Tennessee's discharge rates were19% and 8%, respectively, higher than the corresponding national rates.

The next two leading discharge rates in Tennessee were for pneumonia and psychoses. The former was substantially higher (41%) than the corresponding national rate, while the latter was 10% lower. Tennesseans experienced substantially higher discharge rates (31% and 26%, respectively) of malignant neoplasms and cerebrovascular diseases than the corresponding national rates. Among the next six PDCs, Tennesseans reported higher discharge rates than did the nation as a whole except for two conditions: Diabetes, at 20 per 10,000 population, was about the same as the U.S. rate while asthma, at 14.6 per 10,000 population, was 13% lower than the national rate. These are surprising findings given the documented high prevalence rate for diabetes and the growing concern for untreated asthma in Tennessee.[5]

Table 2 - Hospital Inpatient Discharges with Most Common First-Listed Diagnoses, Per 10,000 Population, Tennessee and U.S., 2002

First-Listed Diagnosis (ICD-9)*	Rate Per 10,000 Population		Tennessee As a % of U.S.
	Tennessee	U.S.	
All Conditions	1,495.0	1,174.6	127%
Heart Diseases	183.5	154.8	119%
Females with Delivery**	148.7	137.6	108%
Pneumonia	64.6	45.7	141%
Psychoses	53.6	59.4	127%
Malignant Neoplasms	55.0	42.1	93%
Cerebrovascular Diseases	41.2	32.8	98%
Fractures, All Sites	42.9	34.7	124%
Chronic Bronchitis	30.6	18.1	169%
Diabetes	20.0	20.1	99%
Osteoarthrosis and Allied Disorders	21.1	19.8	107%
Benign Neoplasms	16.7	14.9	112%
Asthma	14.6	16.8	87%

*The 12 leading first-listed diagnoses represented 46.4% of all discharges in 2002.

**Females with Delivery includes normal delivery, females with delivery, and liveborn.

Following the national pattern, Tennessee reported substantial gender differences in inpatient discharges rate (Table 3). For all diagnoses combined, females in Tennessee experienced 40% more hospitalizations than males in 2002. After elimination of admissions for childbirth, admissions by women remained greater than for men by 17%. Among the individual common discharge diagnoses, females experienced a higher rate of hospitalizations than males in all but two conditions - heart diseases and psychoses. For heart diseases, female Tennesseans' rate of 170.7 per 10,000 population was 13% lower than the corresponding rate of 197 per 10,000 population for male Tennesseans. For psychoses, the rates were about the same for males and females, and this was consistent with the national pattern.

Table 3 - Hospital Inpatient Discharges with Most Common First-Listed Diagnoses, Per 10,000 Population by Sex, Tennessee and U.S., 2002

First-Listed Diagnosis (ICD-9)	Male		Female	
	Tennessee	U.S.	Tennessee	U.S.
All Conditions	1,238.2	952.3	1,736.6	1,388.0
Heart Diseases	197.0	164.9	170.7	145.2
Females with Delivery*			288.7	269.7
Pneumonia	60.7	44.0	68.3	47.3
Psychoses	54.0	58.1	53.2	60.5
Malignant Neoplasms	46.8	41.2	62.8	42.9
Cerebrovascular Diseases	36.3	30.7	45.8	34.8
Fractures, All Sites	38.2	30.8	47.3	38.4
Chronic Bronchitis	27.1	16.3	34.0	19.8
Diabetes	14.9	20.1	24.8	20.1
Osteoarthrosis and Allied Disorders	20.7	15.7	21.5	23.7
Benign Neoplasms	4.2	3.5	28.4	25.8
Asthma	11.5	13.9	17.5	19.7

*Females with Delivery includes normal delivery, females with delivery, and liveborn.

Table 4 reports racial differences in inpatient discharge in 2002. For all conditions, black and white Tennesseans experienced similar rates of inpatient hospitalization while Hispanics reported lower rates. Whites led in the rate of inpatient hospitalization in most of the common diagnoses while blacks led in delivery, osteoartrosis and allied disorders, benign neoplasms, and asthma. Hispanics had lower rates of inpatient hospitalization than both blacks and whites as noted earlier. But they had substantially higher delivery rate (32% higher) than the statewide delivery rate. The discharge rates for Asians and other smaller racial groups such as American Indians, Alaska Natives and Pacific Islanders are not reported because the sample sizes are too small to be reliable.

Table 4 - Hospital Inpatient Discharges with Most Common First-Listed Diagnoses, Per 10,000 Population by Race/Ethnicity, 2002

First-Listed Diagnosis (ICD-9)	Race/Ethnicity			Total
	White	Black	Hispanic	
All conditions	1,439.7	1,462.8	565.6	1,495.0
Heart Diseases	185.2	149.1	12.6	183.5
Females with Delivery	124.5	184.4	195.9	148.7
Pneumonia	67.4	46.3	9.6	64.6
Psychoses	53.4	45.4	4.9	53.6
Malignant Neoplasms	57.3	44.3	7.5	55.0
Cerebrovascular Diseases	43.2	25.8	11.8	41.2
Fractures, All Sites	42.5	39.7	2.9	42.9
Chronic Bronchitis	33.6	14.7	0.9	30.6
Diabetes	21.4	11.6	1.4	20.0
Osteoarthrosis and Allied Disorders	17.6	37.0	4.4	21.1
Benign Neoplasms	13.6	28.0	2.7	16.7
Asthma	11.7	26.8	5.2	14.6

Note: The rates for other smaller racial categories are not reported because the sample sizes are too small to be reliable.

Discussion. This brief report presents data describing utilization patterns of inpatient care in Tennessee's non-federal short-stay hospitals in 2002. The leading diagnoses analyzed, such as heart diseases, pneumonia, psychoses, neoplasms, and cerebrovascular diseases, reflect the major illnesses and diseases that affect the health of the state's general population. The highlights of the results are:

- In 2002, a total of 843,882 inpatients were discharged from non-federal short-stay hospitals with an average length of stay of 4.8 days.
- The overall discharge rate of 1,485.7 per 10,000 population in Tennessee and was 26% higher than the U.S. average rate of 1,174.6 per 10,000.
- Heart disease was the most common discharge diagnosis among all racial and gender groups.

- Tennessee led the nation in the number of discharges in ten of the twelve most common first-listed discharge diagnoses. Tennessee's discharge rate for diabetes was about the same as the national rate and the asthma discharge rate was lower than the national rate.
- Women experienced a higher rate of hospitalization than males in every major diagnostic categories except one - heart disease.
- Racial patterns were mixed, with Blacks reporting higher discharge rates than whites for delivery, diabetes, benign neoplasms, and asthma while whites reporting more discharges for heart diseases, pneumonia, psychoses, malignant neoplasms, cerebrovascular diseases, fractures, chronic bronchitis, and osteoarthrosis and allied disorders.

The patient-level hospital discharge data used in this analysis contain information on a wide range of variables including primary and secondary diagnoses, utilization of services, comorbidity conditions, procedures performed, and hospital charges. Regular analysis and reporting of these data can be used for public health surveillance and evaluation and for improving the efficiency and productivity of the health delivery system.

References:

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