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Expected Principal Source of Payment for Hospital Discharges: United States, 1977[a]

INTRODUCTION

This report presents statistics based on data collected through the National Hospital Discharge Survey, a continuous survey conducted by the National Center for Health Statistics since 1965. In 1977 data were abstracted from the face sheets of medical records of approximately 224,000 patients discharged from 423 short-stay non-Federal hospitals. These data were used to produce estimates of hospital utilization by an estimated 35.9 million inpatients (excluding newborn infants) in the United States.

From 1968 through 1970, information on hospital charges from a subsample of the National Hospital Discharge Survey (NHDS) sample was collected.[1] No information on charges or source of payment was collected from 1971 through 1976. In 1977, however, data on a patient's expected (in contrast with actual) principal source of payment and other expected sources of payment were collected from the face sheets of all medical records in the NHDS sample. Statistics in this report reflect only the patient's principal expected source of payment. The survey form used to collect these data is reproduced in a previous publication of the National Center for Health Statistics.[2]

There is an obvious but important limitation to these data: the expected payment source recorded on the face sheet of the medical record may not have been the actual source of payment. For example, a patient admitted to a hospital following an automobile accident may have cited Blue Cross as the expected source of payment when, in fact, an automobile insurance company ultimately made restitution. Also, because of the manner in which this variable was collected, there is no way to determine the charge for the hospital stay or what proportions of the hospital stay and medical services provided were covered by the principal expected source of payment indicated.

HIGHLIGHTS

Private Insurance

Private health insurance, consisting of Blue Cross and other private or commercial insurance, was the principal expected source of payment for approximately 19.3 million discharges in 1977, or about 54 percent of all discharges (table 1). The average length of stay for patients using private insurance was 6.0 days compared

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[a]This report was prepared by Robert Pokras and Gloria Gardocki, Division of Health Resources Utilization Statistics.

[1]National Center for Health Statistics: Patient charges in short-stay hospitals, United States, 1968-1970, by M. Moien. *Vital and Health Statistics*. Series 13-No. 15. DHEW Pub. No. (HRA) 74-1766. Public Health Service. Washington. U.S. Government Printing Office, May 1974.

[2]National Center for Health Statistics: Inpatient utilization of short-stay hospitals, annual summary of the United States, 1977, by B. J. Haupt. *Vital and Health Statistics*. Series 13-No. 41. DHEW Pub. No. (PHS) 79-1792. Public Health Service. Washington. U.S. Government Printing Office, Mar. 1979.

Table 1. Number and percent distribution of patients discharged from non-Federal short-stay hospitals by principal expected source of payment, age and sex of patient: United States, 1977

Sex and age	All expected sources of payment	Private insurance	Workmen's Compensation	Medicare	Medicaid	Other government payments	Self-pay	No charge	Other payments
	Number in thousands								
Both sexes									
All ages	35,902	19,325	663	8,954	2,936	1,110	2,338	91	486
Under 15 years	3,775	2,549	-	45	635	213	250	13	71
15-44 years	15,180	10,334	446	238	1,636	607	1,574	56	289
45-64 years	8,604	6,135	195	883	546	266	452	14	113
65 years and over	8,344	307	22	7,788	119	24	62	8	13
Male									
All ages	14,385	7,497	527	4,031	901	415	789	31	195
Under 15 years	2,137	1,444	-	23	362	124	139	8	37
15-44 years	4,553	3,091	362	124	306	160	405	11	95
45-64 years	4,042	2,807	153	499	184	120	216	7	56
65 years and over	3,653	155	12	3,385	49	11	29	5	7
Female									
All ages	21,518	11,828	136	4,923	2,035	695	1,549	60	291
Under 15 years	1,638	1,105	-	22	273	89	111	5	34
15-44 years	10,627	7,243	84	114	1,330	447	1,169	45	194
45-64 years	4,562	3,328	42	384	362	146	236	7	57
65 years and over	4,690	152	10	4,403	70	13	33	3	6
	Percent								
Both sexes									
All ages	100.0	53.8	1.8	24.9	8.2	3.1	6.5	0.3	1.4
Under 15 years	100.0	67.5	-	1.2	16.8	5.6	6.6	0.3	1.9
15-44 years	100.0	68.1	2.9	1.6	10.8	4.0	10.4	0.4	1.9
45-64 years	100.0	71.3	2.3	10.3	6.3	3.1	5.3	0.2	1.3
65 years and over	100.0	3.7	0.3	93.3	1.4	0.3	0.7	0.1	0.2
Male									
All ages	100.0	52.1	3.7	28.0	6.3	2.9	5.5	0.2	1.4
Under 15 years	100.0	67.6	-	1.1	16.9	5.8	6.5	0.4	1.7
15-44 years	100.0	67.9	7.9	2.7	6.7	3.5	8.9	0.2	2.1
45-64 years	100.0	69.4	3.8	12.4	4.6	3.0	5.3	0.2	1.4
65 years and over	100.0	4.2	0.3	92.7	1.3	0.3	0.8	0.1	0.2
Female									
All ages	100.0	55.0	0.6	22.9	9.5	3.2	7.2	0.3	1.4
Under 15 years	100.0	67.4	-	1.3	16.7	5.4	6.7	0.3	2.1
15-44 years	100.0	68.2	0.8	1.1	12.5	4.2	11.0	0.4	1.8
45-64 years	100.0	73.0	0.9	8.4	7.9	3.2	5.2	0.2	1.2
65 years and over	100.0	3.2	0.2	93.9	1.5	0.3	0.7	0.1	0.1

Table 2. Number and percent distribution of days of care and average length of stay for patients discharged from non-Federal short-stay hospitals by principal expected source of payment: United States, 1977

Days of care	All expected sources of payment	Principal expected source of payment							
		Blue Cross and other private insurance	Workmen's Compensation	Medicare	Medicaid	Other government payments	Self-pay	No charge	Other payments
Number in thousands.....	262,407	115,616	4,742	100,354	19,261	6,662	12,097	610	3,065
Percent distribution.....	100.0	44.1	1.8	38.2	7.3	2.5	4.6	0.2	1.2
Average length of stay.....	7.3	6.0	7.3	10.9	6.6	6.1	5.2	6.8	6.4

with 7.3 days for all patients (table 2). This difference is partially a function of the age of these patients. That is, average length of stay increases with age, and the average age of patients using private insurance was 35.5 years, while the average age of all patients was just over 40 years (table 3). The shorter average length of stay means that a proportionately smaller number of days of care were used by these patients: while 54 percent of all discharges were covered by private insurance, only 45 percent of the total days of care in short-stay non-Federal hospitals were used by these patients.

The five most frequent first-listed diagnoses for patients using private insurance (table 4) were delivery (with or without mention of complication), malignant neoplasms, benign neoplasms, hypertrophy of tonsils and adenoids, and chronic ischemic heart disease. The diagnostic categories used to determine this ranking are discussed in the Technical Notes. Of the 3.33 million patients hospitalized for deliveries in the United States in 1977, 2.05 million (62 percent) listed Blue Cross or another private insurance plan as the principal expected source of payment. This large proportion of deliveries contributed in part to the shorter average length of stay of patients using private insurance, because a delivery generally results in a relatively short length of stay—from about 3 to 5 days.

Table 3. Private, public, and other expected sources of payment for patients discharged from non-Federal short-stay hospitals by total number of discharges, days of care, average length of stay, and age: United States, 1977

Item	All expected sources of payment	Expected source of payment		
		Private	Public	Self-pay, no charge, other
Total number of discharges in millions.....	35.9	19.3	13.7	2.9
Total days of care in millions.....	262.4	115.6	131.0	15.8
Average length of stay in days.....	7.3	6.0	9.4	5.5
Average age of patients in years...	40.6	35.5	58.8	31.8

Table 5 provides data on all-listed surgeries for inpatients, with a maximum of three procedures recorded on the NHDS survey form. The five most frequent surgical procedures (see Technical Notes for a discussion of surgical categories) performed for patients using private health insurance were diagnostic dilation and curettage of uterus, hysterectomy, tonsillectomy with or without adenoidectomy, bilateral ligation and division of fallopian tubes, and oophorectomy or salpingo-oophorectomy. Of these five procedures, four are female specific, and private insurance was the principal expected source of payment for more than 75 percent of each of them.

The numbers of males and females discharged were relatively similar in all age groups except 15-44 years (table 1). Of the discharges in this age group listing Blue Cross or other private insurance as the expected source of payment, more than twice as many were females as males. This was due to the large number of

Table 4. Number of discharges for the 5 most frequent diagnostic categories for patients discharged from non-Federal short-stay hospitals for each principal expected source of payment, and percent of all discharges with the diagnosis: United States, 1977

Most frequent diagnostic categories and ICDA codes	Number of discharges in thousands	Percent of all discharges
Private insurance		
Delivery with or without mention of complication 650-661	2,049	61.5
Malignant neoplasms 140-209	708	41.0
Benign neoplasms and neoplasms of unspecified nature 210-239	593	72.2
Hypertrophy of tonsils and adenoids 500	492	77.6
Chronic ischemic heart disease 412	410	32.1
Medicare		
Malignant neoplasms 140-209	827	47.8
Chronic ischemic heart disease 412	766	59.9
Cerebrovascular disease 430-438	456	71.4
Pneumonia, all forms 480-486	258	35.7
Cataract 374	245	70.4
Medicaid		
Delivery with or without mention of complication 650-661	411	12.3
Abortion (induced or spontaneous) 640-645	93	19.9
Malignant neoplasms 140-209	83	4.8
Pneumonia, all forms 480-486	80	11.1
Hypertrophy of tonsils and adenoids 500	76	12.0
Workmen's Compensation		
Displacement of intervertebral disc 725	74	18.7
Sprains and strains of back and neck 846-847	66	18.3
Lacerations and open wound (excluding eye, ear, and head) 874-907	37	15.7
Inguinal hernia 550,552	36	7.2
Dislocation without fracture 830-839	32	15.2
Other government payments		
Delivery with or without mention of complication 650-661	139	4.2
Alcoholism 303	46	9.8
Hypertrophy of tonsils and adenoids 500	33	5.2
Malignant neoplasms 140-209	33	1.9
Psychoses 290-299	33	8.0
Self-pay		
Delivery with or without mention of complication 650-661	613	18.4
Abortion (induced or spontaneous) 640-645	78	16.7
Alcoholism 303	76	16.1
Malignant neoplasms 140-209	56	3.2
Complications of pregnancy 630-634	56	16.2
Other payments		
Delivery with or without mention of complication 650-661	80	2.4
Malignant neoplasms 140-209	16	0.9
Alcoholism 303	17	3.6
Intracranial injury (including skull fracture) 850-854	12	3.1
Benign neoplasms and neoplasms of unspecified nature 210-239	11	1.3
No charge		
Delivery with or without mention of complication 650-661	26	0.8
Pneumonia, all forms 480-486	*4	0.6
Abortion (induced or spontaneous) 640-645	*3	0.6
Cholelithiasis 574	*2	0.4
Psychoses 290-299	*2	0.5

Table 5. Number of all-listed surgeries for the 5 most frequent surgical categories for patients discharged from non-Federal short-stay hospitals for each principal expected source of payment, and percent of all such surgeries performed: United States, 1977

Most frequent surgical categories and ICDA codes	Number of all-listed surgeries in thousands	Percent of all such surgeries
Private insurance		
Dilation and curettage of uterus, diagnostic....70.3	766	77.0
Hysterectomy....69.1-69.5	554	78.6
Tonsillectomy with or without adenoidectomy....21.1-21.2	479	77.6
Ligation and division of fallopian tubes, bilateral....68.5	440	75.2
Oophorectomy; salpingo-oophorectomy....67.2-67.5	353	77.1
Medicare		
Extraction of lens....14.4-14.6	249	70.1
Prostatectomy....58.1-58.3	214	71.6
Reduction of fracture with fixation....82.2	168	47.9
Cholecystectomy....43.5	115	25.8
Repair of inguinal hernia....38.2-38.3	110	20.6
Medicaid		
Dilation and curettage of uterus, diagnostic....70.3	89	8.9
Tonsillectomy with or without adenoidectomy....21.1-21.2	73	11.8
Ligation and division of fallopian tubes, bilateral....68.5	68	11.6
Cesarean section....77	52	11.4
Hysterectomy....69.1-69.5	45	6.4
Workmen's Compensation		
Repair of inguinal hernia....38.2-38.3	37	6.9
Neurosurgery....01-05	37	9.5
Operations on muscles, tendons, facia, and bursa....88-89	35	9.4
Excision of intervertebral cartilage (prolapsed disc)....86.4	34	20.5
Suture of skin or mucous membrane....92.5	19	9.8
Other government payments		
Tonsillectomy with or without adenoidectomy....21.1-21.2	33	5.3
Dilation and curettage of uterus, diagnostic....70.3	28	2.8
Ligation and division of fallopian tubes, bilateral....68.5	20	3.4
Hysterectomy....69.1-69.5	18	2.6
Cesarean section....77	17	3.7
Self-pay		
Cesarean section....77	70	15.4
Repair of laceration, obstetrical....78.2-78.3	50	18.4
Dilation and curettage of uterus, diagnostic....70.3	46	4.6
Ligation and division of fallopian tubes, bilateral....68.5	45	7.7
Dilation and curettage after delivery or abortion....78.1	43	14.8
Other payments		
Repair of laceration, obstetrical....78.2-78.3	12	4.4
Dilation and curettage of uterus, diagnostic....70.3	11	1.1
Hysterectomy....69.1-69.5	10	1.4
Cesarean section....77	10	2.2
Ligation and division of fallopian tubes, bilateral....68.5	8	1.4
No charge		
Cesarean section....77	*4	0.9
Hysterectomy....69.1-69.5	*2	0.2
Ligation and division of fallopian tubes....68.5	*2	0.3
Cholecystectomy....43.5	*2	0.4
Dilation and curettage after delivery or abortion....78.1	*2	0.7

females admitted for delivery and female-specific surgery.

Public Programs

Public programs for hospital care payments include Medicare, Medicaid, Workmen's Compensation, and other forms of government payments. Together these programs were listed as the principal expected source of payment for 13.7 million, or 38 percent, of all discharges (table 1). Of these, 66 percent were Medicare patients, 21 percent were Medicaid patients, 5 percent benefited from Workmen's Compensation, and 8 percent received other forms of government payments. While private insurance accounted for 54 percent of all discharges and only 45 percent of the total days of care, public health programs accounted for 38 percent of the total discharges and 49 percent of the total days of care. This disparity resulted from a greater average length of stay, 9.4 days, for patients covered by public programs. The longer average length of stay was itself due in great part to the fact that Medicare was the expected source of payment for 93 percent of all patients 65 years of age or over (table 1); as a result, the average age of patients covered by public programs was almost 59 years.

Because of their specific characteristics, the public programs showed considerable variability among the most frequent diagnoses and surgical procedures. The most obvious case was Workmen's Compensation, in which the five most frequent principal diagnostic conditions reflected injuries, accidents, and physical ailments related to the work environment (table 4). Likewise, the five most frequent surgical procedures covered by Workmen's Compensation reflected medical care provided for accidents and injuries (table 5). For Medicare, 3 of the 5 most frequent principal diagnoses reflected the age of the population using this program: chronic ischemic heart disease, cerebrovascular disease, and cataract. Medicare was the principal expected source of payment for 60, 71, and 70 percent, respectively, of all patients with these conditions. Also, 2 of the 5 most frequently performed surgical procedures, extraction of lens and prostatectomy, reflected the age of the Medicare population.

The most frequent diagnoses and surgical procedures for Medicaid and other government payments did not reflect as specific a class of patients as Workmen's Compensation and Medicare did. Rather, those patients covered by Medicaid and other government payments were more similar to patients covered by private insurance. Of the 5 most frequent diagnoses for Medicaid and other government payments, 3 (delivery, malignant neoplasms, and hypertrophy of tonsils and adenoids) were also among the 5 most frequent diagnoses for both Blue Cross and other commercial insurance (table 4). Also, of the 5 most frequent surgical procedures for Medicaid and other government payments, 4 were among the 5 most frequent surgeries performed for patients using private insurance. These were diagnostic dilation and curettage of uterus, bilateral ligation and division of fallopian tubes, tonsillectomy with or without adenoidectomy, and hysterectomy (table 5).

In the age by sex distribution in table 1, the most prominent sex difference in number of discharges was in the 15-44 years category. For each expected source of payment except Workmen's Compensation and Medicare there were more than twice as many female as male discharges in this age category. In the Medicare class, the number of discharges for females and males was quite similar (114,000 and 124,000, respectively), and, not unexpectedly, in the Workmen's Compensation class the sex difference was the reverse of that for other insurance sources: there were 362,000 males and 84,000 females discharged who were in the 15-44 years age group.

Self-Pay

More than 6 percent (2.3 million) of all patients expected to pay for their hospital care principally by themselves. Delivery, the leading diagnosis for this group (table 4), was the first-listed diagnosis for 26 percent of these patients. No other diagnosis accounted for more than 14 percent of the total number of discharges in any source of payment category except for no charge (as discussed below). The large proportion of self-pay patients admitted for delivery largely accounts for two other characteristics of the self-pay group: 67 percent were between the

ages 15-44 years, and the average length of stay for them was only 5.2 days (table 2).

No Charge

In 1977, an estimated 91,000 discharges (table 1) were not charged for approximately 610,000 days of care (table 2); this was only about two-tenths of 1 percent of all days of care in short-stay hospitals. When data in this category are broken down into most frequent diagnoses and surgical procedures, the frequencies have relative standard errors greater than 30 percent and consequently are too small to be considered reliable estimates. The only exception was the most frequent diagnosis—delivery with or without mention of complication—for which there were 26,000 no charge deliveries in 1977 that accounted for 29 percent of all no charge patients.

TECHNICAL NOTES

SOURCE OF DATA

The National Hospital Discharge Survey encompasses patients discharged from short-stay noninstitutional hospitals, exclusive of military and Veterans Administration hospitals, located in the 50 States and the District of Columbia. Only hospitals with six beds or more and an average length of stay less than 30 days for all patients are included in the survey. Discharges of newborn infants are excluded from this report.

The universe of the survey consisted of 6,965 short-stay hospitals contained in the 1963 Master Facility Inventory of Hospitals and Institutions. New hospitals were sampled for inclusion into the survey in 1972, 1975, and 1977. In all, 535 hospitals were sampled in 1977. Of these hospitals, 68 refused to participate, and 44 were out of scope. The 423 participating hospitals provided approximately 224,000 medical records.

SAMPLE DESIGN

All hospitals with 1,000 beds or more in the universe of short-stay hospitals were selected with certainty in the sample. All hospitals with fewer than 1,000 beds were stratified, the primary strata being 24 size-by-region classes. 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 type of 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.

Sample discharges were selected within the hospitals using the daily listing sheet of discharges as the sampling frame. These discharges were selected by a random technique, usually on the basis of the terminal digit or digits of the patient's medical record number, a number assigned when the patient was admitted to the hospital. The within-hospital sampling ratio for selecting sample discharges varied inversely with the probability of selection of the hospital.

SAMPLING ERRORS, NONRESPONSE, AND DATA EDITS

Since the estimates for this report are based on a sample rather than the entire universe, they are subject to sampling variability. The relative standard errors presented in table I are obtained by dividing the standard error of the estimate by the estimate itself and are expressed as a percent of the estimate.

About 8.5 percent of the discharges sampled for the 1977 NHDS did not have information concerning source of payment on the face sheet of the medical record. Therefore, all frequency estimates in this report have been adjusted for nonresponse by assuming that nonresponses are distributed among the principal expected sources of payment in the same proportions as responses are. However, the ratio estimates of average length of stay and average age in tables 1 and 5 do not incorporate nonresponse data.

There were several edits performed on the raw data. When a principal expected source of payment was not indicated, but a single expected source of payment was listed as a secondary source of payment, the indicated secondary source of payment was assumed to be the principal expected source of payment. When Workmen's Compensation was listed in conjunction with other insurance sources, Workmen's Compensation was taken as the principal expected source of payment; and when Medicare was listed in conjunction with other insurance sources (except Workmen's Compensation),

Table I. Relative standard errors of estimates, by source of data

Size of estimate	First-listed diagnosis and number of discharges		All-listed surgeries	Days of care
	All principal expected sources of payment except self-pay	Self-pay only		
1,000	35.0	-	-	...
10,000	19.5	27.4	21.8	...
100,000	9.2	15.2	8.1	16.9
1,000,000	6.2	13.6	4.0	10.1
10,000,000	3.6	-	-	6.3
100,000,000	...	...	...	4.0
150,000,000	...	...	...	3.7

Medicare was taken as the principal expected source of payment.

DIAGNOSTIC AND SURGICAL CATEGORIES

The most frequent diagnostic and surgical categories in this report come from a grouping scheme devised by NHDS for reporting purposes.[3,4] For diagnoses, these categories are subsets of the 17 major diagnostic classes of the *Eighth Revision International Classification of Diseases, Adapted for Use in the United States*[5] (ICDA-8) and were developed to reduce the detail of ICDA-8 while retaining specificity of conditions. For this report, two changes in this grouping scheme were made: 1. deliveries without mention of complication (ICDA-8 code 650) and deliveries with mention of complication (ICDA-8 codes 651-661) were combined; and 2. neoplasms were categorized as malignant or benign without regard to site. For surgical procedures the categories used are subsets of the first 16 major surgical classes in ICDA-8 (biopsies are excluded). These surgical groups represent single surgical procedures or groups of associated surgical procedures that are performed frequently. In both diagnostic and surgical recoding schemes there are "other" categories that group diagnoses or surgeries into catch-all groups (e.g., "other abdominal surgery"). These categories were not used in determining the five most frequent diagnoses or surgeries.

DEFINITIONS

First-listed diagnosis.—The coded diagnosis identified as the principal diagnosis or else listed first on the face sheet of the medical record. The number of first-listed diagnoses is equivalent to the number of discharges.

All-listed operations.—All coded operations listed in positions 1-3 on the face sheet of the medical record exclusive of certain obstetrical procedures, diagnostic endoscopy and radiography, radiotherapy, and certain other treatments not generally considered as surgery.

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[3] National Center for Health Statistics: Inpatient utilization of short-stay hospitals by diagnosis, United States, 1974, by L. S. Glickman. *Vital and Health Statistics.* Series 13-No. 30. DHEW Pub. No. (HRA) 77-1783. Public Health Service. Washington. U.S. Government Printing Office, July 1977.

[4] National Center for Health Statistics: Surgical Operations in short-stay hospitals, United States, 1975, by A. L. Ranofsky. *Vital and Health Statistics.* Series 13.-No. 34. DHEW Pub. No. (PHS) 78-1785. Public Health Service. Washington. U.S. Government Printing Office, July 1977.

[5] National Center for Health Statistics: *Eighth Revision International Classification of Diseases, Adapted for Use in the United States.* (PHS) Pub. No. 1693. Public Health Service. Washington. U.S. Government Printing Office, 1967.

SYMBOLS

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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