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1995 Summary: National Hospital Discharge Survey

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Abstract

Objectives—This report presents national estimates of the use of non-Federal short-stay hospitals in the United States during 1995. Numbers and rates of discharges, diagnoses, and procedures are shown by age and sex. Discharges are also shown by geographic region of hospital. Average lengths of stay are presented for discharges and selected diagnostic categories.

Methods—The estimates are based on medical abstract data collected through the National Hospital Discharge Survey for 1995. The survey has been conducted annually by the National Center for Health Statistics since 1965. Diagnoses and procedures presented are coded according to the *International Classification of Diseases, 9th Revision, Clinical Modification,* or ICD–9–CM.

Keywords: inpatients • diagnoses • procedures • ICD–9–CM

Introduction

This report presents data from the 1995 National Hospital Discharge Survey (NHDS). The survey has been conducted continuously by the National Center for Health Statistics (NCHS) since 1965. National estimates of hospital use derived from the NHDS are published for each calendar year by NCHS. This report provides an overview of the 1995 data, including the number and rate of discharges and average lengths of stay by the age and sex of patients and by geographic region of hospital. Average lengths of stay are also presented for selected diagnostic categories. Estimates for the number and rate of selected procedures performed on hospital inpatients are shown by age and sex. More detailed data from the NHDS are published in Series 13 of *Vital and Health Statistics,* which includes two reports on trends in hospital use (1,2).

The NHDS is the principal source for national data on the characteristics of patients discharged from non-Federal short-stay hospitals. Data from the NHDS are used to examine important topics of interest in public health (3–7) and for a variety of activities by governmental, scientific, academic and commercial institutions.

Estimates of the number of procedures shown in this report are for inpatients only. Data on ambulatory surgery are being collected by another survey, the National Survey of Ambulatory Surgery (NSAS), also conducted by NCHS. The NSAS was implemented in 1995 and covers hospital-based and free-standing ambulatory surgery centers. Data from this survey are now available (8).

Methods

Data Source

The National Hospital Discharge Survey (NHDS) collects data from a

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sample of inpatient records acquired from a national sample of hospitals. Persons with multiple discharges during the year may be sampled more than once, resulting in estimates for discharges, not persons. Only hospitals with an average length of stay of fewer than 30 days for all patients, general hospitals or children's general hospitals are included in the survey. Federal, military, and Department of Veterans Affairs hospitals, as well as hospital units of institutions (such as prison hospitals), and hospitals with fewer than six beds staffed for patient use, are excluded. Beginning in 1988, the sampling frame for hospitals has been the SMG Hospital Market Database (9–11).

Prior to 1988, the NHDS had a two-stage design, but in 1988 the survey was redesigned (12). Beginning in 1988, all hospitals with 1,000 beds or more or 40,000 discharges or more annually were included in the sample with certainty, while the remaining sample of hospitals was based on a stratified three-stage design. The first stage consists of a selection of 112 primary sampling units (PSU's) that comprise a probability sample of PSU's used in the 1985–94 National Health Interview Survey (13). The second stage consists of a selection of noncertainty hospitals from the sample PSU's. At the third stage, a sample of discharges within hospitals was selected by a systematic random sampling technique.

For 1995, the sample consisted of 525 hospitals, 17 of which were found to be out of scope (ineligible) because they had gone out of business or otherwise failed to meet the criteria for the NHDS universe. Of the 508 in-scope (eligible) hospitals, 466 (91.7 percent) responded to the survey. Data were collected for approximately 263,000 discharges from the 466 responding hospitals.

Two data collection procedures were used by the survey. One was a manual system in which sample selection and medical transcription from the hospital records to abstract forms were performed by the hospital's staff or by staff of the U.S. Bureau of the Census on behalf of NCHS. Completed forms are sent to NCHS for coding, editing, and post survey weighting adjustments.

The other data collection procedure was an automated system, in which NCHS purchased tapes containing machine-readable medical record data from commercial organizations, State data systems, hospitals, or hospital associations. Records from these tapes were systematically sampled by NCHS. In 1995, approximately 33 percent of respondent hospitals provided data through the automated system.

The medical abstract form and the automated data tapes contain items that relate to the personal characteristics of the patient. These items include birth date (or age), sex, race, ethnicity, marital status, ZIP Code, and expected sources of payment. Administrative items such as admission and discharge dates, discharge status, and medical record number were also included. The medical information about patients includes diagnoses, surgical and nonsurgical operations and procedures, and dates of surgery. (The medical record number, date of birth, and ZIP Code are confidential information not available to the public). Medical data are coded according to the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD–9–CM) (14).

For the manual data collection, an ongoing quality control program was undertaken on the coding and entering of data from abstracts to machine readable form. Approximately 5 percent of the abstracts are independently recoded by an NHDS coder, with discrepancies resolved by the chief coder. The overall error rate for records manually coded by NCHS for the 1995 data year was 4.3 percent for medical (ICD–9–CM) coding and entering and 1.4 percent for demographic coding and entering.

Estimation

Because of the stratified multistage design of the NHDS, the survey data must be inflated or weighted in order to produce national estimates. The estimation procedure produces essentially unbiased national estimates and has three basic components: (a) inflation by reciprocals of the probabilities of sample selection, (b) adjustment for nonresponse, and (c) population weighting ratio adjustments. These three components of the final weight are described in more detail in earlier reports (1,2). Information about the standard errors of statistics for the 1995 NHDS is in the Technical notes of this report.

Use of Tables

Discharges are shown in this report by first-listed diagnosis. This is the principal diagnosis if it is specified on the medical record. If the principal diagnosis is not specified, the diagnosis listed first on the face sheet or discharge summary of the medical record is used. Estimates of procedures, including surgical or nonsurgical operations, diagnostic procedures, and special treatments reported on the medical record, are also published. Up to four procedures were coded for each discharge. All-listed procedures include all occurrences of the procedure coded regardless of their order on the medical record.

The diagnoses and procedures appear in separate tables of this report, presented by chapter of ICD–9–CM. Within these chapters, subcategories of diagnoses or procedures are shown. These specific categories were selected primarily because of their large estimates or because they are of special interest. Although diagnoses assigned ICD–9–CM codes E800–E999 (Supplementary classification of external causes of injury and poisoning) were included in the NHDS, these diagnoses were excluded from this report. Data for newborn infants, defined as patients admitted to a hospital by birth, were also excluded from this report.

Because of low reliability, estimates of less than 5,000 are not presented. For these estimates, only an asterisk (*) appears in the tables. These estimates generally have a relative standard error of more than 30 percent or are based on a sample of fewer than 30 cases. Estimates of 5,000 to 9,000 are preceded by an asterisk (*) to indicate that they are generally based on fewer than 60 cases and also have low reliability.

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

The population estimates used in computing rates are for the U.S. civilian population, including institutionalized persons, as of July 1, 1995. These estimates were provided by the U.S. Bureau of the Census and are consistent with the population estimates published in *Current Population Reports,* Series P-25.

Highlights

Patient and Hospital Characteristics

- In 1995, there were an estimated 30.7 million discharges of inpatients, excluding newborn infants, from short-stay non-Federal hospitals in the United States (table 1).
- The discharge rate was 118 per 1,000 population and the average length of stay was 5.4 days in 1995 (table 1).
- The discharge rate per 1,000 population was 96 for males and 138 for females. Males had an average length of stay of 5.8 days compared to 5.0 days for females.
- Persons 65 years of age and over accounted for 38 percent of all discharges.
- The discharge rate per 1,000 population ranged from 137 in the Northeast region to 93 in the West. The average length of stay ranged from 6.3 days in the Northeast region to 4.5 days in the West.

Table 1. Number, rate, and average length of stay for discharges from short-stay hospitals by age, region, and sex: United States, 1995

[Discharges of inpatients from non-Federal hospitals. Excludes newborns]

Selected characteristic	Both sexes	Male	Female
		Number in thousands	
Total	30,722	12,198	18,525
Age			
Under 15 years	2,405	1,377	1,028
15–44 years	10,593	2,949	7,644
45–64 years	6,168	3,053	3,115
65 years and over	11,556	4,818	6,738
Region			
Northeast	7,051	2,960	4,091
Midwest	6,994	2,810	4,184
South	11,373	4,437	6,936
West	5,303	1,990	3,313
		Rate per 1,000 population	
Total	117.5	95.9	138.0
Age			
Under 15 years	41.7	46.6	36.5
15–44 years	89.8	50.2	129.0
45–64 years	118.2	121.2	115.4
65 years and over	344.6	352.0	339.5
Region			
Northeast	137.2	119.6	153.6
Midwest	113.4	93.7	132.0
South	124.8	100.8	147.2
West	92.8	70.2	115.0
		Average length of stay in days	
Total	5.4	5.8	5.0
Age			
Under 15 years	4.5	4.6	4.3
15–44 years	3.9	5.4	3.3
45–64 years	5.5	5.6	5.5
65 years and over	6.8	6.7	7.0
Region			
Northeast	6.3	6.5	6.2
Midwest	5.2	5.8	4.8
South	5.3	5.7	5.0
West	4.5	5.3	4.0

Diagnoses

- Approximately half of all first-listed diagnoses were in four ICD–9–CM chapters: diseases of the circulatory system, supplementary classifications (including females with deliveries), diseases of the respiratory system and diseases of the digestive system (table 2).
- Five diagnostic categories accounted for more than a million discharges. These were heart disease (4.1 million), delivery (3.8 million), malignant neoplasms (1.4 million), pneumonia (1.2 million), and psychoses (1.2 million).
- For persons 65 years of age and over, there were 781 discharges per 10,000 population with a first-listed diagnosis of heart disease (table 3).
- The average length of stay was 5.5 days for heart disease, 2.1 days for delivery, 7.3 days for malignant neoplasms, 10.3 days for psychoses, and 6.7 days for pneumonia (table 4).

Procedures

- During 1995, 39.8 million procedures were performed on hospital inpatients (table 5).
- Almost three-fourths of all procedures were in four ICD–9–CM chapters: miscellaneous diagnostic and therapeutic procedures, obstetrical procedures, operations on the digestive system, and operations on the cardiovascular system.
- Two procedure categories had rates of at least 500 per 100,000 population.

These were arteriography and angiocardiography (702 per 100,000) and episiotomy (540 per 100,000) (table 6).

- Frequent procedures for males were arteriography and angiocardiography, cardiac catheterization, respiratory therapy, diagnostic ultrasound, and computerized axial tomography.
- Frequent procedures for females were episiotomy, repair of current obstetric laceration, fetal EKG and fetal monitoring, and cesarean section.

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Table 2. Number of discharges from short-stay hospital, by first-listed diagnosis, sex, and age: United States, 1995

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

Category of first-listed diagnosis and ICD–9–CM code	Total	Sex		Age			
		Male	Female	Under 15 years	15–44 years	45–64 years	65 years and over
	Number in thousands						
All conditions	30,722	12,198	18,525	2,405	10,593	6,168	11,556
Infectious and parasitic diseases 001–139	885	445	440	193	242	141	309
Septicemia 038	308	133	175	19	27	52	210
Neoplasms 140–239	1,802	691	1,112	36	327	589	851
Malignant neoplasms 140–208,230–234	1,414	623	792	27	153	461	774
Malignant neoplasm of large intestine and rectum 153–154,197.5	140	66	74	–	*6	29	105
Malignant neoplasm of trachea, bronchus, and lung 162,176.4,197.0,197.3	199	106	92	*	13	76	109
Malignant neoplasm of breast 174–175,198.81	140	*	140	–	22	56	62
Benign neoplasms and neoplasms of uncertain behavior and unspecified nature 210–229,235–239	388	68	320	9	173	128	77
Endocrine, nutritional and metabolic diseases, and immunity disorders 240–279	1,278	523	755	143	248	322	565
Diabetes mellitus 250	493	232	261	21	112	172	188
Volume depletion 276.5	416	163	253	100	48	58	210
Diseases of the blood and blood-forming organs 280–289	339	142	197	59	101	58	121
Mental disorders 290–319	2,009	1,023	986	90	1,216	387	316
Psychoses 290–299	1,206	538	668	36	669	245	256
Alcohol dependence syndrome 303	247	183	64	*	163	71	12
Diseases of the nervous system and sense organs 320–389	561	247	314	102	136	113	210
Diseases of the central nervous system 320–349	297	126	171	51	95	58	93
Diseases of the ear and mastoid process 380–389	84	37	47	36	10	16	22
Diseases of the circulatory system 390–459	5,830	2,973	2,857	21	421	1,589	3,799
Heart disease 391–392.0,393–398,402,404,410–416,420–429	4,050	2,139	1,911	11	269	1,152	2,618
Acute myocardial infarction 410	771	468	303	–	43	256	471
Coronary atherosclerosis 414.0	895	567	328	–	44	350	501
Other ischemic heart disease 411–413,414.1–414.9	464	233	231	*	43	155	265
Cardiac dysrhythmias 427	585	277	307	*5	48	131	400
Congestive heart failure 428.0	872	378	494	*	31	142	698
Cerebrovascular disease 430–438	926	425	501	*	38	182	704
Diseases of the respiratory system 460–519	3,329	1,590	1,738	766	462	572	1,528
Acute respiratory infections 460–466	384	213	171	241	44	38	60
Chronic disease of tonsils and adenoids 474	32	17	15	25	*6	*	*
Pneumonia 480–486	1,246	610	636	243	154	161	687
Asthma 493	511	210	301	212	135	87	77
Diseases of the digestive system 520–579	3,031	1,323	1,707	219	807	803	1,202
Ulcers of the stomach and small intestine 531–534	212	106	106	*	34	53	123
Appendicitis 540–543	210	126	84	50	123	25	12
Inguinal hernia 550	66	60	*6	*9	13	14	30
Noninfectious enteritis and colitis 555–558	334	135	199	79	100	59	95
Cholelithiasis 574	430	125	306	*	145	129	155
Diseases of the genitourinary system 580–629	1,768	587	1,181	72	654	395	647
Calculus of kidney and ureter 592	195	127	68	*	90	76	27
Hyperplasia of prostate 600	136	136	. . .	–	*	22	112
Complications of pregnancy, childbirth, and the puerperium[1] 630–677	542	. . .	542	*	540	*	. . .
Abortions and ectopic and molar pregnancies 630–639	111	. . .	111	*	110	*	. . .
Diseases of the skin and subcutaneous tissue 680–709	482	235	246	41	126	118	197
Cellulitis and abscess 681–682	350	182	168	26	95	94	135
Diseases of the musculoskeletal system and connective tissue 710–739	1,479	648	831	37	391	417	634
Arthropathies and related disorders 710–719	561	216	345	11	97	131	322
Intervertebral disc disorders 722	327	187	140	–	158	115	54
Congenital anomalies 740–759	159	87	73	120	24	10	*5
Certain conditions originating in the perinatal period 760–779	142	86	56	141	*	–	–
Symptoms, signs, and ill-defined conditions 780–799	312	143	170	50	121	77	64
Injury and poisoning 800–999	2,591	1,289	1,302	241	925	482	943
Fractures, all sites 800–829	988	439	549	73	279	147	489
Fracture of neck of femur 820	301	79	222	*	*6	18	274
Intracranial injuries (excluding those with skull fracture) 850–854	156	96	59	27	71	21	37
Open wounds 870–897	141	103	38	17	91	20	13
Supplementary classifications V01–V82	4,183	165	4,017	74	3,852	93	164
Females with deliveries V27	3,766	. . .	3,766	12	3,752	*	. . .

– Quantity zero. * Figure does not meet standard of reliability or precision. . . . Category not applicable.

[1]First-listed diagnosis for females with deliveries is coded V27, shown under "Supplementary classifications."

Table 3. Rate of discharges from short-stay hospitals by first-listed diagnosis, sex, and age: United States, 1995

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

Category of first-listed diagnosis and ICD–9–CM code	Total	Sex		Age			
		Male	Female	Under 15 years	15–44 years	45–64 years	65 years and over
	Rate per 10,000 population						
All conditions	1,175.3	959.4	1,379.6	416.7	897.9	1,182.2	3,446.3
Infectious and parasitic diseases 001–139	33.8	35.0	32.8	33.4	20.5	27.0	92.2
Septicemia 038	11.8	10.4	13.0	3.3	2.3	10.0	62.6
Neoplasms 140–239	68.9	54.3	82.8	6.2	27.7	112.8	253.8
Malignant neoplasms 140–208,230–234	54.1	49.0	58.9	4.6	13.0	88.3	230.7
Malignant neoplasm of large intestine and rectum 153–154,197.5	5.4	5.2	5.5	–	*0.5	5.5	31.4
Malignant neoplasm of trachea, bronchus, and lung 162,176.4,197.0,197.3	7.6	8.3	6.9	*	1.1	14.6	32.5
Malignant neoplasm of breast 174–175,198.81	5.4	*	10.4	–	1.9	10.8	18.5
Benign neoplasms and neoplasms of uncertain behavior and unspecified nature 210–229,235–239	14.8	5.3	23.8	1.6	14.7	24.5	23.1
Endocrine, nutritional and metabolic diseases, and immunity disorders 240–279	48.9	41.1	56.3	24.8	21.0	61.7	168.6
Diabetes mellitus 250	18.9	18.2	19.5	3.6	9.5	33.0	56.1
Volume depletion 276.5	15.9	12.8	18.9	17.4	4.1	11.1	62.5
Diseases of the blood and blood-forming organs 280–289	13.0	11.1	14.7	10.2	8.6	11.1	36.1
Mental disorders 290–319	76.8	80.4	73.4	15.5	103.1	74.1	94.3
Psychoses 290–299	46.1	42.4	49.7	6.2	56.7	46.9	76.4
Alcohol dependence syndrome 303	9.5	14.4	4.8	*	13.8	13.7	3.6
Diseases of the nervous system and sense organs 320–389	21.4	19.4	23.4	17.6	11.6	21.6	62.5
Diseases of the central nervous system 320–349	11.4	9.9	12.7	8.8	8.1	11.1	27.8
Diseases of the ear and mastoid process 380–389	3.2	2.9	3.5	6.3	0.8	3.0	6.6
Diseases of the circulatory system 390–459	223.0	233.9	212.8	3.7	35.7	304.6	1,133.1
Heart disease 391–392.0,393–398,402,404,410–416,420–429	154.9	168.2	142.3	2.0	22.8	220.8	780.7
Acute myocardial infarction 410	29.5	36.8	22.6	–	3.7	49.1	140.5
Coronary atherosclerosis 414.0	34.2	44.6	24.4	–	3.7	67.1	149.4
Other ischemic heart disease 411–413,414.1–414.9	17.7	18.3	17.2	*	3.6	29.8	79.1
Cardiac dysrhythmias 427	22.4	21.8	22.9	*0.9	4.1	25.1	119.2
Congestive heart failure 428.0	33.4	29.7	36.8	*	2.6	27.2	208.0
Cerebrovascular disease 430–438	35.4	33.5	37.3	*	3.2	34.8	209.8
Diseases of the respiratory system 460–519	127.3	125.1	129.5	132.8	39.2	109.7	455.6
Acute respiratory infections 460–466	14.7	16.8	12.7	41.8	3.7	7.4	18.0
Chronic disease of tonsils and adenoids 474	1.2	1.3	1.1	4.3	*0.5	*	*
Pneumonia 480–486	47.6	48.0	47.4	42.1	13.0	30.9	205.0
Asthma 493	19.5	16.5	22.4	36.7	11.4	16.7	23.0
Diseases of the digestive system 520–579	115.9	104.1	127.2	37.9	68.4	154.0	358.3
Ulcers of the stomach and small intestine 531–534	8.1	8.3	7.9	*	2.9	10.2	36.6
Appendicitis 540–543	8.0	9.9	6.3	8.7	10.4	4.8	3.7
Inguinal hernia 550	2.5	4.7	*0.4	*1.5	1.1	2.7	9.0
Noninfectious enteritis and colitis 555–558	12.8	10.6	14.8	13.7	8.5	11.4	28.4
Cholelithiasis 574	16.5	9.8	22.8	*	12.3	24.6	46.1
Diseases of the genitourinary system 580–629	67.6	46.2	87.9	12.4	55.5	75.7	193.0
Calculus of kidney and ureter 592	7.4	10.0	5.1	*	7.6	14.6	8.0
Hyperplasia of prostate 600	5.2	10.7	. . .	–	*	4.3	33.5
Complications of pregnancy, childbirth, and the puerperium[1] 630–677	20.7	. . .	40.4	*	45.7	*	. . .
Abortions and ectopic and molar pregnancies 630–639	4.2	. . .	8.3	*	9.3	*	. . .
Diseases of the skin and subcutaneous tissue 680–709	18.4	18.5	18.3	7.1	10.7	22.6	58.7
Cellulitis and abscess 681–682	13.4	14.3	12.5	4.5	8.0	18.1	40.2
Diseases of the musculoskeletal system and connective tissue 710–739	56.6	51.0	61.9	6.4	33.1	80.0	189.1
Arthropathies and related disorders 710–719	21.5	17.0	25.7	2.0	8.2	25.0	96.1
Intervertebral disc disorders 722	12.5	14.7	10.4	–	13.4	22.1	16.0
Congenital anomalies 740–759	6.1	6.8	5.4	20.7	2.1	1.9	*1.6
Certain conditions originating in the perinatal period 760–779	5.4	6.7	4.2	24.5	*	–	. . .
Symptoms, signs, and ill-defined conditions 780–799	12.0	11.2	12.6	8.7	10.2	14.9	19.1
Injury and poisoning 800–999	99.1	101.4	97.0	41.7	78.4	92.5	281.3
Fractures, all sites 800–829	37.8	34.5	40.9	12.7	23.6	28.1	145.8
Fracture of neck of femur 820	11.5	6.2	16.5	*	*0.5	3.5	81.8
Intracranial injuries (excluding those with skull fracture) 850–854	6.0	7.6	4.4	4.8	6.0	4.0	10.9
Open wounds 870–897	5.4	8.1	2.8	3.0	7.7	3.8	3.9
Supplementary classifications V01–V82	160.0	13.0	299.2	12.8	326.5	17.8	49.0
Females with deliveries V27	144.1	. . .	280.5	2.1	318.0	*	. . .

– Quantity zero. * Figure does not meet standard of reliability or precision. . . . Category not applicable.

[1]First-listed diagnosis for females with deliveries is coded V27, shown under "Supplementary classifications."

Table 4. Average length of stay for dischages from short-stay hospitals, by first-listed diagnosis, sex, and age: United States, 1995

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

Category of first-listed diagnosis and ICD–9–CM code	Total	Sex		Age			
		Male	Female	Under 15 years	15–44 years	45–64 years	65 years and over
	Average length of stay in days						
All conditions	5.4	5.8	5.0	4.5	3.9	5.5	6.8
Infectious and parasitic diseases 001–139	6.9	7.0	6.7	3.7	6.9	8.5	8.2
Septicemia 038	8.7	8.6	8.7	5.5	7.6	9.8	8.8
Neoplasms 140–239	6.6	7.5	6.0	6.9	4.6	5.9	7.7
Malignant neoplasms 140–208,230–234	7.3	7.7	7.0	7.7	6.1	6.5	8.0
Malignant neoplasm of large intestine and rectum 153–154,197.5	10.5	10.0	10.8	–	*7.1	8.7	11.1
Malignant neoplasm of trachea, bronchus, and lung 162,176.4,197.0,197.3	7.3	7.5	7.1	*	5.5	6.2	8.4
Malignant neoplasm of breast 174–175,198.81	3.5	*	3.5	–	4.5	3.6	3.0
Benign neoplasms and neoplasms of uncertain behavior and unspecified nature 210–229,235–239	3.9	5.2	3.6	4.4	3.2	3.7	5.6
Endocrine, nutritional and metabolic diseases, and immunity disorders 240–279	5.3	5.3	5.4	3.0	4.3	5.3	6.4
Diabetes mellitus 250	6.2	6.3	6.2	3.7	4.6	6.3	7.4
Volume depletion 276.5	4.8	4.4	5.1	2.3	3.2	4.8	6.4
Diseases of the blood and blood-forming organs 280–289	4.9	4.6	5.1	3.4	5.2	5.3	5.2
Mental disorders 290–319	8.9	8.5	9.3	12.1	8.1	9.0	11.0
Psychoses 290–299	10.3	10.2	10.5	12.4	9.5	10.6	11.9
Alcohol dependence syndrome 303	7.2	7.0	7.9	*	7.3	7.1	7.7
Diseases of the nervous system and sense organs 320–389	5.1	5.3	5.0	3.8	4.8	5.5	5.8
Diseases of the central nervous system 320–349	6.9	7.4	6.6	5.2	5.3	7.8	9.1
Diseases of the ear and mastoid process 380–389	2.9	2.5	3.2	2.0	2.7	2.6	4.5
Diseases of the circulatory system 390–459	5.8	5.6	6.0	4.8	4.7	5.0	6.2
Heart disease 391–392.0,393–398,402,404,410–416,420–429	5.5	5.3	5.7	4.5	4.5	4.8	5.9
Acute myocardial infarction 410	6.6	6.3	7.2	–	4.8	5.8	7.3
Coronary atherosclerosis 414.0	4.8	4.9	4.8	–	4.1	4.3	5.3
Other ischemic heart disease 411–413,414.1–414.9	3.8	3.6	4.0	*	2.7	3.4	4.2
Cardiac dysrhythmias 427	4.2	4.1	4.3	*3.4	2.7	3.7	4.6
Congestive heart failure 428.0	6.4	6.0	6.7	*	6.3	5.6	6.5
Cerebrovascular disease 430–438	6.8	6.7	6.9	*	7.8	6.7	6.8
Diseases of the respiratory system 460–519	6.0	5.8	6.2	3.2	4.9	6.2	7.6
Acute respiratory infections 460–466	3.5	3.4	3.7	3.0	3.3	4.4	5.2
Chronic disease of tonsils and adenoids 474	1.3	1.4	1.2	1.2	*1.5	*	*
Pneumonia 480–486	6.7	6.5	6.8	3.7	6.1	6.8	7.8
Asthma 493	3.7	3.2	4.1	2.7	3.4	4.8	5.9
Diseases of the digestive system 520–579	5.2	5.2	5.3	3.8	3.9	5.3	6.3
Ulcers of the stomach and small intestine 531–534	6.1	5.9	6.4	*	4.5	5.3	6.9
Appendicitis 540–543	3.8	3.8	3.9	3.7	3.3	4.3	8.6
Inguinal hernia 550	2.5	2.4	*3.1	*1.7	2.0	1.8	3.2
Noninfectious enteritis and colitis 555–558	4.4	4.3	4.5	2.8	3.5	5.8	5.8
Cholelithiasis 574	4.2	5.0	3.9	*	2.8	4.0	5.7
Diseases of the genitourinary system 580–629	4.1	4.3	4.0	3.8	3.0	3.6	5.4
Calculus of kidney and ureter 592	2.3	2.0	2.7	*	2.0	2.2	3.0
Hyperplasia of prostate 600	3.1	3.1	. . .	–	*	2.5	3.2
Complications of pregnancy, childbirth, and the puerperium[1] 630–677	2.5	. . .	2.5	*	2.5	*	. . .
Abortions and ectopic and molar pregnancies 630–639	1.8	. . .	1.8	*	1.8	*	. . .
Diseases of the skin and subcutaneous tissue 680–709	6.7	6.3	7.0	3.5	5.4	6.4	8.3
Cellulitis and abscess 681–682	6.1	5.7	6.5	3.5	4.9	5.9	7.6
Diseases of the musculoskeletal system and connective tissue 710–739	4.9	4.6	5.2	4.5	3.3	4.3	6.4
Arthropathies and related disorders 710–719	5.6	5.2	5.8	5.6	3.5	5.1	6.4
Intervertebral disc disorders 722	3.3	3.0	3.7	–	2.6	3.4	5.2
Congenital anomalies 740–759	6.3	6.4	6.1	6.9	4.1	3.6	*6.1
Certain conditions originating in the perinatal period 760–779	9.6	9.6	9.5	9.6	*	–	. . .
Symptoms, signs, and ill-defined conditions 780–799	2.9	2.6	3.2	2.5	2.1	2.9	4.9
Injury and poisoning 800–999	5.6	5.4	5.9	4.0	4.6	5.5	7.1
Fractures, all sites 800–829	6.3	6.0	6.6	4.6	5.0	5.7	7.5
Fracture of neck of femur 820	8.4	7.7	8.6	*	*7.4	8.1	8.4
Intracranial injuries (excluding those with skull fracture) 850–854	6.4	6.3	6.4	4.3	5.9	8.0	8.0
Open wounds 870–897	3.5	3.3	4.1	3.3	3.3	3.0	5.7
Supplementary classifications V01–V82	2.7	8.4	2.5	4.8	2.2	7.1	11.5
Females with deliveries V27	2.1	. . .	2.1	2.3	2.1	*	. . .

– Quantity zero. * Figure does not meet standard of reliability or precision. . . . Category not applicable.

[1]First-listed diagnosis for females with deliveries is coded V27, shown under ''Supplementary classifications.''

Table 5. Number of all-listed procedures for discharges from short-stay hospitals by procedure category, sex, and age: United States, 1995

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

Procedure category and ICD–9–CM code	Sex			Age			
	Total	Male	Female	Under 15 years	15–44 years	45–64 years	65 years and over
	Number in thousands						
All procedures	39,807	15,649	24,158	2,023	14,651	8,915	14,218
Operations on the nervous system 01–05	954	442	512	223	324	187	220
Spinal tap 03.31	332	175	157	157	85	41	49
Operations on the endocrine system 06–07	85	24	60	*	38	28	16
Operations on the eye 08–16	269	126	143	15	45	55	154
Operations on the ear 18–20	68	41	27	37	12	9	10
Operations on the nose, mouth, and pharynx 21–29	353	202	151	75	135	78	64
Tonsillectomy with or without adenoidectomy 28.2–28.3	42	23	19	28	12	*	*
Operations on the respiratory system 30–34	1,041	588	454	56	201	285	498
Bronchoscopy with or without biopsy 33.21–33.24,33.27	302	174	128	17	54	85	145
Operations on the cardiovascular system 35–39	4,840	2,873	1,967	160	475	1,646	2,558
Removal of coronary artery obstruction 36.0	434	285	149	*	32	193	209
Coronary artery bypass graft[1] 36.1	573	423	150	–	17	236	320
Cardiac catheterization 37.21–37.23	1,068	660	408	13	88	438	530
Insertion, replacement, removal, and revision of pacemaker leads or device 37.7–37.8	314	157	156	*	9	47	256
Shunt or vascular bypass 39.0–39.2	169	90	80	*	10	50	105
Hemodialysis 39.95	339	163	176	*	62	119	157
Operations on the hemic and lymphatic system 40–41	363	188	175	19	70	117	156
Operations on the digestive system 42–54	5,074	2,113	2,962	193	1,288	1,270	2,324
Endoscopy of small intestine with or without biopsy 45.11–45.14,45.16	892	398	494	17	145	219	511
Endoscopy of large intestine with or without biopsy 45.21–45.25	512	208	303	*	63	111	332
Partial excision of large intestine 45.7	206	96	110	*	23	54	127
Appendectomy, excluding incidental 47.0	237	135	102	52	139	27	19
Cholecystectomy 51.2	470	142	328	*	161	141	165
Repair of inguinal hernia 53.0–53.1	79	71	*8	9	14	17	39
Lysis of peritoneal adhesions 54.5	326	59	267	*	148	80	94
Operations on the urinary system 55–59	1,102	564	538	46	255	285	516
Cystoscopy with or without biopsy 57.31–57.33	235	152	83	*7	38	50	140
Operations on the male genital organs 60–64	351	351	. . .	28	17	78	228
Prostatectomy 60.2–60.6	239	239	. . .	. . .	*	55	184
Operations on the female genital organs 65–71	2,093	. . .	2,093	*6	1,323	513	250
Oophorectomy and salpingo-oophorectomy 65.3–65.6	447	. . .	447	*	215	175	56
Bilateral destruction or occlusion of fallopian tubes 66.2–66.3	327	. . .	327	–	326	*	*
Hysterectomy 68.3–68.7,68.9	583	. . .	583	–	325	191	67
Dilation and curettage of uterus 69.0	107	. . .	107	*	89	12	*6
Repair of cystocele and rectocele 70.5	158	. . .	158	–	32	64	63
Obstetrical procedures 72–75	6,365	. . .	6,365	16	6,345	*	. . .
Episiotomy with or without forceps or vacuum extraction 72.1,72.21,72.31,72.71,73.6	1,410	. . .	1,410	*5	1,405	*	. . .
Artificial rupture of membranes 73.0	752	. . .	752	*	751	*	. . .
Cesarean section 74.0–74.2,74.4,74.99	785	. . .	785	*	784	*	. . .
Fetal EKG (scalp) and fetal monitoring, not otherwise specified[2] 75.32,75.34	935	. . .	935	*	932	*	. . .
Repair of current obstetric laceration 75.5–75.6	964	. . .	964	*	961	*	. . .
Operations on the musculoskeletal system 76–84	3,077	1,543	1,534	146	1,009	791	1,131
Partial excision of bone 76.2–76.3,77.6–77.8	216	120	96	10	79	73	54
Open reduction of fracture with internal fixation 79.3	414	177	238	14	138	84	178
Excision or destruction of intervertebral disc 80.5	273	162	111	*	132	98	43
Total hip replacement 81.51	134	54	80	–	13	31	90
Total knee replacement 81.54	216	75	141	–	*6	53	157
Operations on the integumentary system 85–86	1,342	588	753	92	423	384	442
Mastectomy 85.4	103	*	102	–	14	42	48
Debridement of wound, infection, or burn 86.22,86.28	350	202	148	23	100	93	133
Skin graft 86.6–86.7	108	69	40	13	37	27	31
Miscellaneous diagnostic and therapeutic procedures 87–99	12,431	6,007	6,424	906	2,691	3,184	5,651
Computerized axial tomography 87.03,87.41,87.71,88.01,88.38	967	473	494	52	220	223	472
Pyelogram 87.73–87.75	176	92	83	*5	65	52	54
Arteriography and angiocardiography using contrast material 88.4–88.5	1,834	1,076	758	16	183	725	909
Diagnostic ultrasound 88.7	1,181	499	682	51	258	269	603
Circulatory monitoring 89.6	375	192	183	20	59	89	206
Radioisotope scan 92.0–92.1	306	141	165	*8	46	83	170
Respiratory therapy 93.9,96.7	1,127	572	555	237	149	222	518

* Figure does not meet standard of reliability or precision. – Quantity zero. . . . Category not applicable.
[1]The number of discharges with a coronary artery bypass graft was 360,000. [2]EKG is electrocardiogram.

Table 6. Rate of all-listed procedures for discharges from short-stay hospitals by procedure category, sex, and age: United States, 1995

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

Procedure category and ICD–9–CM code	Sex			Age			
	Total	Male	Female	Under 15 years	15–44 years	45–64 years	65 years and over
	Rate per 100,000 population						
All procedures	15,228.1	12,309.2	17,991.8	3,503.9	12,418.8	17,088.0	42,401.3
Operations on the nervous system 01–05	364.9	347.8	381.1	385.7	274.8	357.5	657.4
Spinal tap 03.31	127.2	137.9	117.1	271.9	72.3	78.5	146.8
Operations on the endocrine system 06–07	32.4	19.2	45.0	*	32.0	54.2	47.5
Operations on the eye 08–16	102.9	98.8	106.9	26.6	38.0	104.6	459.9
Operations on the ear 18–20	26.0	32.5	19.9	64.4	9.8	18.1	29.6
Operations on the nose, mouth, and pharynx 21–29	134.9	158.7	112.3	129.7	114.8	150.1	190.8
Tonsillectomy with or without adenoidectomy 28.2–28.3	16.2	18.4	14.1	47.8	10.5	*	*
Operations on the respiratory system 30–34	398.3	462.1	337.8	97.7	170.7	546.5	1,486.0
Bronchoscopy with or without biopsy 33.21–33.24,33.27	115.4	136.5	95.4	30.1	45.6	163.8	432.1
Operations on the cardiovascular system 35–39	1,851.3	2,259.5	1,464.9	277.8	402.4	3,155.2	7,629.4
Removal of coronary artery obstruction 36.0	166.1	224.4	110.9	*	27.2	370.8	621.9
Coronary artery bypass graft[1] 36.1	219.2	333.0	111.6	–	14.4	453.2	953.6
Cardiac catheterization 37.21–37.23	408.7	519.1	304.1	22.4	74.4	838.8	1,580.5
Insertion, replacement, removal, and revision of pacemaker leads or device 37.7–37.8	120.0	123.9	116.4	*	7.6	90.2	762.4
Shunt or vascular bypass 39.0–39.2	64.8	70.6	59.3	*	8.7	95.5	312.0
Hemodialysis 39.95	129.6	127.9	131.2	*	52.8	228.2	467.9
Operations on the hemic and lymphatic system 40–41	138.7	147.7	130.2	32.9	59.6	225.0	464.7
Operations on the digestive system 42–54	1,941.2	1,661.7	2,205.8	334.3	1,091.4	2,434.7	6,929.4
Endoscopy of small intestine with or without biopsy 45.11–45.14,45.16	341.4	313.2	368.1	30.3	122.5	420.5	1,524.1
Endoscopy of large intestine with or without biopsy 45.21–45.25	195.8	164.0	225.9	*	53.5	213.4	991.1
Partial excision of large intestine 45.7	78.9	75.7	82.0	*	19.9	103.7	377.7
Appendectomy, excluding incidental 47.0	90.7	106.3	75.9	90.8	117.4	52.6	55.8
Cholecystectomy 51.2	179.8	111.3	244.6	*	136.8	269.7	491.5
Repair of inguinal hernia 53.0–53.1	30.4	56.1	*6.1	16.3	11.6	33.5	116.1
Lysis of peritoneal adhesions 54.5	124.7	46.3	199.0	*	125.4	153.1	280.1
Operations on the urinary system 55–59	421.5	443.4	400.8	79.9	216.2	546.3	1,537.9
Cystoscopy with or without biopsy 57.31–57.33	89.8	119.7	61.6	*11.3	31.8	96.6	418.7
Operations on the male genital organs 60–64	134.4	276.3	. . .	49.2	14.3	149.8	679.3
Prostatectomy 60.2–60.6	91.5	188.2	. . .	. . .	*	105.7	547.3
Operations on the female genital organs 65–71	800.6	. . .	1,558.6	*11.2	1,121.6	983.0	746.4
Oophorectomy and salpingo-oophorectomy 65.3–65.6	171.0	. . .	332.9	*	182.1	335.1	166.8
Bilateral destruction or occlusion of fallopian tubes 66.2–66.3	124.9	. . .	243.2	–	276.4	*	*
Hysterectomy 68.3–68.7,68.9	222.9	. . .	434.0	–	275.7	365.2	199.7
Dilation and curettage of uterus 69.0	40.8	. . .	79.5	*	75.4	22.4	*18.0
Repair of cystocele and rectocele 70.5	60.5	. . .	117.8	–	27.0	122.0	187.1
Obstetrical procedures 72–75	2,435.1	. . .	4,740.6	28.5	5,378.6	*	. . .
Episiotomy with or without forceps or vacuum extraction 72.1,72.21,72.31,72.71,73.6	539.5	. . .	1,050.3	*9.0	1,190.7	*	. . .
Artificial rupture of membranes 73.0	287.8	. . .	560.3	*	636.4	*	. . .
Cesarean section 74.0–74.2,74.4,74.99	300.2	. . .	584.5	*	664.1	*	. . .
Fetal EKG (scalp) and fetal monitoring, not otherwise specified 75.32,75.34	357.5	. . .	696.0	*	790.2	*	. . .
Repair of current obstetric laceration 75.5–75.6	368.9	. . .	718.2	*	814.2	*	. . .
Operations on the musculoskeletal system 76–84	1,177.1	1,213.6	1,142.4	252.1	855.5	1,516.7	3,372.3
Partial excision of bone 76.2–76.3,77.6–77.8	82.6	94.2	71.6	17.2	66.5	140.4	161.5
Open reduction of fracture with internal fixation 79.3	158.5	139.1	176.9	24.9	116.8	161.2	530.9
Excision or destruction of intervertebral disc 80.5	104.5	127.6	82.6	*	111.7	187.8	127.3
Total hip replacement 81.51	51.3	42.5	59.6	–	10.6	59.7	269.7
Total knee replacement 81.54	82.7	59.3	104.9	–	*5.2	101.6	468.5
Operations on the integumentary system 85–86	513.3	462.9	561.0	160.2	358.5	735.8	1,319.4
Mastectomy 85.4	39.5	*	75.8	–	11.5	81.2	141.7
Debridement of wound, infection, or burn 86.22,86.28	133.8	158.8	110.2	40.5	84.7	178.9	397.0
Skin graft 86.6–86.7	41.5	54.0	29.6	22.4	31.6	51.7	92.8
Miscellaneous diagnostic and therapeutic procedures 87–99	4,755.5	4,725.0	4,784.4	1,568.6	2,280.7	6,103.4	16,851.3
Computerized axial tomography 87.03,87.41,87.71,88.01,88.38	369.9	371.7	368.2	89.6	186.5	427.1	1,408.8
Pyelogram 87.73–87.75	67.3	72.7	62.1	*9.5	54.9	98.7	161.4
Arteriography and angiocardiography using contrast material 88.4–88.5	701.5	846.0	564.7	28.1	155.2	1,389.8	2,712.0
Diagnostic ultrasound 88.7	451.9	392.8	507.8	88.6	218.8	516.3	1,797.0
Circulatory monitoring 89.6	143.5	150.9	136.6	35.4	50.2	171.5	614.6
Radioisotope scan 92.0–92.1	117.0	110.6	123.1	*13.2	38.7	159.1	506.1
Respiratory therapy 93.9,96.7	431.1	449.9	413.3	411.3	126.5	425.5	1,545.4

* Figure does not meet standard of reliability or precision. – Quantity zero. . . . Category not applicable.

[1]The rate per 100,000 population of discharges with a coronary artery bypass graft was 137.7.

Technical notes

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. Estimates of sampling variability were calculated with SUDAAN software which takes into account the complex sample design. A description of the software and the approach it uses has been published (15). The constants for relative standard error curves for the 1995 National Hospital Discharge Survey are presented in table I. The relative standard error RSE(X) of an estimate X may be estimated from the formula:

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

where a and b are as defined in table I.

Table I. Estimated parameters for relative standard error equations for National Hospital Discharge Survey statistics by selected characteristics: United States, 1995

Selected characteristic	Number of first-listed diagnoses		Number of procedures	
	a	*b*	*a*	*b*
Total	0.001470	383.006	0.002292	338.540
Sex				
Male	0.001760	337.999	0.002633	350.456
Female	0.001318	375.570	0.002195	342.400
Age				
Under 15 years	0.017012	204.502	0.020369	261.921
15–44 years	0.001562	344.452	0.003580	355.115
45–64 years	0.001346	346.329	0.002882	319.558
65 years and over	0.001742	362.499	0.002971	315.118
Region				
Northeast	0.005335	242.463	0.006875	262.270
Midwest	0.007528	206.001	0.009340	178.460
South	0.005192	391.875	0.004027	330.110
West	0.004464	356.516	0.007656	381.790

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