Utilization of Short-Stay Hospitals in the Treatment of Mental Disorders: 1974-1978

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Introduction

This report presents national estimates on the utilization of non-Federal short-stay hospitals by patients discharged with a diagnosis of mental disorder. Included in the report are data on patients whose first-listed diagnosis is psychosis, neurosis, personality disorder (including alcoholism and drug dependence), or other nonpsychotic mental disorder coded according to the *Eighth Revision International Classification of Diseases, Adapted for Use in the United States.*[1] Information on the number of mental disorder discharges, average length of stay, and most frequent diagnostic categories are presented according to patient characteristics for 1974-78. Also included are data on the average length of stay according to patient's expected source of payment for 1978. Discharges of newborn infants are excluded from this report.

The statistics presented are based on data collected through the National Hospital Discharge Survey, a continuous survey which has been conducted since 1965 by the National Center for Health Statistics. A brief description of the sample design, source of data, and definitions of terms used in this report can be found in the technical notes. Several factors should be kept in mind in using the data discussed in this report. It should be noted that the survey does not include persons discharged from long-stay psychiatric facilities. Also, statistics are presented on discharges, not individual patients, since an individual may have been discharged from a hospital more than once.

Since the data presented in this report are based on a sample of all discharges, they are subject to sampling error. See the technical notes for further discussion of sampling error.

Findings

General trends

From 1974 to 1978 an average of 1.5 million persons with a first-listed diagnosis of mental disorder were discharged each year from short-stay hospitals in the United States. The incidence of discharges increased from 1974 to 1978 (table 1). There were an estimated 1.3 million such discharges in 1974 and 1.7 million in 1978, an increase of 28 percent.

When the number of mental disorder discharges are compared with the number of all patients discharged from short-stay hospitals, an average annual mental disorder discharge rate of 44 per 1,000 is indicated across 5 years of data. This rate increased slightly from 41 per 1,000 discharges in 1974 to 48 in 1978. For a given hospital subpopulation, the mental disorder discharge rate is the number of mental disorder discharges divided by the total number of discharges multiplied by 1,000. The rate can be expressed as:

$$\text{MDDR} = \frac{\text{number of first-listed mental disorder discharges} \times 1,000}{\text{total number of discharges}}$$

Table 1 also presents the average length of stay for all mental disorder discharges for each year from 1974 to 1978. During this period, the average length of stay for patients diagnosed as having a mental disorder was 11.0 days, compared with 7.5 days for all other diagnoses.

Table 1. Number of patients with a diagnosed mental disorder and average length of stay: United States, 1974-78

[Discharges from non-Federal short-stay hospitals. Excludes newborn infants]

Year	Number of discharges in thousands	Average length of stay in days
1978	1,713	11.2
1977	1,613	10.9
1976	1,471	10.5
1975	1,476	11.1
1974	1,338	11.3

Patient characteristics

As indicated in figure 1, the mental disorder discharge rate was higher for all other patients than for white patients. The largest difference is seen for 1975, in which there was a mental disorder discharge rate of 40 for white patients discharged and 52 for all other patients. It should be noted that color was not stated in a large number of cases (approximately 15 percent). As a result, interpretations should be made with caution.

Table 2 shows, by age and sex group, the number and rate of patients diagnosed as having a mental disorder who were discharged from short-stay hospitals.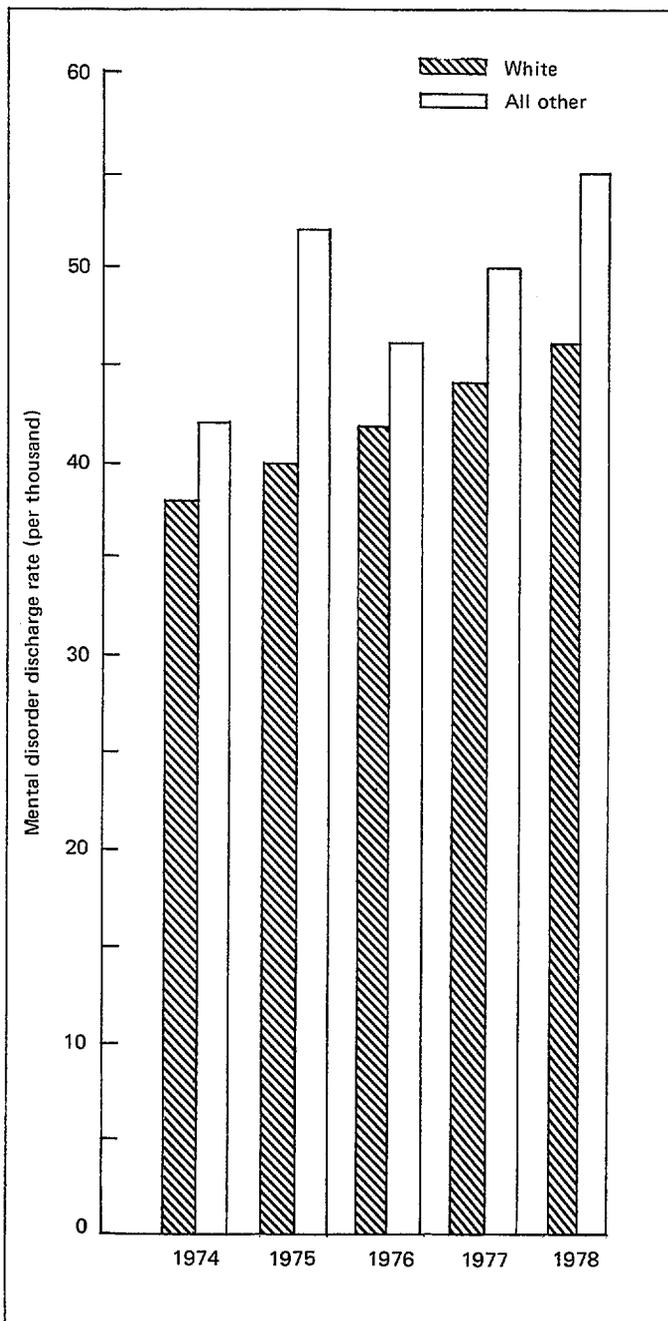 From 1974 through 1978, the number of males and females hospitalized with a mental disorder was about the same. The rate of hospitalization per 1,000 civilian noninstitutionalized population was higher in 1978 than in 1974. The rates for males were 8.3 and 6.6, respectively, and those for females were 7.8 and 6.3.

In 1974-78 a total of 3 million patients in the age groups 25-34 and 35-44 with a diagnosed mental disorder were discharged from short-stay hospitals. Together these age groups accounted for 39 percent, or almost 4 out of every 10 patients with a mental disorder. The age groups 15-24 and 45-54 accounted for 33 percent, or a little over 3 out of every 10 patients with a mental disorder. The remaining 30 percent was distributed among the other three age groups, with the under 15 years group accounting for less than 5 percent of the discharges during this period.

Most frequent diagnostic categories

During 1974-78, the two most frequent diagnostic categories for all mental disorder discharges were alcoholism and neurosis (table 3). Together these two categories accounted for almost 6 out of every 10 persons diagnosed with a mental disorder (56 percent). Schizophrenia and effective psychosis ranked third and fourth, respectively, over the 5-year period. These two diagnostic categories accounted for an average of 18 percent of these discharges.

Of the four most common diagnoses described above, affective psychosis and schizophrenia had the two longest average lengths of stay, with an average of 17.5 and 16.6 days, respectively. The average length of stay for neurosis and alcoholism was 9.9 and 8.2 days, respectively.

For females, neurosis was the most common diagnosis for each of the 5 years from 1974 through 1978. This diagnostic category accounted for approximately 38 percent of all females diagnosed with a mental disorder. Alcoholism and schizophrenia were the next two leading categories of female discharges in the 5-year period under discussion. Together these two categories accounted for approximately 26 percent of all diagnoses of mental disorders for females. For males, alcoholism was the leading mental disorder diagnostic category for each year of data analyzed. Approximately 45 percent of all males with a 'mental disorder diagnosis were discharged with a diagnosis of alcoholism. The second and third most frequent diagnoses were neurosis and schizophrenia, respectively. Together these two diagnostic categories accounted for 29 percent of all males diagnosed with a mental disorder.

Expected source of payment

In 1977, the National Hospital Discharge Survey began collecting data on patient's expected principal

Figure 1. Mental disorder discharge rate, by color: United States, 1974-78

Table 2. Number and rate of patients with a diagnosed mental disorder discharged from short-stay hospitals, by sex and age: United States, 1974-78

[Discharges from non-Federal short-stay hospitals. Excludes newborn infants]

Sex and age	1974	1975	1976	1977	1978
	Number of discharges in thousands				
All mental conditions (except mental retardation)	1,338	1,476	1,471	1,613	1,713
Sex					
Male	657	712	713	810	853
Female	680	765	758	803	860
Age					
Under 15 years	41	42	46	47	42
15-24 years	230	223	236	260	278
25-34 years	270	294	294	347	364
35-44 years	248	281	270	293	319
45-54 years	230	264	254	272	274
55-64 years	167	178	185	200	207
65 years and over	153	192	187	193	229
	Rate of discharges per 1,000 population				
All mental conditions (except mental retardation)	6.5	7.1	7.0	7.6	8.0
Sex					
Male	6.6	7.1	7.0	7.9	8.3
Female	6.3	7.1	7.0	7.3	7.8
Age					
Under 15 years	0.8	0.8	0.9	0.9	0.8
15-24 years	6.1	5.8	6.0	6.5	7.0
25-34 years	9.3	9.8	9.4	10.8	11.0
35-44 years	11.1	12.6	11.9	12.7	13.3
45-54 years	9.8	11.2	10.9	11.7	11.9
55-64 years	8.7	9.1	9.3	9.9	10.1
65 years and over	7.4	9.0	8.6	8.7	10.0

source of payment. This section describes these data for patients with and without mental disorders who were discharged in 1978.

Figure 2 depicts the percent distribution of first-listed diagnosis by source of payment for those patients with and without mental disorders. Approximately 50 percent of all patients without mental disorders and 43 percent of patients with mental disorders listed private or commercial insurance as their principal source of payment. The second leading payment category for patients with and without mental disorders was Medicare. For patients without mental disorders it was 26.1 percent, while for patients with a mental disorder it was 16.6 percent. Together these two payment sources were used by 75.6 percent of all patients without a mental disorder, and 58.8 percent of all patients with a mental disorder. At the other end of the spectrum, Workmen's Compensation was a source of payment for 1.6 percent of all patients without a mental disorder, and 0.3 percent with a mental disorder. "Other" was a source of payment for 1.4 percent of all patients without a mental disorder, and 2.3 percent with a mental disorder. There was no charge for 0.1 percent of all patients without a mental disorder,

and 0.2 percent with a mental disorder. Fourteen percent of the patients with mental disorders and 6 percent of the patients without mental disorders did not state their source of payment.

As shown in table 4, the distribution of days of care by source of payment was similar to the distribution of discharges. Individuals with a diagnosed mental disorder expecting to pay hospital charges through private or commercial insurance carriers used the largest proportion of days of care (45.6 percent, or approximately 8.8 million days). Medicare patients utilized the second highest percent of total days of care (19.3 percent, or 3.7 million days). Of the major sources of payment, the smallest proportion of days of care was utilized by patients with Workmen's Compensation (0.2 percent, or 46,000 days of care).

Overall, there was little significant variation in length of stay by source of payment. The most noticeable difference was that patients using private or commercial insurance carriers as a method of payment stayed an average of 3.8 days longer than those utilizing their own resources as a source of payment.

Table 3. Number of patients with a diagnosed mental disorder discharged from short-stay hospitals and average length of stay, by selected first-listed diagnostic categories and sex: United States, 1974-78

[Discharges from non-Federal short-stay hospitals. Excludes newborn infants]

Selected first-listed diagnostic categories, ICDA code,[1] and sex	1974	1975	1976	1977	1978	1974	1975	1976	1977	1978
	Number of discharges in thousands					Average length of stay in days				
All mental disorders (290-309)										
Both sexes	1,338	1,476	1,471	1,613	1,713	11.25	11.06	10.50	10.85	11.23
Male	657	711	713	810	853	10.36	9.90	10.18	10.30	10.49
Female	680	765	758	803	860	12.10	12.14	10.80	11.42	11.96
Alcoholism (303)										
Both sexes	339	424	429	468	519	7.98	7.90	8.08	8.54	8.50
Male	274	324	328	362	397	7.69	7.71	8.22	8.66	8.06
Female	65	100	102	106	122	9.19	8.53	7.65	8.13	9.93
Neuroses (300)										
Both sexes	424	421	391	426	437	10.12	10.22	9.37	9.29	10.25
Male	131	123	118	133	136	10.30	9.91	10.43	8.99	10.20
Female	293	298	273	293	301	10.05	10.34	8.92	9.43	10.27
Schizophrenia (295)										
Both sexes	153	165	179	221	222	18.17	17.21	15.99	15.69	16.59
Male	71	73	84	101	108	16.61	14.46	14.96	13.88	16.61
Female	82	93	95	120	114	19.51	19.36	16.91	17.22	16.56
Affective psychosis (296)										
Both sexes	77	83	85	97	124	19.35	18.71	16.71	16.71	16.73
Male	25	26	24	35	41	19.62	20.31	16.51	18.02	15.84
Female	52	56	62	62	83	19.22	17.97	16.76	15.97	17.17

[1]Eighth Revision International Classification of Diseases, Adapted for Use in the United States, 1965.

Table 4. Days of care, number of first-listed diagnosis, and average length of stay for inpatients with and without mental disorders discharged from short-stay hospitals, by sources of payment: United States, 1978

[Discharges from non-Federal short-stay hospitals. Excludes newborn infants]

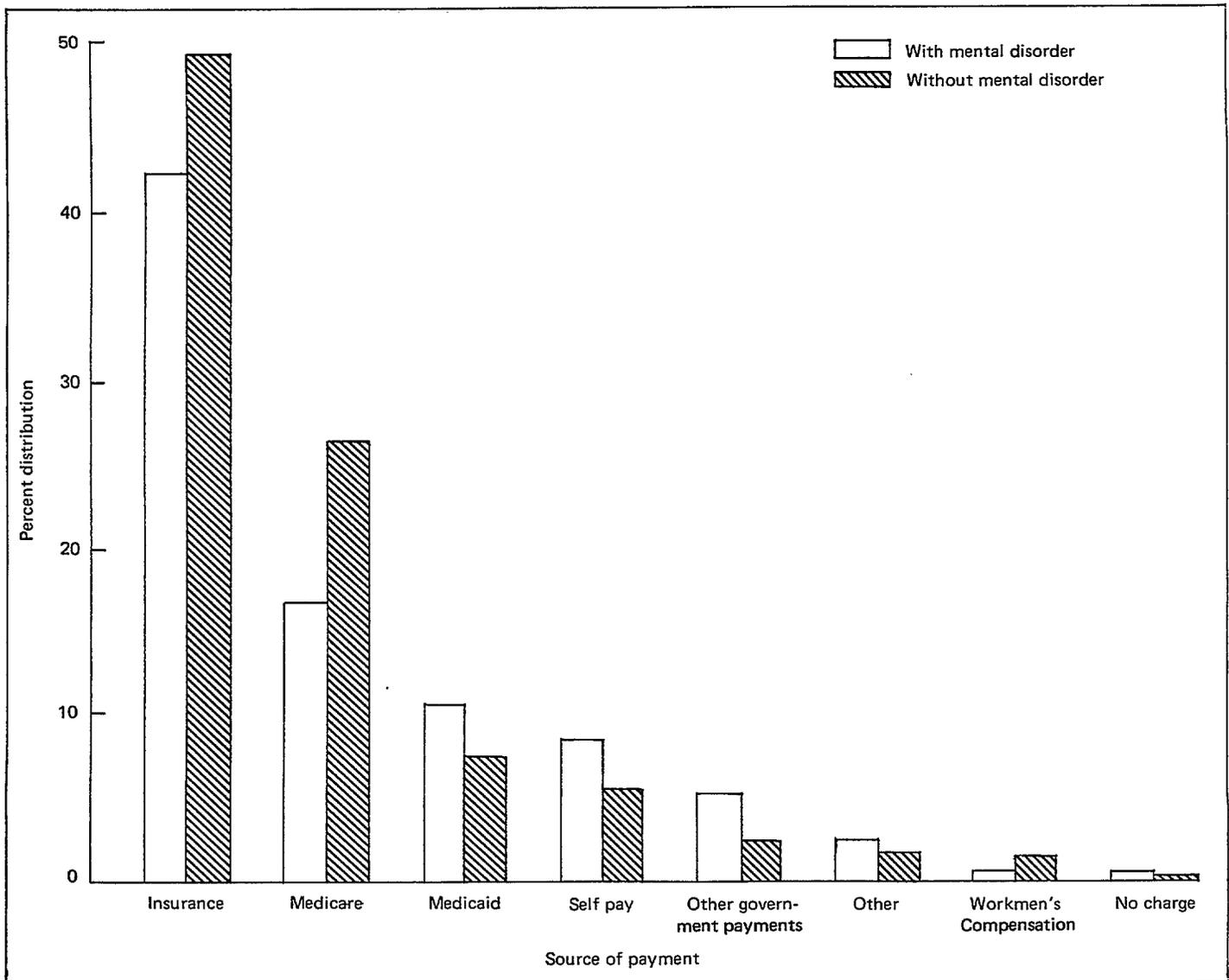| Source of payment	With mental disorders			Without mental disorders		
	Days of care	Number of first-listed diagnosis	Average length of stay	Days of care	Number of first-listed diagnosis	Average length of stay
	In thousands		In days	In thousands		In days
All sources of payment	19,232	1,714	11.2	242,736	33,902	6.9
Self pay	1,204	144	8.3	9,920	1,936	5.1
Workmen's compensation	46	5	9.7	3,689	556	6.6
Medicare	3,714	284	13.1	93,778	8,834	10.6
Medicaid	1,753	181	9.7	16,142	2,547	6.3
Other government payments	812	91	9.0	4,484	783	5.7
Blue Cross, other private or commercial insurance	8,772	723	12.1	97,283	16,787	5.8
No charge	31	3	10.1	254	38	6.7
Other	413	40	10.2	2,870	461	6.2
Not stated	2,487	243	10.2	14,316	1,961	7.3

Figure 2. Percent distribution of first-listed diagnosis, by source of payment: United States, 1978

References

[1]National Center for Health Statistics: *Eighth Revision International Classification of Diseases, Adapted for Use in the United States.* PHS Pub. No. 1693. Public Health Service. Washington. U.S. Government Printing Office, 1967.

[2]National Center for Health Statistics: Utilization of short-stay hospitals, annual summary for the United States, 1974, by A. L. Ranofsky. *Vital and Health Statistics.* Series 13-No. 26. DHEW Pub. No. (HRA) 76-1777. Health Resources Administration. Washington. U.S. Government Printing Office, Sept. 1976.

[3]National Center for Health Statistics: Utilization of short-stay hospitals, annual summary for the United States, 1975, by A. L. Ranofsky. *Vital and Health Statistics.* Series 13-No. 31. DHEW Pub. No. (HRA) 77-1782. Health Resources Administration. Washington. U.S. Government Printing Office, Apr. 1977.

[4]National Center for Health Statistics: Utilization of short-stay hospitals, annual summary for the United States, 1976, by A. L. Ranofsky. *Vital and Health Statistics.* Series 13-No.

37. DHEW Pub. No. (PHS) 78-1788. Public Health Service. Washington. U.S. Government Printing Office, June 1978.

[5]National Center for Health Statistics: Utilization of short-stay hospitals, annual summary of the United States, 1977, by B. J. Haupt. *Vital and Health Statistics.* Series 13-No. 41. DHEW Pub. No. (PHS) 79-1557. Public Health Service. Washington. U.S. Government Printing Office, Mar. 1979.

[6]National Center for Health Statistics: Utilization of short-stay hospitals, annual summary for the United States, 1978, by B. J. Haupt. *Vital and Health Statistics.* Series 13-No. 46. DHEW Pub. No. (PHS) 80-1797. Public Health Service. Washington. U.S. Government Printing Office, Mar. 1980.

[7]National Center for Health Statistics: Utilization of short-stay hospitals, summary of nonmedical statistics, United States, 1973, by W. F. Lewis. *Vital and Health Statistics.* Series 13-No. 23. DHEW Pub. No. (HRA) 76-1774. Health Resources Administration. Washington. U.S. Government Printing Office, July 1976.

Technical Notes

Survey methodology

Source of data

The scope of the National Hospital Discharge Survey encompasses patients discharged from short-stay noninstitutionalized hospitals, exclusive of military and Veterans Administration hospitals, located in the 50 States and the District of Columbia. Only hospitals with six beds or more and an average length of stay less than 30 days for all patients are included in the survey.

The universe of the survey consisted of 6,965 short-stay hospitals contained in the 1963 Master Facility Inventory of Hospitals and Institutions. New hospitals were sampled for inclusion into the survey in 1968, 1972, 1975, and 1977.

The sample size and number of medical records provided for the survey are presented below. Detailed information in regard to the sample can be found in certain *Vital and Health Statistics* Series reports.[2-6]

Year	Number of participating hospitals	Number of records provided
1978	413	219,000
1977	423	224,000
1976	419	223,000
1975	432	232,000
1974	426	227,000

Sample design

All hospitals with 1,000 beds or more in the universe of short-stay hospitals were selected with certainty in the sample. All hospitals with fewer than 1,000 beds were stratified, the primary strata being 24 size-by-region classes. Within each of these 24 primary strata, the allocation of the hospitals was made through a controlled selection technique so that hospitals in the sample would be properly distributed with regard to type of ownership and geographic division. Sample hospitals were drawn with probabilities ranging from certainty for the largest hospitals to 1 in 40 for the smallest hospitals.

Subsamples of discharges were selected within the sample hospitals using the daily listing sheet of discharges as the sampling frame. These discharges were selected by a random technique, usually on the basis of the terminal digit(s) of the patient's medical record number, a number assigned when the patient was admitted to the hospital. The within hospital sampling ratio for selecting sample discharges varied inversely with the probability of selection of the hospitals.

Sampling errors

Since the estimates for this report are based on a sample rather than the entire universe, they are subject to sampling variability. The standard error is primarily a measure of the variability that is attributed to using a value obtained from a sample as an estimate of a population value. The value that would have been obtained had a complete enumeration of the population been made will be contained in an interval represented by the sample estimate plus or minus 1 standard error about 68 out of 100 times, and plus or minus 2 standard errors about 95 out of 100 times.

The relative standard error is obtained by dividing the standard error by the estimate. The resulting value is multiplied by 100, which expresses the standard error as a percentage. The relative standard error applicable to patients discharged (or first-listed diagnosis) and days of care for 1978 data presented in this report are provided in table I. Relative standard error estimates for 1974 through 1977 can be found in earlier publications.[2-5] The formula used for computing the variance of average length of stay has also been published.[7] The two-tailed Bonferroni test for multiple comparisons was performed for testing the difference between two estimates.

Table I. Approximate relative standard errors of estimated number of first-listed diagnoses and days of care

Size of estimate in thousands	First-listed diagnoses	Days of care
	Relative standard error	
1	.370	---
10	.165	.290
100	.080	.165
1,000	.050	.100
10,000	.035	.060

Definition of terms

Patient.—A person who is formally admitted to the inpatient service of a short-stay hospital for observation, care, diagnosis, or treatment. In this report the number of patients refers to the number of discharges during the year including any multiple

NOTE: A list of references follow text.

discharges of the same individual from one or more short-stay hospitals.

Discharge.—The formal release of a patient by a hospital; that is, the termination of a period of hospitalization by death or by disposition to place of residence, nursing home, or another hospital. "Discharges" and "patient discharges" are used synonymously.

Days of Care.—The total number of patient days accumulated at the time of discharge by patients discharged from short-stay hospitals during a year. A stay of less than 1 day (patient admitted and discharged on the same day) is counted as 1 day in the summation of total days of care. For patients admitted and discharged on different days, the number of days of care is computed by counting all days from (and including) the date of admission to (but not including) the date of discharge.

Average Length of Stay.—The total number of patient days accumulated at time of discharge by patients discharged during the year divided by the number of patients discharged.

Mental Disorder Discharges.—Discharges discussed in this report are those designated with a first-listed diagnosis of mental disorder in the *Eighth Revision International Classification of Diseases, Adapted for Use in the United States.*[1] Included are three-digit code numbers 290 through 309. Mental Retardation, code 310, is not included in this report.

First-Listed Diagnosis.—The coded diagnosis identified as the principal diagnosis or else listed first on the face sheet of the medical record. The number of first-listed diagnoses is equivalent to the number of discharges.

Age.—Patient's age refers to age at birthday prior to admission to the hospital inpatient service.

Color.—Patients are classified into two groups, "white" and "all other." The all other classification includes all categories other than white.

NOTE: A list of references follow text.

Symbols

- - - Data not available
... Category not applicable
- Quantity zero
0.0 Quantity more than 0 but less than 0.05
* Figure does not meet standards of reliability or precision

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