

Monthly

# VITAL STATISTICS REPORT



## Hospital Discharge Survey Data

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FROM THE

NATIONAL CENTER FOR HEALTH STATISTICS

## Surgery in Short-Stay Hospitals: United States, 1972

This report shows the estimated number of discharged inpatients for whom surgical operations or procedures were performed at non-Federal short-stay hospitals during 1972. These estimates exclude newborn infants. Frequency and rates of surgical operations are presented by surgical classes and for selected operations and procedures.

The estimates of patients with surgery and frequency of surgical operations are based on information collected by the Hospital Discharge Survey (HDS), which is a continuous nationwide survey conducted by the National Center for Health Statistics (NCHS). Survey data are abstracted from the face

sheets of sampled medical records of inpatients discharged from a national sample of short-stay hospitals. (See Technical Notes for a description of the survey and definitions of terms used in this report).

The data on surgical operations are grouped by the surgical classes of the *Eighth Revision International Classification of Diseases, Adapted for Use in the United States* (ICDA), with some modifications. A maximum of three surgical operations or procedures are coded for each medical record in the sample.

An estimated 31.6 million inpatients, excluding newborn infants, were discharged from non-Federal short-stay hospitals during 1972 (table 1). By sex,

Table 1. Number of inpatients discharged from short-stay hospitals with and without surgery and percent with surgery, by age, sex, and geographic region: United States, 1972

[Excludes newborn infants and Federal hospitals]

Characteristic	All discharges	Without surgery	With surgery	Percent with surgery
	Number in thousands			
Total <sup>1</sup> -----	31,627	18,984	12,643	40.0
AGE				
Under 15 years-----	4,174	2,251	1,923	46.1
15-44 years-----	13,331	7,618	5,712	42.9
45-64 years-----	7,488	4,387	3,101	41.4
65 years and over-----	6,634	4,727	1,907	28.7
SEX				
Male-----	12,593	7,598	4,995	39.7
Female-----	18,996	11,361	7,635	40.2
GEOGRAPHIC REGION				
Northeast-----	7,120	4,015	3,105	43.6
North Central-----	9,434	5,656	3,778	40.0
South-----	10,179	6,577	3,602	35.4
West-----	4,894	2,736	2,158	44.1

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

## MONTHLY VITAL STATISTICS REPORT

Table 2. Number and percent distribution of inpatients discharged from short-stay hospitals with one or more operations, by age and sex: United States, 1972

[Excludes newborn infants and Federal hospitals]

Age and sex	All discharges with surgery	One operation	Two operations	Three operations
Number in thousands				
Total <sup>1</sup> -----	12,643	8,947	2,703	993
AGE				
Under 15 years-----	1,923	1,535	339	49
15-44 years-----	5,712	4,040	1,201	471
45-64 years-----	3,101	2,012	765	324
65 years and over-----	1,907	1,360	399	148
SEX				
Male-----	4,995	3,644	1,025	325
Female-----	7,635	5,293	1,674	667
Percent distribution				
Total <sup>1</sup> -----	100.0	70.8	21.4	7.9
AGE				
Under 15 years-----	100.0	79.8	17.6	2.6
15-44 years-----	100.0	70.7	21.0	8.3
45-64 years-----	100.0	64.9	24.7	10.5
65 years and over-----	100.0	71.3	20.9	7.8
SEX				
Male-----	100.0	73.0	20.5	6.5
Female-----	100.0	69.3	21.9	8.7

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

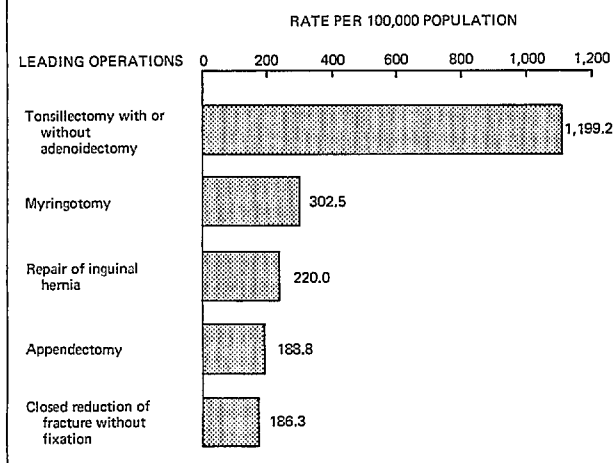
Table 3. Number and rate of all-listed surgical operations for inpatients discharged from short-stay hospitals, by age and sex: United States, 1972

[Excludes newborn infants and Federal hospitals]

Age	Both sexes <sup>1</sup>	Male	Female
Number in thousands			
Total-----	17,333	6,671	10,644
Under 15 years-----	2,361	1,375	982
15-44 years-----	7,856	2,239	5,610
45-64 years-----	4,514	1,806	2,703
65 years and over-----	2,602	1,250	1,349
Rate per 100,000 population			
Total-----	8,487.2	6,771.4	10,068.2
Under 15 years-----	4,170.4	4,767.0	3,538.2
15-44 years-----	9,194.1	5,420.2	12,711.4
45-64 years-----	10,685.3	9,007.6	12,177.1
65 years and over-----	13,059.5	15,059.1	11,603.1

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

Figure 1. ANNUAL RATE OF SURGICAL OPERATIONS FOR INPATIENTS UNDER 15 YEARS OF AGE, EXCLUDING NEWBORN INFANTS, DISCHARGED FROM NON-FEDERAL SHORT-STAY HOSPITALS BY THE LEADING OPERATIONS: UNITED STATES, 1972



the discharges included 12.6 million males and 19.0 million females. Of the patients discharged, approximately 12.6 million had one or more surgical operations during their hospitalization, including 5.0 million males and 7.6 million females.

At least one surgical operation was performed for 40.0 percent of the patients hospitalized. The percent of patients with surgery decreased with each successive age group from 46.1 percent for patients under 15 years of age to 28.7 percent for patients 65 years and over. The proportion of patients with surgery was about the same for both sexes, 39.7 percent for males and 40.2 percent for females. By geographic region, the percent of patients with surgery varied from 35.4 percent in the South Region to 44.1 percent in the West Region.

The number and percent distribution of discharges with surgery, according to the number of operations per patient, are shown for each age group and sex in table 2. One operation was performed for 70.8 percent of the patients, two operations for 21.4 percent, and three or more operations for 7.9 percent. By age group, the percent with only one operation was highest (79.8 percent) for patients under 15 years and lowest (64.9 percent) for patients age 45-64 years. The proportion of patients with three or more operations ranged from 2.6 percent for under 15 years to 10.5

percent for age group 45-64 years. A larger percentage of females than males with surgery underwent multiple operations.

An estimated 17.3 million surgical operations and procedures were listed for the 12.6 million inpatients with surgery (table 3). The corresponding rate per 100,000 persons in the civilian noninstitutionalized population was 8,487.2. The rates were 6,771.4 for males and 10,068.2 for females. The number of all listed operations per 100,000 population increased for males with each successive age group, but for females the rates decreased for the age groups over 15-44 years.

Comparing the number of operations (table 3) with the number of discharges with surgery (table 2) indicates that in 1972 there was an average of 1.4 listed operations per discharge with surgery. By age, operations per discharge with surgery varied from 1.2 operations for those under 15 years to 1.5 operations for those in the age group 45-64.

The number of operations performed for inpatients of short-stay hospitals during 1972 and the corresponding rates per 100,000 population are shown in tables 4 and 5 for the surgery classes of the ICDA and for selected surgical operations, by sex and for patients aged 15 years and over. The classes with the largest frequencies were gynecological surgery (3.2 million operations), abdominal surgery (2.6 million operations), and orthopedic surgery (2.2 million operations). These were also the leading surgery classes for females. For males the largest numbers of operations were accounted for by abdominal surgery, orthopedic surgery, and urological surgery.

The surgical operations and procedures presented in tables 4 and 5 were selected because of their large frequencies. The estimated numbers of selected operations per 100,000 population were largest for tonsillectomy with or without adenoidectomy (449.0); dilation and curettage of uterus, diagnostic (424.0); and hysterectomy (317.6). For ages 15 years and over the rates were largest for dilation and curettage, diagnostic (583.6); hysterectomy (438.1); and cholecystectomy (269.6).

An estimated 2.4 million operations were performed during 1972 for inpatients under age 15 years. The corresponding rate was 4,170.4 operations per 100,000 population. About half (50.3 percent) of the operations for this age group were accounted for by tonsillectomy with or without adenoidectomy, myringotomy, repair of inguinal hernia, appendectomy, and closed reduction of fracture without fixation (figure 1).

## MONTHLY VITAL STATISTICS REPORT

Table 4. Number of all-listed operations for inpatients discharged from short-stay hospitals, by surgery class and selected operations, sex, and age: United States, 1972

[Excludes newborn infants and Federal hospitals]

Surgery class, operation, and ICDA codes	All-listed operations <sup>1</sup>	Male	Female	15 years and over
All operations <sup>2</sup> -----	17,333	6,671	10,644	14,973
Neurosurgery-----01-05	261	134	127	233
Ophthalmology-----06-14	604	279	323	494
Extraction of lens-----14.4-14.6	260	109	150	257
Otorhinolaryngology-----16-21	1,816	908	906	820
Myringotomy-----17.0	184	107	77	13
Tonsillectomy with or without adenoidectomy-----21.1-21.2	917	420	496	238
Operations on thyroid, parathyroid thymus and adrenals-----22-23	78	18	60	75
Thyroidectomy-----22.1-22.2	65	12	53	64
Vascular and cardiac surgery-----24-30	641	371	268	596
Excision and ligation of varicose veins-----24.4	100	26	74	100
Thoracic surgery-----32-35	235	147	88	222
Abdominal surgery-----38-48	2,640	1,355	1,282	2,315
Repair of inguinal hernia-----38.2-38.3	510	461	48	386
Appendectomy <sup>3</sup> -----41.1	331	170	160	224
Cholecystectomy-----43.5	399	94	304	398
Resection of small intestine or colon-----47.4-47.6	129	57	71	125
Proctological surgery-----50-52	544	300	244	534
Local excision and destruction of lesion of rectum and anus-----50.2-51.2	127	66	61	124
Hemorrhoidectomy-----51.3	218	116	102	218
Urological surgery-----54-61	1,380	990	389	1,117
Dilation of urethra-----57.5	191	69	122	137
Prostatectomy-----58.1-58.3	231	231	...	231
Breast surgery-----65	332	16	315	328
Mastectomy-----65.2-65.6	292	13	279	290
Gynecological surgery-----67-72	3,232	...	3,232	3,209
Oophorectomy; salpingo oophorectomy-----67.2-67.5	378	...	378	377
Ligation and division of fallopian tubes (bilateral)-----68.5	258	...	258	257
Hysterectomy-----69.1-69.5	649	...	649	647
Dilation and curettage of uterus, diagnostic-----70.3	866	...	866	861
Obstetrical procedures <sup>4</sup> -----74-78	1,022	...	1,022	1,013
Cesarian section-----77.0	227	...	227	226
Dilation and curettage after delivery or abortion-----78.1	275	...	275	274
Repair of laceration-----78.2-78.3	176	...	176	174
Orthopedic surgery-----80-90	2,221	1,137	1,081	1,942
Excision of bone, partial-----80.4	137	51	86	127
Closed reduction of fracture without fixation-----82.0	329	173	156	224
Reduction of fracture with fixation-----82.2	269	115	153	251
Excision of intervertebral cartilage (prolapsed disk)-----86.4	147	87	60	147
Operations on muscles, tendons, fascia, and bursa-----88-89	312	163	148	257
Plastic surgery-----92-94	968	502	464	811
Oral and maxillofacial surgery-----95-98	158	88	69	129
Dental surgery-----99	368	152	215	328
Biopsy-----A1-A2	834	271	561	806

<sup>1</sup>Includes 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 (ICDA codes 75.0-75.6 and 75.9) for inducing or assisting delivery.

# MONTHLY VITAL STATISTICS REPORT

Table 5. Rates of all-listed operations for inpatients discharged from short-stay hospitals, by surgery class and selected operations, sex, and age: United States, 1972

[Excludes newborn infants and Federal hospitals]

Surgery class, operation, and ICDA codes	All-listed operations <sup>1</sup>	Male	Female	15 years and over
	Rate per 100,000 population			
All operations <sup>2</sup> -----	8,487.2	6,771.4	10,068.2	10,142.7
Neurosurgery-----01-05	127.9	136.0	120.1	157.9
Ophthalmology-----06-14	295.7	283.6	305.7	334.8
Extraction of lens-----14.4-14.6	127.1	110.9	142.0	174.0
Otorhinolaryngology-----16-21	889.1	922.2	856.5	555.3
Miringotomy-----17.0	90.3	108.6	73.1	8.9
Tonsillectomy with or without adenoidectomy-----21.1-21.2	449.0	426.7	468.7	161.3
Operations on thyroid, parathyroid thymus and adrenals-----22-23	38.4	18.4	56.9	50.8
Thyroidectomy-----22.1-22.2	31.7	12.3	49.8	43.2
Vascular and cardiac surgery-----24-30	313.8	377.1	253.3	403.7
Excision and ligation of varicose veins-----24.4	49.1	26.4	70.2	67.8
Thoracic surgery-----32-35	115.0	149.1	83.0	150.3
Abdominal surgery-----38-48	1,292.7	1,375.1	1,212.4	1,568.1
Repair of inguinal hernia-----38.2-38.3	249.9	467.6	45.6	261.3
Appendectomy <sup>3</sup> -----41.1	161.8	172.5	151.4	151.5
Cholecystectomy-----43.5	195.2	95.6	287.2	269.6
Resection of small intestine or colon-----47.4-47.6	63.2	58.3	67.6	84.6
Proctological surgery-----50-52	266.5	304.3	230.4	361.8
Local excision and destruction of lesion of rectum and anus-----50.2-51.2	62.3	67.4	57.3	84.0
Hemorrhoidectomy-----51.3	106.9	117.4	96.8	147.6
Urological surgery-----54-61	675.5	1,005.4	368.1	756.9
Dilation of urethra-----57.5	93.6	69.9	115.7	93.1
Prostatectomy-----58.1-58.3	113.1	234.5	...	156.4
Breast surgery-----65	162.5	16.5	297.8	222.4
Mastectomy-----65.2-65.6	143.1	12.9	263.8	196.6
Gynecological surgery-----67-72	1,582.4	...	3,056.9	2,173.6
Oophorectomy; salpingo-oophorectomy-----67.2-67.5	185.2	...	357.8	255.2
Ligation and division of fallopian tubes (bilateral)-----68.5	126.2	...	243.7	174.0
Hysterectomy-----69.1-69.5	317.6	...	613.6	438.1
Dilation and curettage of uterus, diagnostic-----70.3	424.0	...	819.2	583.6
Obstetrical procedures <sup>4</sup> -----74-78	500.3	...	966.5	686.2
Cesarian section-----77.0	110.9	...	214.3	152.8
Dilation and curettage after delivery or abortion-----78.1	134.7	...	260.3	185.5
Repair of laceration-----78.2-78.3	86.0	...	116.2	117.9
Orthopedic surgery-----80-90	1,087.5	1,154.6	1,022.2	1,315.2
Excision of bone, partial-----80.4	67.1	51.7	81.3	85.8
Closed reduction of fracture without fixation-----82.0	161.2	175.7	147.4	151.6
Reduction of fracture with fixation-----82.2	131.5	116.6	144.6	169.8
Excision of intervertebral cartilage (prolapsed disk)-----86.4	72.2	88.7	56.5	99.5
Operations on muscles, tendons, fascia, and bursa-----88-89	152.6	165.7	140.0	174.1
Plastic surgery-----92-94	473.9	509.9	439.0	549.6
Oral and maxillofacial surgery-----95-98	77.2	89.3	65.3	87.5
Dental surgery-----99	180.2	154.6	203.3	222.4
Biopsy-----A1-A2	408.4	275.3	530.9	546.1

<sup>1</sup>Includes 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 (ICDA codes 75.0-75.6 and 75.9) for inducing or assisting delivery.



### Technical Notes

**SOURCE OF DATA.** The Hospital Discharge Survey collects, on a sample basis, data on inpatients discharged from noninstitutional short-stay hospitals located in the 50 States and the District of Columbia. This report excludes data for newborn infants and discharges from Federal hospitals. Information in this report is based on a sample of about 225,000 abstracts of medical records of patients discharged from a national sample of 424 short-stay hospitals that participated in the survey in 1972.

**SURGERY CODING AND ESTIMATES.** A maximum of three operations recorded on abstracts of sampled medical records for 1972 were coded per sample discharge according to the section of the ICDA on Surgical Operations, Diagnostic and Other Therapeutic Procedures, with some modifications by HDS directives. The estimates in this report pertain to all-listed operations (up to and including three operations per discharge). Operations shown in this report are exclusive of certain obstetrical procedures, diagnostic endoscopy and radiography, radiotherapy, and certain other treatments not generally considered as surgery.

**SAMPLING ERRORS.** The estimates presented are subject to sampling error. The standard errors computed for the estimates of the number of operations are shown in table I.

**ROUNDING.** Due to rounding, detailed figures within tables may not add to totals. Rates presented were computed from unrounded numbers.

**DEFINITIONS.** *Short-stay hospitals* are general and short-term special hospitals that have six beds or more for inpatient use and an average length of stay of less than 30 days.

A *patient* or *inpatient* is a person who is formally admitted to the inpatient service of a short-stay hospital for observation, care, diagnosis, or treatment. Newborn infants admitted to the hospital by birth are excluded in this report.

A *discharge* is the formal release of an inpatient by a hospital, that is, the termination of a period of hospitalization by death or by disposition to place of residence, nursing home, or another hospital.

*Operation(s)* is one or more surgical operations, procedures, or special treatments entered by the physician on the medical record of patients discharged from short-stay hospitals.

*All-listed or listed operations* are the aggregate of up to three individually coded operations, procedures, and special treatments for each medical record in the survey sample.

*Surgery or operation rate* is the ratio of the number of all-listed operations to the number of persons in the civilian noninstitutionalized population as of July 1, 1972.

Table I. Approximate standard errors of estimated numbers of operations

Estimated number of operations	Standard error	Estimated number of operations	Standard error
10,000-----	1,550	500,000----	21,000
20,000-----	2,300	1,000,000---	40,000
50,000-----	3,800	5,000,000--	195,000
100,000----	6,000	10,000,000-	390,000
200,000----	10,000	20,000,000-	780,000

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

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