

Surgical Operations in Short-Stay Hospitals for Discharged Patients

United States - 1965

Statistics are presented on the volume and classes of surgical operations and procedures performed in short-stay hospitals, based on data abstracted from a national sample of records of inpatients discharged. Estimates of discharges with surgery and all listed operations classified by surgical specialty and body site, are distributed by size and regional location of the hospital and by age and sex of the discharged patients.

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Under the legislation establishing the National Health Survey, the Public Health Service is authorized to use, insofar as possible, the services or facilities of other Federal, State, or private agencies.

In accordance with specifications established by the National Center for Health Statistics, the Bureau of the Census, under a contractual arrangement, participated in planning the survey and collecting the data.

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SYMBOLS

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SURGICAL OPERATIONS IN SHORT-STAY HOSPITALS FOR DISCHARGED PATIENTS

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INTRODUCTION

This report is based on data collected through the Hospital Discharge Survey (HDS), a continuous nationwide survey conducted by the National Center for Health Statistics. The data cover calendar year 1965, the first full year of the HDS. Presented are statistics on the frequency of surgical operations among inpatients discharged from short-stay hospitals and the volume of all-listed operations classified by surgical specialty and body site.

The data are based on information transcribed from the hospital medical records for a national sample of inpatients discharged from nonmilitary general and special short-stay hospitals in the United States. Previous reports based on data collected in the Hospital Discharge Survey for 1965, published in *Vital and Health Statistics*, Series 13, Nos. 2-5, presented measurements of hospital utilization according to the demographic characteristics of the discharged patients and the size, control and location of the hospitals. In the latest report in Series 13, No. 6, "Inpatient Utilization of Short-Stay Hospitals by Diagnosis," information is presented on the frequency of diseases and injuries among inpatients discharged during 1965.

Out of the universe of 6,965 hospitals, a sample of 315 hospitals was drawn for the HDS in 1965; 296 hospitals participated during all or part of the year. Approximately 100,400 abstracts (sample discharges) were received and processed. For a detailed description of the sample design, data collection procedures, and the estimation process, see appendix I.

An estimated 28.8 million inpatients (excluding newborn infants) were discharged from the Nation's nonmilitary short-stay hospitals during 1965. Of these, 11.0 million (38 percent) had one or more surgical operations or procedures.

The proportion of operated patients varied by geographic region, being lowest in the South Region and highest in the Northeast Region. For the Nation as a whole, it increased consistently as bed size of hospital increased.

Almost one-half of the inpatients under 15 years of age (excluding newborn infants) had an operation. On the other hand, only 36 percent of the adult patients had an operation. However, adult patients accounted for 83 percent of the estimated volume of operations and procedures performed for inpatients discharged in 1965.

Tonsillectomy was the single most frequently reported operation for inpatients discharged in 1965; it was followed by repair of inguinal hernia and hysterectomy.

Appendix II contains definitions of terms relating to hospitalization and surgery that are used in this report. Since several of the terms have specialized meanings in the Hospital Discharge Survey, familiarity with these definitions will aid in interpreting the data.

DISCHARGES WITH SURGERY

Of the estimated 28.8 million inpatients (excluding newborn infants) discharged from short-stay hospitals during 1965, 11.0 million (or 38 percent) had one or more surgical operations or procedures as defined herein. Approximately 24.0

million of the discharged patients were admitted for conditions other than complications of pregnancy, childbirth, and the puerperium or deliveries. Over 42 percent of these had one or more surgical operations or procedures.

Patient Characteristics

Almost one-half of the discharged inpatients under 15 years of age (excluding newborn infants)

had an operation (2.1 out of 4.3 million); over 1.0 million of the children had a tonsillectomy and/or an adenoidectomy. On the other hand, only 36 percent of the adult patients had an operation (8.9 out of 24.4 million). The proportion of operated patients was lowest for patients 65 years of age or older (table A). Including obstetrical discharges the proportion of operated patients was about the same for males

Table A. Number and percent of inpatients discharged from short-stay hospitals with surgery, by type of discharge, age and sex of patient, geographic region, and size of hospital: United States, 1965

(Excludes newborn infants and Veterans Administration and military hospitals)

Characteristic	All discharges			Nonobstetric discharges ¹		
	Total	Number with surgery	Percent with surgery	Total	Number with surgery	Percent with surgery
	(In thousands)			(In thousands)		
Total ² -----	28,792	10,996	38.2	23,999	10,221	42.6
<u>Age</u>						
Under 15 years-----	4,271	2,109	49.4	4,261	2,108	49.5
15-44 years-----	13,126	4,879	37.2	8,355	4,109	49.2
45-64 years-----	6,702	2,662	39.7	6,692	2,658	39.7
65 years and over-----	4,600	1,317	28.6	4,600	1,317	28.6
<u>Sex and age</u>						
Male, all ages-----	11,159	4,493	40.3	11,159	4,493	40.3
Male, 15 years and over-----	8,709	3,266	37.5	8,709	3,266	37.5
Female, all ages-----	17,584	6,485	36.9	12,791	5,710	44.6
Female, 15 years and over---	15,679	5,578	35.6	10,897	4,805	44.1
<u>Geographic region</u>						
Northeast-----	6,472	2,774	42.9	5,277	2,552	48.4
North Central-----	8,451	3,170	37.5	7,010	2,936	41.9
South-----	9,341	3,135	33.6	7,971	2,947	37.0
West-----	4,527	1,918	42.4	3,741	1,787	47.8
<u>Size of hospital</u>						
Less than 100 beds-----	7,297	2,183	29.9	6,106	2,036	33.3
100-199 beds-----	6,870	2,432	35.4	5,741	2,269	39.5
200-299 beds-----	5,462	2,307	42.2	4,516	2,134	47.3
300-499 beds-----	6,011	2,617	43.5	5,058	2,453	48.5
500 beds or more-----	3,152	1,457	46.2	2,578	1,330	51.6

¹Excludes discharges with first-listed or only diagnosis classified to ICDA class XI, Deliveries and Complications of Pregnancy, Childbirth, and Puerperium.

²Includes discharges for which the patient characteristic was not stated.

and females 15 years of age or older. Excluding obstetrics, 44 percent of the adult females had surgery compared with 37.5 percent for adult males.

Size of Hospital

About 30 percent of the inpatients discharged from hospitals maintaining fewer than 100 beds had one or more surgical operations or procedures. The proportion increased consistently as bed size of hospital increased. Hospitals with 500 or more beds reported at least one operation for 46.2 percent of their discharged patients.

Geographic Region

The proportion of discharged patients with surgery was about 43 percent in the Northeast and West Regions and 37.5 and 33.6 percent in the North Central and South Regions, respectively. The higher proportion of operated patients in the Northeast and West Regions was coupled with relatively lower discharge rates (138 and 146 per 1,000 civilian, noninstitutional population in the Northeast and West Regions, respectively, compared with 159 per 1,000 in the North Central and South Regions).¹

SELECTED OPERATIONS

Sex-specific rates of discharges following each of 15 operations commonly used for comparative purposes are shown in table B for persons of all ages. Similar data are presented in table C for persons 15 years of age and over.

Table B. Number and rate of inpatients discharged from short-stay hospitals with selected surgical operations, by sex: United States, 1965

(Excludes newborn infants and Veterans Administration and military hospitals)

Operation and ICDA-HDS codes ¹	Number of discharges in thousands			Rate of discharges per 100,000 population	
	Both ² sexes	Male	Female	Male	Female
Thyroidectomy-----08.1-08.2	78	*	67	*	68.8
Extraction of lens-----17.3-17.5	142	60	81	65.1	83.1
Tonsillectomy with or without adenoidectomy-----27.1-27.2	1,215	585	627	635.9	641.2
Mastectomy-----38.1-38.3	266	*	257	*	263.1
Repair of inguinal hernia-----40.0-40.1	517	467	50	507.4	51.5
Gastrectomy-----44.2-44.3	65	41	24	44.5	24.3
Appendectomy ³ -----45.1	379	200	177	217.1	181.3
Enterectomy; colectomy-----46.3-46.5	99	42	57	45.4	58.0
Hemorrhoidectomy-----49.3	285	149	134	161.9	137.4
Cholecystectomy-----53.5	355	87	267	94.4	273.4
Prostatectomy-----66.1-66.3	191	191	...	207.9	...
Hysterectomy-----72.3-72.6; 72.9	505	...	505	...	516.5
Reduction of fracture with internal fixation-----82.2	208	94	113	102.4	115.3
Excision of intervertebral cartilage-----83.4	78	45	32	48.6	33.0
Excision and ligation of varicose veins-----88.4	127	32	94	35.1	96.3

¹For further information, see medical coding and edit in appendix I.

²Includes discharges for which sex of patient was not stated.

³Provisional estimate; limited to estimated number of first-listed appendectomies to exclude majority that were performed incidental to other abdominal surgery.

Table C. Number and rate of inpatients 15 years of age and over discharged from short-stay hospitals with selected surgical operations, by sex: United States, 1965

(Excludes Veterans Administration and military hospitals)

Operations and ICDA-HDS codes ¹	Number of discharges of patients in thousands			Rate of discharges per 100,000 persons	
	Both sexes ²	Male	Female	Male	Female
Thyroidectomy-----08.1-08.2	76	*	66	*	96.0
Extraction of lens-----17.3-17.5	140	59	80	96.6	116.5
Tonsillectomy with or without adenoidectomy-----27.1-27.2	230	87	142	141.7	207.2
Mastectomy-----38.1-38.3	265	*	256	*	374.2
Repair of inguinal hernia-----40.0-40.1	380	343	37	556.2	54.2
Gastrectomy-----44.2-44.3	65	41	24	66.3	34.7
Appendectomy ³ -----45.1	237	120	116	194.5	169.3
Enterectomy; colectomy-----46.3-46.5	96	40	56	64.7	82.1
Hemorrhoidectomy-----49.3	285	149	134	241.7	196.3
Cholecystectomy-----53.5	355	87	267	141.0	390.6
Prostatectomy-----66.1-66.3	191	191	...	309.8	...
Hysterectomy-----72.3-72.6;72.9	505	...	505	...	737.9
Reduction of fracture with internal fixation-----82.2	195	85	109	138.3	159.4
Excision of intervertebral cartilage--83.4	78	45	32	72.6	47.2
Excision and ligation of varicose veins-----88.4	127	32	94	52.5	137.7

¹ See reference 2.

² Includes discharges for which sex of patient was not stated.

³ Provisional estimate; limited to estimated number of first-listed appendectomies to exclude majority that were performed incidental to other abdominal surgery.

In the aggregate, the number of discharges with the 15 selected operations accounted for 44 percent of all nonobstetric discharges with surgery (4.5 out of 10.2 million).

Tonsillectomy was the single most frequently reported operation for inpatients discharged from the Nation's nonmilitary short-stay hospitals in 1965; it was followed by repair of inguinal hernia and hysterectomy (table B). Four out of five of the tonsillectomies and one-fourth of the inguinal herniorrhaphies were performed for patients under 15 years of age. Inguinal herniorrhaphies were performed 10 times as frequently for males as females. The sex ratio was about the same for children and for patients 15 years of age and over. Hysterectomies, about equal in volume to repairs of inguinal hernia among discharged patients, was

the leading operation among adult females. The number of hysterectomies per 100,000 females in the civilian, noninstitutional population was 516; it was 738 per 100,000 females 15 years of age and over.

The remainder of the selected operations with one exception were performed almost exclusively for patients 15 years of age and over. Approximately 37 percent of the appendectomies were performed for patients under 15 years of age. Estimates and sex-specific rates of discharges following operations that are most prevalent among children are shown separately in rank order of frequency in table D.

About 70 percent of the prostatectomies were performed for patients 65 years of age and over.

Table D. Number and rate of inpatients under 15 years of age discharged from short-stay hospitals with selected surgical operations, by sex: United States, 1965

(Excludes newborn infants and Veterans Administration and military hospitals)

Operation and ICDA-HDS codes ¹	Number of discharges in thousands			Rate of discharges per 100,000 population	
	Both sexes ²	Male	Female	Male	Female
Tonsillectomy with or without adenoidectomy-----27.1-27.2	981	497	484	1,634.4	1,649.2
Reduction of fracture without internal fixation-----82.0-82.1	141	93	48	306.9	164.3
Appendectomy ³ -----45.1	141	80	60	263.0	207.3
Repair of inguinal hernia-----40.0-40.1	135	122	13	403.0	43.9
Operations on tympanum-----20.4	95	57	38	186.8	129.2

¹See reference 2.

²Includes discharges for which sex of patient was not stated.

³Provisional estimate; limited to estimated number of first-listed appendectomies to exclude majority that were performed incidental to other abdominal surgery.

Table E. Number and rate of inpatients 65 years of age and over discharged from short-stay hospitals with selected surgical operations, by sex: United States, 1965

(Excludes Veterans Administration and military hospitals)

Operation and ICDA-HDS codes ¹	Number of discharges in thousands			Rate of discharges per 100,000 population	
	Both sexes ²	Male	Female	Male	Female
Prostatectomy-----66.1-66.3	131	131	...	1,717.0	...
Extraction of lens-----17.3-17.5	92	32	58	422.0	593.0
Reduction of fracture with internal fixation-----82.2	89	20	70	257.4	713.0
Repair of inguinal hernia-----40.0-40.1	79	68	11	892.9	109.8
Cholecystectomy-----53.5	74	23	51	299.2	517.7

¹See reference 2.

²Includes discharges for which sex of patient was not stated.

One out of every five of the males in this age group who had an operation had a prostatectomy. Extraction of lens was also largely restricted to the aged (92,000 out of 142,000 operations). The rate of lens extractions per 100,000 females 65 and over was 1.4 times the comparable rate for males (table E).

Surgical Operations by Specialty and Body Site

An estimated 14.7 million surgical operations and procedures were listed for the 11.0 million discharges with surgery. The estimate is based on the processing of up to three 3-digit codes for

Table F. Number and percent distribution of all-listed operations for inpatients discharged from short-stay hospitals, by age and sex of patient, geographic region, and size of hospital: United States, 1965

(Excludes newborn infants and Veterans Administration and military hospitals)

Characteristic	Operations including obstetrical procedures		Operations excluding obstetrical procedures	
	Number in thousands	Percent distribution	Number in thousands	Percent distribution
Total ¹ -----	14,679	100.0	13,866	100.0
<u>Age</u>				
Under 15 years-----	2,426	16.5	2,425	17.5
15-44 years-----	6,584	44.9	5,776	41.7
45-64 years-----	3,805	25.9	3,802	27.4
65 years and over-----	1,823	12.4	1,823	13.1
<u>Sex and age</u>				
Male, all ages-----	5,766	39.3	5,766	41.6
Male, 15 years and over-----	4,323	29.4	4,323	31.2
Female, all ages-----	8,890	60.6	8,077	58.2
Female, 15 years and over-----	7,872	53.6	7,060	50.9
<u>Geographic region</u>				
Northeast-----	3,702	25.2	3,464	25.0
North Central-----	4,171	28.4	3,930	28.3
South-----	4,257	29.0	4,060	29.3
West-----	2,550	17.4	2,413	17.4
<u>Size of hospital</u>				
Less than 100 beds-----	2,809	19.1	2,656	19.2
100-199 beds-----	3,216	21.9	3,045	22.0
200-299 beds-----	3,127	21.3	2,944	21.2
300-499 beds-----	3,533	24.1	3,360	24.2
500 beds or more-----	1,995	13.6	1,861	13.4

¹Includes operations for which the patient characteristic was not stated.

operations and treatments of the International Classification of Diseases, Adapted (ICDA),² per sample discharge. It includes biopsies, exploratory laparotomies, and certain other diagnostic procedures coded separately, but it excludes routine obstetrical procedures, endoscopies, and certain other nonsurgical procedures. (See appendix I for further details on medical coding and presentation of estimates.)

Estimates of the total number of operations performed, including and excluding obstetrical procedures, are distributed by selected patient characteristics, hospital size, and geographic region in table F. Estimates of the volume and rates of all-listed operations classified by specialty and body site are presented in tables 1-6.

Patient Characteristics

Over 60 percent of the operations reported for inpatients discharged from short-stay hospitals in 1965 were performed for females. In relation to the civilian, noninstitutional population, the rate of all-listed operations for females exceeded that for males by 45 percent. Much of this excess is accounted for by gynecological surgery, which comprised 30 percent of the volume of operations performed for females (2.7 out of 8.9 million operations). Other than gynecological surgery, the leading group for both males and females was gastrointestinal and abdominal surgery. In addition to appendectomies for both sexes, repairs of hernia for males and operations on the liver and biliary tract (largely cholecystectomies) for females contributed significantly to the relatively high frequency of operations in this surgical specialty (tables 1 and 2).

Patients 15 years of age and over accounted for 83 percent of the volume of surgical operations and procedures performed for discharged patients. Their proportion of operations grouped by specialty ranged from 75 to 100 percent with one exception; it was 37 percent for otorhinolaryngology. Since persons 15 years and over comprised only 68.5 percent of the civilian, noninstitutional population used to compute the rates of operations shown in table 2, the age-specific rates are generally higher than the rates based on the total population.

Geographic Region

The West Region had the smallest share of the civilian, noninstitutional population in 1965 (16.4 percent) and an even smaller proportion of the number of inpatients discharged from the Nation's nonmilitary short-stay hospitals (table G). However, the rate of operations for discharged patients per 100,000 population was slightly higher in the West Region. The South Region had the lowest overall rate of operations, both including and excluding obstetrical procedures (table 4). Differences between the regions in the rates of operations grouped by specialty were generally in the same direction as the overall rates. Lower rates for ophthalmology and otorhinolaryngology in the South Region and a relatively high rate of orthopedic surgery in the West Region were contributing factors. Within each surgical specialty the pattern of regional variation in the rates of operations by body site was less consistent in direction and much more pronounced. For example, the rate of operations on the teeth and gums in the Northeast Region was 5.4 times that in the West Region and over twice the rates in the other two regions. Additionally, the relatively high rate of operations on the fallopian tube in the South Region, twice that in the remainder of the Nation, is inconsistent with the pattern of regional variation in the rates of other gynecological surgery as well as the rates of all-listed operations.

Size of Hospital

Estimates of the number and percent distribution of operations classified by specialty and body site are presented in tables 5 and 6 according to size of hospital. One-half or more of the operations classified as neurosurgery, ophthalmology, thoracic surgery, and operations on the peripheral blood vessels and lymphatic system were reported by hospitals maintaining 300 or more beds for inpatients. While hospitals in the largest bed size group (500 beds or more) reported less than 14 percent of the total volume of operations for patients discharged from the Nation's nonmilitary short-stay hospitals in 1965, they accounted for 37 percent of all operations on the skull, brain, and cerebral meninges; 46

Table G. Percent distribution of the population, of inpatients discharged, of inpatients discharged with surgery, and all-listed operations, by geographic region: United States, 1965

Measure	All regions	North-east	North Central	South	West
	Percent distribution				
Civilian, noninstitutional population-----	100.0	24.7	28.1	30.9	16.4
Hospital discharges (inpatient) ¹ -----	100.0	22.0	29.2	33.2	15.6
Discharges with surgery ¹ -----	100.0	25.2	28.8	28.5	17.4
All listed operations ¹ -----	100.0	25.2	28.4	29.0	17.4

¹ Excludes newborn infants.

percent of the operations on the heart, pericardium, and intrathoracic vessels; and 32 percent of all operations on the pancreas, spleen, and intra-abdominal blood vessels. The smaller hospitals (fewer than 100 beds) reported 19 per-

cent of the overall volume of operations and proportionately more of the operations on the appendix (35 percent), the pharynx, tonsils, and adenoids (28 percent), and the skin and subcutaneous tissue (25 percent).

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Table 1. Number of all-listed operations for inpatients discharged from short-stay hospitals, by specialty and body site, and by age and sex: United States, 1965

(Excludes newborn infants and Veterans Administration and military hospitals)

Specialty and body site with ICDA ¹ codes	All ages			15 years and over
	Both sexes ²	Males	Female	
	Number of all-listed operations in thousands			
All operations-----	14,679	5,766	8,890	12,212
Operations excluding obstetrical procedures-----	13,866	5,766	8,077	11,401
Neurosurgery-----01-06	205	110	95	179
Skull, brain, and cerebral meninges-----01-02	64	40	24	46
Spinal cord, nerve roots, and spinal meninges-----03	48	27	21	47
Peripheral and sympathetic nerves or ganglia-----05-06	93	42	50	87
Ophthalmology-----10-18	422	203	218	315
Orbit, eyeball, and ocular muscles-----10-11	117	64	53	43
Eyelids and conjunctiva-----12-13	70	31	39	60
Cornea, iris, ciliary body, sclera, choroid, retina, and lacrimal apparatus-----14-16,18	85	44	41	68
Lens-----17	150	64	85	145
Otorhinolaryngology-----20-22,27	1,839	935	901	673
Ear-----20	229	123	105	117
Nose and accessory sinuses-----21	256	144	111	235
Larynx and trachea-----22	79	50	29	73
Pharynx, tonsils, and adenoids-----27	1,276	618	655	248
Oral and buccal surgery-----24-26	472	187	284	420
Teeth and gums-----24	393	150	243	359
Salivary glands, buccal cavity, tongue, and palate-----25-26	79	37	41	61
Thoracic surgery-----30-35	227	133	94	189
Heart, pericardium, and intrathoracic vessels-----30-32	87	43	44	58
Bronchus and lung-----33,35	51	34	17	49
Chest wall, pleura, and mediastinum-----34	89	55	34	82
Gastrointestinal and abdominal surgery-----28,40-57	3,178	1,619	1,554	2,797
Repair of hernia-----40	736	535	200	572
Abdominal wall and peritoneum-----41-42	408	131	276	378
Esophagus, stomach and duodenum combined with stomach--28,44	240	148	91	224
Appendix ³ -----45	380	200	178	238
Intestines-----46-47	310	136	174	296
Rectum-----48	124	64	61	120
Anus-----49	446	237	207	441
Liver and biliary tract-----51,53	486	137	348	482
Pancreas, spleen, and intra-abdominal blood vessels-----55-57	48	31	17	45

See footnotes at end of table.

Table 1. Number of all-listed operations for inpatients discharged from short-stay hospitals, by specialty and body site, and by age and sex: United States, 1965—Con.

(Excludes newborn infants and Veterans Administration and military hospitals)

Specialty and body site with ICDA ¹ codes	All ages			15 years and over
	Both sexes ²	Male	Female	
	Number of all-listed operations in thousands			
Genitourinary surgery-----60-69	1,107	823	283	912
Kidney-----60	71	33	37	64
Ureter-----62	121	65	55	111
Urinary bladder-----63	179	103	75	171
Urethra-----64	200	85	115	147
Prostate and seminal vesicles-----66	210	210	...	209
Testis, tunica vaginalis, spermatic cord and scrotum-----67	143	143	...	82
Epididymis and vas deferens-----68	81	81	...	80
Penis-----69	103	103	...	48
Gynecological surgery-----70-75	2,719	...	2,719	2,703
Ovary-----70	375	...	375	370
Fallopian tube-----71	142	...	142	141
Uterus, cervix, and supporting structures-----72-73	1,805	...	1,805	1,799
Vagina, vulva, and perineum-----74-75	397	...	397	392
Obstetrical procedures-----76.6-78.9	813	...	813	811
Orthopedic surgery-----80-87	1,768	965	798	1,485
Bone-----80-82	951	514	435	753
Joint structures-----83-84	481	277	201	440
Muscles, tendons, fascia and bursa-----85-86	268	132	136	229
Amputation and disarticulation of extremities-----87	68	41	26	63
Other general and specialized surgery-----	1,928	793	1,132	1,729
Thyroid, parathyroid, and other endocrine glands-----08-09	95	17	78	89
Breast, male and female-----38	393	13	380	390
Peripheral blood vessels and lymphatic system-----88	294	123	172	281
Skin and subcutaneous tissue-----89	1,145	641	502	969

¹ See reference 2.

² Includes discharge data for which sex of patient was not stated.

³ Provisional estimate; limited to estimated number of first-listed appendectomies to exclude majority that were performed incidental to other abdominal surgery.

Table 2. Rates of all-listed operations for inpatients discharged from short-stay hospitals, by specialty and body site, and by age and sex: United States, 1965

(Excludes newborn infants and Veterans Administration and military hospitals)

Specialty and body site with ICDA ¹ codes	All ages			15 years and over
	Both sexes ²	Male	Female	
	Rate of all-listed operations per 100,000 population			
All operations-----	7,735	6,269	9,090	9,391
Operations excluding obstetrical procedures-----	7,306	6,269	8,259	8,767
Neurosurgery-----01-06	108	119	97	138
Skull, brain, and cerebral meninges-----01-02	34	43	24	35
Spinal cord, nerve roots, and spinal meninges-----03	25	30	21	36
Peripheral and sympathetic nerves or ganglia-----05-06	49	46	52	67
Ophthalmology-----10-18	223	220	223	242
Orbit, eyeball, and ocular muscles-----10-11	62	70	54	33
Eyelids and conjunctiva-----12-13	37	34	40	46
Cornea, iris, ciliary body, sclera, choroid, retina, and lacrimal apparatus-----14-16,18	45	47	42	52
Lens-----17	79	69	87	111
Otorhinolaryngology-----20-22,27	969	1,016	921	517
Ear-----20	121	134	108	90
Nose and accessory sinuses-----21	135	157	114	181
Larynx and trachea-----22	41	54	30	56
Pharynx, tonsils and adenoids-----27	672	671	670	191
Oral and buccal surgery-----24-26	249	204	291	323
Teeth and gums-----24	207	163	249	276
Salivary glands, buccal cavity, tongue, and palate-----25-26	42	40	42	47
Thoracic surgery-----30-35	120	145	96	145
Heart, pericardium, and intrathoracic vessels-----30-32	46	47	45	44
Bronchus and lung-----33,35	27	37	17	37
Chest wall, pleura, and mediastinum-----34	47	60	34	63
Gastrointestinal and abdominal surgery-----28,40-57	1,674	1,760	1,589	2,151
Repair of hernia-----40	388	582	205	440
Abdominal wall and peritoneum-----41-42	215	142	283	291
Esophagus, stomach and duodenum combined with stomach---28,44	127	161	94	172
Appendix ³ -----45	200	218	182	183
Intestines-----46-47	163	148	178	228
Rectum-----48	66	69	62	93
Anus-----49	235	258	212	339
Liver and biliary tract-----51-53	256	149	356	371
Pancreas, spleen, and intra-abdominal blood vessels-----55-57	25	34	17	35

See footnotes at end of table.

Table 2. Rates of all-listed operations for inpatients discharged from short-stay hospitals, by specialty and body site, and by age and sex: United States, 1965—Con.

(Excludes newborn infants and Veterans Administration and military hospitals)

Specialty and body site with ICDA ¹ codes	All ages			15 years and over
	Both sexes ²	Male	Female	
	Rate of all-listed operations per 100,000 population			
Genitourinary surgery-----60-69	584	895	289	701
Kidney-----60	37	36	38	49
Ureter-----62	64	71	56	85
Urinary bladder-----63	94	112	77	131
Urethra-----64	105	92	118	113
Prostate and seminal vesicles-----66	111	228	...	161
Testis, tunica vaginalis, spermatic cord and scrotum-----67	75	155	...	63
Epididymis and vas deferens-----68	43	88	...	62
Penis-----69	54	112	...	37
Gynecological surgery-----70-75	1,433	...	2,780	2,078
Ovary-----70	198	...	384	285
Fallopian tube-----71	75	...	145	109
Uterus, cervix, and supporting structures-----72-73	951	...	1,846	1,383
Vagina, vulva, and perineum-----74-75	209	...	406	301
Obstetrical procedures-----76.6-78.9	428	...	831	624
Orthopedic surgery-----80-87	932	1,048	816	1,142
Bone-----80-82	501	559	444	579
Joint structures-----83-84	253	301	206	338
Muscles, tendons, fascia and bursa-----85-86	141	143	139	176
Amputation and disarticulation of extremities-----87	36	45	27	48
Other general and specialized surgery-----	1,016	862	1,157	1,329
Thyroid, parathyroid, and other endocrine glands-----08-09	50	18	80	68
Breast, male and female-----38	207	14	389	300
Peripheral blood vessels and lymphatic system-----88	155	133	175	216
Skin and subcutaneous tissue-----89	603	696	513	745

¹See reference 2.

²Includes discharge data for which sex of patient was not stated.

³Provisional estimate; limited to estimated number of first-listed appendectomies to exclude majority that were performed incidental to other abdominal surgery.

Table 3. Number of all-listed operations for inpatients discharged from short-stay hospitals, by specialty and body site, and geographic region: United States, 1965

(Excludes newborn infants and Veterans Administration and military hospitals)

Specialty and body site with ICDA ¹ codes	Geographic region			
	Northeast	North Central	South	West
	Number of all-listed operations in thousands			
All operations-----	3,702	4,171	4,257	2,550
Operations excluding obstetrical procedures-----	3,464	3,930	4,060	2,413
Neurosurgery-----01-06	43	53	62	47
Skull, brain, and cerebral meninges-----01-02	12	15	22	14
Spinal cord, nerve roots, and spinal meninges-----03	10	14	14	10
Peripheral and sympathetic nerves or ganglia-----05-06	21	24	26	23
Ophthalmology-----10-18	89	145	105	83
Orbit, eyeball, and ocular muscles-----10-11	26	44	24	24
Eyelids and conjunctiva-----12-13	16	20	24	10
Cornea, iris, ciliary body, sclera, choroid, retina, and lacrimal apparatus-----14-16,18	15	29	19	22
Lens-----17	32	53	39	26
Otorhinolaryngology-----20-22,27	445	593	478	324
Ear-----20	46	88	50	45
Nose and accessory sinuses-----21	64	87	61	44
Larynx and trachea-----22	13	29	20	17
Pharynx, tonsils and adenoids-----27	322	390	346	217
Oral and buccal surgery-----24-26	201	121	116	34
Teeth and gums-----24	180	99	93	22
Salivary glands, buccal cavity, tongue, and palate-----25-26	22	22	23	12
Thoracic surgery-----30-35	43	62	63	60
Heart, pericardium, and intrathoracic vessels-----30-32	14	27	14	33
Bronchus and lung-----33,35	11	14	17	*
Chest wall, pleura, and mediastinum-----34	18	20	32	18
Gastrointestinal and abdominal surgery-----28,40-57	808	897	929	545
Repair of hernia-----40	199	201	208	129
Abdominal wall and peritoneum-----41-42	91	100	156	60
Esophagus, stomach and duodenum combined with stomach---28,44	56	64	65	55
Appendix ² -----45	84	112	122	61
Intestines-----46-47	77	93	78	61
Rectum-----48	33	42	31	19
Anus-----49	119	122	123	82
Liver and biliary tract-----51-53	133	149	133	71
Pancreas, spleen, and intra-abdominal blood vessels-----55-57	16	13	12	*

See footnotes at end of table.

Table 3. Number of all-listed operations for inpatients discharged from short-stay hospitals, by specialty and body site, and geographic region: United States, 1965—Con.

(Excludes newborn infants and Veterans Administration and military hospitals)

Specialty and body site with ICDA ¹ codes	Geographic region			
	Northeast	North Central	South	West
	Number of all-listed operations in thousands			
Genitourinary surgery-----60-69	275	307	333	192
Kidney-----60	17	23	14	17
Ureter-----62	32	34	41	14
Urinary bladder-----63	45	40	57	38
Urethra-----64	39	63	74	24
Prostate and seminal vesicles-----66	55	61	47	47
Testis, tunica vaginalis, spermatic cord and scrotum-----67	41	40	40	22
Epididymis and vas deferens-----68	22	19	23	17
Penis-----69	24	28	38	12
Gynecological surgery-----70-75	680	760	839	440
Ovary-----70	94	106	119	56
Fallopian tube-----71	17	32	67	25
Uterus, cervix, and supporting structures-----72-73	481	506	533	286
Vagina, vulva, and perineum-----74-75	88	116	120	72
Obstetrical procedures-----76.6-78.9	239	241	197	136
Orthopedic surgery-----80-87	414	479	503	373
Bone-----80-82	229	251	279	192
Joint structures-----83-84	104	129	131	117
Muscles, tendons, fascia and bursa-----85-86	65	77	77	50
Amputation and disarticulation of extremities-----87	16	21	17	14
Other general and specialized surgery-----	466	513	633	315
Thyroid, parathyroid, and other endocrine glands-----08-09	20	25	33	18
Breast, male and female-----38	106	110	112	64
Peripheral blood vessels and lymphatic system-----88	69	88	85	53
Skin and subcutaneous tissue-----89	272	290	403	179

¹See reference 2.

²Provisional estimate; limited to estimated number of first-listed appendectomies to exclude majority that were performed incidental to other abdominal surgery.

Table 4. Rates of all-listed operations for inpatients discharged from short-stay hospitals, by specialty and body site, and geographic region: United States, 1965

(Excludes newborn infants and Veterans Administration and military hospitals)

Specialty and body site with ICDA ¹ codes	Geographic region			
	Northeast	North Central	South	West
	Rate of all-listed operations per 100,000 population			
All operations-----	7,909	7,824	7,264	8,206
Excluding obstetrical procedures-----	7,399	7,372	6,928	7,767
Neurosurgery-----01-06	91	100	106	153
Skull, brain, and cerebral meninges-----01-02	26	29	37	46
Spinal cord, nerve roots, and spinal meninges-----03	21	26	25	32
Peripheral and sympathetic nerves or ganglia-----05-06	44	45	44	74
Ophthalmology-----10-18	191	272	179	267
Orbit, eyeball, and ocular muscles-----10-11	55	82	41	78
Eyelids and conjunctiva-----12-13	34	38	41	33
Cornea, iris, ciliary body, sclera, choroid, retina, and lacrimal apparatus-----14-16,18	33	54	32	71
Lens-----17	69	99	66	85
Otorhinolaryngology-----20-22,27	950	1,113	815	1,041
Ear-----20	99	165	85	145
Nose and accessory sinuses-----21	136	162	105	142
Larynx and trachea-----22	28	54	34	55
Pharynx, tonsils and adenoids-----27	688	732	591	699
Oral and buccal surgery-----24-26	430	227	198	110
Teeth and gums-----24	384	186	159	71
Salivary glands, buccal cavity, tongue, and palate-----25-26	47	41	39	40
Thoracic surgery-----30-35	91	117	107	192
Heart, pericardium, and intrathoracic vessels-----30-32	29	51	23	106
Bronchus and lung-----33,35	23	27	30	*
Chest wall, pleura, and mediastinum-----34	39	38	54	59
Gastrointestinal and abdominal surgery-----28,40-57	1,725	1,682	1,585	1,754
Repair of hernia-----40	424	377	354	415
Abdominal wall and peritoneum-----41-42	195	187	267	194
Esophagus, stomach and duodenum combined with stomach-----28,44	120	120	111	178
Appendix ² -----45	180	210	209	198
Intestines-----46-47	164	175	134	197
Rectum-----48	70	79	53	60
Anus-----49	253	229	210	264
Liver and biliary tract-----51-53	285	279	226	228
Pancreas, spleen, and intra-abdominal blood vessels-----55-57	34	25	20	*

See footnotes at end of table.

Table 4. Rates of all-listed operations for inpatients discharged from short-stay hospitals, by specialty and body site, and geographic region: United States, 1965—Con.

(Excludes newborn infants and Veterans Administration and military hospitals)

Specialty and body site with ICDA ¹ codes	Geographic region			
	Northeast	North Central	South	West
	Rate of all-listed operations per 100,000 population			
Genitourinary surgery-----60-69	588	576	568	619
Kidney-----60	36	43	24	55
Ureter-----62	69	64	69	46
Urinary bladder-----63	96	74	97	122
Urethra-----64	83	117	126	78
Prostate and seminal vesicles-----66	118	114	80	150
Testis, tunica vaginalis, spermatic cord and scrotum-----67	87	75	68	72
Epididymis and vas deferens-----68	47	35	40	56
Penis-----69	52	53	65	40
Gynecological surgery-----70-75	1,453	1,426	1,431	1,417
Ovary-----70	200	199	203	182
Fallopian tube-----71	37	61	114	81
Uterus, cervix, and supporting structures-----72-73	1,027	949	909	921
Vagina, vulva, and perineum-----74-75	189	218	205	233
Obstetrical procedures-----76.6-78.9	510	452	336	439
Orthopedic surgery-----80-87	883	898	858	1,201
Bone-----80-82	490	471	475	619
Joint structures-----83-84	221	243	223	377
Muscles, tendons, fascia and bursa-----85-86	139	144	131	160
Amputation and disarticulation of extremities-----87	33	40	29	46
Other general and specialized surgery-----	997	963	1,081	1,013
Thyroid, parathyroid, and other endocrine glands-----08-09	42	46	57	58
Breast, male and female-----38	227	207	192	207
Peripheral blood vessels and lymphatic system-----88	146	164	145	171
Skin and subcutaneous tissue-----89	581	545	688	577

¹See reference 2.

²Provisional estimate; limited to estimated number of first-listed appendectomies to exclude majority that were performed incidental to other abdominal surgery.

Table 5. Number of all-listed operations for inpatients discharged from short-stay hospitals, by specialty and body site, and size of hospital: United States, 1965

(Excludes newborn infants and Veterans Administration and military hospitals)

Specialty and body site with ICDA ¹ codes	Size of hospital					
	All sizes	Less than 100 beds	100-199 beds	200-299 beds	300-499 beds	500 beds or more
	Number of all-listed operations in thousands					
All operations-----	14,679	2,809	3,216	3,127	3,533	1,995
Operations excluding obstetrical procedures--	13,866	2,656	3,045	2,944	3,360	1,861
Neurosurgery-----01-06	205	22	26	42	62	53
Skull, brain, and cerebral meninges-----01-02	64	*	*	14	18	24
Spinal cord, nerve roots, and spinal meninges---03	48	*	*	10	19	*
Peripheral and sympathetic nerves or ganglia--05-06	93	15	14	19	25	20
Ophthalmology-----10-18	422	26	80	110	117	90
Orbit, eyeball, and ocular muscles-----10-11	117	*	23	33	35	20
Eyelids and conjunctiva-----12-13	70	*	14	19	17	11
Cornea, iris, ciliary body, sclera, choroid, retina, and lacrimal apparatus-----14-16,18	85	*	12	23	19	26
Lens-----17	150	*	31	35	45	34
Otorhinolaryngology-----20-22,27	1,839	395	421	398	447	178
Ear-----20	229	12	35	65	76	40
Nose and accessory sinuses-----21	256	23	45	52	100	36
Larynx and trachea-----22	79	*	11	19	22	22
Pharynx, tonsils and adenoids-----27	1,276	356	330	261	249	80
Oral and buccal surgery-----24-26	472	66	113	123	110	59
Teeth and gums-----24	393	54	99	106	88	46
Salivary glands, buccal cavity, tongue, and palate-----25-26	79	12	14	17	22	14
Thoracic surgery-----30-35	227	12	22	57	61	76
Heart, pericardium, and intrathoracic vessels-30-32	87	-	*	22	22	40
Bronchus and lung-----33,35	51	*	*	15	16	14
Chest wall, pleura, and mediastinum-----34	89	10	13	20	23	22
Gastrointestinal and abdominal surgery-28,40-57	3,178	695	740	648	704	390
Repair of hernia-----40	736	153	192	151	159	80
Abdominal wall and peritoneum-----41-42	408	100	82	81	85	60
Esophagus, stomach and duodenum combined with stomach-----28,44	240	36	51	54	64	36
Appendix-----45	380	133	95	62	61	30
Intestines-----46-47	310	47	72	61	77	54
Rectum-----48	124	22	26	29	31	16
Anus-----49	446	99	100	97	112	38
Liver and biliary tract-----51-53	486	104	114	99	106	63
Pancreas, spleen, and intra-abdominal blood vessels-----55-57	48	*	*	12	10	15

See footnotes at end of table.

Table 5. Number of all-listed operations for inpatients discharged from short-stay hospitals, by specialty and body site, and size of hospital: United States, 1965—Con.

(Excludes newborn infants and Veterans Administration and military hospitals)

Specialty and body site with ICDA ¹ codes	Size of hospital					
	All sizes	Less than 100 beds	100-199 beds	200-299 beds	300-499 beds	500 beds or more
	Number of all-listed operations in thousands					
Genitourinary surgery-----60-69	1,107	153	233	257	293	171
Kidney-----60	71	*	13	13	26	12
Ureter-----62	121	11	27	33	35	16
Urinary bladder-----63	179	23	34	41	50	31
Urethra-----64	200	34	37	45	53	30
Prostate and seminal vesicles-----66	210	20	40	56	58	36
Testis, tunica vaginalis, spermatic cord and scrotum-----67	143	24	38	32	28	20
Epididymis and vas deferens-----68	81	14	15	21	20	10
Penis-----69	103	20	28	17	21	16
Gynecological surgery-----70-75	2,719	575	617	548	639	339
Ovary-----70	375	92	75	73	85	50
Fallopian tube-----71	142	37	32	16	31	26
Uterus, cervix, and supporting structures-----72-73	1,805	377	412	383	429	204
Vagina, vulva, and perineum-----74-75	397	69	98	76	94	60
Obstetrical procedures-----76.6-78.9	813	153	171	183	172	134
Orthopedic surgery-----80-87	1,768	299	380	372	458	259
Bone-----80-82	951	183	219	205	214	130
Joint structures-----83-84	481	60	95	89	161	76
Muscles, tendons, fascia and bursa-----85-86	268	44	51	64	69	40
Amputation and disarticulation of extremities-----87	68	12	15	15	14	12
Other general and specialized surgery-----	1,928	412	413	388	468	246
Thyroid, parathyroid, and other endocrine glands-----08-09	95	13	20	21	26	15
Breast, male and female-----38	393	75	77	86	109	47
Peripheral blood vessels and lymphatic system-----88	294	33	57	63	89	51
Skin and subcutaneous tissue-----89	1,145	291	259	217	244	133

¹See reference 2.

²Provisional estimate; limited to estimated number of first-listed appendectomies to exclude majority that were performed incidental to other abdominal surgery.

Table 6. Percent distribution of all-listed operations for inpatients discharged from short-stay hospitals by size of hospital, according to specialty and body site: United States, 1965

(Excludes newborn infants and Veterans Administration and military hospitals)

Specialty and body site with ICDA ¹ codes	Size of hospital					
	All sizes	Less than 100 beds	100-199 beds	200-299 beds	300-499 beds	500 beds or more
	Percent distribution					
All operations-----	100.0	19.1	21.9	21.3	24.1	13.6
Operations excluding obstetrical procedures--	100.0	19.2	22.0	21.2	24.2	13.4
Neurosurgery-----01-06	100.0	10.6	12.8	20.5	30.4	25.7
Skull, brain, and cerebral meninges-----01-02	100.0	*	*	21.6	28.6	37.1
Spinal cord, nerve roots, and spinal meninges---03	100.0	*	*	20.3	39.8	*
Peripheral and sympathetic nerves or ganglia--05-06	100.0	16.1	15.3	19.9	26.8	21.8
Ophthalmology-----10-18	100.0	6.1	18.9	26.0	27.6	21.4
Orbit, eyeball, and ocular muscles-----10-11	100.0	*	19.7	28.0	30.6	17.1
Eyelids and conjunctiva-----12-13	100.0	*	20.5	27.0	24.1	15.1
Cornea, iris, ciliary body, sclera, choroid, retina, and lacrimal apparatus-----14-16,18	100.0	*	13.8	26.8	22.6	30.8
Lens-----17	100.0	*	20.4	23.5	29.9	22.4
Otorhinolaryngology-----20-22,27	100.0	21.5	22.9	21.6	24.3	9.7
Ear-----20	100.0	5.4	15.3	28.5	33.4	17.4
Nose and accessory sinuses-----21	100.0	8.9	17.6	20.4	38.9	14.2
Larynx and trachea-----22	100.0	*	14.3	24.4	27.9	28.2
Pharynx, tonsils and adenoids-----27	100.0	27.9	25.9	20.5	19.5	6.2
Oral and buccal surgery-----24-26	100.0	14.0	23.9	26.1	23.4	12.5
Teeth and gums-----24	100.0	13.8	25.1	27.1	22.4	11.6
Salivary glands, buccal cavity, tongue, and palate-----25-26	100.0	15.3	17.9	21.5	28.1	17.2
Thoracic surgery-----30-35	100.0	5.3	9.5	25.1	26.6	33.5
Heart, pericardium, and intrathoracic vessels-30-32	100.0	-	*	25.5	25.4	45.9
Bronchus and lung-----33,35	100.0	*	*	28.8	30.5	26.5
Chest wall, pleura, and mediastinum-----34	100.0	11.6	14.9	22.5	25.7	25.3
Gastrointestinal and abdominal surgery-28,40-57	100.0	21.9	23.3	20.4	22.2	12.3
Repair of hernia-----40	100.0	20.8	26.1	20.5	21.7	10.8
Abdominal wall and peritoneum-----41-42	100.0	24.5	20.1	19.9	20.9	14.6
Esophagus, stomach and duodenum combined with stomach-----28,44	100.0	14.8	21.1	22.6	26.4	15.1
Appendix ² -----45	100.0	34.9	25.1	16.3	15.9	7.8
Intestines-----46-47	100.0	15.1	23.1	19.7	24.7	17.3
Rectum-----48	100.0	17.5	20.9	23.6	25.1	12.9
Anus-----49	100.0	22.1	22.5	21.8	25.2	8.4
Liver and biliary tract-----51-53	100.0	21.5	23.4	20.4	21.8	12.9
Pancreas, spleen, and intra-abdominal blood vessels-----55-57	100.0	*	*	26.0	20.6	32.2

See footnotes at end of table.

Table 6. Percent distribution of all-listed operations for inpatients discharged from short-stay hospitals by size of hospital, according to specialty and body site: United States, 1965—Con.

(Excludes newborn infants and Veterans Administration and military hospitals)

Specialty and body site with ICDA ¹ codes	Size of hospital					
	All sizes	Less than 100 beds	100-199 beds	200-299 beds	300-499 beds	500 beds or more
	Percent distribution					
Genitourinary surgery-----60-69	100.0	13.8	21.1	23.2	26.4	15.4
Kidney-----60	100.0	*	19.0	17.8	37.2	17.0
Ureter-----62	100.0	9.2	22.2	26.9	28.8	12.9
Urinary bladder-----63	100.0	13.0	19.1	22.7	28.0	17.2
Urethra-----64	100.0	16.9	18.8	22.7	26.7	14.9
Prostate and seminal vesicles-----66	100.0	9.5	18.8	26.8	27.7	17.3
Testis, tunica vaginalis, spermatic cord and scrotum-----67	100.0	17.0	26.9	22.1	19.9	14.1
Epididymis and vas deferens-----68	100.0	17.1	19.1	26.1	24.9	12.8
Penis-----69	100.0	19.8	27.3	16.9	20.7	15.3
Gynecological surgery-----70-75	100.0	21.1	22.7	20.2	23.5	12.5
Ovary-----70	100.0	24.6	19.9	19.5	22.8	13.2
Fallopian tube-----71	100.0	25.8	22.7	11.3	22.1	18.1
Uterus, cervix, and supporting structures-----72-73	100.0	20.9	22.8	21.2	23.8	11.3
Vagina, vulva, and perineum-----74-75	100.0	17.3	24.8	19.1	23.7	15.0
Obstetrical procedures-----76.6-78.9	100.0	18.8	21.1	22.5	21.2	16.5
Orthopedic surgery-----80-87	100.0	16.9	21.5	21.1	25.9	14.6
Bone-----80-82	100.0	19.3	23.1	21.5	22.5	13.7
Joint structures-----83-84	100.0	12.4	19.8	18.4	33.5	15.9
Muscles, tendons, fascia and bursa-----85-86	100.0	16.5	18.8	23.9	25.8	15.0
Amputation and disarticulation of extremities-----87	100.0	17.4	21.7	22.2	21.3	17.5
Other general and specialized surgery-----	100.0	21.4	21.4	20.1	24.3	12.8
Thyroid, parathyroid, and other endocrine glands-----08-09	100.0	13.6	20.9	22.3	27.1	16.1
Breast, male and female-----38	100.0	19.1	19.6	21.8	27.7	11.9
Peripheral blood vessels and lymphatic system-----88	100.0	11.4	19.4	21.6	30.4	17.3
Skin and subcutaneous tissue-----89	100.0	25.4	22.6	19.0	21.3	11.7

¹See reference 2.

²Provisional estimate; limited to estimated number of first-listed appendectomies to exclude majority that were performed incidental to other abdominal surgery.

APPENDIX I

TECHNICAL NOTES ON METHODS

Statistical Design of the Hospital Discharge Survey

Scope of the survey.—The scope of the Hospital Discharge Survey (HDS) encompasses patients other than well newborn infants discharged from noninstitutional hospitals which have six beds or more for inpatient use, which are located in the 50 States and the District of Columbia, and in which the average length of stay for all patients is less than 30 days.

Sampling frame and size of sample.—The sampling frame for hospitals in the HDS is the Master Facility Inventory of Hospitals and Institutions (MFI). A detailed description of how the MFI was developed, its content, plans for maintaining it, and procedures for assessing the completeness of its coverage has been published in an earlier report.³

The universe for the HDS consisted of 6,965 short-stay hospitals, excluding military and Veterans Administration hospitals, contained in the MFI in 1963. The

Table I. Distribution of short-stay hospitals in the universe (MFI) and in the HDS sample by size of hospital and geographic region: United States, 1965

Size of hospital	All regions	North-east	North central	South	West
<u>All sizes</u>					
Universe-----	6,965	1,107	1,979	2,620	1,259
Sample-----	315	85	93	91	46
<u>6-49 beds</u>					
Universe-----	3,113	199	830	1,438	646
Sample-----	39	5	11	15	8
<u>50-99 beds</u>					
Universe-----	1,623	288	442	587	306
Sample-----	44	8	12	16	8
<u>100-199 beds</u>					
Universe-----	1,144	277	378	332	157
Sample-----	63	16	20	19	8
<u>200-299 beds</u>					
Universe-----	552	182	151	134	85
Sample-----	55	19	16	12	8
<u>300-499 beds</u>					
Universe-----	386	110	129	96	51
Sample-----	59	16	19	16	8
<u>500-999 beds</u>					
Universe-----	129	42	46	28	13
Sample-----	37	12	12	8	5
<u>1,000 beds or more</u>					
Universe-----	18	9	3	5	1
Sample-----	18	9	3	5	1

distributions of short-stay hospitals by size and region in the MFI and the HDS sample for 1965 are shown in table I.

The sample of hospitals for 1965 as originally drawn consisted of 315 hospitals. Of these hospitals, eight refused to participate; five did not submit any abstracts during the year; and six were out of scope either because the hospital had gone out of business or because it failed to meet the definition of a short-stay hospital. (See appendix II for the definition of short-stay hospital used in the HDS.) Thus 296 in-scope hospitals participated in the survey during 1965.

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

The within-hospital sampling ratio for selecting discharges varied inversely with the probability of selection of the hospital. The smallest sampling fraction of discharged patients was taken in the largest hospitals, and the largest fraction was taken in the smallest hospitals. This was done to compensate for the fact that hospitals were selected with probabilities proportionate to size class and to make sure that the overall probability of selecting a discharge would be approximately the same in all hospitals.

In nearly all hospitals the daily listing sheet of discharges was the frame from which the subsamples of discharges were selected within the sample hospitals. Well newborn infants are out of scope of the survey. The sample discharges were selected by random techniques, usually on the basis of the terminal digit(s) of the patient's medical record number—a number assigned when the patient was admitted to the hospital. If the hospital's daily discharge listing did not show the medical record numbers, the sample was selected by starting with a randomly selected discharge and taking every k th discharge thereafter.

Data Collection and Processing

Data collection.—During 1965, survey hospitals used an optical mark page reader form (abstract form) to transcribe data from the hospital records. This form,

shown in figures I and II, has two sides. The front (fig. I) provides for demographic data, admission dates, and discharge dates. The reverse side (fig. II) provides for information on discharge diagnoses and surgical operations or procedures. All discharge diagnoses and operations were transcribed onto the abstract form in the order in which they were listed on the face sheet of the hospital medical record. Depending on the procedure agreed upon with the hospital administrator, the sample selection and the transcription of information from the hospital records to the abstract form were performed either by the hospital staff or by representatives of the National Center for Health Statistics (NCHS) or by both. In more than three-fourths of the hospitals that participated in the HDS during 1965, this work was performed by the staff of the hospital medical records department. In nearly all of the remaining hospitals, the work was performed by U.S. Bureau of the Census personnel acting for NCHS.

Shipments of completed abstract forms for each sample hospital were transmitted, along with sample selection control sheets, to NCHS for processing. For data year 1965, approximately 100,400 abstracts were received from the 296 hospitals that participated in the survey during part or all of the year. Conversion to computer tape by an optical mark page reader, edit, and estimation procedures were accomplished for non-medical information (from front of sample patients abstracts) independently and prior to the coding and computer processing of medical data.

Medical coding and edit.—The medical information recorded on the reverse side of the sample patient abstracts (for data year 1965) was coded centrally by NCHS staff. A maximum of five diagnostic codes and three codes for surgical operations were assigned per sample abstract. Following conversion to computer tape and collation with nonmedical sample data, final "medical" edit was accomplished by computer inspection runs and a review of rejected abstracts. If sex and/or age of patient was incompatible with the recorded medical information, priority was given to the latter in the editing decision.

The basic system used for coding the medical terminology on HDS sample patient abstracts is the detailed 3- and 4-digit codes of the ICDA² exclusive of the following sections:

Supplementary Classification of External Cause of Injury (E802-E998)

Classification of Causes of Stillbirth (Y30-Y39)

Part of Classification of Liveborn Infants According to Type of Birth (Y20, Y22-23, Y26-27).

CONFIDENTIAL- All information which would permit identification of an individual or an establishment will be held confidential, will be used only by persons engaged in and for the purposes of the survey and will not be disclosed or released to other persons or used for any other purpose (22 FR 1687).

PHS-4734-2
REV. 11-66

DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
NATIONAL CENTER FOR HEALTH STATISTICS

Form Approved:
Budget Bureau No. 68-R620 R2-2



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ABSTRACT OF PATIENT RECORD-Hospital Discharge Survey

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Figure 1. Nonmedical section of optical mark page reader form.

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Figure 11. Medical section of optical mark page reader form.

The basic system for coding surgical operations and procedures was modified in certain areas by directives of the Hospital Discharge Survey to accommodate incomplete terminology on the source documents, i.e., lack of specificity of the body site

involved, surgical method or approach, or other details prescribed by the ICDA. HDS modifications that are pertinent to estimates presented in this report are as follows:

<i>ICDA Code</i>	<i>HDS modification</i>
17.3 - Extraction of lens, extracapsular	-----
17.4 - Extraction of lens, intracapsular	-----
-----	add 17.5 - Extraction of lens, not otherwise specified
30.4 - Catheterization of the right heart	redefine 30.4 - Catheterization of the heart
30.5 - Catheterization of the left heart	30.5 not used
72.3 - Hysterectomy, partial or subtotal	-----
72.4 - Hysterectomy, complete or total	-----
72.5 - Hysterectomy, radical	-----
72.6 - Hysterectomy, vaginal	-----
-----	add 72.9 - Hysterectomy, not otherwise specified
82 - Reduction of fracture and fracture-dislocation of bones (except nasal and skull)	-----
82.0 - Closed reduction of fracture of shaft of long bone	redefine 82.0 - Reduction (closed or not otherwise specified) of fracture in 82 without mention of fixation
82.1 - Open reduction of fracture of shaft of long bone without internal fixation	redefine 82.1 - Reduction (open) of fracture in 82 without mention of fixation
82.2 - Open reduction of fracture of shaft of long bone with internal fixation	redefine 82.2 - Reduction (closed or open) of fracture in 82 with mention of fixation
-----	82.3-82.8 not used
84.0 - Arthroplasty of hip without mechanical device	redefine 84.0 - Arthroplasty of hip
84.1 - Arthroplasty of hip with mechanical device	84.1 not used

Presentation of Estimates

Grouping of operations.—Estimates of the number, rate, and distribution of operations by surgical specialty and body site are based on the classification of operations reported on sample patient abstracts in the 3-digit detail provided by the ICDA. The groupings by surgical specialty that are used in this report are similar to but somewhat broader than the major classes (numbered 1-15) of the ICDA section "Classification of Operations and Treatments." (ICDA class No. 16—Certain Nonsurgical Procedures—was not used in this report.) A comparison of the two systems of grouping operations by 2-digit codes is as follows:

HDS specialty groups	ICDA class
Neurosurgery (01-06)-----	No.1 (01-06)
Ophthalmology (10-18)-----	3 (10-18)
Otorhinolaryngology (20-22,27)-----	4 (20-22)
Oral and buccal surgery (24-26)-----	5 (24-28)
Thoracic surgery (30-35)-----	6 (30-32), & 7 (33-35)
Gastrointestinal and abdominal surgery (28,40-57)-----	9 (40-57)
Genitourinary surgery (60-69)-	10 (60-69)
Gynecological surgery (70-75)-	11 (70-75)
Obstetrical procedures (76-78) ¹ -----	12 (76-78)
Orthopedic surgery (80-87)-----	13 (80-87)
Other general and specialized surgery (08-09,38,88,89)-----	2 (08-09), 8 (38), 14 (88), & 15 (89) ¹

¹3-digit codes 76.0-76.5 are not used in this report.

Subgroupings of operations are shown for most of the surgical specialties. These are described in terms of the body site involved with two minor exceptions, namely "repair of hernia" and "amputation and disarticulation of extremities."

Patient characteristics not stated.—Estimates of surgical operations distributed by sex or age are exclusive of a negligible number of operations for which the personal characteristic was not reported. In the detailed tables presenting frequencies and rates, "not stated" cases are included in the totals. The proportion of operations for which sex was not reported was 1.0 percent for "thyroid, parathyroid, and other endocrine glands"; it was less than 1.0 percent for all other operations classified by specialty and body site. Similarly, the highest proportion of operations for which age of patient was not reported was 1.3 percent for "esophagus, stomach, and duodenum combined with stomach."

Rounding of numbers.—Estimates of the number of surgical operations have been rounded to the nearest thousand for tabular presentation. Rates and percents were calculated on the basis of unrounded figures.

Population figures.—The base populations used in computing rates are unpublished estimates for the U.S. civilian, noninstitutional population as of July 1, 1965, provided by the Bureau of the Census. These estimates are consistent with estimates of the civilian, resident population published by the Bureau of the Census in *Current Population Reports*, Series P-25, but they are not to be considered official population estimates.

The population data used to compute rates in this report are as follows:

Group	Both sexes	Male	Female
Population in thousands			
Total-----	189,787	91,989	97,798
Age			
Under 15 years-----	59,741	30,392	29,350
15-44 years-----	74,158	35,449	38,709
45-64 years-----	38,453	18,496	19,956
65 years and over--	17,434	7,652	9,783
Geographic region			
Northeast-----	46,812	---	---
North Central-----	53,305	---	---
South-----	58,599	---	---
West-----	31,071	---	---

Reliability of Estimates

Estimation.—Statistics produced by the Hospital Discharge Survey are derived by a complex estimating procedure. The basic unit of estimation is the sample inpatient discharge abstract. The estimating procedure used to produce essentially unbiased national estimates in the HDS has three principal components: (1) inflation by reciprocals of the probabilities of sample selection, (2) adjustment for nonresponse, and (3) ratio adjustments to fixed totals. These components of estimation are described in the appendixes of two earlier publications.^{4,5}

Measurement errors.—As in any survey, the results are subject to nonsampling or measurement errors which include errors due to hospital nonresponse, missing abstracts, information incompletely or inaccurately recorded on abstract forms, and processing errors.

Sampling errors.—The standard error is primarily a measure of the variability that occurs by chance because a sample rather than the entire universe is surveyed. In this report the standard error also reflects part of the measurement error, but it does not measure any systematic biases in the data. The relative standard error of an estimate is obtained by dividing the standard error of the estimate by the estimate itself and is expressed as a percentage of the estimate. The relative standard errors given in table II are for the corresponding estimates of discharges by selected operations shown in table B. For example, the estimated number of thyroidectomies performed is 77,600. The relative standard error for this statistic is 8.2 percent. The chances are 68 out of 100 that the value that would be obtained in a complete enumeration is contained in the interval $77,600 \pm 8.2$ percent of 77,600, i.e., between 71,200 and 84,000 thyroidectomies; 95 out of 100 for the interval $77,600 \pm 8.2$ percent of 77,600 multiplied by 2; 99 out of 100 for the interval $77,600 \pm 8.2$ percent of 77,600 multiplied by 2.5.

Relative standard errors are not available for estimates of all-listed operations by specialty and body site.

Table II. Relative standard errors of the estimated number of discharges by selected operations: United States, 1965

Operation	Relative standard error (in percent)
Thyroidectomy-----	8.2
Extraction of lens-----	7.5
Tonsillectomy with or without adenoidectomy----	4.0
Mastectomy-----	5.0
Repair of inguinal hernia-	3.7
Gastrectomy-----	8.8
Appendectomy-----	4.8
Enterectomy; colectomy----	8.0
Hemorrhoidectomy-----	5.6
Cholecystectomy-----	4.3
Prostatectomy-----	6.4
Hysterectomy-----	4.2
Reduction of fracture with internal fixation-----	5.4
Excision of intervertebral cartilage-----	10.5
Excision and ligation of varicose veins-----	6.2

— ○ ○ ○ —

APPENDIX II

DEFINITIONS OF CERTAIN TERMS USED IN THIS REPORT

Terms Relating to Hospitalization

Short-stay hospitals.—General and short-term special hospitals having six beds or more for inpatient use and an average length of stay of less than 30 days, excluding military and Veterans Administration hospitals and hospital units of institutions. "Hospitals" and "short-stay hospitals" are used synonymously.

Inpatient.—A person who is formally admitted to the inpatient service of a short-stay hospital for observation, care, diagnosis, or treatment. In this report the number of inpatients refers to the number of discharges during 1965, including multiple discharges of the same individual (if any) from one short-stay hospital or more.

Newborn infants admitted by birth or admitted to the inpatient service on the calendar day of birth (directly or by transfer from another medical facility) are not included in this report.

Discharge.—The formal release of an inpatient by a hospital, i.e., the termination of a period of hospitalization by death or disposition to place of residence, nursing home, or another hospital. In this report the number of discharges from short-stay hospitals during 1965 (alive or dead) is exclusive of hospital newborn infants and other infants admitted to the inpatient service on the calendar day of birth. "Discharges" and "patients (or inpatients) discharged" are used synonymously.

Episode (hospital).—A continuous period of inpatient stay in one hospital from date of admission to (but not including) date of discharge. In this survey the number of hospital episodes (inpatient) in short-stay hospitals is equivalent to the number of discharges.

Demographic Terms

Age.—Age of discharged patients (excluding newborn infants) refers to the age at last birthday prior to admission to the hospital inpatient service.

The aged.—Persons 65 years of age and over.

Adults.—Persons 15 years of age and over.

Children.—Persons under 15 years of age.

United States.—The 50 States and the District of Columbia.

Geographic region.—For the purpose of classifying hospitals by geographic area, the States are grouped into four regions. They correspond to those used by the U. S. Bureau of the Census and are as follows:

Region	States Included
Northeast-----	Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania
North Central--	Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas, Michigan, Ohio, Illinois, Indiana, and Wisconsin
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

Terms Relating to Surgery

Discharges with surgery.—The estimated number of operated patients (see definition) discharged from nonmilitary short-stay hospitals during 1965.

Operation(s).—One or more surgical operations, procedures, or special treatments that are assigned by the physician to the medical record of patients discharged from the inpatient service of short-stay hospitals. In this survey, all terms listed on the face sheet (summary sheet) of the medical record under the captions "operations," "operative procedures," "operations and/or special treatments," etc., are transcribed in the order listed. A maximum of three 3-digit codes are assigned per sample discharge, based on the operations and treatments section of the ICDA² and Hospital Discharge Survey directives. (See "Medical Coding and

Edit" in appendix I for further details.) "Operations" and "surgical operations" are used synonymously.

All-listed operations.—In terms of the classification system used and the processing of not more than three codes per sample discharge, the estimated number of surgical operations and procedures performed for inpatients discharged from nonmilitary short-stay hospitals during 1965. The aggregate of individually coded operations, procedures, and special treatments in code positions 1-3 exclusive of spinal puncture, endoscopy, radiography, shock therapy, and certain other treatments not generally considered as surgery.

Operated patients.—Inpatients for whom at least one operation or procedure is performed during one period of hospitalization, exclusive of spinal puncture,

endoscopy, radiography, shock therapy, and certain other treatments not generally considered as surgery.

Obstetrical procedures.—Includes procedures or operations inducing or assisting delivery by surgical means; repair of obstetrical lacerations and other operations performed after delivery or abortion; and obstetrical operations without delivery, excluding operations for the termination of pregnancy. Includes cesarean section but excludes any accompanying division or ligation of fallopian tubes, sterilization, or hysterectomy (classified to gynecological surgery).

Volume of operations.—The estimated number of all-listed operations (see definition) performed for inpatients discharged from nonmilitary short-stay hospitals during 1965.

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