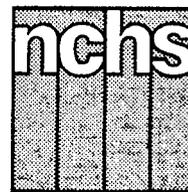


Advance Data



From Vital and Health Statistics of the CENTERS FOR DISEASE CONTROL/National Center for Health Statistics

Expected Principal Source of Payment for Hospital Discharges: United States, 1990

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Introduction

In the United States during 1990, non-Federal short-stay hospitals discharged an estimated 30.8 million inpatients, excluding newborn infants. Of these 30.8 million, 11.9 million indicated private insurance as their expected principal source of payment; 15.2 million cited Medicare, Medicaid, or other public programs; and 2.7 million were in the "self-pay, no charge, or other" category.

Estimates in this report are based on the National Hospital Discharge Survey (NHDS), which has been conducted annually by the National Center for Health Statistics (NCHS) since 1965. For the 1990 NHDS, researchers abstracted data from the medical records of approximately 266,000 patients discharged from 474 short-stay hospitals. This survey reflects a redesign that took place in

1988. A brief description of this new design, data collection procedures, and the estimation process can be found in the section entitled "Technical notes." A detailed description of the original and new designs of the NHDS have been published by the NCHS (1).

Definitions of terms used in this report are also provided in the Technical notes. It should be noted that "source of payment" refers to the expected principal source of payment. The terms "patient," "inpatient," and "discharge" are used here synonymously, and that these terms do not refer to individual persons. An individual may have more than one hospitalization during a year and thus count as more than one patient, inpatient, or discharge.

From 1968 through 1970, information on hospital charges and sources of payment was collected

from a subsample of the NHDS (2). No information on charges or sources of payment was collected in the NHDS from 1971 through 1976. Beginning in 1977, data on patients' expected principal sources of payment and other expected sources of payment were collected from the face sheets of medical records in the NHDS sample.

Estimates in this report are based on what patients indicated as the expected principal source of payment. Data on expected source of payment from the NHDS for 1977, 1979, and 1985 (3-5), as well as summary data for 1982-1990 (6-14), have been published. Statistics in these reports, as well as in this one, reflect only the patients' principal source of payment.

The 1977 report presented estimates of source of payment by age and sex of patients along with estimates for major diagnostic and

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surgical categories. The 1979 and 1985 reports updated these basic estimates and provided analysis by additional characteristics of patients and hospitals. This report includes estimates by source of payment; sex, age, and race of patients; and geographic region of hospital. Selected diagnostic and procedure categories are also shown by source of payment. The survey form used to collect these data is reproduced in another NCHS publication (14).

According to the NHDS, approximately 6 percent of discharges from short-stay hospitals in 1990 indicated self-pay as their source of payment. On the other hand, data from the National Health Interview Survey (NHIS) for 1989 indicated that 14 percent of the population had no coverage (15). This implies that the number of the hospitalized uninsured was proportionally smaller than that of the hospitalized insured. However, some individuals who reported no health insurance at admission may have found on being hospitalized that they were covered under a public program.

In 1990, the percent of hospital discharges covered by private insurance was 38.7 percent. This was much lower than the 76.1 percent of the population estimated by the 1989 NHIS (15) to have private insurance coverage. This difference could be attributed to several factors: Persons with private insurance tend to be younger and healthier than persons under public programs and are therefore hospitalized less frequently; public programs are often billed first for hospital charges; and individuals citing private coverage may be using it as a secondary source of payment.

In some cases the expected source of payment recorded on the face sheet of the medical record may not have been the actual source of payment. For example, a patient admitted to a hospital following an automobile accident may have cited Blue Cross as the expected source of payment when, in fact, an automobile insurance company ultimately made restitution. Also, because of the manner in which this variable was

collected, it was not possible to determine the charge for the hospital stay or the proportions of the hospital stay and medical services covered by the principal source of payment indicated.

Highlights

- In 1990, approximately 39 percent of hospitalized patients expected private insurance to pay for their hospital stay, compared with 53 percent in 1979.
- In 1990 approximately 49 percent of hospitalized patients expected public programs to pay for their hospital stay, compared with 40 percent in 1979.
- The average length of stay for patients expecting private insurance to pay for their hospital stay was 4.9 days compared with 7.8 days for public programs.
- The average age of patients expecting private insurance to pay for their hospital stay was 35.3 years. For those expecting public programs to pay for their hospitalization, it was 68.6 years.
- White patients were more likely than black patients to report private insurance and Medicare as sources of payment. Black patients were more likely than white patients to be in the Medicaid and self-pay categories.
- About 65 percent of patients hospitalized for benign neoplasms expected private insurance to pay for their hospitalization; for malignant neoplasms, it was 35 percent.
- The diagnostic categories with high proportions of discharges covered by Medicare (congestive heart failure, hyperplasia of prostate, and cerebrovascular disease) reflected the greater age of Medicare patients.
- Medicaid was the payment source for 12 percent of all patients, but for 28 percent of women hospitalized for childbirth.
- Although only 6 percent of all patients were in the self-pay category, that category accounted

- for 22 percent of patients with lacerations and open wounds.
- Of all patients with a hysterectomy performed, approximately 71 percent expected private insurance to pay for their hospitalization.
- Other government payments, including Workers' Compensation, accounted for 4 percent of surgeries, and for 22 percent of excision or destruction of an intervertebral disc.
- Medicare was the source of payment for more than half of all endoscopies of the small intestine, colonoscopies and sigmoidoscopies, and cystoscopies, excluding those with biopsies.

Trends

Three payment categories are shown in table 1: private insurance; public programs; and other types of payment (self-pay, no charge, and other). Private insurance includes Blue Cross, health maintenance organizations (HMO's), and other commercial insurance. Public programs include Medicare, Medicaid, Workers' Compensation, and other government programs.

The number of patients expecting to pay their hospital bills through private insurance declined from 19.3 million (52 percent) in 1979 to 11.9 million (39 percent) in 1990. In 1979, 14.7 million hospitalized patients (40 percent) expected to pay their hospital bills through a public program, compared with 15.2 million (49 percent) in 1990. The number of patients in the self-pay, no charge, and other category was approximately 2.7 million, both in 1979 (7 percent of all discharges) and in 1990 (9 percent of all discharges).

The number and proportion of hospital days expected to be paid for by private insurance also declined. In 1979, private insurance covered 113.3 million hospital days (43 percent of all days of care), compared with only 58.5 million (30 percent) in 1990. Public programs were the expected source of payment for 135.5 million

Table 1. Number of patients discharged from short-stay hospitals, days of care, average length of stay, and average age of patient, by expected principal source of payment: United States, selected years 1979–90

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

Expected principal source of payment	Year	Number of discharges in thousands	Days of care in thousands	Average length of stay in days	Average age of patient
All sources of payment	1979	36,747	264,173	7.2	43.7
	1985	35,056	226,217	6.5	46.7
	1990	30,788	197,422	6.4	47.9
Private Insurance	1979	19,289	113,329	5.9	34.4
	1985	15,726	83,031	5.3	35.9
	1990	11,926	58,531	4.9	35.3
Public programs	1979	14,713	135,453	9.2	58.5
	1985	16,231	126,920	8.2	60.2
	1990	15,213	118,563	7.8	68.6
Self-pay, other sources of payments, and no charge	1979	2,744	15,392	5.7	29.9
	1985	3,098	16,265	5.3	30.7
	1990	2,657	14,675	5.5	31.2

¹Includes data for patients whose expected principal source of payment was not stated.

days of care in 1979, which was 51 percent of all inpatient days. In 1990, the number of days of care in the public category had decreased to 118.6 million, but the category accounted for 60 percent of the total days. The number of days of care in the self-pay, no charge, and other category was 15.4 million (6 percent) in 1979, and 14.7 million (7 percent) in 1990.

Patients with public programs as their source of payment had consistently longer average lengths of stay than patients with private insurance, although average lengths of stay decreased for both groups from 1979 to 1990. In 1990, the average length of stay for public patients was 7.8 days, compared with 4.9 days for private patients. This is primarily because of Medicare, which was designed to help the elderly defray the cost of medical care (older people tend to have more chronic ailments and longer hospital stays than younger people). In 1990, the average age of those expecting public programs to pay for their hospital stay was 68.6 years, compared with an average age of 35.3 years for those with private insurance as their payment source. The relationship of age and coverage underlies many of the findings in this report.

Patients in the self-pay, no charge, and other category had similar average lengths of stay in 1979 (5.7 days) and in 1990 (5.5 days). The

average age of these patients was 29.9 years in 1979 and 31.2 years in 1990.

Patient characteristics

The number and percent distribution of patients discharged from short-stay hospitals by expected source of payment, according to age and sex, are shown in table 2. Private insurance was the expected source of payment for at least 50 percent of discharges in all age groups except for those 65 years of age and over. Approximately 90 percent of discharges 65 years of age and over reported Medicare as their principal expected source of payment. Medicaid and self-pay categories accounted for larger proportions of discharges under 45 years of age than for those 45 years of age and over. Females were more likely to have Medicaid as a source of payment (14 percent) than were males (8 percent).

Expected sources of payment differed for white and black patients, as shown in table 3. Approximately 41 percent of white patients expected private insurance to pay for their hospital stay, compared with 29 percent of black patients. Medicare was an expected source of payment for 38 percent of the white patients, but for only 24 percent of the black patients. In contrast, 8 percent of white patients and 27 percent of black patients indicated

Medicaid as an expected source of payment, and the self-pay category accounted for 5 percent of white patients and for almost 9 percent of black patients.

The percent of inpatients with private insurance as an expected source of payment ranged from 42 percent in the West to 36 percent in the Northeast. The percent of inpatients expecting the Medicare program to pay for their hospitalization ranged from 36 percent in the West to 30 percent in the Midwest.

Utilization by diagnosis

Table 4 provides the number and percent distribution of discharges by expected source of payment, according to selected diagnostic categories. Although 39 percent of all discharges expected private insurance to pay for their hospital stay, private insurance was the expected source of payment for 65 percent of discharges with benign neoplasms and neoplasms of uncertain behavior and unspecified nature, 54 percent of females with deliveries, 52 percent of discharges with an intervertebral disc disorder, 50 percent of discharges with noninfectious enteritis and colitis, and 49 percent of discharges with cholelithiasis.

Thirty-five percent of hospital discharges expected Medicare to pay for their hospital stay. The diagnostic categories with high proportions of discharges covered by Medicare reflect the older age of Medicare discharges. For example, Medicare was the expected source of payment for 78 percent of discharges with congestive heart failure, 72 percent of discharges with cerebrovascular disease, and 71 percent of discharges with hyperplasia of prostate.

Of particular interest is the contrast in sources of payment for types of neoplasms. The incidence of malignant neoplasms increases with age. As a result, among patients with a malignant neoplasm, 50 percent expected Medicare to be their source of payment, and 35 percent expected private insurance to pay for their

Table 2. Number and percent distribution of patients discharged from short-stay hospitals by expected principal source of payment, according to sex and age: United States, 1990

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

<i>Sex and age</i>	<i>All expected principal sources of payment</i>	<i>Private insurance</i>	<i>Medicare</i>	<i>Medicaid</i>	<i>Other government payments</i>	<i>Self-pay</i>	<i>Other payments and no charge</i>	<i>Payment source not stated</i>
Both sexes					Number in thousands			
All ages	30,788	11,926	10,625	3,582	1,006	1,788	869	992
Under 15 years.	2,412	1,240	41	684	91	194	92	70
15-44 years.	11,799	6,410	407	2,269	605	1,129	481	497
45-64 years.	6,244	3,801	838	497	264	362	215	248
65 years and over.	10,333	475	9,339	133	46	83	81	176
Male								
All ages	12,280	4,470	4,718	967	550	814	359	403
Under 15 years.	1,362	709	23	381	51	103	57	39
15-44 years.	3,330	1,657	211	358	309	480	157	158
45-64 years.	3,115	1,863	490	171	164	193	110	125
65 years and over.	4,472	241	3,993	57	26	39	36	81
Female								
All ages	18,508	7,456	5,907	2,616	457	974	510	589
Under 15 years.	1,049	531	18	303	40	91	35	31
15-44 years.	8,469	4,753	196	1,911	296	650	325	339
45-64 years.	3,129	1,939	347	326	100	189	105	123
65 years and over.	5,861	234	5,346	76	20	45	46	95
Both sexes					Percent distribution			
All ages	100.0	38.7	34.5	11.6	3.3	5.8	2.8	3.2
Under 15 years.	100.0	51.4	1.7	28.4	3.8	8.0	3.8	2.9
15-44 years.	100.0	54.3	3.5	19.2	5.1	9.6	4.1	4.2
45-64 years.	100.0	60.9	13.4	8.0	4.2	6.1	3.4	4.0
65 years and over.	100.0	4.6	90.4	1.3	0.4	0.8	0.8	1.7
Male								
All ages	100.0	36.4	38.4	7.9	4.5	6.6	2.9	3.3
Under 15 years.	100.0	52.1	1.7	27.9	3.7	7.5	4.2	2.9
15-44 years.	100.0	49.8	6.3	10.8	9.3	14.4	4.7	4.8
45-64 years.	100.0	59.8	15.7	5.5	5.3	6.2	3.5	4.0
65 years and over.	100.0	5.4	89.3	1.3	0.6	0.9	0.8	1.8
Female								
All ages	100.0	40.3	31.9	14.1	2.5	5.3	2.8	3.2
Under 15 years.	100.0	50.6	1.7	28.9	3.8	8.7	3.4	3.0
15-44 years.	100.0	56.1	2.3	22.6	3.5	7.7	3.8	4.0
45-64 years.	100.0	62.0	11.1	10.4	3.2	6.0	3.3	3.9
65 years and over.	100.0	4.0	91.2	1.3	0.3	0.8	0.8	1.6

hospital stay. On the other hand, 65 percent of discharges with a benign neoplasm listed private insurance as their expected source of payment, and only 17 percent used Medicare.

Approximately 12 percent of all discharges expected Medicaid to cover their hospital stay. However, Medicaid was the source of payment for 28 percent of women hospitalized for deliveries. Twenty-two percent of patients diagnosed with asthma, 19 percent with some form of psychosis, and 16 percent with an acute respiratory infection listed Medicaid as their expected source of payment.

Other government programs, including Workers' Compensation, were the expected source of payment

for 3 percent of all discharges, whereas these programs paid for 22 percent of discharges with intervertebral disc disorders, 10 percent of those with lacerations and open wounds, and 6 percent of those with fractures.

Although only 6 percent of all discharges were in the self-pay category, this was a frequent source of payment for lacerations and open wounds (22 percent).

Utilization by procedures

The number and percent distribution of procedures by expected source of payment, according to age and sex, are provided in table 5. Procedures in this report reflect only those

procedures performed on an inpatient basis. Many procedures are performed in a hospital outpatient department or in other ambulatory care settings. Forty-one percent of all procedures were performed on inpatients who expected to pay for their hospital stay through private insurance. Private insurance was the expected source of payment for 37 percent of procedures for males and 44 percent of procedures for females. For discharges 45-64 years of age, private insurance was the expected source of payment for 63 percent of procedures.

One-third of all procedures performed were for discharges who expected Medicare to pay for their hospital stay. Medicare was the expected payment source for

Table 3. Number and percent distribution of patients discharged from short-stay hospitals by expected principal source of payment, according to race and geographic region: United States, 1990

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

<i>Race and region</i>	<i>All expected principal sources of payment</i>	<i>Private insurance</i>	<i>Medicare</i>	<i>Medicaid</i>	<i>Other government payments</i>	<i>Self-pay</i>	<i>Other payments and no charge</i>	<i>Payment source not stated</i>
Number in thousands								
All patients	30,788	11,926	10,625	3,582	1,006	1,788	869	992
Race								
White	21,376	8,722	8,135	1,730	650	1,067	533	538
Black	3,611	1,027	869	979	140	320	143	131
All other	958	402	168	222	32	84	38	13
Not stated	4,843	1,774	1,452	651	184	317	154	310
Geographic region								
Northeast	6,895	2,481	2,367	853	156	402	253	383
Midwest	7,620	3,104	2,756	779	209	390	207	176
South	11,173	4,222	3,972	1,286	401	744	224	325
West	5,100	2,119	1,530	665	241	252	184	108
Percent distribution								
All patients	100.0	38.7	34.5	11.6	3.3	5.8	2.8	3.2
Race								
White	100.0	40.8	38.1	8.1	3.0	5.0	2.5	2.5
Black	100.0	28.5	24.1	27.1	3.9	8.9	4.0	3.6
All other	100.0	41.9	17.5	23.1	3.4	8.7	4.0	1.3
Not stated	100.0	36.6	30.0	13.4	3.8	6.6	3.2	6.4
Geographic region								
Northeast	100.0	36.0	34.3	12.4	2.3	5.8	3.7	5.6
Midwest	100.0	40.7	36.2	10.2	2.7	5.1	2.7	2.3
South	100.0	37.8	35.5	11.5	3.6	6.7	2.0	2.9
West	100.0	41.6	30.0	13.0	4.7	5.0	3.6	2.1

41 percent of procedures on males, compared with 29 percent of procedures on females. As expected, 89 percent of procedures performed on discharges 65 years of age and over had Medicare as the expected principal source of payment.

Medicaid was the expected source of payment for 11 percent of all procedures performed. Approximately 26 percent of the procedures performed on discharges under 15 years of age, and 22 percent of procedures for females between the ages of 15 and 44, had Medicaid as the principal expected source of payment. Approximately 5 percent of all procedures were in the self-pay category, but this category accounted for 14 percent of the procedures performed on males 15–44 years of age.

The number and percent distribution of surgical procedures by expected source of payment, according to selected surgical categories, are shown in table 6. Forty-six percent of all surgical procedures were performed on discharges listing private insurance as

the expected source of payment. Among specific surgeries, private insurance was the expected source of payment for 71 percent of hysterectomies, 70 percent of oophorectomies and salpingo-oophorectomies, and 63 percent of appendectomies. More than half of several obstetrical and musculoskeletal surgeries also had private insurance as the expected source of payment.

Twenty-nine percent of all surgical procedures were performed on discharges using Medicare as the expected source of payment. Medicare was the expected source of payment for particularly large proportions of discharges with procedures on the heart or prostate. For example, 74 percent of surgical operations for insertion, replacement, removal, or revision of pacemaker leads or devices and 73 percent of prostatectomies were performed on discharges with Medicare as their expected source of payment. Again, these findings are consistent with the fact that older persons are generally covered under the Medicare program.

Ten percent of all surgical procedures were performed on discharges using Medicaid as the expected source of payment, but Medicaid discharges had larger proportions of several obstetric and gynecological procedures. These patients had 32 percent of the surgical operations for bilateral destruction or occlusion of fallopian tubes, 27 percent of artificial ruptures of membranes, 26 percent of repairs of obstetric laceration, and 25 percent of cesarean sections.

Other government payments, including Workers' Compensation, accounted for 4 percent of all surgeries, 23 percent of excision or destruction of an intervertebral disc, and 22 percent of spinal fusion. The self-pay category comprised 5 percent of all surgeries; 12 percent of appendectomies; 9 percent of debridement of wounds, infections, and burns; and 9 percent of open reduction of fractures with internal fixation.

Table 7 shows the number and percent distribution of nonsurgical procedures for selected procedure

Table 4. Number and percent distribution of patients discharged from short-stay hospitals by expected principal source of payment, according to selected diagnostic categories: United States, 1990

[Discharges from non-Federal hospitals. Excludes newborn infants. Diagnostic groupings and code number inclusions are based on the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*]

First-listed diagnosis and ICD-9-CM code	All expected principal sources of payment	Private insurance	Medicare	Medicaid	Other government payments	Self-pay	Other payments and no charge	Payment source not stated
Number in thousands								
All conditions ¹	30,788	11,926	10,625	3,582	1,006	1,788	869	992
Females with deliveries V27	4,025	2,182	36	1,112	121	272	132	170
Heart disease 391-392.0,393-398,402,404,410-416,420-429	3,556	932	2,172	129	51	111	67	94
Acute myocardial infarction 410	675	195	389	21	*8	24	14	22
Coronary atherosclerosis 414.0	410	163	193	10	*8	14	10	11
Other ischemic heart disease 411-413,414.1-414.9	870	255	502	35	12	27	16	24
Cardiac dysrhythmias 427	483	130	298	14	*7	16	10	9
Congestive heart failure 428.0	701	77	549	27	9	15	*8	15
Malignant neoplasms 140-208,230-234	1,571	542	780	83	34	48	35	49
Malignant neoplasm of large intestine and rectum 153-154,197.5	175	50	103	*6	*	*5	*	*6
Malignant neoplasm of trachea, bronchus, and lung 162,197.0,197.3	231	77	119	12	*5	*8	*	*7
Malignant neoplasm of breast 174-175,198.81	164	69	72	*7	*	*	*	*7
Benign neoplasms and neoplasms of uncertain behavior and unspecified nature 210-229,235-239	393	254	69	21	*6	16	15	14
Pneumonia 480-486	1,052	281	546	128	12	46	16	23
Fractures 800-829	1,017	300	427	58	65	94	37	36
Cerebrovascular disease 430-438	812	134	585	28	10	25	12	18
Psychosis 290-299	812	256	282	152	21	55	25	21
Cholelithiasis 574	506	247	151	40	10	24	17	17
Acute respiratory infections 460-466	487	174	176	79	13	26	9	10
Arthropathias and related disorders 710-719	479	166	229	24	22	9	12	18
Asthma 493	476	182	115	103	11	32	19	14
Intervertebral disc disorders 722	425	220	62	10	95	13	15	11
Diabetes mellitus 250	420	135	174	49	9	25	10	19
Noninfectious enteritis and colitis 555-556,558	347	172	75	51	9	22	9	9
Diseases of the central nervous system 320-336,340-349	342	125	114	44	12	23	10	14
Hyperplasia of prostate 600	259	58	185	*	*	*	*	*7
Lacerations and open wounds 870-904	240	83	20	23	23	53	13	25
Percent distribution								
All conditions	100.0	38.7	34.5	11.6	3.3	5.8	2.8	3.2
Females with deliveries	100.0	54.2	0.9	27.6	3.0	6.7	3.3	4.2
Heart disease	100.0	26.2	61.1	3.6	1.4	3.1	1.9	2.6
Acute myocardial infarction	100.0	28.9	57.7	3.1	*1.2	3.6	2.1	3.3
Coronary atherosclerosis	100.0	39.9	47.0	2.5	*1.9	3.5	2.5	2.7
Other ischemic heart disease	100.0	29.3	57.6	4.0	1.4	3.0	1.8	2.8
Cardiac dysrhythmias	100.0	26.9	61.6	2.9	*1.4	3.2	2.1	1.9
Congestive heart failure	100.0	11.0	78.4	3.9	1.2	2.2	*1.1	2.2
Malignant neoplasms	100.0	34.5	49.6	5.3	2.2	3.1	2.2	3.1
Malignant neoplasm of large intestine and rectum	100.0	28.6	58.7	*3.3	*	*2.5	*	*3.7
Malignant neoplasm of trachea, bronchus, and lung	100.0	33.3	51.2	5.3	*2.2	*3.4	*	*3.2
Malignant neoplasm of breast	100.0	42.2	43.8	*4.0	*	*	*	*3.2
Benign neoplasms and neoplasms of uncertain behavior and unspecified nature	100.0	64.5	17.4	5.2	*1.6	4.0	3.7	3.6
Pneumonia	100.0	26.8	51.9	12.2	1.1	4.3	1.5	2.2
Fractures	100.0	29.5	42.0	5.7	6.4	9.3	3.6	3.6
Cerebrovascular disease	100.0	16.5	72.0	3.4	1.3	3.0	1.5	2.2
Psychosis	100.0	31.6	34.7	18.7	2.6	6.7	3.1	2.5
Cholelithiasis	100.0	48.9	29.8	7.9	1.9	4.8	3.3	3.4
Acute respiratory infections	100.0	35.8	36.1	16.2	2.7	5.4	1.8	2.0
Arthropathias and related disorders	100.0	34.6	47.8	4.9	4.6	1.9	2.6	3.7
Asthma	100.0	38.3	24.1	21.5	2.2	6.8	4.0	3.0
Intervertebral disc disorders	100.0	51.7	14.6	2.4	22.3	3.0	3.5	2.5
Diabetes mellitus	100.0	32.0	41.4	11.7	2.2	6.0	2.3	4.4
Noninfectious enteritis and colitis	100.0	49.6	21.6	14.7	2.6	6.3	2.7	2.5
Diseases of the central nervous system	100.0	36.6	33.3	12.8	3.5	6.7	3.0	4.1
Hyperplasia of prostate	100.0	22.2	71.2	*	*	*	*	*2.8
Lacerations and open wounds	100.0	34.4	8.3	9.6	9.6	22.1	5.5	10.4

¹Includes data for diagnostic conditions not shown in table.

categories, according to expected source of payment. Thirty-five percent of the nonsurgical procedures, compared with 46 percent of surgical procedures, were performed on discharges with private insurance as the expected source of payment. Discharges with private insurance had

57 percent of fetal EKGs and fetal monitoring, 47 percent of contrast myelograms, 43 percent of manually assisted deliveries, and 41 percent of arteriographies and angiocardiographies.

Thirty-nine percent of all nonsurgical procedures, compared with 29 percent of all surgical

procedures, were performed on discharges with Medicare as the expected source of payment. Sixty percent of colonoscopies and sigmoidoscopies (excluding those with biopsy), 56 percent of cystoscopies (excluding those with biopsy), 56 percent of electrographic

Table 5. Number and percent distribution of all-listed procedures for patients discharged from short-stay hospitals by expected principal source of payment, according to sex and age: United States, 1990

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

Sex and age	All expected principal sources of payment	Private insurance	Medicare	Medicaid	Other government payments	Self-pay	Other payments and no charge	Payment source not stated
				Number in thousands				
Both sexes								
All ages	40,506	16,717	13,471	4,381	1,437	2,104	1,158	1,237
Under 15 years.	1,960	1,033	31	517	87	162	81	49
15-44 years.	16,186	9,198	442	3,035	858	1,350	668	635
45-64 years.	9,052	5,709	1,120	653	423	499	312	337
65 years and over.	13,308	778	11,878	176	70	93	97	217
				Percent distribution				
Male								
All ages	15,916	5,853	6,456	989	770	909	461	477
Under 15 years.	1,144	612	17	290	53	94	51	27
15-44 years.	3,840	1,969	194	376	412	517	192	178
45-64 years.	4,605	2,859	652	239	264	249	171	171
65 years and over.	6,326	412	5,593	84	41	49	47	101
				Percent distribution				
Female								
All ages	24,590	10,864	7,015	3,392	667	1,195	697	760
Under 15 years.	816	421	14	227	34	68	30	22
15-44 years.	12,346	7,228	248	2,659	445	833	476	456
45-64 years.	4,447	2,850	468	414	159	250	140	166
65 years and over.	6,982	365	6,285	93	28	44	50	116
				Percent distribution				
Both sexes								
All ages	100.0	41.3	33.3	10.8	3.5	5.2	2.9	3.1
Under 15 years.	100.0	52.7	1.6	26.4	4.5	8.3	4.1	2.5
15-44 years.	100.0	56.8	2.7	18.8	5.3	8.3	4.1	3.9
45-64 years.	100.0	63.1	12.4	7.2	4.7	5.5	3.4	3.7
65 years and over.	100.0	5.8	89.3	1.3	0.5	0.7	0.7	1.6
				Percent distribution				
Male								
All ages	100.0	36.8	40.6	6.2	4.8	5.7	2.9	3.0
Under 15 years.	100.0	53.5	1.5	25.3	4.7	8.2	4.4	2.4
15-44 years.	100.0	51.3	5.1	9.8	10.7	13.5	5.0	4.6
45-64 years.	100.0	62.1	14.2	5.2	5.7	5.4	3.7	3.7
65 years and over.	100.0	6.5	88.4	1.3	0.6	0.8	0.7	1.6
				Percent distribution				
Female								
All ages	100.0	44.2	28.5	13.8	2.7	4.9	2.8	3.1
Under 15 years.	100.0	51.6	1.7	27.8	4.2	8.3	3.7	2.7
15-44 years.	100.0	58.5	2.0	21.5	3.6	6.7	3.9	3.7
45-64 years.	100.0	64.1	10.5	9.3	3.6	5.6	3.2	3.7
65 years and over.	100.0	5.2	90.0	1.3	0.4	0.6	0.7	1.7

monitoring, and 54 percent of circulatory monitoring, radioisotope scans, and endoscopies of the small intestine (excluding those with biopsy) were performed on discharges with Medicare as the expected source of payment.

Medicaid discharges made up 12 percent of all nonsurgical procedures, and, as was the case for surgical procedures, Medicaid was the expected source of payment for large proportions of obstetrical procedures. Thirty-three percent of manually assisted deliveries and 27 percent of fetal EKGs and fetal monitoring were performed on Medicaid discharges. In addition, Medicaid discharges had 22 percent of spinal taps.

Other government payments, including Workers' Compensation,

were the expected source of payment for 3 percent of all nonsurgical procedures and accounted for 21 percent of contrast myelograms. The self-pay category accounted for 5 percent of all nonsurgical procedures and for 9 percent of spinal taps.

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Table 6. Number and percent distribution of all-listed surgical procedures for patients discharged from short-stay hospitals by expected principal source of payment, according to selected surgical categories: United States, 1990

[Discharges from non-Federal hospitals. Excludes newborn infants. Diagnostic groupings and code number inclusions are based on the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*]

Procedure category and ICD-9-CM code	All expected principal sources of payment	Private insurance	Medicare	Medicaid	Other government payments	Self-pay	Other payments and no charge	Payment source not stated	Number in thousands											
All surgical procedures ¹	23,051	10,541	6,679	2,334	896	1,166	686	748												
Episiotomy with or without forceps or vacuum extraction72.1,72.21,72.31,72.71,73.6	1,717	1,023	11	383	49	118	51	82												
Cardiac catheterization37.21-37.23	995	411	426	37	18	36	32	35												
Cesarean section74.0-74.2,74.4,74.99	945	569	*8	234	27	45	28	34												
Repair of current obstetric laceration75.5-75.6	795	433	9	207	27	57	33	29												
Artificial rupture of membranes73.0	691	389	9	183	21	43	31	15												
Hysterectomy68.3-68.7	591	422	61	37	11	19	22	18												
Cholecystectomy51.2	522	263	151	40	11	23	18	16												
Puncture of vessel38.9	515	145	241	67	16	22	12	12												
Oophorectomy and salpingo-oophorectomy65.3-65.6	476	333	59	28	*6	21	15	14												
Bilateral destruction or occlusion of fallopian tubes66.2-66.3	419	224	*5	132	15	17	11	14												
Coronary artery bypass graft36.1	392	155	203	9	*8	*5	*	9												
Open reduction of fracture with internal fixation79.3	391	128	150	20	30	34	14	14												
Prostatectomy60.2-60.6	364	74	266	*5	*	*	*	9												
Debridement of wound, infection, or burn86.22,86.28	332	99	136	24	21	30	9	13												
Lysis of peritoneal adhesions54.5	323	183	87	24	*	10	11	*6												
Excision or destruction of intervertebral disc80.5	305	163	38	*8	69	*8	11	*8												
Operations on muscles, tendons, and bursa82-83.1,83.3-83.9	291	146	58	20	29	19	11	*8												
Removal of coronary artery obstruction36.0	285	127	119	*6	*7	9	9	*8												
Appendectomy, excluding incidental47.0	274	173	18	23	*8	32	11	9												
Insertion, replacement, removal, and revision of pacemaker leads or device37.7-37.8	259	44	191	*6	*	*5	*	*5												
Partial excision of bone76.2-76.3,77.6-77.8	193	94	41	12	23	*7	*8	*7												
Spinal fusion81.0	130	64	18	*7	29	*5	*	*												
									Percent distribution											
All surgical procedures ¹	100.0	45.7	29.0	10.1	3.9	5.1	3.0	3.2												
Episiotomy with or without forceps or vacuum extraction72.1,72.21,72.31,72.71,73.6	100.0	59.6	0.6	22.3	2.9	6.9	3.0	4.8												
Cardiac catheterization37.21-37.23	100.0	41.3	42.8	3.7	1.8	3.7	3.2	3.5												
Cesarean section74.0-74.2,74.4,74.99	100.0	60.2	*0.8	24.8	2.9	4.8	3.0	3.6												
Repair of current obstetric laceration75.5-75.6	100.0	54.5	1.1	26.1	3.4	7.1	4.2	3.7												
Artificial rupture of membranes73.0	100.0	56.3	1.3	26.5	3.0	6.2	4.5	2.2												
Hysterectomy68.3-68.7	100.0	71.4	10.4	6.3	1.8	3.3	3.7	3.1												
Cholecystectomy51.2	100.0	50.5	28.9	7.7	2.1	4.4	3.4	3.1												
Puncture of vessel38.9	100.0	28.2	46.8	13.0	3.1	4.2	2.3	2.4												
Oophorectomy and salpingo-oophorectomy65.3-65.6	100.0	69.9	12.4	5.9	*1.2	4.5	3.2	3.0												
Bilateral destruction or occlusion of fallopian tubes66.2-66.3	100.0	53.5	*1.1	31.6	3.7	4.0	2.7	3.4												
Coronary artery bypass graft36.1	100.0	39.5	51.7	2.3	*1.9	*1.3	*	2.2												
Open reduction of fracture with internal fixation79.3	100.0	32.9	38.3	5.2	7.8	8.8	3.5	3.5												
Prostatectomy60.2-60.6	100.0	20.4	73.1	*1.5	*	*	*	2.4												
Debridement of wound, infection, or burn86.22,86.28	100.0	29.9	40.9	7.1	6.3	9.1	2.7	4.0												
Lysis of peritoneal adhesions54.5	100.0	56.6	27.0	7.3	*	3.0	3.3	*1.8												
Excision or destruction of intervertebral disc80.5	100.0	53.4	12.4	*2.6	22.6	*2.6	3.7	*2.7												
Operations on muscles, tendons, and bursa82-83.1,83.3-83.9	100.0	50.2	20.0	6.9	9.8	6.7	3.7	*2.8												
Removal of coronary artery obstruction36.0	100.0	44.6	41.6	*2.2	*2.3	3.1	3.3	*2.8												
Appendectomy, excluding incidental47.0	100.0	63.2	6.6	8.2	*2.9	11.6	4.1	3.4												
Insertion, replacement, removal, and revision of pacemaker leads or device37.7-37.8	100.0	17.1	73.8	*2.3	*	*1.9	*	*2.1												
Partial excision of bone76.2-76.3,77.6-77.8	100.0	48.8	21.5	6.3	11.9	*3.7	*4.3	*3.5												
Spinal fusion81.0	100.0	49.2	14.2	*5.3	22.2	*3.7	*	*												

¹Includes data for surgical conditions not shown in table.

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Table 7. Number and percent distribution of all-listed nonsurgical procedures for patients discharged from short-stay hospitals by expected principal source of payment, according to selected nonsurgical categories: United States, 1990

[Discharges from non-Federal hospitals. Excludes newborn infants. Diagnostic groupings and code number inclusions are based on the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*]

Procedure category and ICD-9-CM code	All expected principal sources of payment	Private insurance	Medicare	Medicaid	Other government payments	Self-pay	Other payments and no charge	Payment source not stated
Number in thousands								
All nonsurgical procedures ¹	17,455	6,176	6,792	2,047	541	938	472	489
Arteriography and angiocardiology using contrast material.88.4-88.5	1,735	709	745	65	33	67	62	55
Fetal EKG (scalp) and fetal monitoring, not otherwise specified75.32,75.34	1,377	780	13	371	53	80	45	36
Diagnostic ultrasound88.7	1,608	494	722	196	38	88	39	31
Computerized axial tomography (CAT)87.03,87.41,87.71,88.01,88.38	1,506	422	722	111	54	109	49	39
Respiratory therapy93.9	1,164	286	571	158	34	67	19	29
Endoscopy of small intestine (excludes that with biopsy)45.11-45.13	549	157	294	41	10	22	10	15
Manually assisted delivery73.5	754	321	13	251	27	57	33	53
Circulatory monitoring89.6	724	178	392	74	21	42	9	*7
Radioisotope scan.92.0-92.1	603	160	324	52	15	29	11	11
Cystoscopy (excludes that with biopsy)57.31-57.32	485	144	273	21	*6	12	9	20
Spinal tap.03.31	396	148	81	89	15	35	16	12
Colonoscopy and sigmoidoscopy (excludes that with biopsy)45.23-45.24	393	109	237	19	*5	*6	*8	9
Electrographic monitoring89.54	629	171	349	44	19	31	*6	9
Contrast myelogram87.21	213	100	45	*6	44	*7	*7	*5
Percent distribution								
All nonsurgical procedures ¹	100.0	35.4	38.9	11.7	3.1	5.4	2.7	2.8
Arteriography and angiocardiology using contrast material.88.4-88.5	100.0	40.8	42.9	3.7	1.9	3.8	3.5	3.2
Fetal EKG (scalp) and fetal monitoring, not otherwise specified.75.32,75.34	100.0	56.6	0.9	26.9	3.8	5.8	3.3	2.6
Diagnostic ultrasound88.7	100.0	30.7	44.9	12.2	2.4	5.5	2.4	2.0
Computerized axial tomography (CAT)87.03,87.41,87.71,88.01,88.38	100.0	28.0	48.0	7.4	3.6	7.3	3.2	2.6
Respiratory therapy93.9	100.0	24.6	49.1	13.5	2.9	5.8	1.6	2.5
Endoscopy of small intestine (excludes that with biopsy)45.11-45.13	100.0	28.6	53.6	7.5	1.8	4.0	1.8	2.8
Manually assisted delivery73.5	100.0	42.6	1.7	33.3	3.6	7.5	4.4	7.0
Circulatory monitoring89.6	100.0	24.6	54.1	10.3	2.9	5.8	1.3	*1.0
Radioisotope scan.92.0-92.1	100.0	26.6	53.8	8.6	2.4	4.8	1.9	1.9
Cystoscopy (excludes that with biopsy)57.31-57.32	100.0	29.7	56.3	4.3	*1.3	2.5	1.8	4.1
Spinal tap.03.31	100.0	37.3	20.5	22.4	3.8	8.9	4.0	3.1
Colonoscopy and sigmoidoscopy (excludes that with biopsy)45.23-45.24	100.0	27.6	60.2	4.9	*1.2	*1.6	*2.0	2.4
Electrographic monitoring89.54	100.0	27.1	55.6	7.0	3.1	4.9	*0.9	1.4
Contrast myelogram87.21	100.0	46.9	21.0	*2.9	20.5	*3.1	*3.4	*2.2

¹Includes data for nonsurgical conditions not shown in table.

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Symbols

- - - Data not available
 - . . . Category not applicable
 - Quantity zero
 - 0.0 Quantity more than zero but less than 0.05
 - Z Quantity more than zero but less than 500 where numbers are rounded to thousands
 - * Figure does not meet standard of reliability or precision
 - # Figure suppressed to comply with confidentiality requirements
-

Technical notes

Survey methodology

Sources of data

The National Hospital Discharge Survey (NHDS) covers discharges from noninstitutional hospitals, exclusive of Federal, military, and Veterans' Administration hospitals, located in the 50 States and the District of Columbia. Only short-stay hospitals (hospitals where the average length of stay for all patients is less than 30 days) and those whose specialty is general (medical or surgical) or children's general are included in the survey. These hospitals must also have at least six beds staffed for patient use.

Beginning with 1988, the NHDS sampling frame has comprised hospitals that were listed in the April 1987 SMG Hospital Market Tape (16), met the above criteria, and began accepting patients by August 1987. For 1990, the sample consisted of 542 hospitals, of which 23 were found to be out of scope (ineligible) because they had gone out of business or failed to meet the criteria for the NHDS universe. Of the 519 in-scope (eligible) hospitals, 474 responded to the survey.

Sample design and data collection

The National Center for Health Statistics (NCHS) has conducted the NHDS continuously since 1965. The original sample was selected in 1964 from a frame of short-stay hospitals listed in the National Master Facility Inventory. That sample was updated periodically with samples of hospitals that opened later. Sample hospitals were selected with probabilities ranging from certainty for the largest hospitals to 1 in 40 for the smallest hospitals. Within each sample hospital, a systematic random sample of discharges was selected.

Beginning in 1988 the NHDS sample has included with certainty all hospitals with 1,000 beds or more, or 40,000 discharges or more, annually. The remaining sample of hospitals

was based on a stratified three-stage design. The first stage consisted of a selection of 112 primary sampling units (PSU's) that composed a probability subsample of PSU's to be used in the 1985-94 National Health Interview Survey (NHIS). The second stage comprised a selection of noncertainty hospitals from the sample PSU's. At the third stage, a sample of discharges was selected by a systematic random-sampling technique. A detailed description of the original and new designs has been published (1).

Two data collection procedures were used for the survey. One was a manual system of sample selection and data abstraction. The other, an automated method used for approximately 34 percent of the respondent hospitals in 1990, involved the purchase of data tapes from abstracting services, State data systems, and hospitals.

In the manual system, the sample selection and the transcription of information from hospital records to abstract forms were performed at the hospitals. The completed forms, along with sample selection control sheets, were forwarded to NCHS for coding, editing, and weighting. A few of these hospitals submitted their data via computer printout or tape. Of the hospitals using the manual system in 1990, about two-thirds had the work performed by their own medical records staff. In the remaining hospitals using the manual system, personnel of the U.S. Bureau of the Census did the work on behalf of NCHS.

For the automated system, NCHS purchased tapes containing machine-readable medical record data from abstracting services. Records were systematically sampled by NCHS. The medical abstract form and the abstract data tapes contained items relating to the patient's personal characteristics, including birth date, sex, race, and marital status but not name and address; administrative information, including admission and discharge dates, discharge status, and medical record number; diagnoses; and surgical and nonsurgical operations and procedures. Beginning

in 1977 data pertaining to patient ZIP Code, expected source of payment, and dates of surgery were also collected. (The medical record number and patient ZIP Code are confidential and, therefore, not available to the public.)

Presentation of estimates

The relative standard error (RSE) of the estimate and the number of sample records on which that estimate was based (referred to as "the sample size") were used to identify estimates with relatively low reliability. Because of the complex sample design of the NHDS, the following guidelines were used in presenting the NHDS estimates:

- If the relative standard error of an estimate was larger than 30 percent, or the sample size was less than 30, the estimate is not shown. In this case, only an asterisk (*) appears in the tables.
- If the sample size was less than 60, the value of the estimate could not be assumed to be reliable. In this case, the estimate is preceded by an asterisk (*) in the tables.

Sampling errors and rounding of numbers

The standard error is primarily a measure of sampling variability that occurs by chance because only a sample rather than the entire universe is surveyed. The relative standard error of the estimate is obtained by dividing the standard error by the estimate itself and is expressed as a percent of the estimate. The resulting value is multiplied by 100, so the relative standard error is expressed as a percent of the estimate.

Estimates of sampling variability were calculated with SESUDAAN software, which computes standard errors by using a first-order Taylor approximation of the deviation of estimates from their expected values. A description of the software and the approach it uses has been published (17).

The constants for relative standard error curves for the NHDS estimates are presented in table I. The relative standard error [RSE (*X*)] of an estimate *X* may be estimated from the formula

$$RSE(X) = \sqrt{a + b/X}$$

where *X*, *a*, and *b* are as defined in table I.

The most conservative standard error should be used when a statistic involves more than one variable. For example, the number of discharges for females 15–44 years of age expecting to pay for their own hospitalization was 650,000. Using the formula

$$RSE(X) = \sqrt{a + b/X} \cdot 100$$

the relative standard error in percent was 4.16 for females, 4.34 for inpatients 15–44 years of age, and 7.81 for self-pay inpatients. The

relative standard error in percent for the self-pay variable should be used since it is the most conservative of the three variables.

Estimates have been rounded to the nearest thousand. For this reason, figures within tables do not always add to the totals. Rates and average lengths of stay were calculated from original, unrounded figures and do not necessarily agree precisely with rates or average lengths of stay calculated from rounded data.

Tests of significance

In this report, statistical inference is based on the two-sided *t*-test with a critical value of 1.96 (0.05 level of significance). Terms such as “higher” and “less” indicate that differences are statistically significant. Terms such as “similar” or “no difference” mean that no statistically significant differences exist between the

estimates being compared. A lack of comment on the difference between any two estimates does not mean that the difference was tested and found not to be significant.

Definition of terms

Terms relating to sources of payment

Private insurance—Health insurance provided by nongovernment sources, such as insurance companies, private industry, and philanthropic organizations.

Medicare (Title XVIII)—A nationwide health program providing health insurance protection, regardless of income, to people 65 years of age and over, people eligible for Social Security disability payments for more than two years, and people with end-stage renal disease.

Medicaid—A joint Federal-State welfare program available in virtually all States that provides benefits for low-income persons. Each State has its own criteria for qualification as “low income.”

Other government payments—Government payments other than those through the Medicare or Medicaid programs, such as Workers’ Compensation (a program designed to enable employees injured on the job to receive financial compensation regardless of fault), payments made under the Title V Program, and the Civilian Health and Medical Program for the Uniformed Services (CHAMPUS, which provides coverage for civilian medical care for family members of active-duty uniformed service personnel and for retired uniformed service personnel and their families).

Self-pay—A form of hospital payment in which the major share of the total cost is paid by the patient or the patient’s spouse, family, or next of kin.

No charge—A situation where medical services are provided free of charge by the hospital. This category includes hospital-sponsored welfare, donated staff services, and hospital-sponsored special research.

Table I. Estimated parameters for relative standard error equations for National Hospital Discharge Survey statistics by characteristics: United States, 1990

Characteristic	Number of discharges or first-listed diagnoses		Number of days of care		Number of procedures	
	a	b	a	b	a	b
Total	0.00213	228.834	0.00358	452.582	0.00547	92.597
Sex						
Male	0.00152	313.079	0.00293	292.127	0.00410	89.724
Female	0.00125	311.632	0.00213	701.564	0.00337	83.021
Age						
Under 15 years	0.01597	47.116	0.00224	140.764	0.03171	44.124
15–44 years	0.00142	299.762	0.00301	460.089	0.00302	139.070
45–64 years	0.00157	234.543	0.00920	432.971	0.00491	68.024
65 years and over	0.00161	263.223	0.00251	762.854	0.00436	47.886
Region						
Northeast	0.00274	56.268	0.00368	146.195	0.00588	108.765
Midwest	0.00487	183.531	0.00605	970.001	0.00886	107.681
South	0.00375	343.892	0.00540	929.232	0.00781	50.919
West	0.00564	318.914	0.01036	830.740	0.01235	144.582
Expected principal source of payment						
Private insurance	0.00141	356.276	0.00258	1,253.398	0.00370	152.998
Medicare	0.00233	147.208	0.00335	105.814	0.00502	93.208
Medicaid	0.00542	225.144	0.00918	269.323	0.01281	125.784
Workers’ Compensation	0.00881	52.626	0.02194	159.965	0.02224	27.461
Other government payments	0.04049	72.916	0.04643	240.704	0.05825	61.826
Self-pay	0.00571	255.679	0.01277	677.732	0.01598	75.975
Other payments and no charge	0.02316	146.212	0.03494	244.069	0.03750	88.504
Not stated	0.04000	171.864	0.05910	363.932	0.06397	134.637
Race						
White	0.00212	298.564	0.00329	599.597	0.00426	80.500
Black	0.00537	264.999	0.00838	291.219	0.01044	52.381
All other	0.02899	119.661	0.04485	150.121	0.04866	59.007
Not stated	0.02252	226.201	0.02914	634.529	0.00357	44.250

NOTE: The relative standard error (RSE) for an estimate (*X*) can be determined from the equation $RSE(X) = \sqrt{a + b/X}$.

Other payments—All other nonprofit sources of payment such as church welfare, the United Way (United Appeal), or the Shriners Crippled Children Services.

Terms relating to hospitalization

Hospitals—All hospitals with an average length of stay for all patients of less than 30 days; hospitals whose specialty is general (medical or surgical) or children's general are eligible for inclusion in the NHDS, with the exception of Federal hospitals, hospital units of institutions, and hospitals with fewer than 6 beds staffed for patients' use.

Patient—A person formally admitted to the inpatient service of a short-stay hospital for observation, care, diagnosis, or treatment. The terms "patient," "inpatient," and "discharge" are used here synonymously.

Newborn infant—A patient admitted by birth to a hospital.

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. The terms "discharge," "patient," and "inpatient" are used here synonymously.

Days of care—The number of patient days accumulated at time of discharge. A stay of less than 1 day (patient admission and discharge 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 number of days of care accumulated by patients during the year divided by the number of these patients.

Terms relating to diagnoses

Diagnosis—A disease or injury (or factor that influences health status and contact with health services that is not itself a current illness or injury) listed on the medical record of a patient.

Principal diagnosis—The condition established after study to be chiefly responsible for occasioning the admission of the patient to the hospital for care.

First-listed diagnosis—The coded diagnosis identified as the principal diagnosis or that listed first on the face sheet or discharge summary of the medical record if the principal diagnosis cannot be identified. The number of first-listed diagnoses is equal to the number of discharges.

Terms relating to procedures

Procedure—A surgical or nonsurgical operation, diagnostic procedure, or special treatment reported on the medical record of a patient. The following ICD-9-CM procedure codes are not used in the NHDS:

87.09, 87.11-87.12, 87.16-87.17, 87.22-87.29, 87.39, 87.43-87.49, 87.85, 87.89, 87.92, 87.95, 87.99, 88.09, 88.16, 88.19, 88.21-88.29, 88.31, 88.33, 88.35, 88.37, 88.39, 89.01-89.09, 89.11-89.13, 89.15-89.16, 89.26, 89.29, 89.31, 89.33-89.39, 89.7-89.8, 90.01-90.99, 91.01-91.99, 93.01-93.09, 93.11-93.19, 93.21-93.25, 93.27-93.28, 93.31-93.39, 93.61-93.67, 93.71-93.78, 93.81-93.89, 94.01-94.19, 94.21-94.23, 94.29, 94.31-94.39, 94.41-94.49, 94.51-94.59, 95.01-95.03, 95.05-95.09, 95.14-95.15, 95.31-95.36, 95.41-95.48, 96.11-96.19, 96.26-96.28, 96.34-96.39, 96.41-96.48, 96.51-96.59, 96.6, 97.01-97.04, 97.14-97.16, 97.21-97.29, 97.31-97.39, 97.41-97.49, 97.51-97.59, 97.61-97.69, 97.72-97.79, 97.81-97.87, 97.89, 99.12-99.14, 99.16-99.18, 99.26-99.29, 99.31-99.39, 99.41-99.48, 99.51-99.59.

All-listed procedures—Includes up to four procedures listed on the face sheet of the medical record.

Surgical operations—All procedures except those listed under "nonsurgical procedures."

Nonsurgical procedures—Procedures generally not considered to be surgery. These include diagnostic endoscopy and radiography, radiotherapy and related therapies, physical medicine, and rehabilitation. The following ICD-9-CM codes identify nonsurgical procedures:

01.18-01.19, 03.31, 03.39, 04.19, 05.19, 06.19, 07.19, 08.19, 09.19, 09.41-09.49, 10.29, 11.29, 12.29, 14.29, 15.09, 16.21, 16.29, 18.01, 18.11, 18.19, 20.31, 20.39, 21.00-21.02, 21.21, 21.29, 22.19, 24.19, 25.09, 26.19, 27.29, 28.19, 29.11, 29.19, 31.41-31.42, 31.48-31.49, 33.21-33.23, 33.29, 34.21-34.22, 34.28-34.29, 37.26-37.27, 37.29, 38.29, 39.95, 40.19, 41.38-41.39, 42.22-42.23, 42.29, 44.11-44.13, 44.19, 45.11-45.13, 45.19, 50.19, 51.10-51.11, 51.19, 52.19, 54.21, 54.29, 55.21-55.22, 55.29, 56.31, 56.35, 56.39, 57.31-57.32, 57.39, 57.94-57.95, 58.21-58.22, 58.29, 59.29, 60.18-60.19, 61.19, 69.92, 70.21-70.22, 70.29, 71.19, 73.4, 73.51-73.59, 73.91-73.92, 75.31-75.32, 75.34-75.35, 75.94, 76.19, 78.80-78.89, 80.20-80.29, 81.98, 83.29, 84.41-84.43, 84.45-84.47, 85.19, 86.19, 86.92, 87-99.

Demographic terms

Age—Patient's age at birthday.

Race—Patients are classified into three groups: white, black, and all other (with "all other" including all categories other than white or black).

Geographic region—Hospital's location; one of four regions of the United States as defined by the U.S. Bureau of the Census.

Region	States included
Northeast	Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut,

	New York, New Jersey, and Pennsylvania
Midwest	Michigan, Ohio, Illinois, Indiana, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas
South	Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas
West	Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Hawaii, and Alaska

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