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## VITAL STATISTICS REPORT

### Hospital Discharge Survey Data

FROM THE  
NATIONAL CENTER FOR HEALTH STATISTICS

## Surgery in Short-Stay Hospitals: United States, 1973

This report provides estimates of the number of surgical operations and procedures which were performed for inpatients discharged from non-Federal general and special short-stay hospitals during 1973. The estimates are based on data collected by the Hospital Discharge Survey (HDS). This survey of short-stay hospital utilization in the United States has been conducted by the National Center for Health Statistics (NCHS) continuously since the beginning of 1965. Data for newborn infants are excluded from this report.

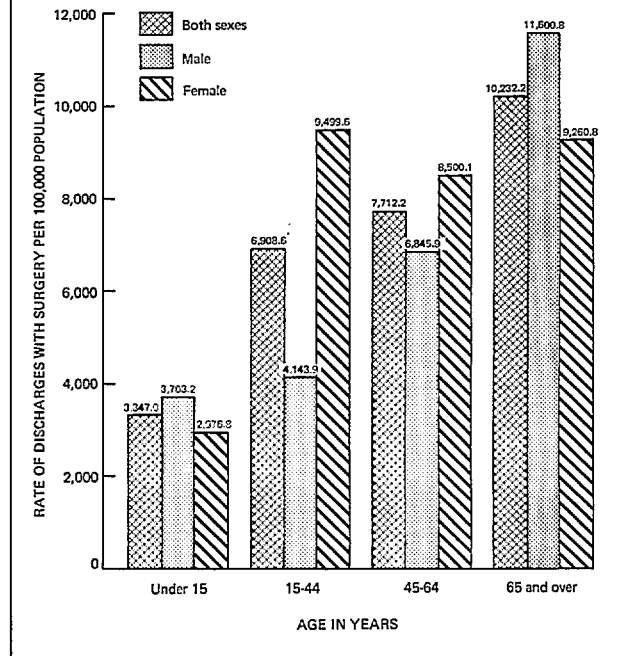
Estimates from the HDS are based on a sample of the hospital records of inpatients discharged from a national sample of the non-Federal short-stay hospitals. Demographic, diagnostic, and surgical data for inpatients in the sample are abstracted from the face sheets of the medical records. A maximum of five diagnoses and three operations or procedures are coded for each inpatient. Coding of the medical data from the survey is done according to the *Eighth Revision International Classification of Diseases, Adapted for Use in the United States* (ICDA), with some modifications. (See Technical Notes for a description of the survey and definitions of terms used in this report.)

An estimated 32.1 million inpatients, excluding newborn infants, were discharged from short-stay hospitals during 1973 (table 1). Of this number, 13.3 million, or 41.3 percent of the patients discharged, had one or more operations. The percent of patients with surgery decreased with each older age group from 47.3 percent for those under 15 years of age to 30.0 percent for age group 65 years and over.

Hospitals in the South Region had the smallest proportion of patients with surgery (36.3 percent) and hospitals in the West Region had the largest proportion (45.4 percent). The percent of patients with surgery increased with successively larger hospitals from 29.0 percent in hospitals with 6-99 beds to 47.6 percent in hospitals with 500 beds or more.

The estimated numbers of inpatients discharged with surgery per 100,000 persons in the civilian, non-institutionalized population increased with age. The

Figure 1. RATE OF INPATIENTS DISCHARGED WITH SURGERY FROM SHORT-STAY HOSPITALS PER 100,000 POPULATION, BY AGE AND SEX: UNITED STATES, 1973



1973 rates for inpatients with surgery increased with age from 3,347.0 for under age 15 years to 10,232.5 for age 65 years and over (figure 1). The rates for males were also higher for each older age group. For females, however, the rate for discharges with surgery was highest for age group 15-44 years—the child-bearing years.

The number and percent distribution of inpatients with surgery according to age group and sex are shown by the number of operations per patient in table 2. An estimated 69.6 percent of the patients had one operation, 22.0 percent had two operations, and 8.5 percent

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Table 1. Number of inpatients discharged from short-stay hospitals with and without surgery, and percent with surgery, by age, sex, geographic region, and size of hospital: United States, 1973

[Excludes newborn infants and Federal hospitals]

Characteristic	All discharges	Without surgery	With surgery	Percent with surgery
	Number of inpatients discharged in thousands			
Total <sup>1</sup> -----	32,125	18,859	13,266	41.3
AGE				
Under 15 years-----	3,933	2,073	1,861	47.3
15-44 years-----	13,482	7,445	6,037	44.8
45-64 years-----	7,772	4,483	3,290	42.3
65 years and over-----	6,937	4,858	2,079	30.0
SEX				
Male-----	12,835	7,667	5,168	40.3
Female-----	19,266	11,175	8,091	42.0
GEOGRAPHIC REGION				
Northeast-----	7,208	3,972	3,237	44.9
North Central-----	9,975	5,824	4,151	41.6
South-----	9,905	6,311	3,594	36.3
West-----	5,036	2,752	2,284	45.4
HOSPITAL SIZE				
6-99 beds-----	6,604	4,687	1,917	29.0
100-199 beds-----	5,485	3,383	2,102	38.3
200-299 beds-----	5,625	3,166	2,459	43.7
300-499 beds-----	8,228	4,386	3,842	46.7
500 beds or more-----	6,183	3,237	2,946	47.6

<sup>1</sup>Includes inpatients discharged for whom sex was not stated.

had three operations. Patients in age group 45-64 years accounted for the largest percent of multiple operations.

There were 18.4 million surgical operations performed in 1973 for the 13.3 million patients with surgery (table 3). Of this number, 6.9 million operations were for males and 11.5 million were for females. By dividing the number of operations in table 3 by the number of discharges with surgery in table 2, the average number of surgical operations and procedures per patient with surgery is 1.4 for all patients, 1.3 for male patients, and 1.4 for female patients. By age, these averages are 1.3 for under 15 years, 1.4 for 15-44 years, 1.5 for 45-64 years, and 1.4 for 65 years and over.

Although the percent of patients with surgery de-

creased with age, the number of operations per 100,000 population increased with age from 4,185.8 for under 15 years to 14,067.1 for 65 years and over (table 3). The number of operations per 100,000 population was 6,984.7 for males and 10,776.5 for females. Males accounted for higher surgery rates than females in the youngest and oldest age groups, and females had higher rates than males in age groups 15-64 years.

The numbers of operations and corresponding rates for inpatients discharged from short-stay hospitals during 1973 are presented in tables 4 and 5 for the surgery classes of ICDA and selected surgical operations, by sex and for patients age 15 years and over. The surgical operations and procedures shown in these tables were selected primarily because of their large frequencies.

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Table 2. Number and percent distribution of inpatients discharged from short-stay hospitals with one or more operations by number of operations, according to age and sex: United States, 1973

[Excludes newborn infants and Federal hospitals]

Age and sex	All discharges with surgery	One operation	Two operations	Three operations <sup>1</sup>
Number of inpatients discharged in thousands				
Total <sup>2</sup> -----	13,266	9,230	2,912	1,124
AGE				
Under 15 years-----	1,861	1,447	362	52
15-44 years-----	6,037	4,190	1,310	537
45-64 years-----	3,290	2,118	807	365
65 years and over-----	2,079	1,474	434	171
SEX				
Male-----	5,168	3,746	1,076	346
Female-----	8,091	5,479	1,835	777
Percent distribution				
Total <sup>2</sup> -----	100.0	69.6	22.0	8.5
AGE				
Under 15 years-----	100.0	77.8	19.4	2.8
15-44 years-----	100.0	69.4	21.7	8.9
45-64 years-----	100.0	64.4	24.5	11.1
65 years and over-----	100.0	70.9	20.9	8.2
SEX				
Male-----	100.0	72.5	20.8	6.7
Female-----	100.0	67.7	22.7	9.6

<sup>1</sup>A maximum of three operations were coded for each inpatient discharged.  
<sup>2</sup>Includes inpatients discharged for whom sex was not stated.

Table 3. Number and rate of all-listed surgical operations for inpatients discharged from short-stay hospitals, by age and sex: United States, 1973

[Excludes newborn infants and Federal hospitals]

Age	Both sexes <sup>1</sup>	Male	Female
Number of operations in thousands			
Total-----	18,426	6,936	11,480
Under 15 years-----	2,326	1,337	988
15-44 years-----	8,420	2,347	6,069
45-64 years-----	4,826	1,904	2,920
65 years and over-----	2,855	1,348	1,504
Rate per 100,000 population			
Total-----	8,951.8	6,984.7	10,776.5
Under 15 years-----	4,185.8	4,720.6	3,626.0
15-44 years-----	9,640.1	5,555.7	13,459.4
45-64 years-----	11,317.1	9,377.1	13,074.8
65 years and over-----	14,067.1	15,986.3	12,677.8

<sup>1</sup>Includes data for sex not stated.

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Table 4. Number of all-listed surgical operations for inpatients discharged from short-stay hospitals, by surgery class and selected operations, sex, and age: United States, 1973

[Excludes newborn infants and Federal hospitals]

Surgical class, operation, and ICDA codes	All-listed operations	All ages <sup>1</sup>		15 years and over
		Male	Female	
Number of operations in thousands				
All operations <sup>2</sup> -----	18,426	6,936	11,480	16,100
Neurosurgery-----01-05	310	157	152	282
Ophthalmology-----06-14	655	295	358	542
Extraction of lens-----14.4-14.6	279	116	162	278
Otorhinolaryngology-----16-21	1,835	903	930	840
Miringotomy-----17.0	215	122	92	17
Tonsillectomy with or without adenoidectomy-----21.1-21.2	884	398	486	237
Operations on thyroid, parathyroid, thymus and adrenals-----22-23	80	17	64	77
Thyroidectomy-----22.1-22.2	64	10	54	64
Vascular and cardiac surgery-----24-30	718	410	308	670
Excision and ligation of varicose veins-----24.4	98	24	74	98
Thoracic surgery-----32-35	240	138	102	224
Abdominal surgery-----38-48	2,747	1,357	1,389	2,431
Repair of inguinal hernia-----38.2-38.3	525	464	61	409
Appendectomy <sup>3</sup> -----41.1	339	175	163	236
Cholecystectomy-----43.5	411	94	318	410
Resection of small intestine or colon-----47.4-47.6	146	65	81	141
Proctological surgery-----50-52	565	303	262	555
Local excision and destruction of lesion of rectum and anus-----50.2,51.2	140	76	65	138
Hemorrhoidectomy-----51.3	218	111	107	218
Urological surgery-----54-61	1,453	1,032	420	1,205
Dilation of urethra-----57.5	227	82	145	169
Prostatectomy-----58.1-58.3	249	249	...	248
Breast surgery-----65	336	19	317	331
Mastectomy-----65.2-65.6	290	11	279	286
Gynecological surgery-----67-72	3,565	...	3,565	3,544
Oophorectomy; salpingo-oophorectomy-----67.2-67.5	425	...	425	424
Ligation and division of fallopian tubes (bilateral)-----68.5	299	...	299	298
Hysterectomy-----69.1-69.5	690	...	690	688
Dilation and curettage of uterus, diagnostic-----70.3	934	...	934	931
Obstetrical procedures <sup>4</sup> -----74-78	1,077	...	1,077	1,066
Cesarian section-----77.0	246	...	246	245
Dilation and curettage after delivery or abortion-----78.1	273	...	273	271
Repair of laceration-----78.2-78.3	182	...	182	180
Orthopedic surgery-----80-90	2,351	1,217	1,133	2,081
Excision of bone, partial-----80.4	157	64	93	145
Closed reduction of fracture without fixation-----82.0	321	174	147	218
Reduction of fracture with fixation-----82.2	284	119	164	269
Excision of intervertebral cartilage (prolapsed disk)-----86.4	147	86	61	146
Operations on muscles, tendons, fascia, and bursa-----88-89	307	169	138	261
Plastic surgery-----92-94	1,041	543	497	891
Oral and maxillofacial surgery-----95-98	174	92	82	150
Dental surgery-----99	358	153	204	323
Biopsy-----A1-A2	919	300	618	888

<sup>1</sup>Excludes data for sex not stated.<sup>2</sup>Includes operations not listed in table.<sup>3</sup>Limited to estimated number of appendectomies excluding those performed incidental to other abdominal surgery.<sup>4</sup>Excludes certain obstetrical procedures for inducing or assisting delivery (ICDA codes 75.0-75.6 and 75.9).

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Table 5. Rates of all-listed surgical operations for inpatients discharged from short-stay hospitals, by surgery class and selected operations, sex, and age: United States, 1973

[Excludes newborn infants and Federal hospitals]

Surgical class, operation, and ICDA codes	All-listed operations	All ages <sup>1</sup>		15 years and over
		Male	Female	
	Rate of operations per 100,000 population			
All operations <sup>2</sup> -----	8,951.8	6,984.7	10,776.5	10,713.8
Neurosurgery-----01-05	150.5	158.4	143.2	187.5
Ophthalmology-----06-14	318.3	297.5	336.3	360.8
Extraction of lens-----14.4-14.6	135.6	116.8	152.3	184.8
Otorhinolaryngology-----16-21	891.4	909.8	873.3	558.7
Myringotomy-----17.0	104.3	122.8	86.8	11.1
Tonsillectomy with or without adenoidectomy-----21.1-21.2	429.6	400.9	455.9	157.8
Operations on thyroid, parathyroid, thymus and adrenals-----22-23	39.1	16.8	59.8	51.0
Thyroidectomy-----22.1-22.2	31.3	10.4	50.8	42.4
Vascular and cardiac surgery-----24-30	348.9	413.0	288.9	445.8
Excision and ligation of varicose veins-----24.4	47.8	24.1	69.8	65.0
Thoracic surgery-----32-35	116.7	138.8	95.9	149.1
Abdominal surgery-----38-48	1,334.5	1,366.9	1,303.6	1,617.5
Repair of inguinal hernia-----38.2-38.3	255.3	467.0	57.5	271.8
Appendectomy <sup>3</sup> -----41.1	164.5	176.7	153.0	156.8
Cholecystectomy-----43.5	199.8	94.4	298.1	272.8
Resection of small intestine or colon-----47.4-47.6	71.0	65.5	76.1	94.1
Proctological surgery-----50-52	274.5	304.8	246.2	369.6
Local excision and destruction of lesion of rectum and anus-----50.2,51.2	68.1	76.1	60.7	91.7
Hemorrhoidectomy-----51.3	106.0	111.8	100.5	144.8
Urological surgery-----54-61	705.8	1,038.8	394.7	802.2
Dilation of urethra-----57.5	110.4	82.4	136.0	112.3
Prostatectomy-----58.1-58.3	120.8	250.4	...	165.1
Breast surgery-----65	163.2	18.8	297.8	220.1
Mastectomy-----65.2-65.6	140.8	11.2	261.7	190.3
Gynecological surgery-----67-72	1,732.2	...	3,346.9	2,358.0
Oophorectomy; salpingo-oophorectomy-----67.2-67.5	206.5	...	399.1	281.8
Ligation and division of fallopian tubes (bilateral)-----68.5	145.5	...	281.1	199.0
Hysterectomy-----69.1-69.5	335.2	...	647.7	457.9
Dilation and curettage of uterus, diagnostic-----70.3	453.8	...	876.8	619.5
Obstetrical procedures <sup>4</sup> -----74-78	523.2	...	1,011.0	709.4
Cesarian section-----77.0	119.6	...	231.1	163.0
Dilation and curettage after delivery or abortion-----78.1	132.6	...	256.2	180.6
Repair of laceration-----78.2-78.3	88.2	...	170.4	119.9
Orthopedic surgery-----80-90	1,142.3	1,225.1	1,064.0	1,385.0
Excision of bone, partial-----80.4	76.3	64.0	87.7	96.8
Closed reduction of fracture without fixation-----82.0	156.0	174.8	138.1	145.0
Reduction of fracture with fixation-----82.2	137.9	120.0	154.4	179.2
Excision of intervertebral cartilage (prolapsed disk)-----86.4	71.4	86.3	57.5	97.5
Operations on muscles, tendons, fascia, and bursa-----88-89	149.1	169.9	129.8	173.8
Plastic surgery-----92-94	505.8	546.7	466.5	593.2
Oral and maxillofacial surgery-----95-98	84.5	92.7	76.8	100.1
Dental surgery-----99	174.1	154.5	191.7	214.8
Biopsy-----A1-A2	446.6	302.3	580.0	591.1

<sup>1</sup>Excludes data for sex not stated.

<sup>2</sup>Includes operations not listed in table.

<sup>3</sup>Limited to estimated number of appendectomies excluding those performed incidental to other abdominal surgery.

<sup>4</sup>Excludes certain obstetrical procedures for inducing or assisting delivery (ICDA codes 75.0-75.6 and 75.9).

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The surgery classes with the largest numbers of surgical operations were gynecological surgery (3.6 million operations), abdominal surgery (2.7 million operations), and orthopedic surgery (2.4 million operations). The largest surgery classes for males were for abdominal, orthopedic, and urological surgery; for females they were gynecological, abdominal, and orthopedic surgery.

The rates of operations per 100,000 population for the selected categories of surgical operations and procedures were largest for dilation and curettage of uterus, diagnostic (453.8), tonsillectomy with or without adenoidectomy (429.6), and hysterectomy (335.2). For males the rates were largest for repair of inguinal hernia (467.0), tonsillectomy with or without adenoidectomy (400.9), and prostatectomy (250.4). For females the rates were largest for dilation and curettage of uterus, diagnostic (876.8), hysterectomy (647.7), and tonsillectomy with or without adenoidectomy (455.9).

The estimated rate of operations per 100,000 population was 10,713.8 for patients age 15 years and over (table 5) compared with 4,185.8 for patients under age 15 years (table 6). For patients under age 15 years the rates were highest for tonsillectomy with or without adenoidectomy (1,164.9), myringotomy (356.2), repair of inguinal hernia (210.4), closed reduction of fracture without fixation (185.8), and appendectomy (185.3). The leading categories of operations for patients 15 years and over were dilation and curettage of uterus, diagnostic (619.5), hysterectomy (457.9), oophorectomy and salpingo-oophorectomy (281.8), cholecystectomy (272.8), and repair of inguinal hernia (271.8).

Table 6.. Number and rate of all-listed surgical operations with large frequencies for inpatients under 15 years of age discharged from short-stay hospitals, United States, 1973

[Excludes newborn infants and Federal hospitals]

Operation and ICDA codes	Number of operations in thousands	Rate of operations per 100,000 population
All operations-----	2,326	4,185.8
Tonsillectomy with or without adenoidectomy-----21.1-21.2	647	1,164.9
Myringotomy-----17.0	198	356.2
Repair of inguinal hernia-----38.2-38.3	117	210.4
Closed reduction of fracture without fixation-----82.0	103	185.8
Appendectomy <sup>1</sup> -----41.1	103	185.3
Adenoidectomy without tonsillectomy-----21.3	61	110.1
Resection and recession of eye muscle-10.5-10.6	58	105.2
Dilation of urethra-57.5	58	105.1
All other operations-----residual	979	1,762.9

<sup>1</sup>Limited to estimated number of appendectomies excluding those performed incidental to other abdominal surgery.